GoTools

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Contents

Chapter 1

GoTools Library

1.1 Introduction

The newest version of GoTools is available from http://www.sintef.no/Geometry-Toolkits.

GoTools is licensed under the GNU General Public License

GoTools is the group name of many interdependent C++ software modules developed by the geometry group at SINTEF ICT, Dept. of Applied Mathematics. GoTools software has been developed for a range of different applications in many different projects. However, a few key modules are used by almost all the others; these have been grouped together in GoTools Core.

At the moment, the following GoTools modules are offered with GPL license:

- GoTools Core. Parametric curves and surfaces including construction methods and operations on these entities
- GoTools Parametrization. Parametrization of scattered data points
- GoTools Implicitization. Approximating spline curves and surfaces by implicitely defined algebraic entities
- GoTools Intersections. Intersection functionality involving spline curves and surfaces and computations of self intersections.
- GoTools Igeslib. Read from and write to iges format.
- GoTools Trivariate. Spline volumes and elementary volumes including some creation methods
- GoTools Topology. Adjacency analysis for surface sets
- GoTools CompositeModel. Representation of a surface set including topological entities and operations on a set of surfaces as one unit.
- GoTools Trivariatemodel. A volume model including topology and some operations on the model
- GoTools Viewlib. A utility viewer to visualize curves and surfaces
- GoTools QualityModule. A set of tools to check the quality of CAD models
- GoTools IsogeometricModel. A set of tools related to isogeometric analysis
- GoTools LRsplines2D. LR spline surfaces

GoTools depends on:

- SISL (available with GPL license), SINTEF's spline library, for various spline related functionality,
- TTL (available with GPL license), a generic triangulation library,
- newmat (available with a permissive license), for various matrix operations.

For convenience, these libraries are included in the GPL version of GoTools.

1.2 Building GoTools

This GoTools package uses CMake to generate a Makefile (on Linux) or MS Visual Studio project file (on Windows).

For information on using CMake, see www.cmake.org.

As a Quick Start Guide, on Linux, make a build directory somewhere:

```
$ cd some_dir
$ mkdir build
$ cd build
$ ccmake <path_to_source_code>
```

Follow the instructions of 'ccmake' - the CMake "GUI". Then:

```
$ make
$ sudo make install
```

On Windows, add a new build folder somewhere. Start the CMake executable and fill in the paths to the source and build folders. When you run CMake, a Visual Studio project solution file will be generated in the build folder.

1.2.1 Compilers

The code uses certain features of the new C++ standard C++11, most notably the smart pointer `std::shared_ptr`. It has been tested on GCC 4.6.1 on Linux and Visual Studio 2010 on Windows.

A set of options to control the build can be accessed in CMake (names starting with `GoTools`). For example, you can turn on/off building the various modules by checking/unchecking `GoTools_COMPILE_MODULE_<modulename>`.

Also provided is the option `GoTools_USE_BOOST`. If this option is turned on, the building process uses `boost::shared_ptr` instead of `std::shared_ptr`. If a C++11 compliant compiler is not available, you may try this option and see if it works. Requires Boost: www.boost.org.

Chapter 2

GoTools CompositeModel

Contains tools for representing composite models.

This module depends on the following GoTools modules:

- GoTools Core
- GoTools Implicitization
- GoTools Intersection
- GoTools Parametrization
- GoTools Igeslib
- GoTools Topology

and the following modules external to GoTools:

- SISL (SINTEF)
- TTL (SINTEF)
- The newmat matrix library, which is freely available from www.robertnz.net.

SISL, TTL and newmat is included for convenience.

Chapter 3

GoTools example files

A number of example programs are created to illustrate the use of various GoTools functionality.

Example programs in gotools-core:

- adapt_curve
- append_curve
- approx_curve
- approx_surface
- circle
- closestpoint_curve
- closestpoint_degenerate_sf
- closestpoint_surface
- cone
- const_param_curves
- coons_patch_gen
- cylinder
- ellipse
- interpol_curve_free
- interpol_curve_hermite
- linear_swept_surface
- project_curve
- rotational_swept_surface
- sphere
- surface_of_revolution
- torus

The module trivariate has the following example programs:

- coons_patch_volume_gen
- createCoonsVolume
- linear_swept_volume
- loft_volume_creator
- rotational_swept_volume

The example programs related to compositemodel:

- createSplitDisc
- createBlockStructuredDisc
- createVolumeBoundaries
- face2splineset

The example programs in the trivariatemodel module are:

- createMidShip
- mirrorAndLoft
- multiPatchSweep

Chapter 4

GoTools Core

All GoTools modules depend on the gotools-core module. This module contains parametric curves and surfaces and functionality related to these entities. For clarity it is divided into four parts:

- *geometry* — contains classes and functionality for representing, storing and manipulating parameterized geometrical objects
- *utils* — contains general, low-level functionality
- *creators* — contains functionality for generating curves and surfaces by approximation, blending, etc.
- *tesselator* — contains functionality for making tesselations of geometry entities

4.1 Geometric Data Structures

The figure above shows the main geometry classes in GoTools.

All geometric objects are of type GeomObject. This class has a function instanceType, and by calling this function, it is possible to check the concrete type of a given object. A GeomObject is Streamable, which means that they can be written to and read from a stream (typically a file) in a uniform way. See the g2-format documentation for more information on this topic. Similarly, they can be created in a uniform way by the Factory, which is useful when you want to generate objects whose exact kind is unknown at compile time.

4.1.1 Parametric Curves

ParamCurve is the base class for all parametric curves in GoTools and defines a common interface. Many operations do not need to distinguish between different types of parametric curves. A parametric curve has (with some exceptions) the following functionality:

- operations on the curve
  - clone: make a copy of this curve
  - subCurve: create a subcurve of this curve
  - appendCurve: append another curve to this curve
  - split: split the curve into two curves at a given parameter
- operations in the parameter interval

  - startparam: fetch start parameter
  - endparam: fetch end parameter
  - setParameterInterval: linearly reparametrize the parameter interval
  - reverseParameterDirection: reverse the parameter interval
- evaluations
  - point: evaluate the curve's position (and perhaps a certain number of derivatives) at a given parameter
  - uniformEvaluator: evaluate the curve's position at a regular set of parameter values
- geometric information retrieval
  - length: compute the length of (a segment of) the curve
  - estimatedCurveLength: estimate the length of (a segment of) the curve
  - compositeBox: compute a composite box (bounding box) enclosing the curve
  - directionCone: compute a directional cone containing all tangent directions of this curve
- closest point computations
  - closestPointGeneric: compute the closest point on (a segment of) this curve to a specified point — generic implementation
  - closestPoint: compute the closest point on (a segment of) this curve to a specified point — specific implementation for each parametric curve type
- checks for degeneracy, symmetry, and type
  - isLinear: check if the curve is linear
  - isInPlane: check if the curve is contained in a plane belonging to a given pencil of planes
  - isAxisRotational: check if the curve is axis rotational
  - isDegenerate: check whether the curve degenerates to a single point
  - isClosed: check whether the curve is closed

4.1.2 Parametric Surfaces

ParamSurface is the base class for a parametric surface and defines the common interface for all parametric surfaces. A parametric surface has (with some exceptions) the following functionality:

- operations on the surface
  - clone: make a copy of this surface
  - subSurfaces: create subsurfaces of this surface
  - asSplineSurface: create a spline surface represented by this surface, if any
  - outerBoundaryLoop: fetch the anticlockwise, outer boundary loop of the surface
  - allBoundaryLoops: fetch the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries
  - getBoundaryInfo: compute the boundary curve segment between two points on the boundary, as well as the cross-tangent curve
  - mirrorSurface: reflect the surface through a given plane
  - getInternalPoint: fetch an (unspecified) internal point in the surface
  - constParamCurves: fetch the curve(s) obtained by intersecting the surface with one of its isoparametric curves
  - nextSegmentVal: determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction

  - turnOrientation: flip the direction of the normal of the surface
  - getCornerPoints: fetch surface corners, geometric and parametric points

- operations in the parameter domain
  - setParameterDomain: set the parameter domain to a given rectangle
  - parameterDomain: fetch the parameter domain
  - containingDomain: fetch a rectangular domain that contains the parameter domain
  - inDomain: check if a parameter pair lies in the parameter domain
  - inDomain2: check if a parameter pair lies inside, on the boundary, or outside of the parameter domain
  - onBoundary: check if a parameter pair lies on the boundary of the parameter domain
  - closestInDomain: fetch the parameter value in the parameter domain closest to a given parameter pair
  - reverseParameterDirection: reverse one of the parameter directions
  - swapParameterDirection: swap the two parameter directions

- geometric information retrieval
  - normalCone: create a direction cone containing all surface normals
  - tangentCone: create a direction cone containing all surface tangents in a given parameter direction
  - compositeBox: compute a composite box (bounding box) enclosing the surface
  - area: compute the total area of this surface
  - estimateSfSize: estimate the size of the surface in the two parameter directions

- evaluations
  - point: evaluate the surface's position (and perhaps a certain number of derivatives) at a given parameter pair
  - normal: evaluate the surface normal for a given parameter pair
  - evalGrid: evaluate the surface's position at a grid in the parameter domain

- closest point computations
  - closestPoint: iteratively find the closest point on the surface to a given point
  - closestBoundaryPoint: iteratively find the closest point on the boundary of the surface to a given point
  - setIterator: set type of closest point iterator

- checks for degeneracy, symmetry, and type
  - isDegenerate: check whether one of the four boundary curves is degenerate (i.e., has zero length)
  - getDegenerateCorners: find degenerate surface corners by checking for parallel and anti-parallel partial derivatives
  - isIsoTrimmed: check if the surface is trimmed along constant parameter curves
  - isSpline: check if the surface is of type spline
  - isAxisRotational: check if the surface is axis rotational
  - isPlanar: check if the surface is planar
  - isLinear: check if the surface is linear in one or both directions
  - ElementOnBoundary: check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries
  - ElementBoundaryStatus : check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries, is inside or outside

4.2 B-spline Curves

A B-spline curve is represented by the SplineCurve class.

Mathematically, the curve is defined by the parametrization

$$\mathbf{c}(t) = \sum_{i=1}^{n} \mathbf{p}_i B_{i,k,\mathbf{t}}(t).$$

The dimension dim of the curve $\mathbf{c}$ is equal to that of its *control points* $\mathbf{p}_i$. For example, if the dimension of the control points is one, the curve is a function, if the dimension is two, the curve is planar, and if the dimension is three, the curve is spatial. Usually the dimension of the curve will be at most three, but higher dimensions are allowed.

A B-spline curve is a linear combination of a sequence of B-splines $B_{i,k,\mathbf{t}}$ (called a B-basis) uniquely determined by a knot vector $\mathbf{t}$ and the order k. The order is equal to the polynomial degree plus one. For example, if the order is two, the degree is one and the B-splines and the curve c they generate are (piecewise) linear. If the order is three, the degree is two and the B-splines and the curve are quadratic. Cubic B-splines and curves have order 4 and degree 3, etc.

The parameter range of a B-spline curve $\mathbf{c}$ is the interval $[t_k, t_{n+1}]$, and so mathematically, the curve is a mapping $\mathbf{c} : [t_k, t_{n+1}] \to \mathbf{R}^{dim}$, where dim is the Euclidean space dimension of its control points.

The complete representation of a B-spline curve consists of

- dim: The dimension of the underlying Euclidean space, $1, 2, 3, \ldots$.
- n: The number of control points (also the number of B-splines)
- k: The order (polynomial degree + 1) of the B-splines.
- $\mathbf{t}$: The knot vector of the B-splines. $\mathbf{t} = (t_1, t_2, \ldots, t_{n+k})$.
- $\mathbf{p}$: The control points of the B-spline curve. $p_{d,i}$, $d = 1, \ldots, dim$, $i = 1, \ldots, n$. E.g. when $dim = 3$, we have $\mathbf{p} = (x_1, y_1, z_1, x_2, y_2, z_2, \ldots, x_n, y_n, z_n)$.

We note that arrays in c start at index 0 which means, for example, that if the array t holds the knot vector, then $t[0] = t_1, \ldots, t[n + k - 1] = t_{n+k}$ and the parameter interval goes from $t[k - 1]$ to $t[n]$. Similar considerations apply to the other arrays.

The data in the curve representation must satisfy certain conditions:

- The knot vector must be non-decreasing: $t_i \leq t_{i+1}$. Moreover, the knots t_i and t_{i+k} must be distinct: $t_i < t_{i+k}$.
- The number of control points should be greater than or equal to the order of the curve: $n \geq k$.

To understand the representation better, we will look at three parts of the representation: the B-splines (the basis functions), the knot vector and the control polygon.

4.2.1 B-spline Basis Functions

The spline space is represented by the class BsplineBasis. A set of B-spline basis functions is determined by the order k and the knots.

4.2.1.1 Linear B-splines

For example, to define a single basis function of degree one, we need three knots.

In the figure the three knots are marked as dots.

In the figure above the two knots at each end are equal.

By taking a linear combination of the three basis functions shown above, we can generate a linear spline function as shown in the next figure.

4.2.1.2 Quadratic B-splines

A quadratic B-spline basis function is a linear combination of two linear basis functions, in which the coefficients are linear affine in the parameter t. In the next figure, we will see a quadratic B-spline defined by four knots. A quadratic B-spline is the sum of two products, the first product between the linear B-spline on the left and a corresponding line from 0 to 1, the second product between the linear B-spline on the right and a corresponding line from 1 to 0.

4.2.1.3 Higher-order B-splines

For higher-order B-splines there is a similar definition. A B-spline of order $k \geq 2$ is a weighted linear combination of two B-splines of order $k-1$. Explicitly, we define B-splines of order $k = 1$ as box functions,

$$B_{i,1}(t) = 1 \quad if \quad t_i \leq t < t_{i+1} \quad and \quad 0 \quad otherwise$$

and then the B-splines of order $k \geq 2$ as

$$B_{i,k}(t) = \frac{t - t_i}{t_{i+k-1} - t_i} B_{i,k-1}(t) + \frac{t_{i+k} - t}{t_{i+k} - t_{i+1}} B_{i-1,k-1}(t).$$

4.2.1.4 Basic properties

B-spline basis functions satisfy some important properties for curve and surface design. Each basis function is non-negative and it can be shown that they sum to one,

$$\sum_{i=1}^{n} B_{i,k,\mathbf{t}}(t) = 1.$$

These properties combined mean that B-spline curves satisfy the *convex hull property:* the curve lies in the convex hull of its control points. Furthermore, the support of the B-spline basis function $B_{i,k,\mathbf{t}}$ is the interval $[t_i, t_{i+k}]$ which means that B-spline curves has *local control:* moving one control point only alters the curve locally.

With k multiple knots at the ends of the knot vector, B-spline curves also have the *endpoint property:* the start point of the B-spline curve equals the first control point and the end point equals the last control point, in other words

$$\mathbf{c}(t_k) = \mathbf{p}_1 \qquad \text{and} \qquad \mathbf{c}(t_{n+1}) = \mathbf{p}_n.$$

4.2.2 The Control Polygon

The *control polygon* of a B-spline curve is the polygonal arc formed by its control points, $\mathbf{p}_0, \mathbf{p}_1, \ldots, \mathbf{p}_n$. This means that the control polygon, regarded as a parametric curve, is itself a piecewise linear B-spline curve (order two), identical to its own control polygon. If we increase the order, the distance between the control polygon and the curve increases. A higher order B-spline curve tends to smooth the control polygon and at the same time mimic its shape. For example, if the control polygon is convex, so is the B-spline curve. Another property of the control polygon is that it will get closer to the curve if it is redefined by inserting knots into the curve and thereby increasing the number of control points. This can be seen in the next figure. In the limit, the refinement of the control polygon converges to its B-spline curve.

4.2.3 The Knot Vector

The knots of a B-spline curve describe the following properties of the curve:

- The parameterization of the B-spline curve
- The continuity at the joins between the adjacent polynomial segments of the B-spline curve.

Although the curves in the figure below have the same control polygon, they have different knot vectors and therefore different parametrizations.

This example is not meant as an encouragement to use parameterization for modelling, rather to make users aware of the effect of parameterization. Something close to curve length parameterization is in most cases preferable. For interpolation, chord-length parameterization is used in most cases.

The number of equal knots determines the degree of continuity. If k consecutive internal knots are equal, the curve is discontinuous. Similarly if $k-1$ consecutive internal knots are equal, the curve is continuous but not in general differentiable. A continuously differentiable curve with a discontinuity in the second derivative can be modelled using $k-2$ equal knots etc. Normally, B-spline curves in GoTools are expected to be continuous. For many algorithms, curves should be continuously differentiable (C^1).

4.2.4 NURBS Curves

A NURBS (Non-Uniform Rational B-Spline) curve is a generalization of a B-spline curve,

$$\mathbf{c}(t) = \frac{\sum_{i=1}^{n} w_i \mathbf{p}_i B_{i,k,\mathbf{t}}(t)}{\sum_{i=1}^{n} w_i B_{i,k,\mathbf{t}}(t)}.$$

In addition to the data of a B-spline curve, the NURBS curve $\mathbf{c}$ has a sequence of weights $w_1, \ldots, w_n$. One of the advantages of NURBS curves over B-spline curves is that they can be used to represent conic sections exactly (taking the order k to be three). A disadvantage is that NURBS curves depend nonlinearly on their weights, making some calculations, like the evaluation of derivatives, more complicated and less efficient than with B-spline curves.

The representation of a NURBS curve is the same as for a B-spline curve except that it also includes

- $\mathbf{w}$: A sequence of weights $\mathbf{w} = (w_1, w_2, \ldots, w_n)$.

We make the assumption that the weights are strictly positive: $w_i > 0$.

Under this condition, a NURBS curve, like its B-spline cousin, enjoys the convex hull property. With k-fold knots at the ends of the knot vector, also NURBS curves have the endpoint interpolation property.

A NURBS curve is in GoTools stored using the same entities as non-rational spline curves. Note that the constructors of these entities assume that the NURBS coefficients are given in the format: $w_i p_{i,1}, \ldots w_i p_{i,dim}, w_i$ for $i = 1, \ldots n$, i.e., the coefficients are multiplied with the weigths.

4.2.5 Spline Curve Functionality

In GoTools, SplineCurve inherites ParamCurve and has thereby the functionality specified for ParamCurve objects. Functionality specific for a B-spline curve can be found in the doxygen information. This functionality includes:

- Compute the derivative curve corresponding to a given curve
- Fetch information related to the spline space
- Fetch the control polygon of a spline curve
- Insert new knots into the knot vector of the curve and update the curve accordingly
- Increase the polynomial degree of the curve
- Make sure that the curve has got an open knot vector, i.e., knot multiplicity equal to the order in the ends of the curve

4.3 B-spline Surfaces

A tensor product B-spline surface is represented by the class SplineSurface.

Mathematically, the B-spline surface is defined by the parametrization

$$\mathbf{s}(u,v) = \sum_{i=1}^{n_1}\sum_{j=1}^{n_2} \mathbf{p}_{i,j} B_{i,k_1,\mathbf{u}}(u) B_{j,k_2,\mathbf{v}}(v)$$

with control points $\mathbf{p}_{i,j}$ and two variables (or parameters) u and v. The formula shows that a basis function of a B-spline surface is a product of two basis functions of B-spline curves (B-splines). This is why a B-spline surface is called a tensor-product surface. The following is a list of the components of the representation:

- dim: The dimension of the underlying Euclidean space.
- n_1: The number of control points with respect to the first parameter.
- n_2: The number of control points with respect to the second parameter.
- k_1: The order (polynomial degree + 1) of the B-splines in the first parameter.
- k_2: The order of the B-splines in the second parameter.
- $\mathbf{u}$: The knot vector of the B-splines with respect to the first parameter, $\mathbf{u} = (u_1, u_2, \ldots, u_{n_1+k_1})$.
- $\mathbf{v}$: The knot vector of the B-splines with respect to the second parameter, $\mathbf{v} = (v_1, v_2, \ldots, v_{n_2+k_2})$.
- $\mathbf{p}$: The control points of the B-spline surface, $c_{d,i,j}$, $d = 1, \ldots, dim$, $i = 1, \ldots, n_1$, $j = 1, \ldots, n_2$. When $dim = 3$, we have $\mathbf{p} = (x_{1,1}, y_{1,1}, z_{1,1}, x_{2,1}, y_{2,1}, z_{2,1}, \ldots, x_{n_1,1}, y_{n_1,1}, z_{n_1,1}, \ldots, x_{n_1,n_2}, y_{n_1,n_2}, z_{n_1,n_2})$.

The data of the B-spline surface must fulfill the following requirements:

- Both knot vectors must be non-decreasing.
- The number of control points must be greater than or equal to the order with respect to both parameters: $n_1 \geq k_1$ and $n_2 \geq k_2$.

The properties of the representation of a B-spline surface are similar to the properties of the representation of a B-spline curve. The control points $\mathbf{p}_{i,j}$ form a *control net* as shown in the figure below. The control net has similar properties to the control polygon of a B-spline curve, described above.

4.3.1 The Basis Functions

A basis function of a B-spline surface is the product of two basis functions corresponding to B-spline curves,

$B_{i,k_1,\mathbf{u}}(u)B_{j,k_2,\mathbf{v}}(v)$.

Its support is the rectangle $[u_i, u_{i+k_1}] \times [v_j, v_{j+k_2}]$. If the basis functions in both directions are of degree one and all knots have multiplicity one, then the surface basis functions are pyramid-shaped. For higher degrees, the surface basis functions are bell shaped.

4.3.2 NURBS Surfaces

A NURBS (Non-Uniform Rational B-Spline) surface is a generalization of a B-spline surface,

$$\mathbf{s}(u,v) = \frac{\sum_{i=1}^{n_1}\sum_{j=1}^{n_2} w_{i,j}\mathbf{p}_{i,j}B_{i,k_1,\mathbf{u}}(u)B_{j,k_2,\mathbf{v}}(v)}{\sum_{i=1}^{n_1}\sum_{j=1}^{n_2} w_{i,j}B_{i,k_1,\mathbf{u}}(u)B_{j,k_2,\mathbf{v}}(v)}.$$

In addition to the data of a B-spline surface, the NURBS surface has a weights $w_{i,j}$. NURBS surfaces can be used to exactly represent several common 'analytic' surfaces such as spheres, cylinders, tori, and cones. A disadvantage is that NURBS surfaces depend nonlinearly on their weights, making some calculations less efficient.

The representation of a NURBS surface is the same as for a B-spline surface except that it also includes

- $\mathbf{w}$: The weights of the NURBS surface, $w_{i,j}, i = 1,\ldots,n_1, j = 1,\ldots,n_2$, so $\mathbf{w} = (w_{1,1}, w_{2,1},\ldots,w_{n_1,1},\ldots, w_{1,2},\ldots,w_{n_1,n_2})$.

The weights are required to be strictly positive: $w_{i,j} > 0$.

The NURBS surface is represented by SISLSurf and SplineSurface in SISL and GoTools, respectively. As for the curve case, the constructors of SISLSurf and SplineSurface expect the coefficients to be multiplied with the weights.

4.3.3 Spline Surface Functionality

SplineSurface inherites ParamSurface in the GoTools data structure and implements the functionality described for ParamSurface. Important additional functionality is listed below:

- Compute the derivative surface and normal surface corresponding to a given surface
- Fetch information related to the spline spaces
- Fetch the control polygon of a spline surface
- Fetch all weights of a NURBS surface
- Grid evaluation of the basis functions related to a surface
- Grid evaluation of the surface
- Insert new knots into the knot vectors of the surface and adapt the surface description accordingly
- Increase the polynomial degrees of the surface
- Fetch information related to the boundary curves of a surface

4.4 Other Curve Types

As shown in the class hierarchy, a spline curve is not the only parametric curve in GoTools although it is the most important one. There are also other curves that share parts of the public interface:

- BoundedCurve A bounded curve is a restriction of a parametric curve to a given interval. The interval can be specified either in parameter space, in geometry space or both. In the last case, it must be specified whether the parameter space bound or the geometry space bound is the master.
- ElementaryCurve An elementary curve is a container for a conic section or a line. This entity will be described in some detail later.
- CurveOnSurface This class represents a curve lying on a surface.

4.4.1 Curve On Surface

The CurveOnSurface entity is often related to a bounded, or trimmed, surface. A bounded surface is limited by a curve loop where each curve in the loop most often is represented by a CurveOnSurface. However, a CurveOn↩ Surface is an entity in its own right. It simply represents a curve lying on a surface. It can for instance originate from intersecting the surface with a plane.

A CurveOnSurface consists of a parametric surface and two corresponding curves, one curve in the parameter domain of the surface and one spatial curve. The master representation is specified. Some operations may required the existence of one particular of these curves, in particular the parameter curve is requested. It exists functions that compute the missing curve from the existing one.

4.4.2 Elementary Curve

An elementary curve is a fairly new concept in GoTools, and until now such curves have been entered as entities in an IGES or STEP file. The elementary curves may also be represented as spline curves although non-bounded curves must be given a finite extension. The elementary curves is of the types:

- Circle The circle is defined by its center and radius and the plane in which it lies if the dimension of the geometry space is larger than 2. A circle is parameterized in terms of the angle. This is a bounded parameterization.
- Ellipse An ellips is represented by a centre, the direction of one semi-axis and the length of the two semi-axis. The plane in which the ellipse lies is required if the dimension of the geometry space is larger than 2. An ellipse is parameterized in terms of the angle which gives a bounded parameterization.
- Line A line is given by a point and a direction. It has an unbounded parameterization, $t \in [-\infty, \infty]$.
- Parabola A parabola is given by a position, C, a focal distance, F, and a coordinate system, $(\mathbf{x}, \mathbf{y}, \mathbf{z})$. It is described as $f(t) = C + F(t^2\mathbf{x} + 2t\mathbf{y})$ and has an unbounded parameterization, $t \in [-\infty, \infty]$.
- Hyperbola A hyperbola is given by a position, a coordinate system and two distances. The parameterization is unbounded.

4.5 Other Surface Types

Similar to the curve case, GoTools supports also other types of parametric surfaces than spline surfaces. The additional surface types are bounded surface, elementary surface and composite surface. The elementary surfaces are conic surfaces, plane and torus. A composite surface consists of a number of spline surfaces where the associated parameter domains are mapped into one composite domain. The class is not complete in the sense that it does not support all functions specified in the interface for a parametric surface.

4.5.1 Bounded Surface

A bounded surface is a trimmed surface defined by an underlying surface and a trimming loop. The underlying surface is a parametric surface and the loop consists of a closed sequence of ordered parametric curves, often of type CurveOnSurface. The trimming loop must lie on the surface and be continuous with respect to a given tolerance.

4.5.2 Elementary Surface

Also elementary surfaces are quite new in GoTools, and have been entered as entities from IGES or STEP. The elementary surfaces may also be represented as spline surfaces although non-bounded surfaces must be given a finite extension. Operations involving this curve may, however, be made more efficiently by the knowledge of the surface type. The elementary surfaces is of the types:

- Cone A cone is described by a location, the cone axis, the radius of the cross section corresponding to the location and the cone angle. The parameterization is given by the angle and the distance along the axis, thus it is unbounded in one parameter direction.
- Cylinder A cylinder is given by its centre and radius and the cylinder axis. It is parameterized by the angle around the circle and the distance in the axis direction.
- Plane A plane is given by a point and a normal. It has an unbounded parameterization in both parameter directions.
- Sphere A sphere is given by its centre and radius. It has an angular parameterization in both parameter directions and thereby bounded.
- Torus A torus is given by the minor and major radius, a location and an axis. The parameterization is angular in both parameter directions.
- Disc A disc is a part of a plane limited by a circle and given by its centre, radius, plane normal and an additional vector to generate a coordinate system.

The elementary surfaces described above is placed in a coordinate system to facilitate the parameterization. In addition to the geometric information given for each entity, remaining coordinate system information must be specified.

4.6 Geometry Construction

The combination of SISL and GoTools provide a lot of methods for geometry construction. They partly overlap. The GoTools functionality is outlined here. More details can be found in the appropriate classes and namespaces. The SISL geometry construction methods are described in the SISL manual.

The classes for parametric curves, surfaces and volumes in GoTools do not contain construction facilites. They are solely for operating on these entites. The construction is performed in separate classes.

4.6.1 Curve Construction

Construction of elementary curves are being done by their definition or they are read from an IGES file. The curve construction methods in GoTools are concerned with spline curves. The methods are split between two sub modules in gotools-core, namely geometry and creators. The relevant classes are

- HermiteInterpolator The class is placed in geometry. Interpolates a set of points where each point is associated a tangent vector. The points must be parameterized. This is a local curve construction method.
- SplineInterpolator A set of methods to interpolate a set of points. Some methods accept tangent vectors associated to some points. The points must be parameterized. The class gives the possibility to set particular conditions in the endpoints of the curve. This is a global method for curve construction.
- SplineApproximator Approximation in the least squares sense. Parameterized points and a spline space must be given. This class and the two proceeding ones inherite the same class, link Go::Interpolator Interpolator, and share parts of the interface.
- ApproxCurve Make a curve approximating a set of points with a given accuracy. The points must be parameterized and it is possible to give an initial spline space. The method iteratively applies the method in the class SmoothCurve. This class and the following ones lie in the sub module creators.
- SmoothCurve Approximate a set of parameterized data points with a spline curve using a least squares approximation with a smoothing term. The spline space must be given. The method can also be used to perform smoothing on a given curve.
- AdaptCurve Approximates an evaluator based curve with a given accuracy. The method is based on least squares approxation with a smoothing term and spline space refinement.
- ApproxCrvToSeqs Approximate a set of curve sequences by a set of B-spline curves within a given accuracy. The curves are represented in the same spline space.
- HermiteAppC Approximate an evaluator based curve represented by a sub class of the class EvalCurve, by a spline curve. An hermite method is used, thus a C^1 continuous curve will be generated. The existing evaluator based curves are
  1. A curve in the parameter domain of a surface is represented as the projection of a 3D curve into the parameter domain of a given surface. The output curve lies in the parameter domain of the surface.
  2. Given data describing a surface-surface intersection curve, the curve lying given offset distances from the two surface involved in the intersection and parameterized similar to the intersection curve is represented. This construction can be used to create a rolling ball blend.
  3. Given two approximations of the same intersection curves, reapproximate the intersection curve.
  4. Given a curve in the parameter domain of a surface, the geometry space curve is evaluated.
  5. Represent an offset curve from a given space curve. The direction of the offset is given as an expression of corresponding curves.
  6. An offset curve to a given curve in the direction of a cross tangent curve constructed as a blend between tangent curves.
  7. A parameter curve of any type that is to be approximated by a spline curve.
- HermiteAppS Approximate an evaluator based curve set represented by a sub class of the class EvalCurve↩Set. A number of curves defined in the same spline space are generated. One concreate evaluator based curve set exists currently:
  1. Given a surface, a curve in geometry space and a corresponding cross tangent curve, the parameter curve representing the projection of the geometry curve into the surface and the corresponding projection of the cross tangent in the parameter domain is represented.
  2. Given an intersection curve represented as two CurveOnSurface instances, reapproximate this intersection curve along with the two parameter domain curves representing this curve.
  3. Improve the accuracy of an existing trimming curve.
  4. Given an intersection curve between two surfaces, offset these surfaces given distances and create the intersections curve between the offset surfaces and corresponding cross tangent curves that will give a smooth transition between the offset surfaces.

4.6.2 Surface Construction

Similar to the curve construction methods, these methods are placed in the sub modules geometry and creators.

- SweepSurfaceCreator The class lies in geometry. The class contains two methods; sweep a curve along another curve to create a surface and rotational sweep.
- ApproxSurf This class and the following lie in creators. A set of parameterized scattered data are approximated by a spline surface. The boundary curves to the surface can be defined a priori. The spline space must be given. The method iteratively applies the method in SmoothSurface and performs parameter iteration. It may also refine the spline space.
- SmoothSurf Approximate a set of parameterized scattered data points using a least squares approach with a smoothing term. The spline space must be given. The method can also be used to smooth a given surface.
- LoftSurfaceCreator constructs a surface by interpolating a number of non-rational spline curves.
- CoonsPatchGen Construct a surface interpolating 4 boundary curves. The curves may be attached cross tangent curves. To achieve interpolation, the boundary conditions must be consistent.
- HahnsSurfaceGen Fill an n-sided hole with n surfaces. $n = 3, 5$ or 6.

4.7 The utils module

The 'utility' module was developed in parallel with the 'geometry' module, and contains various useful classes and functions related to math. / computational geometry, while not being directly related to splines.

4.7.1 Data structures

You can find templated arrays and optimised vectors.

4.7.2 Geometrical objects

The module contain some objects that are much used in computational geometry, like

- points
- bounding boxes , axis-aligned or rotated , eventually composite
- rational numbers
- barycentric coordinate systems
- direction cones

4.7.3 Misc.

- Compile-time computation of factorials
- A general, nonlinear function minimizer in an arbitrary number of variables. This can be useful in a great number of different settings!

4.8 Tesselation

The geometry entities are tesselated in gotools-core in the sub module tesselator. Depending on the type of the geometry object, the result of the tesselation is stored in GenericTriMesh, LineStrip, QuadMesh or RegularMesh which all inherite the abstract class GeneralMesh. The tesselators in this module relate to a given resolution in each parameter direction of the geometry object.

A curve is tesselated by the class CurveTesselator and the tesselated curve is returned by the function CurveTesselator::getMesh() as a shared pointer to a LineStrip object. A rectangular surface is tesselated in RectGridTesselator and the tesselator returns a shared pointer to a RegularMesh. The triangles produced during tesselation is organized in a set of triangle strips. This structure is taken advantage of to improve the drawing efficiency. A trimmed surface is tesselated by ParametricSurfaceTesselator and the tesselation is represented as an unorganized bunch of triangles. The output from the functionality in the tesselation module is taken as input to the GoTools viewers and the actual drawing is performed using openGL.

Chapter 5

The g2-format, GoTools file format for geometry entities

The following geometry entities have read and write functionality using the g2-format:

- *SplineCurve*, entity code = 100,
- *CurveOnSurface*, entity code = 110,
- *Line*, entity code = 120,
- *Circle*, entity code = 130,
- *Ellipse*, entity code = 140,
- *BoundedCurve*, entity code = 150,
- *Hyperbola*, entity code = 160,
- *Parabola*, entity code = 170,
- *SplineSurface*, entity code = 200,
- *BoundedSurface*, entity code = 210,
- *SurfaceOnVolume*, entity code = 211,
- *GoBaryPolSurface*, entity code = 220,
- *GoHBSplineParamSurface*, entity code = 230,
- *CompositeSurface*, entity code = 240,
- *Plane*, entity code = 250,
- *Cylinder*, entity code = 260,
- *Sphere*, entity code = 270,
- *Cone*, entity code = 280,
- *Torus*, entity code = 290,
- *SurfaceOfRevolution*, entity code = 291,
- *Disc*, entity code = 292,
- *LRSplineSurface*, entity code = 293,

- *TSplineSurface*, entity code = 294,
- *Go3dsObject*, entity code = 300,
- *GoHeTriang*, entity code = 310,
- *GoSdTriang*, entity code = 320,
- *GoQuadMesh*, entity code = 330,
- *GoHybridMesh*, entity code = 340,
- *ParamTriang*, entity code = 350,
- *GoVrmlGeometry*, entity code = 360,
- *PointCloud*, entity code = 400,
- *LineCloud*, entity code = 410,
- *GoTriangleSets*, entity code = 500,
- *RectGrid*, entity code = 510,
- *SplineVolume*, entity code = 700,
- *Parallelepiped*, entity code = 720,
- *SphereVolume*, entity code = 721,
- *CylinderVolume*, entity code = 722,
- *ConeVolume*, entity code = 723,
- *TorusVolume*, entity code = 724

In the following the file format corresponding to most of the entities listed above will be described. Note that the g2-file format is a simple format that does not support pointers. Thus, duplication of information may occur.

5.1 The object header

All geometry entities are preceeded by the object ObjectHeader in a stream. ObjectHeader contains information about the class type of the geometry object to folow and the version number of the file format. The format of the header is as follows:

- `class type` . The entity code given in the list above.
- `major version` . Always 1.
- `minor version` . Always 0.
- `auxillerary data` . 0 if the default colour is chosen, 4 if the rgb-colour code is chosen. In the latter case, the entity is followed by 4 integer digits between 0 and 255 giving the colours red, green and blue and the xxx.

5.2 SplineCurve

The entity code 100 is given in the header. SplineCurve continues with the following information

- dimension of geometry space, whether or not the curve is rational: 1=rational, 0=non-rational
- the number of coefficients, the polynomial order (i.e. degree+1)
- the knot vector, multiple knots are represented by giving the knot value several times
- the curve coefficients

The curve coefficients are given continuously, normally divided by a carriage return for each coefficient. The sequence is, in the non-rational case, $(x_i, y_i, z_i), \quad i = 1, \ldots n$ where n is the number of coefficients. In the rational case, the coefficients are given as $(x_i h_i, y_i h_i, z_i h_i, h_i), \quad i = 1, \ldots n.$ h_i is the weight associated the current coefficient. Note that the coefficients are represented with the weight multiplied with the x, y and x-value.

A linear non-rational spline curve with no inner knots in the parameter interval $[0.1]$is including the header given as:

```
100 1 0 0
3 0
2 2
0 0 1 1
0 0 0
1 0 0
```

5.3 CurveOnSurface

The entity enumeration of a CurveOnSurface is 110. The remaining file format is as follows:

- whether or not the parameter space curve is the master information (1=parameter curve is master, 0=space curve is master), the entity type of the parameter curve (0 if no such curve exists), the entity type of the space curve (0 if no such curve exists)
- the description of the parameter curve according to the rules for that curve type
- the description of the space curve according to the rules for that curve type

Either the parameter curve, the space curve or both are given. Information regarding constant parameter information for the curve on surface is not covered by the file format.

Note that the CurveOnSurface entity does also contain information about a ParamSurface. Thus, the g2-representation of a CurveOnSurface is not stand alone. It needs to be combined with a BoundedSurface. That section gives an example of how the CurveOnSurface entity is used in this context.

5.4 Line

The line is given by the following information:

- the dimension of the geometry space
- a point on the line
- the direction of the line
- a flag, 0 or 1, for unbounded or bounded
- if the line is bounded, the start and end parameters

The entity enumeration for a line is 120.

5.5 Circle

The circle is given by:

- the dimension of the geometry space
- the radius of the circle
- the centre of the circle
- the normal of the plane in which the circle lies
- the vector from the centre of the circle towards the "x-axis" - the start point of the default parametrization of the circle
- the start and end parameters

The circle has a default implicit parametrization from 0 to 2π.

The entity enumeration for a circle is 130.

Example:

```
130 1 0 0
dim
rad
c_x c_y c_z
n_x n_y n_z
v_x v_y v_z
```

5.6 Ellipse

The ellipse is given by:

- the dimension of the geometry space
- the major radius of the ellipse
- the minor radius of the ellipse
- the centre of the ellipse
- the normal of the plane in which the ellipse lies
- the vector from the centre of the ellipse towards the "x-axis" - the start point of the default parametrization

The entity enumeration for an ellipse is 130.

5.7 Bounded Curve

A bounded curve are expected to be bounded both parametrically and geometrically. Thus, a parameter on whether or not the limitation in the parameter space or in geometry space is preffered is included in the format. The format is:

- Whether the limitation in the parameter space is the master (1 if true)
- The start parameter of the bounded curve, the end parameter of the bounded curve
- The start point of the bounded curve in geometry space
- The end point of the bounded curve in geometry space
- The underlying curve described according to its entity type

All the information listed above is expected to be given in a g2-file. The corresponding entity enumeration is 150.

A bounded line from the point (0,0,0) to (1,0,0) where the position in space is the master regarding the bounding points is expressed as

```
150 1 0 0
120 0
0 1
3
0 0 0
1 0 0

3
0 0 0
1 0 0
```

120 is the entity number for a line and the dimension of the geometry space is 3.

5.8 SplineSurface

The entity enumeration for a spline surface is 200. The body of a spline surface is as follows:

- dimension of geometry space, whether or not the surface is rational: 1=rational, 0=non-rational
- the number of coefficients in the first parameter direction, the polynomial order in this direction (i.e. degree+1)
- the knot vector in the first parameter direction, multiple knots are represented by giving the knot value several times
- the number of coefficients in the second parameter direction, the polynomial order in this direction (i.e. degree+1)
- the knot vector in the second parameter direction
- the surface coefficients

The surface coefficients are given continuously and the 1. parameter direction runs fastest. The sequence is $(x_{(1,1)}, y_{(1,1)}, z_{(1,1)}), (x_{(2,1)}, y_{(2,1)}, z_{(2,1)}), \ldots, (x_{(n,1)}, y_{(n,1)}, z_{(n,1)}), (x_{(1,2)}, y_{(1,2)}, z_{(1,2)}), \ldots, (x_{(n,2)}, y_{(n,2)}, z_{(n,2)}), \ldots, (x_{(1,m)}$
Here n is the number of coefficients in the 1. parameter direction, and m is the number of coefficients in the 2. parameter direction. The weights are multiplied with the coefficients similarily to the case for the spline curve and is given as an extra entity for each coefficient, again similar to the curve case.

A simple non-rational, bilinear surface with no inner knots is represented as:

```
200 1 0 0
3 0
2 2
0 0 1 1
2 2
0 0 1 1
0 0 0
1 0 0
0 1 0
1 1 0
```

5.9 BoundedSurface

BoundedSurface has entity enumeration 210. A bounded surface consists of an underlying rectangular parametric surface and one or more trimming loops. The file format body consists of the following information:

- The underlying surface represented according to its type
- The number of trimming loops
- For each trimming loop
  1. The number of curves in the current trimming loop
  2. The tolerance within which the loop is found to be continuous
  3. The curves in the trimming loop, one by one

The trimming curves are of type ParamCurve, but it most cases they will be represented as CurveOnSurface.

The following example illustrates the format a bounded surface. The underlying surface is a plane as can be seen from the entity number in line two. The 3 curves in the trimming loop are all of type CurveOnSurface. Note that the entity number of CurveOnSurface does not appear. The space curve corresponding to the curve on surface is the master, and the only curve describing the trimming curve. This is given by the line *0 0 100* which occur for every curve and is to be interpreted: *the space curve is the master, the parameter curve does not exist, the space curve is a spline curve* . Following this line is the body of a spline curve in the g2-format.

```
210 1 0 0
250
3
0 0 0
0 0 1
1 0 0
1
-3 3
-3 3
0

1
3 0.0001

0 0 100
3 0
2 2
0 0 1 1
-1 0 0
0 -1 0

0 0 100
3 0
2 2
0 0 1 1
0 -1 0
-0.5 2 0

0 0 100
```

```
3 0
4 3
0 0 0 0.5 1 1 1
-0.5 2 0
-1 2 0
-2 1 0
-1 0 0
```

In this case the two first trimming curves are linear spline curves while the last one is of order 3 (degree 2) and has one inner knot. All the curves are non-rational.

5.10 Plane

A Plane has entity enumeration 250 and the body related to the g2-formation contains:

- The dimension of the geometry space
- A point in the plane
- The normal of the plane
- One vector in the set of vectors spanning the plane
- A flag, 0 or 1, for unbounded or bounded
- If the plane is bounded, the four bounds: *umin, umax, vmin, vmax*
- A flag, 0 or 1, indicating whether or not the *u* and *v* parameter directions are swapped.

The plane used as an underlying surface in the previous example has the format:

```
250 1 0 0
3
0 0 0
0 0 1
1 0 0
1
-3 3
-3 3
0
```

5.11 Cylinder

A Cylinder has entity enumeration 260 and the body related to the g2-formation contains:

- The dimension of the geometry space
- The cylinder radius
- A point on the cylinder axis
- The cylinder axis
- The vector from the cylinder axis towards the cylinder surface giving the start point of the default parametrization
- A flag, 0 or 1, for unbounded or bounded in the linear direction
- If unbounded, the bounding parameters: *umin, umax*
- If bounded, the bounding parameters: *umin, umax, vmin, vmax*
- A flag, 0 or 1, indicating whether or not the *u* and *v* parameter directions are swapped

5.12 Sphere

A Sphere has entity enumeration 270 and the body related to the g2-formation contains:

- The dimension of the geometry space
- The radius of the sphere
- The centre of the sphere
- The axis on which the degeneracies of a NURBS representation of the sphere will lie, i.e. the sphere axis
- The vector from the sphere axis towards the sphere surface giving the start point of the default parametrization
- The bounding parameters: *umin, umax, vmin, vmax*
- A flag, 0 or 1, indicating whether or not the *u* and *v* parameter directions are swapped

A sphere with centre in (1.5, 0, 0) and radius 1.5 represented in the g2-format is

```
270 1 0 0
3
1.5
1.5 0 0
0 0 1
1 0 0
0 6.283185307179586
-1.5707963267948966 1.5707963267948966
0
```

5.13 Cone

A Cone has entity enumeration 280 and the body related to the g2-formation contains:

- The dimension of the geometry space
- The cone radius at the position of the point on the cone axis
- A point on the cone axis
- The cone axis
- The vector from the cone axis towards the cone surface giving the start point of the default parametrization
- The opening angle of the cone
- A flag, 0 or 1, for unbounded or bounded in the linear direction
- If unbounded, the bounding parameters: *umin, umax*
- If bounded, the bounding parameters: *umin, umax, vmin, vmax*
- A flag, 0 or 1, indicating whether or not the *u* and *v* parameter directions are swapped

5.14 Torus

A Torus has entity enumeration 290 and the body related to the g2-formation contains:

- The dimension of the geometry space
- The major radius of the torus
- The minor radius of the torus
- The torus centre
- The mid axis of the torus
- The vector from the torus centre to the torus surface giving the startpoint of the default parametrization
- Select outer (1=yes, 0=no): Defines the parameter domain of the torus in degenerate cases.
- A flag, 0 or 1, for unbounded or bounded in the linear direction
- If unbounded, the bounding parameters: *umin, umax*
- If bounded, the bounding parameters: *umin, umax, vmin, vmax*
- A flag, 0 or 1, indicating whether or not the *u* and *v* parameter directions are swapped

5.15 SurfaceOfRevolution

A SurfaceOfRevolution has entity enumeration 291 and the body contains:

- The dimension of the geometry space
- A point of the axis of revolution
- The direction of the axis of revolution
- The *body* of the *spline curve* to rotate around this axis

A surface of revolution is

```
291 1 0 0
3
0 0 0
0 0 1

3 0
2 2
0 0 1 1
1 0 0
3 0 0
```

5.16 Disc

The entity number for Disc is 292. The g2 body contains:

- The dimension of the geometry space
- The centre of the disc
- The disc radius
- The normal to the disc surface
- A vector from the disc centre to the disc boundary to give a start point for the parametrization
- Whether a NURBS representation should have a degeneracy in the centre (=1) or have degenerate corners (=0)
- The angles giving the four degeneracy points at the boundary. Not used if the flag for centre degeneracy is false.

5.17 PointCloud

A PointCloud has enumeration 400. It has the following body:

- Number of points
- The coordinates of each point. The points are given one by one.

The dimension of a point in a point cloud is 3 by default. An example of a point cloud with 3 points is

```
400 1 0 0
3
0 0 0
1 0 0
1 1 0
```

5.18 LineCloud

A LineCloud has enumeration 410. It has the following body:

- Number of line segments
- The coordinates of the endpoints of each line segments. The lines are given one by one.

The dimension of a line in a line cloud is 3 by default. A line cloud with 3 lines follow:

```
410 1 0 0
3
0 0 0  0 0 1
1 0 0  1 0 1
1 1 0  1 1 1
```

5.19 SplineVolume

The entity enumeration for a spline volume is 700. The spline volume entity is placed in the module trivariate. The body of a spline volume is as follows:

- dimension of geometry space, whether or not the volume is rational: 1=rational, 0=non-rational
- the number of coefficients in the first parameter direction, the polynomial order in this direction (i.e. degree+1)
- the knot vector in the first parameter direction, multiple knots are represented by giving the knot value several times
- the number of coefficients in the second parameter direction, the polynomial order in this direction (i.e. degree+1)
- the knot vector in the second parameter direction
- the number of coefficients in the third parameter direction, the polynomial order in this direction (i.e. degree+1)
- the knot vector in the third parameter direction
- the volume coefficients

The volume coefficients are given continuously and the 1. parameter direction runs fastest, the 2. parameter direction is next and the 3. parameter direction is the most slow. For a non-rational spline volume in the 3-dimensional space, the sequence is $(x_{(1,1,1)}, y_{(1,1,1)}, z_{(1,1,1)}), (x_{(2,1,1)}, y_{(2,1,1)}, z_{(2,1,1)}), \ldots, (x_{(n,1,1)}, y_{(n,1,1)}, z_{(n,1,1)}), (x_{(1,2,1)}, y_{(1,2),1}, z_{(1,2,1}$ Here n is the number of coefficients in the 1. parameter direction, m is the number of coefficients in the 2. parameter direction and p is the number of coefficients in the 3. parameter direction. The weights are multiplied with the coefficients similarily to the case for the spline curve and the spline surface and is given as an extra entity for each coefficient, again similar to the curve and surface case.

A simple non-rational, trilinear volume with no inner knots is represented as:

```
700 1 0 0
3 0
2 2
0 0 1 1
2 2
0 0 1 1
2 2
0 0 1 1
0 0 0
1 0 0
0 1 0
1 1 1
0 0 1
1 0 1
0 1 1
1 1 1
```

5.20 Parallelepiped

Parallelepiped has enumeration 720 and the following g2-format:

- Dimension of geometry space
- Lower right corner
- Unit vector in geometry space representing the first parameter direction
- Length of parallelepiped in the first direction
- Unit vector in geometry space representing the second parameter direction
- Length of parallelepiped in the second direction
- Unit vector in geometry space representing the third parameter direction
- Length of parallelepiped in the third direction

5.21 SphereVolume

SphereVolume has enumeration 721 and the following g2-format:

- Dimension of geometry space
- Sphere radius
- Centre of sphere
- Axis of sphere, i.e. the vector along which the degeneracies of a NURBS representation of the sphere will lie
- Vector from the centre to the outer surface giving input to the sphere parametrization

5.22 CylinderVolume

CylinderVolume has enumeration 722 and the following g2-format:

- Dimension of geometry space
- Cylinder centre
- Cylinder axis
- Vector from the centre to the outer surface giving input to the parametrization of the cylinder
- Minium cylinder radius. If this number is larger than 0, the cylinder will have a hole along the axis
- Maximum radius, the radius of the outer cylinder surface
- Minimum hight, =1: the cylinder is infinite, =0: the cylinder is finite and the distance from the centre to the bottom of the cylinder folllows (positive or negative number)
- Maximum hight, =1: the cylinder is infinite, =0: the cylinder is finite and the total hight of the cylinder follows
- Whether a NURBS representation should have a degeneracy in the centre (=1) or have degenerate corners (=0)
- The angles giving the four degeneracy points at the boundary. Not used if the flag for centre degeneracy is false.

5.23 ConeVolume

ConeVolume has enumeration 723 and the following g2-format:

- Dimension of geometry space
- Radius of the cone at the centre
- A point at the cone axis (the centre)
- Cone axis
- The vector from the cone axis towards the boundary surface of the cone giving the start point of the cone parametrization
- The opening angle of the cone
- Minimum hight the distance from the centre to the smallest end disc of the cone (positive or negative number)
- Maximum hight, =1: the cone is infinite, =0: the cone is finite and the cone hight follows
- Whether a NURBS representation should have a degeneracy in the centre (=1) or have degenerate corners (=0)
- The angles giving the four degeneracy points at the boundary. Not used if the flag for centre degeneracy is false.

5.24 TorusVolume

TorusVolume has enumeration 724 and the following g2-format:

- Dimension of geometry space
- The torus centre
- The normal to the plane through the big circle of the torus
- A vector from the torus centre to the torus surface giving the parametrization
- The major radius
- The minor radius
- Angle of revolution for the small circle
- Anlge of revolution for the large circle
- Whether a NURBS representation should have a degeneracy in the centre (=1) or have degenerate corners (=0)
- The angles giving the four degeneracy points at the boundary. Not used if the flag for centre degeneracy is false.

Chapter 6

GoTools Igeslib

The IGES converter read an IGES file and represents its entites in the internal data structure of GoTools. It can also write a model represented in GoTools to an IGES file or convert between an IGES file and the internal file format of GoTools.

GoTools represent only geometric entities. Thus, IGES entities like annotation, structure, property, associativity, view, drawing and figure will be neglected. Neither are constructive solid geometry or finite element modelling entites handled. If such entities exist in a file read by the IGES converter, warning messages will be issued.

The topological entities specified in IGES 5.3 is not handled by the current version of the IGES converter. Thus, the entities vertex, edge, edge list, loop, face and shell is not handled. However, the geometric entities corresponding to these topological entities will be read. Colour information is read.

The content of an IGES file is transferred to the application as a vector of GeomObjects. By checking the type of each object and acting thereafter, the model can be stored and handled in the GoTools environment.

To write an IGES file, the file entities are added one by one to the IGES convertor using the function addGeom which takes a GeomObject as parameter. The actual file is written by the command writeIGES.

Chapter 7

GoTools Implicitization

Contains tools for implicitizing spline curves and surfaces. Also contains various classes for Bernstein polynomials.

Historically, the underlying ideas for implicitzation and approximate implicitization were developed by Tor Dokken at SINTEF, ICT, in his Ph.D. thesis: Aspects of Intersection Algorithms and Approximation, University of Oslo, Norway, 1997.

The implementations in this library was done in connection with the EU projects GAIA I and II.

This module depends on the newmat matrix library, which is freely available from www.robertnz.net.

Chapter 8

GoTools Intersections

Contains tools for finding intersections of spline curves and surfaces.

This module depends on the newmat matrix library, which is freely available from www.robertnz.net.

Chapter 9

GoTools IsogeometricModel

Contains tools related to isogeometric analysis.

Chapter 10

GoTools LRsplines2D

This module contains classes and tools for working with LR spline surfaces.

Chapter 11

GoTools Parametrization

11.1 Purpose

The purpose of the GoTools Parametrization Library is to compute a reasonable parametrization for a discrete geometrical object. This geometrical object can be a planar graph embedded in R^2 or R^3 (triangulation, rectangular grid, etc.) or a point cloud without any explicit connectivity, but with an identified border.

There are many contexts for which such a parametrization is useful, for example when mapping textures onto polygonal meshes or when triangulating a surface from a set of scattered 3D points. The algorithms contained in this software are based on the work of Dr. Michael Floater.

11.2 How it can be used

This library has three degrees of freedom for specifying the parametrization:

- choice of *data structure*
- choice of *boundary parametrization*
- choice of *parametrization of the interior*

11.2.1 Choice of data structure

As mentioned in the last section, the data to be parametrized can be of various kinds, from general polygonal meshes (3D points and connectivity) to point clouds (no connectivity information, but boundary nodes must be indentified and ordered). The various possible data types are given as sub-classes of PrOrganizedPoints. You should choose the one that corresponds to the data that you want to parametrize. Many of these classes have read/write functionality for a generic format; you might want to reimplement these to correspond with the format of the data you are using. The list of currently available data structures are:

- PrUnorganized_OP
- PrFastUnorganized_OP
- PrTriangulation_OP
- PrRectangularGrid_OP
- PrPlanarGraph_OP

You can of course write a totally *new* specialization of the PrOrganizedPoints class, as long as you implement all the required member functions.

11.2.2 Choice of boundary parametrization

The boundary of the surface must be parametrized before the surface interior. This is done by the class PrParametrizeBdy. There are several ways of parametrizing the boundary. You can specify the method you want to use through the PrParametrizeBdy::setParamKind() member function. There are currently three options:

- `PrCHORDLENGTHBDY` - parametrize by chordlength (generally preferred)
- `PrCENTRIPETAL` - parametrize using square root of boundary point distances
- `PrUNIFBDY` - parametrize by imposing a fixed distance between each boundary point

Another thing that must be specified when determining the parametrization of the boundary is the *shape* of the parametrical domain. It can be a circle (default), or a rectangle (corners must be specified).

11.2.3 Choice of interior parametrization

The parametrization of the interior can also be done in several ways, which are each implemented as a sub-class of PrParametrizeInt. Currently available methods are: (click on the links for individual explanations)

- PrPrmMeanValue (generally preferred)
- PrPrmEDDHLS
- PrPrmLeastSquare
- PrPrmShpPres
- PrPrmUniform

11.2.4 Putting it all together

The general procedure for parametrizing a data set can be summarized as follows:

- Prepare the data structure
  - establish an object of the appropriate datastructure (sub-class of PrOrganizedPoints). This object should be owned by a shared pointer (as found in the `boost` library.
  - read your data into the structure, either by using one of the provided member functions like PrTriangulation_OP::scanRawData(), PrTriangulation_OP::scan(), or by adding your own I/O-routines.
- Parametrize the boundary
  - Establish a PrParametrizeBdy object.
  - Associate it with your data by using the PrParametrizeBdy::attach() function.
  - Choose parametrization type by calling the PrParametrizeBdy::setParamKind() function.
  - Execute the parametrization by calling PrParametrizeBdy(). When calling this function without arguments, the parametrical domain will be a circle. A rectangular parameter domain can also be used. This is specified by additional arguments to the function.

- Parametrize the interior
  - When the boundary has been successfully parametrized, the interior can be treated. First, you need to instantiate an object of the desired sub-class of PrParametrizeInt.
  - Associate your data to this object by using the PrParametrizeInt::attach() function.
  - Carry out the parametrization by calling the PrParametrizeInt::parametrize() function.
- Accessing the result
  - The parametrization can be accessed in several ways, through the PrOrganizedPoints interface of your data structure:
    - Several print routines can be used to dump all nodes with/without coordinates and associated parameters (PrOrganizedPoints::printUVNodes, PrOrganizedPoints::printUVXYZNodes, etc.).
    - The parameters of an individual node can be accessed by the PrOrganizedPoints::getU() and PrOrganizedPoints::getV() functions.
  - Most of the sub-classes of PrOrganizedPoints also have print() and scan() functions that can be used for reading and writing their data to a stream.
  - You can write your own customised data access and streaming functions.

11.3 Example program

The procedure mentioned above can be observed in a working program located in the `examples` folder. The source file name is demo.C. The program is run from the command line, where you can also specify the data. It can handle both point clouds and triangulations. A sample triangulation is provided in the `data/` folder.

For instance, try

```
$ ./demo -i data/gjoevik_triang
```

(There are also more options you can specify; to see the list of options, run the program without any arguments).

If the input data is a triangulation (the case above), the resulting, parametrized triangulation will be saved in the file `triangulation`. In any case, the parametrization for each node/point will be dumped to the file `uv_nodes`.

Good luck!

Chapter 12

GoTools QualityModule

This GoTools module consists of a set of tools to check the quality of CAD models.

12.1 Tolerances

The tests make use of the tolerances associated with a surface model, i.e.

gap CAD models are seen as continuous if they are continuous within this tolerance. If the distance between two points are less than this tolerance, they are viewed as identical. A reasonable tolerance is in the specter $[10^{-6}, 10^{-2}]$, but it depends on the expected quality of a model.

neighbour This tolerance is used in adjacency analysis and it represents the maximum distance between neighbouring surfaces or curves. If two curves or surfaces lie more distant than this tolerance, the entities are found not to be adjacent. The neighbour tolerance should be larger than the gap tolerance. If nothing specific is known, a factor of 10 makes sense, but if the gap tolerance is really small, a larger factor should be used. Surfaces that lie closer to each other than the neighbouring tolerance is found to be adjacent, but if the distance between the surfaces somewhere is larger than the gap tolerance, the surface set contains gaps. This is an error in the model.

bend If two surfaces meet along a common boundary and corresponding surface normals form an angle which is larger than this tolerance, it is assumed that there is an intended sharp edge between the surfaces. Similarly, if two curves in a composite curve meet with an angle larger than this tolerance, there is an intentional corner.

kink If two adjacent curves or surfaces meet with an angle less than this tolerance, they are seen as G^1 continuous. It the angle is larger than this tolerance, but less than the bend tolerance, the intended G^1 continuity is broken and it is an error in the model. The tolerance depends on the continuity requirements of the application. One suggestion is 10^{-2}. The bend tolerance must be larger than the kink tolerance, for instance by a factor of 10. Both angular tolerances are given in radians.

12.2 Tests

The available quality tests can be classified as follows:

Face continuity Checks for continuity between faces in a surface model. Positional and tangential discontinuities with respect to the gap and the kink tolerance, respective, are returned. Discontinuities larger than the neighbour tolerance or bend tolerance are assumed to be intentional, and thus no error is reported.

Edge continuity Checks for positional and tangential discontinuity between edges in the model. The same tolerances are used as for face continuity.

Accuracy of bounding entities Whether or not the distance between an edge and its associated face, a vertex and its associated edges and a vertex and its associated faces is less than the gap tolerance.

Acute angles Check for acute angles between adjacent faces or edges. The kink tolerance is applied.

Degeneracies Identify surfaces with boundary curves degenerating to a point and surfaces with degenerate corners. Identify vanishing surface normals and curve tangents, intersections between boundary loops belonging to a trimmed surface and self intersections of boundary loops. The gap tolerance is used in the intersection and self intersection tests while the neighbour and kink tolerance is used in degeneracy tests. The gap tolerance is used in tests for vanishing tangents and normals.

Small entities Identify small edges, small faces, sliver surfaces, and narrow regions in faces. The narrow region test relates to the neighbour tolerance while the other tests use specific tolerances.

Consistency of orientation Check for consistency in loops, i.e. the curves defining the loop are head to tail oriented, or in surface models. For closed face sets, all surface normals should point out of the model or into it, preferable out. Also open face sets should have consistent surface normal directions at face boundaries. However, the face orientation test is currently not up to date and the result can unfortunately not be trusted.

Identical entities Check for identity of vertices, and identical or embedded faces or edges. The neighbourhood tolerance is used.

Spline entity testing Check spline curves and surfaces for G^1 and C^1 discontinuities. The test is localized to knots of high multiplicity. The gap and the kink tolerances are used for these tests. Check also for spline entities with close, but not identical knots. Such entities can create problems for certain operations. A specific tolerance is used in this test.

Compute curvature information with respect to single entities The minimum curvature radius and curvature radii less than a given threshold can be obtained. The test is applied to all curve or surface entities in a model.

The tests described above are localized in the class FaceSetQuality. See the documentation of this class for more information.

Chapter 13

The filter routines main page

13.1 Introduction

This is a collection of routines for handling various (3x3x3) 3d filters.

020114: This REALLY REALLY must be cleaned up... 021231: Not yet, but soon, it will only be a question of removing commented out stuff... Hopefully... 050120: Changed return types for boolean functions from int to bool. Hope this doesn't break anything.

Chapter 14

GoTools Topology

This module contains functionality to perform topology analysis on a collection of faces. The ajacency analysis itself is performed in FaceAdjacency, and the operations uses template faces and edges. The interfaces are given in tpFace and tpEdge, respectively.

The module depends on the GoTools core library

Chapter 15

GoTools Trivariate

This module trivariate represents NURBS volumes and contains construction methods and operations related to such volumes.

This module depends on:

- GoTools Core library
- SISL library

15.1 Data Structures

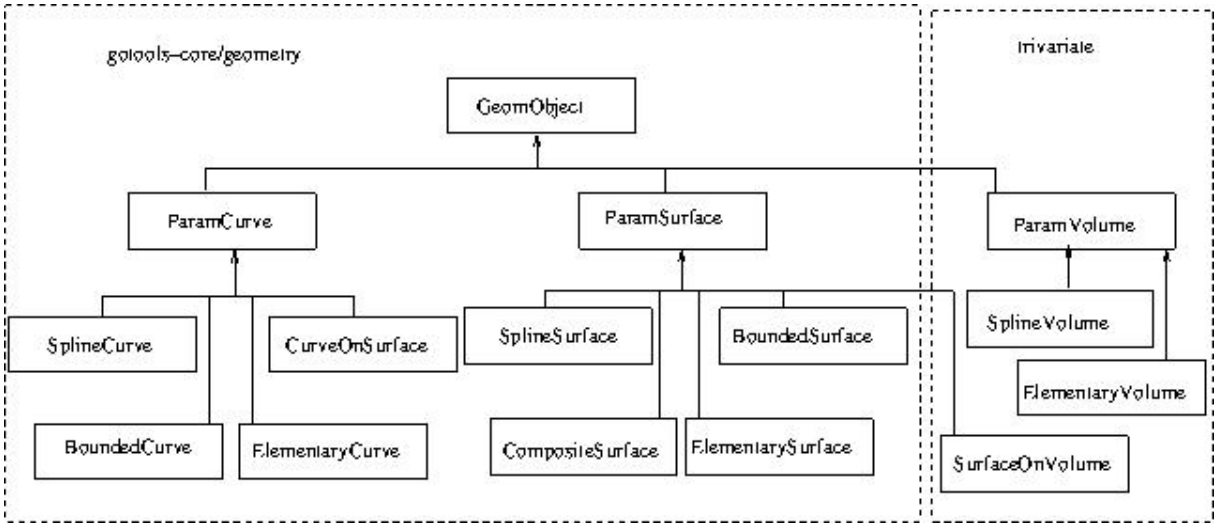

Figure 15.1 Simplified overview of the geometry class hierarchy

The figure above shows the main geometric classes in GoTools and how they are divided between modules.

15.2 B-spline Volumes

A B-spline volume is represented in SplineVolume in the GoTools module trivariate.

The volume is defined by the formula

$\mathbf{V}(u,v,w) = \sum_{i=1}^{n_1}\sum_{j=1}^{n_2}\sum_{h=1}^{n_3}\mathbf{p}_{i,j,h}B_{i,k_1,\mathbf{u}}(u)B_{j,k_2,\mathbf{v}}(v)B_{h,k_3,\mathbf{w}}(w)$

with control points $\mathbf{p}_{i,j,h}$ and three variables (or parameters) u, v and w. A basis function of a B-spline volume is a product of three basis functions of B-spline curves (B-splines).

The following is a list of the components of the representation:

- dim: The dimension of the underlying Euclidean space.
- n_1: The number of control points with respect to the first parameter.
- n_2: The number of control points with respect to the second parameter.
- n_3: The number of control points with respect to the third parameter.
- k_1: The order (polynomial degree + 1) of the B-splines in the first parameter.
- k_2: The order of the B-splines in the second parameter.
- k_3: The order of the B-splines in the third parameter.
- $\mathbf{u}$: The knot vector of the B-splines with respect to the first parameter, $\mathbf{u} = (u_1, u_2, \ldots, u_{n_1+k_1})$.
- $\mathbf{v}$: The knot vector of the B-splines with respect to the second parameter, $\mathbf{v} = (v_1, v_2, \ldots, v_{n_2+k_2})$.
- $\mathbf{w}$: The knot vector of the B-splines with respect to the third parameter, $\mathbf{w} = (w_1, w_2, \ldots, w_{n_3+k_3})$.
- $\mathbf{p}$: The control points of the B-spline volume, $c_{d,i,j,h}$, $d = 1,\ldots,dim$, $i = 1,\ldots,n_1$, $j = 1,\ldots,n_2$, $h = 1,\ldots,n_3$. When $dim = 3$, we have $\mathbf{p} = (x_{1,1,1}, y_{1,1,1}, z_{1,1,1}, x_{2,1,1}, y_{2,1,1}, z_{2,1,1}, \ldots, x_{n_1,1,1}, y_{n_1,1,1}, z_{n_1,1,1}, \ldots, x_{n_1,n_2,1}, y_{n_1,n_2,1}, z_{n_1,n_2,1}, \ldots x_{n_1,n_2,n_3}, y_{n_1,n_2,n_3}, z_{n_1,n_2,n_3})$.

The data of the B-spline volume must fulfill the following requirements:

- All knot vectors must be non-decreasing.
- The number of control points must be greater than or equal to the order with respect to all three parameters: $n_1 \geq k_1$, $n_2 \geq k_2$ and $n_3 \geq k_3$.

The properties of the representation of a B-spline volume are similar to the properties of the representation of a B-spline curve or surface. The control points $\mathbf{p}_{i,j,h}$ form a *control net*. The control net has similar properties to the control polygon of a B-spline curve, described in the module gotools-core. A B-spline volume has three knot vectors, one for each parameter.

15.2.1 The Basis Functions

A basis function of a B-spline volume is the product of three basis functions corresponding to B-spline curves,

$B_{i,k_1,\mathbf{u}}(u)B_{j,k_2,\mathbf{v}}(v)B_{h,k_3,\mathbf{w}}(w)$

Its support is the box $[u_i, u_{i+k_1}] \times [v_j, v_{j+k_2}] \times [w_h, w_{h+k_3}]$.

15.2.2 NURBS Volumes

A NURBS (Non-Uniform Rational B-Spline) volume is a generalization of a B-spline volume,

$$\mathbf{V}(u,v,w) = \frac{\sum_{i=1}^{n_1}\sum_{j=1}^{n_2}\sum_{r=1}^{n_3} h_{i,j,r}\mathbf{p}_{i,j,r}B_{i,k_1,\mathbf{u}}(u)B_{j,k_2,\mathbf{v}}(v)B_{r,k_3,\mathbf{w}}(w)}{\sum_{i=1}^{n_1}\sum_{j=1}^{n_2}\sum_{r=1}^{n_3} h_{i,j,r}B_{i,k_1,\mathbf{u}}(u)B_{j,k_2,\mathbf{v}}(v)B_{r,k_3,\mathbf{w}}(w)}.$$

In addition to the data of a B-spline surface, the NURBS surface has a weights $h_{i,j,r}$. NURBS volumes can be used to exactly represent volumes that have common 'analytic' surfaces such as spheres, cylinders, tori, and cones as boundary surfaces. A disadvantage is that NURBS volume depend nonlinearly on their weights, making some calculations less efficient.

The representation of a NURBS volume is the same as for a B-spline volume except that it also includes

$\mathbf{h}$: The weights of the NURBS volume, $h_{i,j,r}$, $i = 1,\dots,n_1$, $j = 1,\dots,n_2$, $r = 1,\dots,n_3$, so $\mathbf{h} = (h_{1,1,1}, h_{2,1,1},\dots,h_{n_1,1,1}, h_{1,2,1},\dots,h_{n_1,n_2,1},\dots h_{n_1,n_2,n_3})$.

The weights are required to be strictly positive: $h_{i,j,r} > 0$.

The NURBS volume is represented by SplineVolume. As for the curve and surface cases, the constructor expects the coefficients to be multiplied with the weights.

15.2.3 Spline Volume Functionality

The functionality of a spline volume to a large extend corresponds to the functionality of a spline surface. Important functionality is:

- A NURBS volume is able to make a copy of itself
- Compute the bounding box of the volume
- Evaluation and grid evaluation
- Grid evaluation of basis functions
- Compute the derivative volume corresponding to a volume
- Closest point computation
- Fetch a sub volume of a given volume
- Fetch information related to the spline spaces
- Swap and reverse parameter directions in a volume
- Fetch the control polygon of the volume
- Fetch all weights of a NURBS volume
- Insert knots into the spline spaces of the volume and adapt the volume description accordingly
- Increase the polynomial degree of the volume in one parameter direction
- Fetch a constant parameter surface from the volume
- Fetch all boundary surfaces surrounding a volume
- Check for periodicity and degeneracy

15.2.4 Construction Methods for SplineVolume

The following methods exist for construction of a spline volume. The corresponding GoTools class names are given in brackets.

- Sweep a NURBS surface along a NURBS curve (SweepVolumeCreator).
- Rotational sweep of a NURBS surface (SweepVolumeCreator).
- Lofting to interpolate a number of NURBS surfaces (LoftVolumeCreator).
- Interpolate 6 boundary surface to create a volume using a Coons patch approach (CoonsPatchVolumeGen). This functionality applies only to non-rational spline surfaces.
- Represent an elementary volume as a spline volume. An elementary volume is a parametric volume similarily to spline volumes. The elementary volumes are:
  1. Sphere
  2. Cylinder
  3. Cone
  4. Parallelepiped
  5. Torus

A spline volume may have a well behaved outer boundary, but a bad distribution of coefficients in the inner. This is in particular the case if the volume is constructed by a Coons patch approach. The positioning of the internal coefficients may be improved by smoothing. The coefficients at the boundaries are kept fixed and the coefficients in the inner are redistributed by solving a minimization problem. The smoothing is performed in the class SmoothVolume.

15.3 Surface on Volume

The module trivariate provides a surface which extends the class of parametric surfaces defined in gotools-core, namely SurfaceOnVolume. This surface inherits most of the functionality defined for parametric surfaces and takes the same role as CurveOnSurface for parametric curves. The surface possesses information about

- The associated volume
- The geometric description of this surface and/or
- The description of this surface in the parameter domain of the given volume
- Constant parameter and volume boundary information. If this surface for instance happens to be a constant parameter surface in the given volume, it knows the parameter direction and the associated constant parameter value.

15.4 Curves Related to a Parametric Volume

Two evaluator based curves can be used in together with HermiteAppC in gotools-core/creators exist, namely VolumeParameterCurve and VolumeSpaceCurve.

Chapter 16

GoTools Trivariatemodel

The module trivaratemodel contains the representation format for a set of volumes and tools to act upon the volumemodel.

The module depends on:

- The GoTools Core library
- GoTools Composite Model
- GoTools Trivariate
- Modules that Composite Model depend upon

16.1 Volume Topology

The volume topology in GoTools is an extension to the boundary represented topology implemented in the module compositemodel. However, in contrast to the boundary represented topology, the volume topology is not manifold. Thus, we must expect more than two faces to meet in an edge.

The top entity in the topology structure is the volume model (VolumeModel) which consists of a set of volumes. Each volume has a topological entity implemented in ftVolume and a geometrical representation implemented as ParamVolume. Information about the geometric representation of a volume can be found in the module trivariate.

ftVolume inherits Body in compositemodel and is, as Body, surronded by one or more shells represented as SurfaceModels. A shell is a collection of faces (ftSurface) which have a geometric representation as a ParamSurface. ParamSurface is described in the module gotools-core.

A face is limited by a number of loops that are sequences of edges (ftEdge). In this context, the face is used to represent adjacency between volumes. An edge is limited by two vertices.

16.2 Volume Model

VolumeModel is a composite model as illustrated in the figure above. See also the description in the documentation of composite model. As such it inherites a function interface, but some methods are not implemented. Thus, the class is incomplete, but not in the sense of being a topological entity.

VolumeModel has the following functionality:

- Fetch one entity in the set, either as a topological or geometric volume.
- Evaluate the volume model given information about which entity to evaluate
- Compute bounding box
- Add a new volume to the volume model
- Remove one volume from the volume model
- Check if all geometrical volumes are NURBS
- Fetch all vertices in the model
- Fetch all radial edges in the model
- Fetch non-radial edges, i.e. edges that does not belong to at least two volumes.
- Fetch all inner faces in the model
- Fetch all boundary faces in the model
- Check if the model has a corner-to-corner configuration
- Ensure that the model has a corner-to-corner configuration
- Ensure that adjacent spline volumes share common spline spaces at common boundaries
- Fetch the boundary of the volume model described as a number of SurfaceModels
- Divide the volume model into connected volume models

The constructor of the volume model requires a number of comp_sec2, namely gap, neighbour, kink and bend. These tolerances are the same as the ones required for a composite model, and the tolerances are explained in the documentation of the compositemodel module.

16.3 Topological Volume Entity

The topological volume entity is implemented in the class ftVolume and it inherits Body from the compositemodel module. The name ftVolume is choosen to be in line with ftSurface and ftEdge. Those entities have got their names for historical reasons. The prefix *ft* has no deeper meaning.

An ftVolume is a Body and has thus access to its shells, i.e. boundaries, and can check whether two ftVolumes are adjacent. An ftVolume can also

- Fetch the corresponding geometry volume
- Fetch the bounding box of this volume
- Fetch all adjacent ftVolumes
- Fetch all radial edges belonging to this volume or being common between this volume an another volume

- Fetch edges belonging only to the current volume
- Compute adjacency information between the current volume and another volume
- Return information about outer boundaries
- Get local information about correspondence of coefficients of two adjacent spline volumes
- Return the relation between the current volume and a given vertex

A ftVolume may be trimmed. That is, the boundary faces of the volume may limit the extent of the underlying parametric volume. In this context the following functionality apply:

- Check if the volume is hexahedral
- Approximate a hexahedral trimmed volume by one spline volume
- Split a trimmed volumes into a set of hexahedral trimmed volumes

Note that the functionality related to trimmed volumes are under development and currently very unstable and limited.

16.4 Extensions to Face

The initial implementation of a face as one entity in a boundary representation solid was no longer sufficient when the entity should serve as part of the boundary of a volume belonging to a volume model. Some extensions turned out the be required. The face ftSurface has knowledge about the Body it belongs to, if any. It has also a pointer to a boundary face belonging to an adjacent body. This pointer is used in the context of a volume model. During the assembly of a volume model, information about coincident boundary faces of the ftVolumes are computed, and the pointer representing adjacency is set accordingly.

An ftSurface provides access to its twin and to the, at most, two bodies sharing the common face represented by this ftSurface.

When the ftSurface represents the boundary surface of an ftVolume, the corresponding parametric surface will be of type SurfaceOnVolume. This class is implemented in the module trivariate. A SurfaceOnVolume has knowledge about the spatial representation of the surface, the ParamVolume on which it belongs and the position of the surface in the parameter domain of the volume. Currently, a SurfaceOnVolume is constructed only as a boundary surface of a SplineVolume. It contains enough information to identify which volume boundary it represents and the orientation of the surface compared to this boundary.

16.5 Radial Edge

In a non-manifold model, more than two faces can meet in an edge, and thus the half edge representation implemented in ftEdge is not sufficient to hold the model. The radial edge, EdgeVertex, is an extension to the topology structures of compositemodel and the class itself is placed in compositemodel. An EdgeVertex contains information of all pairs of half edges, ftEdge, meeting in an edge, and each ftEdge belonging to an EdgeVertex has access to this EdgeVertex.

An EdgeVertex instance is defined when adjacency between two ftSurfaces is found. Thus, at edges in an ftVolume where no adjacent ftVolume exists, no EdgeVertex instance will be defined. Then the edge is represented with a pair of ftEdge instances.

The EdgeVertex class is placed in the module compositemodel, but is used in connection with volume models. In addition to functionality related to topology build, the class has some access functionality:

- Fetch edges meeting in the radial edge, either uniquely defined, i.e. one instance for a pair or twins, or absolutely all edges.
- Fetch a specified edge
- Check if a ftEdge belongs to a radial edge
- Check if a ftEdge belongs to a radial edge and has no information about a corresponding ftEdge. In that case the corresponding surface does not belong to a volume.
- Fetch adjacent faces
- Fetch adjacent bodies

Chapter 17

Application Programming Interface to TTL (API)

There are two interface channels between TTL and the application data structure: DartType and TraitsType, which are template arguments to the TTL functions. Function templates in TTL use either `DartType` or both `DartType` and `TraitsType` depending on the complexity of the algorithms. `DartType` is used for topological queries, and `TraitsType` is used for topological modifiers and geometric calculations. The documentation in TTL tells which functionality is needed in `DartType` and `TraitsType` for each function template.

TTL consists of two namespaces with generic functions: ttl contains the main interface and ttl_util contains utility functions that can also be used by the application programmer. The figure below shows the (simple) architecture of an application using TTL.

In the following we explain how `DartType` and `TraitsType` must be implemented as an interface to the actual data structure. For more details see literature.

17.1 DartType

The generic functions in TTL navigates in the application data structure through a "topological element" call a *dart*, which must be implemented as a struct or a class by the application programmer. A dart can be considered as a unique triple $d = (V, E, T)$, where V is a node of the edge E, and V and E is a node and an edge of the triangle T; see figure a) below where a dart is indicated as an arrow.

TTL expects that three functions, which we call *alpha-iterators*, are present in the dart class: `alpha0()`, `alpha1()` and `alpha2()`. These functions reposition the dart in the triangulation as shown in figure b) above and return a reference to the modified dart itself. Thus, `alpha0()`, `alpha1()` and `alpha2()` change the node, the edge and the triangle of the triple $d = (V, E, T)$ respectively.

Note

- The *dart* is not part of the data structure. It is a "dynamic" element that "moves" around in the actual application data structure when the alpha-iterators are applied to it. Thus, this mechanism does not require any extra memory other than that occupied by the (few) darts that are involved in a function template of TTL that is called.

In addition to the alpha-iterators, TTL expects that standard class member functions such as constructors, assignment operators and the like are also implemented in the dart class.

The following syntax is required:

```
class MyDart {
  ...
public:
  // Constructors and destructors
  ...
  MyDart(const MyDart& dart) {...} // copy constructor
  MyDart& operator= (const MyDart& dart) {...} // assignment operator

  // comparing dart objects
  bool operator==(const MyDart& dart) const {...}
  bool operator!=(const MyDart& dart) const {...}

  // alpha-iterators
  MyDart& alpha0() {...; return *this;}
  MyDart& alpha1() {...; return *this;}
  MyDart& alpha2() {...; return *this;}
  };
```

Thus, the alpha-iterators change the content of the dart and return a reference to the dart itself.

Note

- Note that `alpha2()` must return the dart itself without changing its content (when checked with the == operator) if the edge associated with the dart is at the boundary of the triangulation. The source code of ttl::isBoundaryEdge illustrates this:

```
template <class DartType>
  bool isBoundaryEdge(const DartType& dart) {

  DartType dart_iter = dart;
  if (dart_iter.alpha2() == dart)
    return true;
  else
    return false;
}
```

Consult the definition and source code of class hed::Dart, which implements the dart class for the half-edge data structure, for a thorough example.

17.2 TraitsType

`TraitsType` can be a static class or a struct that contains functionality required by the functions in TTL. The purpose with `TraitsType` is twofold:

- Let the application programmer provide topological modifiers on the actual data structure that are not resolved by TTL, e.g., remove a triangle from the triangulation,
- Let the application programmer provide basic geometric calculations and thus control the level of accuracy for such calculations.

For example, assume that a function in TTL requires a scalar product between vectors in the plane, represented as darts, with the following syntax:

```
real_type scalarProduct2d(const DartType& d1, const DartType& d2)
```

Then this function must be implemented in the traits class together with the definition of `real_type`:

```
struct MyTraitsType {
  typedef double real_type;
  ...
  static real_type scalarProduct2d(const MyDart& v1, const MyDart& v2) {
    return ::my_scalarProduct2d(v1,v2);
  }
  ...
  static bool swapTestDelaunay(const MyDart& dart) {
    if (dart.getEdge().isConstrained())
      return false;
    else
      return ttl::swapTestDelaunay<MyTraitsType>(dart);
  }
};
```

The second function, `swapTestDelaunay`, implements the Delaunay swapping test. The function desides if the edge associated with the given dart should be swapped according to the *circumcircle* criterion (or equivalently according to the *MaxMin* angle criterion). In the example above, it is first examined if the edge is constrained, in which case false is returned. Then the test is directed back to TTL again since the circumcircle test is present there; see ttl::swapTestDelaunay. Of course, the user could also make his/her own implementation of the circumcircle test, e.g., by using robust schemes with exact arithmetic as Jonathan Richard Shewchuk does (`http://www-2.cs.cmu.edu/~quake/robust.html`).

This example also illustrates the syntax `functionName<MyTraitsType>`(...arguments...) when calling function templates using a traits class.

Actually, scalar product between vectors, as well as cross product and other point and vector algebra, are also present in the the namespace ttl_util. Assume that `MyDart::x()` and `MyDart::y()` deliver the coordinates in the plane of the node associated with a dart. Then the scalar product in `MyTraitsType` can be implementes as:

```
static real_type scalarProduct2d(const MyDart& v1, const MyDart& v2) {
  MyDart v10 = v1; v10.alpha0();
  Dart v20 = v2; v20.alpha0();
  return ttl_util::scalarProduct2d(v10.x()-v1.x(), v10.y()-v1.y(),
                                   v20.x()-v2.x(), v20.y()-v2.y());
}
```

Consult the definition and source code of struct hed::TTLtraits, which implements the traits class for the half-edge data structure. This example shows which members that are required in the traits class for running incremental Delaunay triangulation and removing nodes in a triangulation.

Chapter 18

Example using TTL and the half-edge data structure

Chapter 19

The Half-Edge Data Structure and Adaption to TTL

An implementation of the the well-known *half-edge* data structure for triangulations is documented briefly on these pages together with adaption of this data structure to TTL, The Triangulation Template Library. Only the class hed::Dart and the (static) struct hed::TTLtraits are documented thoroughly. These compounds represent the interface channels between TTL and the application data structure. See Application Programming Interface to TTL (API) for a general documentation of this mechanism. Follow the links to the source code for classes that are not documented in detail - most member functions are self-explanatory.

19.1 The Class Diagram

The classes hed::Node, hed::Edge and hed::Triangulation represent the half-edge data structure shown as a class diagram in the figure below. ("Edge" denotes a half-edge). These classes, together with hed::Dart and hed::TTLtraits for adaption to TTL, are encapsulated in the namespace **hed**.

Each half-edge has a pointer to the hed::Node it starts from, a pointer to the next half-edge belonging to the same triangle (counterclockwise), and a pointer to its "twin-edge" belonging to another triangle.

The class hed::Triangulation containts a list of (half-) edges, each of which represents one triangle in the triangulation. In addition, the class hed::Triangulation also serves as an interface to the TTL as it implements hed::TTLtraits::swapEdge, hed::TTLtraits::splitTriangle etc., which are functions required on the application side by function templates in the TTL (via the traits class).

19.2 Example

Consult the file main.cpp for a program using TTL and the half-edge data structure.

Chapter 20

GoTools Viewlib

The Viewlib module contains the application 'goview', which is a utility to support visualization of curves, surface, point clouds and line clouds.

goview can read curves and surfaces from an IGES file or from the GoTools internal file format g2 and visualize those. Currently, goview is not able to visualize volumes. In the volume case, it is recommended to pick the boundary surfaces corresponding to the volume and draw them.

For more information on the g2 file format, see The g2-format, GoTools file format for geometry entities.

The program uses Qt for representing the GUI and OpenGL for graphics. Curves and surfaces are tessellated in the submodule tessellate in the module gotools-core. According to their type, curves and surfaces are approximated by triangles or line segments that are convenient for visualization using OpenGL.

The model in the viewer is manipulated using the mouse keys. The left one rotates the model, the middle one is for zooming and the right one for translation of the model.

goview has got a graphical user interface. It has a graphical window, a window containing an object list and a number of pull down menus:

- `file` commands to read and write geometry and to close the current session and make the viewer ready to read a new geometry file.
- `view` options to choose shaded or wire frame mode for visualization. A highlight modus may be toggled and some focusing facilities exist.
- `select` Selection of entities can be done using this menu, in the object list or by using the control key in combination with the left mouse key.
- `group` grouping of objects. This menu is not really used
- `object` this menu offers the possibility to alter the resolution of curves and surfaces and to enable/disable selected entities from the view. Some commands have a key pad short cut.

goview is a utility and not a product. This implies unfortunately that the help functionality is not implemented. Visualization of trimmed surfaces can have some flaws, but they are normally repaired or minimized by increasing the resolution.

20.1 Dependencies

Viewlib requires the following libraries to be installed on the system:

- Qt4, `qt.nokia.com`
- OpenGL and GLUT, `www.opengl.org`
- Boost, `www.boost.org`

Chapter 21

Bug List

Class Go::ftSSfEdge

Not tested

Chapter 22

Module Index

22.1 Modules

Here is a list of all modules:

Chapter 23

Namespace Index

23.1 Namespace List

Here is a list of all namespaces with brief descriptions:

Chapter 24

Hierarchical Index

24.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 25

Class Index

25.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 26

File Index

26.1 File List

Here is a list of all files with brief descriptions:

Chapter 27

Module Documentation

27.1 RBD common library

Files

- file include.h
- file myexcept.h
- file myexcept.cpp

Namespaces

- RBD_COMMON
- RBD_LIBRARIES

Macros

- #define use_namespace
- #define UseExceptions
- #define USING_DOUBLE
- #define bool_LIB 0
- #define TypeDefException
- #define DEFAULT_HEADER
- #define ATandT

27.1.1 Detailed Description

27.1.2 Macro Definition Documentation

27.1.2.1 #define ATandT

Definition at line 277 of file include.h.

27.1.2.2 #define bool_LIB 0

Definition at line 34 of file include.h.

27.1.2.3 #define DEFAULT_HEADER

Definition at line 105 of file include.h.

27.1.2.4 #define TypeDefException

Definition at line 47 of file include.h.

27.1.2.5 #define use_namespace

Definition at line 10 of file include.h.

27.1.2.6 #define UseExceptions

Definition at line 19 of file include.h.

27.1.2.7 #define USING_DOUBLE

Definition at line 31 of file include.h.

Chapter 28

Namespace Documentation

28.1 Go Namespace Reference

Namespaces

- AdaptSurface
- BoundedUtils
- boxStructuring
- ClosestPoint

  Namespace for computing closest points.
- cmUtils

  Various utility functions for the compositemodel module.
- CoonsPatchGen
- CoonsPatchVolumeGen

  This namespace contains functions used to create a Coons Patch volume.
- CreatorsUtils

  Related to the generation of cross tangent curves.
- Curvature

  Curvature analysis related to curves.
- CurvatureAnalysis
- CurveCreators
- CurveInterpolator

  Curve interpolation functionality not adapted to the Interpolator class.
- FaceUtilities
- ftVolumeTools

  This namespace contains service functions related to ftVolume.
- GapRemoval

  Functionality for removal of gaps between two adjacent surfaces of various types.
- GeometryTools
- HahnsSurfaceGen
- IntersectionUtils

  Various functions related to the intersection algorithms.
- LinDepUtils
- LoftSurfaceCreator

  This namespace contains functions used to create lofted surfaces.
- LoftVolumeCreator

This namespace contains functions used to create lofted volumes.

- LoopUtils
- LRApproxApp
- LRBSpline2DUtils
- LRSplineMBA
- LRSplineUtils
- LRSurfStitch
- Mesh2DUtils
- ModifySurf
- OffsetSurfaceUtils
- OffsetUtils

  Related to the generation of cross tangent curves.
- orientCurves

  Sorts and orients a set of curves.
- Path

  Functions related to sequence of edges.
- PointSetApp

  Point set and triangulation applicitions.
- qualityUtils
- RegularizeUtils

  Utility functionality for RegularizeFace and RegularizeFaceSet.
- Singular
- SplineDebugUtils
- SplineUtils
- SplitModelUtils

  Utility functionality for splitting of surface models.
- SurfaceCreators
- SurfaceInterpolator

  Functionality for creating interpolating surfaces.
- SurfaceModelUtils

  Utility functionality for splitting of surface models.
- SurfaceOnVolumeTools
- SurfaceTools

  Free functions operating on parametric surfaces.
- TesselatorUtils

  Related to the relative resolution of tesselation.
- tpUtils
- Utils

  Namespace for some utility functions.
- VolumeInterpolator

  This namespace contains functions used to interpolate a set of points.
- VolumeModelCreator
- VolumeTools

  This namespace contains free functions operating on parametric volumes.

Classes

- class AdaptCurve
- struct AdjacencyInfo

  Struct to store information about adjacency relations between two faces.
- struct Alg2DElem
- struct Alg3DElem
- class AlgObj2DInt

  Class for 2-dimensional algebraic intersection objects.
- class AlgObj3DInt
- class AlgObjectInt
- class ApproxCrvToSeqs
- class ApproxCurve
- class ApproxSurf
- class Array
- class BaryCoordSystem
- class BaryCoordSystemTriangle3D
- class BaseSurface
- struct BasisDerivs
- struct BasisDerivs2
- struct BasisDerivsSf
- struct BasisDerivsSf2
- struct BasisPts
- struct BasisPtsSf
- class BdCondFunctor
- class BernsteinMulti
- class BernsteinPoly
- class BernsteinTetrahedralPoly
- class BernsteinTriangularPoly
- class BezierTriangle

  Not documented.
- class Binomial
- class BlockBoundaryCondition
- class BlockPointBdCond
- class BlockSolution
- class Body

  A boundary represented solid.
- struct BoundaryFunctionInt
- struct BoundaryGeomInt
- struct BoundaryIntersectionData
- class BoundedCurve

  A bounded curve. Both parameter values and end points may be given to define the boundaries. Assuming that both points prefer parameter, or both points prefer points. Typically used to bound infinite curves, for instance lines.
- class BoundedSurface
- class BoundingBox
- class BsplineBasis
- struct CachedInterval

  Helper struct for saving bracketed bounds of influence areas.
- class CellDivision
- class Circle

  Class that represents a circle. It is a subclass of ElementaryCurve and thus has a parametrization.
- class ClosestPointCalculator
- class CompleteEdgeNet

Complete the edge net of a SurfaceModel. Fetches the wire frame model corresponding to a surface model, and extends it such that the extended wire frame will become the wire frame model corresponding to a volume model have the given surface model as its outer boundary. The extension to the wireframe is represented as pairs of vertices where these vertices lie at the endpoints of the missing edges. NB! This solution is currently not expected to handle all configurations.

- class ComplexityInfo
- class CompositeBox
- class CompositeCurve
- class CompositeModel
- class CompositeModelFactory
- class CompositeModelFileHandler
- class CompositeSurface
- class ConcreteCreator
- class Cone

  Class that represents a cone. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.
- class ConeVolume

  *Class that represents a solid cone. It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius u, an angle v, and distance w: **p**(u, v, w) = **C** + u (R + w tan α)((cos v) **x** + (sin v) **y**) + w **z**, where **C** is the cone apex, R is the radius when w = 0, α is the cone angle, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $0 \leq u \leq 1, 0 \leq v \leq 2\pi, -\infty < w < \infty$. The dimension is 3.*
- class ConnectionFunctor
- class CoordinateSystem

  Defines a Cartesian coordinate system.
- class CPUclock

  A class for measuring CPU time in programs.
- class Creator
- class CrossesValue

  IntersectionPoolUtils. predicate for STL function.
- class CrossTangentOffset
- class CrossTanOffDist
- class CurveBoundedDomain
- class CurveLoop
- class CurveModel
- class CurveOnSurface

  A curve living on a parametric surface. It either has got information about the curve in geometry space and in the parameter domain of the surface or the ability to compute the other representation given one. The curve may have information on whether it is a constant parameter or boundary curve on the surface.
- class CurveOnVolume

  A curve living on a parametric volume. It either has got information about the curve in geometry space and in the parameter domain of the volume or the ability to compute the other representation given one.
- class CurveTesselator
- class CvCvIntersector

  Class that performs intersection between two parametric curves.
- class CvPtIntersector
- struct cvSetConstraint
- class Cylinder

  Class that represents a cylinder. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.
- class CylinderInt

  Class for cylindrical algebraic intersection objects.
- class CylinderVolume

  *Class that represents a solid cylinder, maybe with empty interior like a straight tube. It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius u, an angle v, and distance w: **p**(u, v, w) = **C** + u(cos(v) **x** + sin(v) **y**) + w **z**, where **C** is a position vector, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $R \leq u \leq S, 0 \leq v \leq 2\pi, -\infty < w < \infty$, where $Rand$ S are the inner and outer radius. The dimension is 3.*

- class DegeneratedIntersectionCurve

  IntersectionCurve that is degenerated into a single point.
- class DirectionCone
- class Disc

  *Class that represents a circular disc. It is a subclass of ElementarySurface, and has a natural parametrization by polar coordinates in terms of a radius r and angle v: **p**(r, v) = **C** + r((cos v) **x** + (sin v) **y**), where **C** is the centre position vector and **x** and **y** are the (local) axes. The parametrization is bounded by:* $0 \leq r \leq R$ *and* $0 \leq v \leq 2\pi$*, where R is the disc radius. The dimension is 2 or 3.*
- class Domain
- class EdgeVertex
- class Element2D
- class ElementaryCurve

  ElementaryCurve is a base class for elementary curves like lines and circles. Such curves have natural parametrizations and ElementaryCurve is therefore a subclass of ParamCurve.
- class ElementarySurface

  ElementarySurface is a base class for elementary surfaces like planes and cylinders. Such surfaces have natural parametrizations and ElementartSurface is therefore a subclass of ParamSurface. These surfaces are non-self-intersecting.
- class ElementaryVolume

  ElementaryVolume is a base class for elementary volumes like boxes and solid cylinders. Such volumes have natural parametrizations and ElementartVolume is therefore a subclass of ParamVolume. These volumes are non-self-intersecting.
- class Ellipse

  Class that represents an ellipse. It is a subclass of ElementaryCurve and thus has a parametrization.
- struct EntityList

  The entity number of all supported IGES entites.
- class EvalCurve
- class EvalCurveSet
- class EvalFunctorCurve
- class EvalFunctorSurface
- class EvalOffsetSurface
- class EvalParamCurve
- class EvalSurface
- class FaceAdjacency

  Compute adjacency information for a set of surfaces.
- struct FaceConnectivity
- class FaceConnectivityUtils

  Utilities used in adjacency computations of face sets.
- class FaceSetQuality
- class FaceSetRepair
- struct Factorial

  Compile-time factorial calculations.
- struct Factorial< 1 >
- class Factory
- class ftCell

  Helper class handling one of the cells in class CellDivision.
- class ftCellInfo

  Function object for sorting ftCells.
- class ftChartSurface
- class ftCurve
- class ftCurveSegment
- class ftEdge

  The ftEdge is a half-edge implementation of a topological data structure.
- class ftEdgeBase

Base class for edges. Defines the interface used in topology analysis.

- class ftFaceBase
- class ftGraphEdge
- class ftGroupGeom

  A group of geometrical objects.
- class ftLine
- class ftMessage
- class ftPlanarGraph
- class ftPlane
- class ftPoint
- class ftPointSet
- class ftSamplePoint
- class ftSearchNode
- class ftSmoothSurf
- class ftSSfEdge
- class ftSurface
- class ftSurfaceSet
- class ftSurfaceSetPoint
- class ftVolume

  A topological solid with a trivariate geometry description.
- class Fun2Fun
- class FunctionMinimizer
- class GeneralMesh
- class GenericTriMesh
- class GeomObject
- class GeomObjectInt
- class GeoTol

  Class handling various tolerances.
- struct go_iterator_traits
- struct go_iterator_traits< const T * >
- struct go_iterator_traits< T * >
- class GoTools

  Class containing some service functions for the GoTools "system".
- struct GPos
- class GpuMatrix
- class HermiteAppC
- class HermiteApprEvalSurf
- class HermiteAppS
- class HermiteGrid1D
- class HermiteGrid1DMulti
- class HermiteGrid2D
- class HermiteInterpolator
- class Hyperbola

  Class that represents a hyperbola. It is a subclass of ElementaryCurve and thus has a parametrization.
- class Identity

  Check coincidence.
- class IGESconverter
- struct IGESdirentry

  Storage of all data contained in an IGES directory entity.
- struct IGESheader

  Storage of all data contained in the IGES header.
- class ImplicitizeCurveAlgo
- class ImplicitizeCurveAndVectorAlgo

- class ImplicitizePointCloudAlgo
- class ImplicitizeSurfaceAlgo
- class IndexMesh2DIterator
- class IntCrvEvaluator
- class InterpolatedIntersectionCurve
- class Interpolator

  Base class for spline interpolators or approximators.
- class IntersectionCurve
- class IntersectionLink
- class IntersectionPoint
- class IntersectionPool
- class Intersector
- class Intersector2Obj
- class IntersectorAlgPar
- class IntersectorFuncConst
- struct IntPtInfo
- class IntResultsCompCv
- class IntResultsModel
- class IntResultsSfModel
- struct InverseFactorial
- class IsogeometricBlock
- class IsogeometricModel
- class IsogeometricSfBlock
- class IsogeometricSfModel
- class IsogeometricVolBlock
- class IsogeometricVolModel
- class IsoparametricIntersectionCurve
- class LiftCurve
- class Line

  Class that represents a line. It is a subclass of ElementaryCurve and thus has a parametrization.
- class Line2DInt

  Class representing an algebraic line in 2-dimensional space.
- class LineCloud
- class LineCloudTesselator
- class LineStrip
- class LockedDirDistFunc
- class Loop

  Primarily a loop connected to a face in a boundary represented solid or face set. May also be used to represent a general closed sequence of edges.
- class LRBSpline2D
- class LRSplineEvalGrid
- class LRSplineSurface
- class LRSurfApprox
- class LRSurfSmoothLS
- struct LSSmoothData
- class MarchPoint

  Helper class for marching.
- class MatrixXD
- class Mesh2D
- class Mesh2DIterator
- class ModelQuality
- class ModelRepair
- class NonEvaluableIntersectionCurve

  IntersectionCurve that cannot be evaluated.

- class NoopTesselator
- class ObjectHeader
- class Par0FuncIntersector

  This class is performing intersections between two constants.
- class Par1FuncIntersector
- class Par2FuncIntersector
- class Parabola

  Class that represents a parabola. It is a subclass of ElementaryCurve and thus has a parametrization.
- class Parallelepiped

  Class that represents a solid parallelepiped. It is a subclass of ElementaryVolume, and thus has a parametrization.
- class Param0FunctionInt
- class Param1FunctionInt
- class Param2FunctionInt
- class ParamCurve
- class ParamCurveInt
- class ParametricSurfaceTesselator
- class ParamFunctionInt
- class ParamGeomInt
- class ParamObjectInt
- class ParamPointInt
- class ParamSurface
- class ParamSurfaceInt
- class ParamVolume
- class Plane

  Class that represents a plane. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.
- class PlaneInt

  Class representing planar algebraic intersection objects.
- class Point
- class PointCloud
- class PointOnCurve
- class PointOnEdge
- class PointSequence
- struct preEvaluationSf
- struct preEvaluationVol
- class ProjectCurve
- class ProjectCurveAndCrossTan
- class ProjectIntersectionCurve
- class PtPtIntersector

  This class performs intersection between two points.
- class QuadMesh
- class QualityResults
- class Rational
- struct raw_pointer_comp
- class RectangularSurfaceTesselator
- class RectangularVolumeTesselator
- class RectDomain
- class RectGrid
- class RectGridTesselator
- struct RegistrationInput

  Struct for input to registration, either raw, fine or combined.
- struct RegistrationResult

  Struct for result from registration process, either raw, fine or combined.

- class Registrator
- class RegularizeFace

  Split one face into a number of 4-sided domains without inner trimming. This class is intended for use in block structuring. One face with possible inner and outer trimming is split according to certain rules to result in a face set with 4 sided faces although faces with less than 4 sides can occur. A side is defined as a piece of the face boundary between two corners or between vertices where there are more than one adjacent face. The trimmed surfaces being output from this class can later be approximated by spline surfaces. The splitting procedure is recursive.
- class RegularizeFaceSet
- class RegularMesh
- class RegularVolMesh
- class RotatedBox
- struct RotationInfo
- struct SamplePointData

  Sample data related to one face. The struct contains one point in a point set with information about position, associated surface normal and curvature. Points lying on the face boundary know about its assoicated edge. If the surface normal and curvature information regarding boundary points is not unique, the assosiated data is set to be equal to MAX_DOUBLE.
- class ScratchVect
- struct SecondOrderProperties
- class SfBoundaryCondition
- class SfCvIntersector
- class SfPointBdCond
- class SfPtIntersector
- class SfSelfIntersector

  This class finds self-intersections for a parametric surface.
- class SfSfIntersector

  This class performs intersection between two parametric surfaces.
- class SfSolution
- struct sideConstraint
- struct sideConstraintSet
- struct SingBox
- class SingularityInfo
- struct SingUnion
- class SmoothCurve
- class SmoothCurveSet
- class SmoothSurf
- class SmoothSurfSet
- class SmoothTransition
- class SmoothVolume

  This class modifies a NURBS volume with respect to smoothness, editing constraints and boundary conditions. Specified coefficients are adjusted to minimize a functional combining the different modification conditions.
- class SolveBCG
- class SolveCG
- class SolveCGCO
- class SpaceIntCrv
- class Sphere

  Class that represents a sphere. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.
- class SphereInt

  Class representing spherical algebraic intersection objects.
- class SphereVolume

  Class that represents a solid sphere. It is a subclass of ElementaryVolume, and thus has a parametrization.
- class Spline1FunctionInt
- class Spline2FunctionInt
- class SplineApproximator

- class SplineCurve

  SplineCurve provides methodes for storing, reading and manipulating rational and non-rational B-spline curves.
- class SplineCurveInt

  Class representing the "intersection object" of a spline curve.
- class SplineInterpolator
- class SplineSurface

  SplineSurface provides methodes for storing, reading and manipulating rational and non-rational B-spline surfaces.
- class SplineSurfaceInt
- class SplineVolume

  SplineVolume provides methodes for storing, reading and manipulating rational and non-rational B-spline volumes.
- class Streamable
- class SurfaceAssembly
- class SurfaceModel
- class SurfaceOfLinearExtrusion
- class SurfaceOfRevolution

  Class that represents a surface of revolution. A SurfaceOfRevolution is swept out by a SplineCurve that is rotated around an axis with a complete revolution, and is thereby a parametric surface.
- class SurfaceOnVolume

  A surface living on a parametric volume. It either has got information about the surface in geometry space and in the parameter domain of the volume or both. The surface may have information on whether it is a constant parameter or boundary surface on the volume.
- class SweepSurfaceCreator

  Functionality to create a spline surface by linear or rotational sweep.
- class SweepVolumeCreator

  Class with static methods for volume creation by sweep methods.
- class Tesselator
- class TestInDomain

  IntersectionPoolUtils. predicate for STL function.
- class Torus

  Class that represents a torus. It is a subclass of ElementarySurface, and thus has a parametrization. A torus may be degenerate. Then the minor radius is greater than the major radius, and it is in principle selfintersecting.
- class TorusVolume

  Class that represents a solid torus, maybe with empty interior like a circular pipe, and/or a section (not full revolution along the main axis). It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius u and two angles v and w: ***p****(u, v, w) =* ***C*** *+ (R + u cos w)((cos v)* ***x*** *+ (sin v)* ***y****) + (u sin w)* ***z****, where* ***C*** *is a position vector, R is the major radius, and* ***x****,* ***y*** *and* ***z*** *are the (local) axes. The parametrization for a full solid torus is bounded by:* $0 \leq u \leq r, 0 \leq v, w \leq 2\pi$*, where r is the minor axis. A bended pipe will have a positive minimal limit for u, while a torus segment will have other limits for v. The dimension is 3.*
- class tpEdge
- class tpFace
- class tpMarchPoint

  Helper class for marching.
- class tpTableEntry
- struct tpTolerances
- struct tpTopologicalInfo
- class tpTopologyTable
- class Triangle
- class TrimCurve
- class ttlPoint
- class Vertex

  The vertex class represents the vertex entity in a boundary represented solid or face set.
- class VolBoundaryCondition
- class VolPointBdCond
- class VolSolution

- class VolumeAdjacency

  Adjacency analysis of volume models.
- struct VolumeAdjacencyInfo

  Struct to store information about adjacency relations between two bodies.
- class VolumeModel

  A set of volumes including topology information.
- class VolumeModelFileHandler
- class VolumeParameterCurve

  An evaluator based curve representing the parameter domain curve in a given volume which represents the same curve as a given space curve. Project a geometry curve into the parameter domain of a volume.
- class VolumeSpaceCurve

  An evaluator based curve representing the space curve corresponding to parameter domain curve in a given volume. Compute the space curve corresponding to a curve in the parameter domain of a volume.
- class Zero_Parameter_Span_Error

  Error object used internally in IntersectionCurve.

Typedefs

- typedef std::vector< ftSearchNode >::iterator GraphIter
- typedef std::list< shared_ptr< ftSamplePoint > > PointList
- typedef ftSamplePoint * PointIter
- typedef std::pair< std::pair< double, double >, std::pair< ftFaceBase *, int > > BoundaryPiece
- typedef struct Go::sideConstraint sideConstraint
- typedef struct Go::sideConstraintSet sideConstraintSet
- typedef PointCloud< 3 > PointCloud3D
- typedef PointCloud< 4 > PointCloud4D
- typedef Array< double, 2 > Vector2D

  Typedef for ease of use in frequently used case.
- typedef Array< double, 3 > Vector3D

  Typedef for ease of use in frequently used case.
- typedef Array< double, 4 > Vector4D

  Typedef for ease of use in frequently used case.
- typedef BaryCoordSystem< 2 > BaryCoordSystem2D
- typedef BaryCoordSystem< 3 > BaryCoordSystem3D
- typedef Element2D simpleElement
- typedef std::map< LRBSpline2D *, size_t > BsplineIndexMap

Enumerations

- enum closestPointLevel { LOCAL_SEARCH = 1, SEMI_LOCAL_SEARCH, GLOBAL_SEARCH }
- enum ftCurveType {
  CURVE_NOTYPE = -1, CURVE_INTERSECTION, CURVE_EDGE, CURVE_KINK,
  CURVE_CORNER, CURVE_GAP, CURVE_SINGULAR }
- enum ftmessages {
  FT_NOT_IMPLEMENTED = -99, FT_NO_DATA, FT_BAD_INPUT_FILE, FT_ERROR_IN_READ_IGES,
  FT_DISCONTINUITY, FT_UNEXPECTED_DATA_TYPE, FT_NON_4_SIDED_SURF, FT_WRONG_NO_↩
  OF_BOUNDARIES,
  FT_INSUFFICIENT_MESH_CURVES, FT_ERROR_IN_TOPOLOGY_ANALYSIS, FT_TOPOLOGY_PRO↩
  BLEM, FT_ERROR_IN_SURFACE_CREATION,
  FT_ERROR_IN_PARAMETERIZE, FT_ERROR_IN_SURFACE_TRIMMING, FT_NOT_SUPPORTED, FT↩
  _NOT_SPLINE_SURF,
  FT_ERROR_IN_SURFACE_GRIDDING, FT_NEIGHBOUR_GRID_SIZE_DIFFER, FT_OK = 0, FT_APPR↩
  OX_ERROR_TOO_LARGE,
  FT_COULD_NOT_REFINE_SURFACE, FT_FEATURE_ERROR_TOO_LARGE, FT_DEGENERATE_PA↩
  TCH_CREATED, FT_SURFACE_ALREADY_CREATED,
  FT_DEGENERATE_SURFACE, FT_UNEXPECTED_INPUT_OBJECT_IGNORED, FT_FACES_OVERLAP,

FT_COULD_NOT_SMOOTH_SURFACE,
FT_COULD_NOT_SMOOTH_SURFACESET, FT_NO_SMOOTHING, FT_FAILED_CREATING_GRAPH,
FT_GRID_NOT_CREATED,
FT_SURFACE_NOT_MODIFIED }

- enum IntersectionType {
No_Type = 0, SurfaceModel_SurfaceModel, SurfaceModel_Plane, SurfaceModel_Line,
CompositeCurve_CompositeCurve, CompositeCurve_Plane, CompositeCurve_Line }
- enum ClassType {
Class_Unknown = 0, Class_SplineCurve = 100, Class_CurveOnSurface = 110, Class_CurveOnVolume = 111,
Class_Line = 120, Class_Circle = 130, Class_Ellipse = 140, Class_BoundedCurve = 150,
Class_Hyperbola = 160, Class_Parabola = 170, Class_SplineSurface = 200, Class_BoundedSurface = 210,
Class_SurfaceOnVolume = 211, Class_GoBaryPolSurface = 220, Class_GoHBSplineParamSurface = 230,
Class_CompositeSurface = 240,
Class_Plane = 250, Class_Cylinder = 260, Class_SurfaceOfLinearExtrusion = 261, Class_Sphere = 270,
Class_Cone = 280, Class_Torus = 290, Class_SurfaceOfRevolution = 291, Class_Disc = 292,
Class_LRSplineSurface = 293, Class_TSplineSurface = 294, Class_Go3dsObject = 300, Class_GoHeTriang = 310,
Class_GoSdTriang = 320, Class_GoQuadMesh = 330, Class_GoHybridMesh = 340, Class_ParamTriang = 350,
Class_GoVrmlGeometry = 360, Class_PointCloud = 400, Class_LineCloud = 410, Class_GoTriangleSets = 500,
Class_RectGrid = 510, Class_SplineVolume = 700, Class_BoundedVolume = 710, Class_Parallelepiped = 720,
Class_SphereVolume = 721, Class_CylinderVolume = 722, Class_ConeVolume = 723, Class_TorusVolume = 724,
Class_LRSplineVolume = 793 }
- enum AlgorithmChoice { GEOMETRICAL, FUNCTIONAL }
- enum {
pretop_UNDEF, pretop_IN, pretop_OUT, pretop_ON,
pretop_AT }
- enum IteratorType { Iterator_parametric = 0, Iterator_geometric = 1 }
- enum PointSequenceType { PSTPoint, PSTPointTangent, PSTScattered }

  Type of point.
- enum RegistrationReturnType {
RegistrationOK, TooFewPoints, PointSetSizeDiff, AreaTooSmall,
SolveFailed }
- enum ftTangPriority { ftNoType = 0, ftMaster, ftSlave }
- enum FileFormat { go, disp, IGES }
- enum IGESSection {
S, G, D, P,
T, E }
- enum EvalKind { SPACECURVE, PARAMCURVE_1, PARAMCURVE_2 }
- enum TangentDomain { GEOM, PARAM1, PARAM2 }
- enum EstimateDirection { FORWARDS, BACKWARDS }
- enum IntPtClassification {
DIR_UNDEF = 0, DIR_IN, DIR_OUT, DIR_PARALLEL,
DIR_PERPENDICULAR, DIR_HIGHLY_SINGULAR, DIR_TOUCH }
- enum IntPtLocation {
LOC_OUTSIDE_BOTH = 0, LOC_INSIDE_BOTH, LOC_EDGE_ONE, LOC_CORNER_ONE,
LOC_CORNER_BOTH, LOC_EDGE_BOTH }
- enum LinkType {
LINK_UNDEFINED = 0, SIMPLE_CONE, SIMPLE_MONOTONE, SIMPLE_IMPLICIT,
SIMPLE_TWO_POINTS, COINCIDENCE_CVPT, COINCIDENCE_CVCV, COINCIDENCE_SFCV,
COINCIDENCE_SFPT, MICRO_CVCV, MICRO_SFPT, MICRO_SFCV,
MICRO_SFSF, MICRO_PAR1FUNC, MICRO_PAR2FUNC, LINEAR_CVCV,
LINEAR_SFCV, LINEAR_SFSF, MERGED_UNDEFINED, MERGED_SIMPLE_CONE,
MERGED_SIMPLE_MONOTONE, MERGED_SIMPLE_CONE_MONOTONE, MERGED_COINCIDENCE↩

_SFCV_SFCV, DEG_TRIANGLE,
POST_ITERATE, BRANCH_CONNECTION, COMPLEX_SFSF, SPLIT_LINK,
REPAIRED_MISSING_LINK, INSIDE_OUTSIDE_SINGULARITY_BOX }

- enum SingularityClassification { NO_SING = 0, INIT_SING, DIVIDED_SING, KEEP_SING }

  This enum classifies the type of singularity.
- enum SingularityType {
  ORDINARY_POINT = 0, TANGENTIAL_POINT, ISOLATED_POINT, BRANCH_POINT,
  HIGHER_ORDER_POINT }
- enum SubdivisionClassification {
  CANNOT_SUBDIVIDE = 0, DIVIDE_DEG, DIVIDE_CRITICAL, DIVIDE_HIGH_SING,
  DIVIDE_SING, DIVIDE_KNOT, DIVIDE_INT, DIVIDE_PAR }

  This enum classifies the type of subdivision.
- enum BdConditionType {
  UNKNOWN = 0, ZERO_DIRICHLET, CONSTANT_DIRICHLET, DIRICHLET,
  ZERO_NEUMANN, NEUMANN, SYMMETRY }
- enum Direction2D { XFIXED =0, YFIXED =1 }
- enum testSuite {
  IDENTICAL_VERTICES = 0, IDENTICAL_EDGES = 1, EMBEDDED_EDGES = 2, IDENTICAL_FACES = 3,
  EMBEDDED_FACES = 4, MINI_CURVE = 5, MINI_SURFACE = 6, MINI_EDGE = 7,
  MINI_FACE = 8, SLIVER_FACE = 9, NARROW_REGION = 10, DEGEN_SRF_BD = 11,
  DEGEN_SRF_CORNER = 12, VANISHING_TANGENT = 13, VANISHING_NORMAL = 14, EDGE_VERT↩
  EX_DISTANCE = 15,
  FACE_VERTEX_DISTANCE = 16, FACE_EDGE_DISTANCE = 17, EDGE_POSITION_DISCONT = 18, E↩
  DGE_TANGENTIAL_DISCONT = 19,
  FACE_POSITION_DISCONT = 20, FACE_TANGENTIAL_DISCONT = 21, LOOP_CONSISTENCY = 22, L↩
  OOP_ORIENTATION = 23,
  FACE_ORIENTATION = 24, CV_G1DISCONT = 25, CV_C1DISCONT = 26, SF_G1DISCONT = 27,
  SF_C1DISCONT = 28, CV_CURVATURE_RADIUS = 29, SF_CURVATURE_RADIUS = 30, EDGE_ACU↩
  TE_ANGLE = 31,
  FACE_ACUTE_ANGLE = 32, LOOP_INTERSECTION = 33, LOOP_SELF_INTERSECTION = 34, INDIST↩
  INCT_KNOTS = 35 }
- enum tpJointType {
  JOINT_G1 = 0, JOINT_KINK = 1, JOINT_G0 = 2, JOINT_GAP = 3,
  JOINT_DISC = 4, JOINT_NONE = 5 }
- enum CoefStatus { CoefFree, CoefKnown, CoefAvoid, CoefOther }

Functions

- double areaTriangle (const Vector2D &corner1, const Vector2D &corner2, const Vector2D &corner3)
- void GaussQuadValues (const BsplineBasis &basis, std::vector< double > &parameters, std::vector< double > &par_weights)

  Functions used to compute integrals of inner products of B-splines.
- void GaussQuadInner (const BsplineBasis &basis, int ider, double lim1, double lim2, double ***integral)
- void GaussQuadInnerFlat (const BsplineBasis &basis, int derivs, int start_der, int gap, double lim1, double lim2, std::vector< double > &integral)
- void GaussQuadInner2 (const BsplineBasis &basis, int ider, double lim1, double lim2, double **integral)
- void GaussQuadInnerRational (const BsplineBasis &basis, int ider, double lim1, double lim2, shared_ptr< SplineCurve > bspline_curve, double ***integral)
- template<class PtrToCurveType >
  double computeLoopGap (const std::vector< PtrToCurveType > &curves)

  Computes the largest gap in the loop specified by the vector of curves.
- int extremalPtSurfSurf (ParamSurface *psurf1, ParamSurface *psurf2, int constraints[2], double constraints↩
  _par[2], double limit[ ], double enext[ ], double gpos[ ], double angle_tol)
- template<class T >
  void Register ()

- void intersectCurvePoint (const ParamCurve *crv, Point pnt, double epsge, std::vector< double > &intersections, std::vector< std::pair< double, double > > &int_crvs)
- void intersect2Dcurves (const ParamCurve *cv1, const ParamCurve *cv2, double epsge, std::vector< std::pair< double, double > > &intersections, std::vector< int > &pretopology, std::vector< std::pair< std::pair< double, double >, std::pair< double, double > > > &int_crvs)
- void intersectcurves (SplineCurve *cv1, SplineCurve *cv2, double epsge, std::vector< std::pair< double, double > > &intersections)
- void intersectCurveSurf (const SplineCurve *cv, const SplineSurface *sf, double epsge, std::vector< std::pair< double, Point > > &int_pts, std::vector< int > &pretopology, std::vector< std::pair< std::pair< double, Point >, std::pair< double, Point > > > &int_crvs)

  Intersect a spline curve and a spline surface.
- void closestPtCurves (SplineCurve *cv1, SplineCurve *cv2, double epsge, double &par1, double &par2, double &dist)
- SISLCurve GO_API * Curve2SISL (const SplineCurve &cv, bool copy=true)
- SISLCurve GO_API * Curve2SISL_rat (const SplineCurve &cv)
- SplineCurve GO_API * SISLCurve2Go (const SISLCurve *const cv)
- SISLSurf GO_API * GoSurf2SISL (const SplineSurface &sf, bool copy=true)
- SplineSurface GO_API * SISLSurf2Go (SISLSurf *sf)
- std::istream & operator>> (std::istream &is, Go::Streamable &obj)
- std::ostream & operator<< (std::ostream &os, const Go::Streamable &obj)
- bool point_inside_contour (const double x0, const double y0, const double *const vertices, const std::vector< int > &contour)
- bool segment_contour_intersection_for_s2m (const double x0, const double y0, const double x1, const double y1, const double *const vertices, const std::vector< int > &contour, double &x, double &y, double &s, const bool snap_ends=false)
- std::vector< short_list_short_list > sort_2dpoly_segments (const double *const vertices, const std::vector< int > &contour, const bool transposed=false)
- int is_inside (const std::vector< Go::Vector3D > &trim_curve_p, const std::vector< int > &contour, const double u, const double v)
- bool is_on_corner (const std::vector< Go::Vector3D > &trim_curve_p, const std::vector< int > &contour, const double u, const double v)
- int is_on_contour (const std::vector< Go::Vector3D > &trim_curve_p, const std::vector< int > &contour, const double u, const double v)
- bool degenerate_triangle (const Vector2D &c1, const Vector2D &c2, const Vector2D &c3)
- void make_trimmed_mesh (shared_ptr< ParamSurface > srf, std::vector< shared_ptr< ParamCurve > > &crv_set, std::vector< Vector3D > &vert, std::vector< Vector2D > &vert_p, std::vector< int > &bd, std::vector< Vector3D > &norm, std::vector< int > &mesh, std::vector< Vector3D > &trim_curve, std::vector< Vector3D > &trim_curve_p, const int dn, const int dm, double bd_res_ratio)
- template<typename T , int Dim>
  Go::Array< T, Dim > operator* (T d, const Go::Array< T, Dim > &v)

  The product of a vector and a scalar.
- template<typename T , int Dim>
  std::istream & operator>> (std::istream &is, Go::Array< T, Dim > &v)

  Stream extraction for Array.
- template<typename T , int Dim>
  std::ostream & operator<< (std::ostream &os, const Go::Array< T, Dim > &v)

  Stream insertion for Array.
- template<class T , int Dim>
  Array< T, Dim > operator* (const Array< double, Dim > &a, const T b)
- double binom (int n, int i)

  Computes the binomial coefficient: n! / (i! (n-i)!)
- double factorial (int n)

  computes n! (n factorial)
- double trinomial (int n, int i, int j)

  computes the trinomial coefficient: n! / (i! j! (n-i-j)!)

- double quadrinomial (int n, int i, int j, int k)

  computes the quadrinomial coefficient: n! / (i! j! k! (n-i-j-k)!)
- template<class Functor >
  double brent_minimize (const Functor &f, double a, double b, double c, double &parmin, const double rel_↩
  tolerance=std::sqrt(std::numeric_limits< double >::epsilon()))
- template<typename Iterator >
  bool strictly_increasing (Iterator begin, Iterator end)
- template<typename Array >
  bool strictly_increasing (const Array &A)
- template<typename Iterator >
  bool weakly_increasing (Iterator begin, Iterator end)
- template<typename Array >
  bool weakly_increasing (const Array &A)
- template<typename Iterator >
  bool strictly_decreasing (Iterator begin, Iterator end)
- template<typename Array >
  bool strictly_decreasing (const Array &A)
- template<typename Iterator >
  bool weakly_decreasing (Iterator begin, Iterator end)
- template<typename Array >
  bool weakly_decreasing (const Array &A)
- template<typename ValueType >
  bool nondecreasing (ValueType a, ValueType b, ValueType c)
- template<typename ValueType >
  bool nonincreasing (ValueType a, ValueType b, ValueType c)
- template<typename ValueType >
  bool strictly_decreasing (ValueType a, ValueType b, ValueType c)
- template<typename ValueType >
  bool strictly_increasing (ValueType a, ValueType b, ValueType c)
- template<typename ValueType >
  bool interval_overlap (ValueType front1, ValueType back1, ValueType front2, ValueType back2)
- template<typename Iterator >
  int compare_seq (Iterator begin_1, Iterator end_1, Iterator begin_2, Iterator end_2)
- shared_ptr< boxStructuring::BoundingBoxStructure > preProcessClosestVectors (const std::vector< shared_ptr< GeomObject > > &surfaces, double par_len_el)
- void closestPointSingleCalculation (int pt_idx, int start_idx, int skip, const std::vector< float > &inPoints, const std::vector< std::vector< double > > &rotationMatrix, const Point &translation, const shared_ptr< box↩
  Structuring::BoundingBoxStructure > &boxStructure, std::vector< float > &result, std::vector< std::vector< int > > &lastBoxCall, int return_type, int search_extend)
- std::vector< float > closestPointCalculations (const std::vector< float > &pts, const shared_ptr< box↩
  Structuring::BoundingBoxStructure > &structure, const std::vector< std::vector< double > > &rotation↩
  Matrix, const Point &translation, int return_type, int start_idx, int skip, int max_idx, int search_extend=3, bool m_core=true)
- std::vector< float > closestVectorsOld (const std::vector< float > &inPoints, const shared_ptr< box↩
  Structuring::BoundingBoxStructure > &boxStructure, const std::vector< std::vector< double > > &rotation↩
  Matrix, const Point &translation, int return_type, int start_idx, int skip, int max_idx, int search_extend=3)

  Calculates the closest points of a point cloud to a surface model, by not using the inside polygons in closestVectors()
- std::vector< float > closestPointCalculations (const std::vector< float > &pts, const shared_ptr< box↩
  Structuring::BoundingBoxStructure > &structure, const std::vector< std::vector< double > > &rotation↩
  Matrix, const Point &translation, int return_type)
- std::vector< float > closestDistances (const std::vector< float > &pts, const shared_ptr< boxStructuring↩
  ::BoundingBoxStructure > &structure, const std::vector< std::vector< double > > &rotationMatrix, const Point &translation)
- std::vector< float > closestSignedDistances (const std::vector< float > &pts, const shared_ptr< box↩
  Structuring::BoundingBoxStructure > &structure, const std::vector< std::vector< double > > &rotation↩
  Matrix, const Point &translation)

- std::vector< float > closestPoints (const std::vector< float > &pts, const shared_ptr< boxStructuring::↩ BoundingBoxStructure > &structure, const std::vector< std::vector< double > > &rotationMatrix, const Point &translation)
- double curvatureRadius (const std::vector< Point > &der, std::vector< Point > &unitder)
- double stepLenFromRadius (double radius, double aepsge)
- double tanLenFromRadius (double radius, double angle)
- void getHermiteData (const std::vector< Point > &der1, const std::vector< Point > &der2, double &parint, double &len1, double &len2)
- template<class Functor >
  void minimise_conjugated_gradient (FunctionMinimizer< Functor > &dfmin)
- template<typename Functor >
  void trapezoidal (Functor &f, double a, double b, double &s, int n)
- template<typename Functor >
  double simpsons_rule (Functor &f, double a, double b, const double eps=1.0e-6, const int max_iter=20)
- template<typename Functor >
  double gaussian_quadrature (Functor &f, double a, double b)
- template<typename Functor2D >
  double simpsons_rule2D (Functor2D &f, double ax, double bx, double ay, double by, const double eps=1.0e-6, const int max_iter=20)
- template<typename Functor2D >
  double gaussian_quadrature2D (Functor2D &f, double ax, double bx, double ay, double by)
- template<typename SquareMatrix >
  void LUDecomp (SquareMatrix &mat, int num_rows, int *perm, bool &parity)
- template<typename SquareMatrix , typename T >
  void LUsolveSystem (SquareMatrix &A, int num_unknowns, T *vec)
- template<typename SquareMatrix , typename T >
  void forwardSubstitution (const SquareMatrix &L, T *x, int num_unknowns)
- template<typename SquareMatrix , typename T >
  void backwardSubstitution (const SquareMatrix &U, T *x, int num_unknowns)
- template<typename SquareMatrix >
  void forwardSubstitution (const SquareMatrix &L, std::vector< double > *x, int num_unknowns)
- template<typename SquareMatrix >
  void backwardSubstitution (const SquareMatrix &U, std::vector< double > *x, int num_unknowns)
- template<typename T , int Dim>
  std::ostream & operator<< (std::ostream &os, const MatrixXD< T, Dim > &m)

  output operator
- Point operator* (double d, const Point &p)

  The product of a vector and a scalar.
- std::istream & operator>> (std::istream &is, Go::Point &v)

  Stream extraction for Point.
- std::ostream & operator<< (std::ostream &os, const Go::Point &v)

  Stream insertion for Point.
- bool operator< (const Point &p1, const Point &p2)

  Less than operator.
- bool operator== (const Point &p1, const Point &p2)

  Equal operator.
- void normalNoise (double *res, double mean_err, int num_samples)
- void uniformNoise (double *res, double lval, double uval, int num_samples)
- Rational operator+ (const Rational &r1, const Rational r2)
- Rational operator- (const Rational &r1, const Rational r2)
- Rational operator* (const Rational &r1, const Rational r2)
- Rational operator/ (const Rational &r1, const Rational r2)
- std::ostream & operator<< (std::ostream &os, const Rational &p)
- RegistrationResult rawRegistration (const std::vector< Point > &points_fixed, const std::vector< Point > &points_transform, bool allow_rescaling, RegistrationInput params)

- void addToLinearSystem (int pt_idx, const std::vector< Point > &points_fixed, const std::vector< Point > &points_transform, bool allow_rescaling, const std::vector< std::vector< double > > &id, const Point &fine↩_R, const Point &fine_T, double fine_s, const std::vector< std::vector< double > > &m_rot_R, double s2, double R2, bool zero_R, const std::vector< std::vector< std::vector< double > > > &lhs_matrix, const std::vector< std::vector< double > > &rhs_matrix)

  Add the contribution from one single point to the linear system coefficients used during fine registration.
- RegistrationResult fineRegistration (const std::vector< Point > &points_fixed, const std::vector< Point > &points_transform, bool allow_rescaling, RegistrationInput params)
- RegistrationResult registration (const std::vector< Point > &points_fixed, const std::vector< Point > &points_transform, bool allow_rescaling, RegistrationInput params)
- double getCurrentTime ()

  Number of seconds since some (probably system-dependent) epoch.
- void systemSleep (double sleep_time)

  Sleep for sleep_time seconds.
- template<typename T >
  T determinantOf (const Array< T, 2 > *a)
- template<typename T >
  T determinantOf (const Array< T, 3 > *a)
- template<typename T , int Dim>
  T simplex_volume (const Array< T, Dim > *a)
- template<typename T >
  T area (const Array< T, 2 > *c)
- template<typename T >
  T area (const Array< T, 3 > *c)
- template<typename T >
  T volume (const Array< T, 3 > *c)

  Computes the volume of a 3D simplex (embedded i 3D space).
- template<typename T >
  T signed_area (const Array< T, 3 > *c, const Array< T, 3 > &normal)
- BernsteinMulti operator* (const BernsteinMulti &m1, const BernsteinMulti &m2)

  Multiplication of two polynomials.
- BernsteinMulti operator* (const BernsteinMulti &m1, double c)

  Multiplication of a polynomial with a scalar.
- BernsteinMulti operator* (double c, const BernsteinMulti &m1)

  Multiplication of a scalar with a polynomial.
- BernsteinMulti operator+ (const BernsteinMulti &m1, const BernsteinMulti &m2)

  Addition of two polynomials.
- BernsteinMulti operator+ (const BernsteinMulti &m, double c)

  Addition of a polynomial with a scalar.
- BernsteinMulti operator+ (double c, const BernsteinMulti &m)

  Addition of a scalar with a polynomial.
- BernsteinMulti operator- (const BernsteinMulti &m1, const BernsteinMulti &m2)

  Subtraction of two polynomials.
- BernsteinMulti operator- (const BernsteinMulti &m, double c)

  Subtraction of a scalar from a polynomial.
- BernsteinMulti operator- (double c, const BernsteinMulti &m)

  Subtraction of a polynomial from a scalar.
- BernsteinMulti operator/ (const BernsteinMulti &m, double c)

  Division of a polynomial with a scalar.
- BernsteinPoly operator* (const BernsteinPoly &p1, const BernsteinPoly &p2)

  Multiplication of two polynomials.
- BernsteinPoly operator* (const BernsteinPoly &p, double c)

  Multiplication of a polynomial with a scalar.

- BernsteinPoly operator∗ (double c, const BernsteinPoly &p)

  Multiplication of a scalar with a polynomial.
- BernsteinPoly operator+ (const BernsteinPoly &p1, const BernsteinPoly &p2)

  Addition of two polynomials.
- BernsteinPoly operator+ (double c, const BernsteinPoly &p)

  Addition of a scalar with a polynomial.
- BernsteinPoly operator+ (const BernsteinPoly &p, double c)

  Addition of a polynomial with a scalar.
- BernsteinPoly operator- (const BernsteinPoly &p1, const BernsteinPoly &p2)

  Subtraction of two polynomials.
- BernsteinPoly operator- (double c, const BernsteinPoly &p)

  Subtraction of a polynomial from a scalar.
- BernsteinPoly operator- (const BernsteinPoly &p, double c)

  Subtraction of a scalar from a polynomial.
- BernsteinPoly operator/ (const BernsteinPoly &p, double c)

  Division of a polynomial with a scalar.
- BernsteinTetrahedralPoly operator∗ (const BernsteinTetrahedralPoly &p1, const BernsteinTetrahedralPoly &p2)

  Multiplication of two polynomials.
- BernsteinTetrahedralPoly operator∗ (const BernsteinTetrahedralPoly &p, double c)

  Multiplication of a polynomial with a scalar.
- BernsteinTetrahedralPoly operator∗ (double c, const BernsteinTetrahedralPoly &p)

  Multiplication of a scalar with a polynomial.
- BernsteinTetrahedralPoly operator+ (const BernsteinTetrahedralPoly &p1, const BernsteinTetrahedralPoly &p2)

  Addition of two polynomials.
- BernsteinTetrahedralPoly operator+ (double c, const BernsteinTetrahedralPoly &p)

  Addition of a scalar with a polynomial.
- BernsteinTetrahedralPoly operator+ (const BernsteinTetrahedralPoly &p, double c)

  Addition of a polynomial with a scalar.
- BernsteinTetrahedralPoly operator- (const BernsteinTetrahedralPoly &p1, const BernsteinTetrahedralPoly &p2)

  Subtraction of two polynomials.
- BernsteinTetrahedralPoly operator- (double c, const BernsteinTetrahedralPoly &p)

  Subtraction of a polynomial from a scalar.
- BernsteinTetrahedralPoly operator- (const BernsteinTetrahedralPoly &p, double c)

  Subtraction of a scalar from a polynomial.
- BernsteinTetrahedralPoly operator/ (const BernsteinTetrahedralPoly &p, double c)

  Division of a polynomial with a scalar.
- std::istream & operator>> (std::istream &is, Go::BernsteinTetrahedralPoly &p)

  Read BernsteinTetrahedralPoly from input stream.
- std::ostream & operator<< (std::ostream &os, const Go::BernsteinTetrahedralPoly &p)

  Write BernsteinTetrahedralPoly to output stream.
- BernsteinTriangularPoly operator∗ (const BernsteinTriangularPoly &p1, const BernsteinTriangularPoly &p2)

  Multiplication of two polynomials.
- BernsteinTriangularPoly operator∗ (const BernsteinTriangularPoly &p, double c)

  Multiplication of a polynomial with a scalar.
- BernsteinTriangularPoly operator∗ (double c, const BernsteinTriangularPoly &p)

  Multiplication of a scalar with a polynomial.
- BernsteinTriangularPoly operator+ (const BernsteinTriangularPoly &p1, const BernsteinTriangularPoly &p2)

  Addition of two polynomials.

- BernsteinTriangularPoly operator+ (double c, const BernsteinTriangularPoly &p)

  Addition of a scalar with a polynomial.
- BernsteinTriangularPoly operator+ (const BernsteinTriangularPoly &p, double c)

  Addition of a polynomial with a scalar.
- BernsteinTriangularPoly operator- (const BernsteinTriangularPoly &p1, const BernsteinTriangularPoly &p2)

  Subtraction of two polynomials.
- BernsteinTriangularPoly operator- (double c, const BernsteinTriangularPoly &p)

  Subtraction of a polynomial from a scalar.
- BernsteinTriangularPoly operator- (const BernsteinTriangularPoly &p, double c)

  Subtraction of a scalar from a polynomial.
- BernsteinTriangularPoly operator/ (const BernsteinTriangularPoly &p, double c)

  Division of a polynomial with a scalar.
- std::istream & operator>> (std::istream &is, Go::BernsteinTriangularPoly &p)

  Read BernsteinTriangularPoly from input stream.
- std::ostream & operator<< (std::ostream &os, const Go::BernsteinTriangularPoly &p)

  Write BernsteinTriangularPoly to output stream.
- void spline_to_bernstein (const SplineCurve &seg, int dd, BernsteinPoly &bp)
- void spline_to_bernstein (const SplineSurface &pat, int dd, BernsteinMulti &bm)
- void spline_to_bernstein (const SplineCurve &seg, std::vector< BernsteinPoly > &seg_bp)
- void spline_to_bernstein (const SplineSurface &pat, std::vector< BernsteinMulti > &pat_bm)
- template<int Ndim>
  void splineToBernstein (const SplineCurve &segment, Array< BernsteinPoly, Ndim > &curve_bp)
- template<int Ndim>
  void splineToBernstein (const SplineSurface &patch, Array< BernsteinMulti, Ndim > &surface_bm)
- template<int Ndim>
  void bernsteinToSpline (const Array< BernsteinPoly, Ndim > &curve_bp, bool rational, SplineCurve &segment)
- template<int Ndim>
  void bernsteinToSpline (const Array< BernsteinMulti, Ndim > &surface_bm, bool rational, SplineSurface &patch)
- void create_bary_coord_system2D (const SplineCurve &curve, BaryCoordSystem2D &bc)

  Creates a barycentric coordinate system from a given spline curve.
- void create_bary_coord_system3D (const SplineCurve &curve, BaryCoordSystem3D &bc)

  Creates a barycentric coordinate system from a given 3D spline curve.
- void create_bary_coord_system3D (const SplineSurface &surface, BaryCoordSystem3D &bc)

  Creates a barycentric coordinate system from a given spline surface.
- void create_bary_coord_system3D (const PointCloud3D &cloud, BaryCoordSystem3D &bc)

  Creates a barycentric coordinate system from a point cloud.
- void create_bary_coord_system3D (const BoundingBox &box, BaryCoordSystem3D &bc)

  Creates a barycentric coordinate system from a bounding box.
- void cart_to_bary (const SplineCurve &cv, const BaryCoordSystem2D &bc, SplineCurve &cv_bc)
- void cart_to_bary (const SplineCurve &cv, const BaryCoordSystem3D &bc, SplineCurve &cv_bc)
- void cart_to_bary (const SplineSurface &sf, const BaryCoordSystem3D &bc, SplineSurface &sf_bc)
- void cart_to_bary (const PointCloud3D &cloud, const BaryCoordSystem3D &bc, PointCloud4D &cloud_bc)
- void make_matrix (const SplineCurve &curve, int deg, std::vector< std::vector< double > > &mat)

  Make the matrix D.
- void make_matrix (const SplineSurface &surf, int deg, std::vector< std::vector< double > > &mat)

  Make the matrix D.
- void make_matrix (const PointCloud4D &cloud, int deg, std::vector< std::vector< double > > &mat)

  Make the matrix D.
- void make_implicit_svd (std::vector< std::vector< double > > &mat, std::vector< double > &b, double &sigma_min)

- void make_implicit_gauss (std::vector< std::vector< double > > &mat, std::vector< double > &b)
- int checkCoincide (ParamCurveInt *curve, double start, double end, shared_ptr< GeoTol > tol, ParamCurveInt *other, double other_start, double other_end)
- int checkCoincide (ParamCurveInt *curve, double start, double end, ParamSurfaceInt *surf, Point su_start, Point su_end, shared_ptr< GeoTol > tol)
- int checkCoincide (ParamCurveInt *curve, double start, double end, SplineSurfaceInt *surf, const Point &su_start, const Point &su_end, shared_ptr< GeoTol > tol)
- int checkCoincide (Param1FunctionInt *func1, double start, double end, Param0FunctionInt *C, shared_ptr< GeoTol > tol)
- int checkCoincide (ParamSurfaceInt *surf1, ParamSurfaceInt *surf2, std::vector< double > &par_loop, const shared_ptr< GeoTol > tol)

  by the parameter values of the intersection points representing it
- int stepLength (const std::vector< Point > &ft, const std::vector< Point > &gs, double delta, bool forward, double &delta_t)
- double stepLength (const std::vector< Point > &ft, const std::vector< Point > &gs, bool forward, std::vector< Point > &cvder, double min_step, double max_step, double aepsge)
- int evalProjectedCurve (const std::vector< Point > &ft, const std::vector< Point > &gs, std::vector< Point > &res)
- void evalDistCurve (const std::vector< Point > &marching_curve, const std::vector< Point > &other_curve, std::vector< Point > &dist_curve)
- bool determineCoincidenceRegion (const ParamObjectInt *obj1, const ParamObjectInt *obj2, shared_ptr< const GeoTol > tol, const double *current_params, int dir, bool forward, double &last_param_val_inside, double &first_param_val_outside)
- bool determineCoincidenceRegion (const ParamFunctionInt *obj_1d, double C, shared_ptr< const GeoTol > tol, const double *current_params, int dir, bool forward, double &last_param_val_inside, double &first_param_val_outside)
- template<class iterator >
  shared_ptr< IntersectionCurve > constructIntersectionCurve (const iterator begin, const iterator end)
- void intersectCurves (shared_ptr< ParamCurve > crv1, shared_ptr< ParamCurve > crv2, double tol, std::vector< std::pair< double, double > > &intersection_points)

  Intersection between two parametric curves.
- void debug_write_line (const Point &p1, const Point &p2, const char *fname)
- void debug_write_point (const Point &p1, const char *fname)
- bool no_parent (const shared_ptr< IntersectionPoint > &p)
- IntersectionPoint * flip_intersecting_objects (IntersectionPoint *p)
- bool link_is_iso_in (shared_ptr< IntersectionLink > link, int dir)
- bool link_is_iso (shared_ptr< IntersectionLink > link)
- bool link_is_iso_in_other_than (shared_ptr< IntersectionLink > link, int dir)
- template<class T1 , class T2 >
  bool compare_first (const std::pair< T1, T2 > &x, const std::pair< T1, T2 > &y)
- void add_reachables_from (const IntersectionPoint *pt, const IntersectionPoint *last_pt, std::set< IntersectionPoint * > &result)
- void estimate_seed_by_interpolation (const IntersectionPoint *p1, const IntersectionPoint *p2, int fixed_dir, double fixed_value, double *result)
- void determine_seed (double *par, int par_start, int par_end, const Point &pt, const IntersectionPoint *const ip1, const IntersectionPoint *const ip2)
- int find_point_in (IntersectionPoint *p, const std::vector< shared_ptr< IntersectionPoint > > &vec)
- shared_ptr< const CurveOnSurface > make_curve_on_surface (shared_ptr< const ParamSurface > surf, double u_start, double v_start, double u_end, double v_end, double p_start, double p_end)
- void extract_chains (const std::vector< shared_ptr< IntersectionPoint > > pts, std::vector< std::vector< shared_ptr< IntersectionPoint > > > &chains)
- double benchmarkSfRefinement (LRSplineSurface &lr_sf, const std::vector< LRSplineSurface::Refinement2D > &refs, bool single_insertions=false)
- std::ostream & operator<< (std::ostream &os, const LRBSpline2D &b)
- std::istream & operator>> (std::istream &is, LRBSpline2D &b)
- void writePostscriptMesh (Go::LRSplineSurface &lr_spline_sf, std::ostream &out, const bool close=true)

- Direction2D flip (Direction2D d)
- std::ostream & operator<< (std::ostream &os, const GPos &g)
- std::istream & operator>> (std::istream &is, GPos &g)
- std::ostream & operator<< (std::ostream &os, const Mesh2D &m)
- std::istream & operator>> (std::istream &is, Mesh2D &m)

Variables

- const int MAJOR_VERSION = 1
- const int MINOR_VERSION = 0

28.1.1 Detailed Description

The Go namespace is the common namespace for all GoTools modules.

28.1.2 Typedef Documentation

28.1.2.1 typedef BaryCoordSystem<2> Go::BaryCoordSystem2D

Definition at line 183 of file BaryCoordSystem.h.

28.1.2.2 typedef BaryCoordSystem<3> Go::BaryCoordSystem3D

Definition at line 184 of file BaryCoordSystem.h.

28.1.2.3 typedef std::pair<std::pair<double, double>, std::pair<ftFaceBase*, int> > Go::BoundaryPiece

Definition at line 45 of file ftSurfaceSet.h.

28.1.2.4 typedef std::map<LRBSpline2D*, size_t> Go::BsplineIndexMap

This class modifies a LR spline surface with respect to conditions on smoothness, data points and boundary conditions.

Definition at line 70 of file LRSurfSmoothLS.h.

28.1.2.5 typedef std::vector<ftSearchNode>::iterator Go::GraphIter

Definition at line 29 of file ftPlanarGraph.h.

28.1.2.6 typedef PointCloud<3> Go::PointCloud3D

Definition at line 261 of file PointCloud.h.

28.1.2.7 typedef PointCloud<4> Go::PointCloud4D

Definition at line 262 of file PointCloud.h.

28.1.2.8 typedef ftSamplePoint* Go::PointIter

Definition at line 63 of file ftPointSet.h.

28.1.2.9 typedef std::list<shared_ptr<ftSamplePoint> > Go::PointList

Definition at line 59 of file ftPointSet.h.

28.1.2.10 typedef struct Go::sideConstraint Go::sideConstraint

Struct defining linear side constraints between control points in a surface. The elements of factor_ correspond to a linear combination of control points on the left side of the equation, whilst constant_term_ denotes the right side of the equation.

28.1.2.11 typedef struct Go::sideConstraintSet Go::sideConstraintSet

Struct defining linear side constraints between control points in a set of surfaces. The elements of factor_ correspond to a linear combination of control points on the left side of the equation, whilst constant_term_ denotes the right side of the equation.

28.1.2.12 typedef Element2D Go::simpleElement

Definition at line 66 of file LRSplineEvalGrid.h.

28.1.2.13 typedef Array<double, 2> Go::Vector2D

Typedef for ease of use in frequently used case.

Definition at line 431 of file Array.h.

28.1.2.14 typedef Array<double, 3> Go::Vector3D

Typedef for ease of use in frequently used case.

Definition at line 433 of file Array.h.

28.1.2.15 typedef Array<double, 4> Go::Vector4D

Typedef for ease of use in frequently used case.

Definition at line 435 of file Array.h.

28.1.3 Enumeration Type Documentation

28.1.3.1 anonymous enum

Enumeration of various pretopologies that can be associated with intersections.

Enumerator

pretop_UNDEF

pretop_IN

pretop_OUT

pretop_ON

pretop_AT

Definition at line 56 of file GoIntersections.h.

28.1.3.2 enum Go::AlgorithmChoice

This enumeration denotes whether the 'closestPtSurfSurfPlane' function should base itself upon a geometrical algorithm (marching on the surfaces) or a pure functional one (constrained minimization of a cost function). The default has been set to FUNCTIONAL, as there are flaws in the GEOMETRICAL one when it comes to close-to-degenerate cases.

Enumerator

GEOMETRICAL

FUNCTIONAL

Definition at line 56 of file ClosestPoint.h.

28.1.3.3 enum Go::BdConditionType

Enumerator

UNKNOWN

ZERO_DIRICHLET

CONSTANT_DIRICHLET

DIRICHLET

ZERO_NEUMANN

NEUMANN

SYMMETRY

Definition at line 48 of file BdConditionType.h.

28.1.3.4 enum Go::ClassType

All concrete classes that inherit GeomObject should have a matching enum in ClassType. It is necessary to have a central location for the type identification numbers, so that two classes in different modules (for example) does not try to use the same number. At the same time, it is something we'd like to avoid, because it forces you to update this file every time you add a new GeomObject- inheriting class.

If you need to add a new type, you may also need to add a "Registrator", see the 'GoTools' class. If the new class is part of 'geometry' in 'gotools-core', do this in the init() function of the GoTools class itself. If it's outside the core, then write another class with its own static init() function containing the Registrator.

Also, if you need the name of that added type, i.e. a ClassType-to-string conversion, then you should add that as well. See GoTools::className().

Enumerator

Class_Unknown

Class_SplineCurve

Class_CurveOnSurface

Class_CurveOnVolume

Class_Line

Class_Circle

Class_Ellipse

Class_BoundedCurve

Class_Hyperbola

Class_Parabola

Class_SplineSurface

Class_BoundedSurface

Class_SurfaceOnVolume

Class_GoBaryPolSurface

Class_GoHBSplineParamSurface

Class_CompositeSurface

Class_Plane

Class_Cylinder

Class_SurfaceOfLinearExtrusion

Class_Sphere

Class_Cone

Class_Torus

Class_SurfaceOfRevolution

Class_Disc

Class_LRSplineSurface

Class_TSplineSurface

Class_Go3dsObject

Class_GoHeTriang

Class_GoSdTriang

Class_GoQuadMesh

Class_GoHybridMesh

Class_ParamTriang

Class_GoVrmlGeometry
Class_PointCloud
Class_LineCloud
Class_GoTriangleSets
Class_RectGrid
Class_SplineVolume
Class_BoundedVolume
Class_Parallelepiped
Class_SphereVolume
Class_CylinderVolume
Class_ConeVolume
Class_TorusVolume
Class_LRSplineVolume

Definition at line 63 of file ClassType.h.

28.1.3.5 enum Go::closestPointLevel

Enumerator

LOCAL_SEARCH
SEMI_LOCAL_SEARCH
GLOBAL_SEARCH

Definition at line 56 of file CompositeModel.h.

28.1.3.6 enum Go::CoefStatus

Enumerator

CoefFree
CoefKnown
CoefAvoid
CoefOther

Definition at line 56 of file SmoothVolume.h.

28.1.3.7 enum Go::Direction2D

Enumerator

XFIXED
YFIXED

Definition at line 46 of file Direction2D.h.

28.1.3.8 enum Go::EstimateDirection

Enumerator

FORWARDS

BACKWARDS

Definition at line 57 of file IntersectionCurve.h.

28.1.3.9 enum Go::EvalKind

Enumerator

SPACECURVE

PARAMCURVE_1

PARAMCURVE_2

Definition at line 55 of file IntersectionCurve.h.

28.1.3.10 enum Go::FileFormat

Enumerator

go

disp

IGES

Definition at line 74 of file IGESconverter.h.

28.1.3.11 enum Go::ftCurveType

Indicates type of curve described by a ftCurve.

Enumerator

CURVE_NOTYPE Untyped curve.

CURVE_INTERSECTION Curve mostly in interior of surfaces.

CURVE_EDGE Curve lying on the edge of surfaces.

CURVE_KINK Between surfaces joined by kink.

CURVE_CORNER Between surfaces meeting at a corner line.

CURVE_GAP Between surfaces joined by gap.

CURVE_SINGULAR Curve mostly in interior of one surface.

Definition at line 57 of file ftCurve.h.

28.1.3.12 enum Go::ftmessages

Enumerator

FT_NOT_IMPLEMENTED
FT_NO_DATA
FT_BAD_INPUT_FILE
FT_ERROR_IN_READ_IGES
FT_DISCONTINUITY
FT_UNEXPECTED_DATA_TYPE
FT_NON_4_SIDED_SURF
FT_WRONG_NO_OF_BOUNDARIES
FT_INSUFFICIENT_MESH_CURVES
FT_ERROR_IN_TOPOLOGY_ANALYSIS
FT_TOPOLOGY_PROBLEM
FT_ERROR_IN_SURFACE_CREATION
FT_ERROR_IN_PARAMETERIZE
FT_ERROR_IN_SURFACE_TRIMMING
FT_NOT_SUPPORTED
FT_NOT_SPLINE_SURF
FT_ERROR_IN_SURFACE_GRIDDING
FT_NEIGHBOUR_GRID_SIZE_DIFFER
FT_OK
FT_APPROX_ERROR_TOO_LARGE
FT_COULD_NOT_REFINE_SURFACE
FT_FEATURE_ERROR_TOO_LARGE
FT_DEGENERATE_PATCH_CREATED
FT_SURFACE_ALREADY_CREATED
FT_DEGENERATE_SURFACE
FT_UNEXPECTED_INPUT_OBJECT_IGNORED
FT_FACES_OVERLAP
FT_COULD_NOT_SMOOTH_SURFACE
FT_COULD_NOT_SMOOTH_SURFACESET
FT_NO_SMOOTHING
FT_FAILED_CREATING_GRAPH
FT_GRID_NOT_CREATED
FT_SURFACE_NOT_MODIFIED

Definition at line 51 of file ftMessage.h.

28.1.3.13 enum Go::ftTangPriority

Whether the group of objects (surfaces) are a master, a slave or not specified. Related to tangent plane continuity between groups of surfaces

Enumerator

ftNoType
ftMaster
ftSlave

Definition at line 49 of file ftTangPriority.h.

28.1.3.14 enum Go::IGESSection

Enumerator

S

G

D

P

T

E

Definition at line 75 of file IGESconverter.h.

28.1.3.15 enum Go::IntersectionType

Enumerator

No_Type

SurfaceModel_SurfaceModel

SurfaceModel_Plane

SurfaceModel_Line

CompositeCurve_CompositeCurve

CompositeCurve_Plane

CompositeCurve_Line

Definition at line 54 of file IntResultsModel.h.

28.1.3.16 enum Go::IntPtClassification

Enumeration used to classify the direction of an intersection curve passing through an intersection point with respect to surface boundaries

Enumerator

DIR_UNDEF Not defined.

DIR_IN Tangent of the intersection curve pointing into the domain.

DIR_OUT Tangent of the intersection curve pointing out from the comain.

DIR_PARALLEL Tangent of the intersection curve parallel to the domain.

DIR_PERPENDICULAR Tangent of the intersection curve perpendicular to the domain.

DIR_HIGHLY_SINGULAR No defined tangent.

DIR_TOUCH Tangent touching the domain at a corner.

Definition at line 54 of file IntersectionPointUtils.h.

28.1.3.17 enum Go::IntPtLocation

Enumeration used to classify the location of an intersection point in the parameter domain of the object.

Enumerator

LOC_OUTSIDE_BOTH Point is outside domain for both objects.

LOC_INSIDE_BOTH Point is inside domains (inner point) for both objects.

LOC_EDGE_ONE Point is on the edge of at least one object.

LOC_CORNER_ONE Point is on the corner of at least one object.

LOC_CORNER_BOTH Point is on the corner of both objects.

LOC_EDGE_BOTH Point is on the edge of both objects.

Definition at line 77 of file IntersectionPointUtils.h.

28.1.3.18 enum Go::IteratorType

Enumerator

Iterator_parametric

Iterator_geometric

Definition at line 54 of file ParamSurface.h.

28.1.3.19 enum Go::LinkType

A classification of IntersectionLink objects. The classification is strictly based on how it was made within the algorithm.

Enumerator

LINK_UNDEFINED 0

SIMPLE_CONE 1

SIMPLE_MONOTONE 2

SIMPLE_IMPLICIT 3

SIMPLE_TWO_POINTS 4

COINCIDENCE_CVPT 5

COINCIDENCE_CVCV 6

COINCIDENCE_SFCV 7

COINCIDENCE_SFPT 8

MICRO_CVCV 9

MICRO_SFPT 10

MICRO_SFCV 11

MICRO_SFSF 12

MICRO_PAR1FUNC 13

MICRO_PAR2FUNC 14

LINEAR_CVCV 15

LINEAR_SFCV 16
LINEAR_SFSF 17
MERGED_UNDEFINED 18
MERGED_SIMPLE_CONE 19
MERGED_SIMPLE_MONOTONE 20
MERGED_SIMPLE_CONE_MONOTONE 21
MERGED_COINCIDENCE_SFCV_SFCV 22
DEG_TRIANGLE 23
POST_ITERATE 24
BRANCH_CONNECTION 25
COMPLEX_SFSF 26
SPLIT_LINK 27
REPAIRED_MISSING_LINK 28
INSIDE_OUTSIDE_SINGULARITY_BOX 29

Definition at line 50 of file LinkType.h.

28.1.3.20 enum Go::PointSequenceType

Type of point.

Enumerator

PSTPoint Each grid position holds a point.
PSTPointTangent Each grid position holds a point, then a tangent.
PSTScattered Regard this an unordered point cloud.

Definition at line 53 of file PointSequence.h.

28.1.3.21 enum Go::RegistrationReturnType

Enumerator for registration error reasons RegistrationOK No error found TooFewPoints Less than three points are given PointSetSizeDiff The two point sets given have different length AreaTooSmall Failed to find a tripple of points that are far enough from being almost colinear SolveFailed Solving the linear system in the Newtons approach method failed. Error code is stored in registrationData.solve_code

Enumerator

RegistrationOK
TooFewPoints
PointSetSizeDiff
AreaTooSmall
SolveFailed

Definition at line 57 of file RegistrationUtils.h.

28.1.3.22 enum Go::SingularityClassification

This enum classifies the type of singularity.

Enumerator

NO_SING

INIT_SING

DIVIDED_SING

KEEP_SING

Definition at line 49 of file SingularityClassification.h.

28.1.3.23 enum Go::SingularityType

A classification of an IntersectionPoint, based on the nature of the intersection on which it lies.

Enumerator

ORDINARY_POINT IntersectionPoint lies on normal, transversal intersection.

TANGENTIAL_POINT The two intersecting objects are tangent to each other at the location of this IntersectionPoint.

ISOLATED_POINT This is an isolated IntersectionPoint (does not lie on an IntersectionCurve or on a partial coincidence area).

BRANCH_POINT This is an IntersectionPoint where flere interection curves meet.

HIGHER_ORDER_POINT The two objects intersecting at this point have same tangent plane AND curvature.

Definition at line 46 of file SingularityType.h.

28.1.3.24 enum Go::SubdivisionClassification

This enum classifies the type of subdivision.

Enumerator

CANNOT_SUBDIVIDE

DIVIDE_DEG

DIVIDE_CRITICAL

DIVIDE_HIGH_SING

DIVIDE_SING

DIVIDE_KNOT

DIVIDE_INT

DIVIDE_PAR

Definition at line 49 of file SubdivisionClassification.h.

28.1.3.25 enum Go::TangentDomain

Enumerator

GEOM
PARAM1
PARAM2

Definition at line 56 of file IntersectionCurve.h.

28.1.3.26 enum Go::testSuite

Enumerator

IDENTICAL_VERTICES
IDENTICAL_EDGES
EMBEDDED_EDGES
IDENTICAL_FACES
EMBEDDED_FACES
MINI_CURVE
MINI_SURFACE
MINI_EDGE
MINI_FACE
SLIVER_FACE
NARROW_REGION
DEGEN_SRF_BD
DEGEN_SRF_CORNER
VANISHING_TANGENT
VANISHING_NORMAL
EDGE_VERTEX_DISTANCE
FACE_VERTEX_DISTANCE
FACE_EDGE_DISTANCE
EDGE_POSITION_DISCONT
EDGE_TANGENTIAL_DISCONT
FACE_POSITION_DISCONT
FACE_TANGENTIAL_DISCONT
LOOP_CONSISTENCY
LOOP_ORIENTATION
FACE_ORIENTATION
CV_G1DISCONT
CV_C1DISCONT
SF_G1DISCONT
SF_C1DISCONT
CV_CURVATURE_RADIUS
SF_CURVATURE_RADIUS
EDGE_ACUTE_ANGLE
FACE_ACUTE_ANGLE
LOOP_INTERSECTION
LOOP_SELF_INTERSECTION
INDISTINCT_KNOTS

Definition at line 51 of file testSuite.h.

28.1.3.27 enum Go::tpJointType

Enumerator

JOINT_G1 G^1 continous (angle diff. less than kink tolerance) Continous (angle diff. between kink and bend tolerance)

JOINT_KINK Continous (angle diff. greater than bend tolerance)

JOINT_G0 Discontinous (distance between gap and neighbour tol.)

JOINT_GAP Discontinous (distance greater than neighbour tolerance)

JOINT_DISC No joint, this was the last segment.

JOINT_NONE

Definition at line 46 of file tpJointType.h.

28.1.4 Function Documentation

28.1.4.1 void Go::add_reachables_from (const IntersectionPoint * *pt,* const IntersectionPoint * *last_pt,* std::set< IntersectionPoint * > & *result*)

Definition at line 426 of file IntersectionPoolUtils.h.

28.1.4.2 void Go::addToLinearSystem (int *pt_idx,* const std::vector< Point > & *points_fixed,* const std::vector< Point > & *points_transform,* bool *allow_rescaling,* const std::vector< std::vector< double > > & *id,* const Point & *fine_R,* const Point & *fine_T,* double *fine_s,* const std::vector< std::vector< double > > & *m_rot_R,* double *s2,* double *R2,* bool *zero_R,* const std::vector< std::vector< std::vector< double > > > & *lhs_matrix,* const std::vector< std::vector< double > > & *rhs_matrix*)

Add the contribution from one single point to the linear system coefficients used during fine registration.

28.1.4.3 template<typename T > T Go::area (const Array< T, 2 > * *c*) [inline]

Computes the area of a 2-dimensional triangle. Input is an array of corner points. Same function also exists for 3-dimensional triangles.

Definition at line 91 of file Volumes.h.

28.1.4.4 template<typename T > T Go::area (const Array< T, 3 > * *c*) [inline]

Computes the area of a 2-dimensional triangle. Input is an array of corner points. Same function also exists for 2-dimensional triangles.

Definition at line 98 of file Volumes.h.

28.1.4.5 double Go::areaTriangle (const Vector2D & *corner1,* const Vector2D & *corner2,* const Vector2D & *corner3*)

28.1.4.6 template<typename SquareMatrix , typename T > void Go::backwardSubstitution (const SquareMatrix & *U,* T * *x,* int *num_unknowns*)

Using backward substitution to calculate x on the system Ux = b, where U is an upper triangular matrix with unitary diagonal.

Parameters

U	The upper triangular matrix. The actually used class must support the operation [][] and return 'double'.
x	At function invocation, x should point to an array of T, containing the vector 'b'. On successful completion of the function, this array will contain the solution for x.
num_unknowns	The system size (number of unknowns).

Definition at line 178 of file LUDecomp_implementation.h.

28.1.4.7 template<typename SquareMatrix > void Go::backwardSubstitution (const SquareMatrix & *U,* std::vector< double > * *x,* int *num_unknowns*)

Using backward substitution to calculate x on the system Ux = b, where U is an upper triangular matrix with unitary diagonal.

Parameters

U	The upper triangular matrix. The actually used class must support the operation [][] and return 'double'.
x	At function invocation, x should point to a vector of doubles, containing the vector 'b'. On successful completion of the function, this vector will contain the solution for x.
num_unknowns	The system size (number of unknowns).

Definition at line 192 of file LUDecomp_implementation.h.

28.1.4.8 double Go::benchmarkSfRefinement (LRSplineSurface & *lr_sf,* const std::vector< LRSplineSurface::Refinement2D > & *refs,* bool *single_insertions* = false)

28.1.4.9 template<int Ndim> void Go::bernsteinToSpline (const Array< BernsteinPoly, Ndim > & *curve_bp,* bool *rational,* SplineCurve & *segment*)

Converts an Array of *Ndim* BernsteinPolys to a SplineCurve segment. If the wanted SplineCurve is rational, *Ndim* is equal to *dim+1*, where *dim* is the dimension of space. Furthermore, in *curve_bp*, the weights are included in the space part of the coefficients, i.e. they have the form *wP1*, *wP2*, ..., *wPdim*, *w*.

Parameters

curve_bp	an Array of *Ndim* BernsteinPolys
rational	flag to indicate if the objects are rational
segment	the resulting spline curve segment

Definition at line 184 of file BernsteinUtils.h.

28.1.4.10 template<int Ndim> void Go::bernsteinToSpline (const Array< BernsteinMulti, Ndim > & *surface_bm,* bool *rational,* SplineSurface & *patch*)

Converts an Array of *Ndim* BernsteinMultis to a SplineSurface patch. If the wanted SplineSurface is rational, *Ndim* is equal to *dim+1*, where *dim* is the dimension of space. Furthermore, in *surface_bm*, the weights are included in

the space part of the coefficients, i.e. they have the form *wP1*, *wP2*, ..., *wPdim*, *w*.

Parameters

surface_bm	an Array of *Ndim* BernsteinMultis
rational	flag to indicate if the objects are rational
patch	the resulting spline surface patch

Definition at line 220 of file BernsteinUtils.h.

28.1.4.11 double Go::binom (int *n*, int *i*) [inline]

Computes the binomial coefficient: n! / (i! (n-i)!)

Definition at line 50 of file binom.h.

28.1.4.12 template<class Functor > double Go::brent_minimize (const Functor & *f*, double *a*, double *b*, double *c*, double & *parmin*, const double *rel_tolerance* = std::sqrt(std::numeric_limits<double>::epsilon())) [inline]

Definition at line 78 of file brent_minimize.h.

28.1.4.13 void Go::cart_to_bary (const SplineCurve & *cv*, const BaryCoordSystem2D & *bc*, SplineCurve & *cv_bc*)

Creates a new curve with control points in 3 barycentric coordinates from the 2D input curve.

28.1.4.14 void Go::cart_to_bary (const SplineCurve & *cv*, const BaryCoordSystem3D & *bc*, SplineCurve & *cv_bc*)

Creates a new curve with control points in 4 barycentric coordinates from the 3D input curve.

28.1.4.15 void Go::cart_to_bary (const SplineSurface & *sf*, const BaryCoordSystem3D & *bc*, SplineSurface & *sf_bc*)

Creates a new surface with control points in 4 barycentric coordinates from the 3D input surface.

28.1.4.16 void Go::cart_to_bary (const PointCloud3D & *cloud*, const BaryCoordSystem3D & *bc*, PointCloud4D & *cloud_bc*)

Creates a new point cloud in 4 barycentric coordinates from the 3D input cloud.

28.1.4.17 int Go::checkCoincide (ParamCurveInt * *curve*, double *start*, double *end*, shared_ptr< GeoTol > *tol*, ParamCurveInt * *other*, double *other_start*, double *other_end*)

Check if two curves are coinciding between parameters start and end on this curve, and other_start and other_end on the other curve.

28.1.4.18 int Go::checkCoincide (ParamCurveInt * *curve,* double *start,* double *end,* ParamSurfaceInt * *surf,* Point *su_start,* Point *su_end,* shared_ptr< GeoTol > *tol*)

Check if this curve is coinciding between parameters start and end, with the ParamSurface between parameters su_start and su_end.

28.1.4.19 int Go::checkCoincide (ParamCurveInt * *curve,* double *start,* double *end,* SplineSurfaceInt * *surf,* const Point & *su_start,* const Point & *su_end,* shared_ptr< GeoTol > *tol*)

Check if this curve is coinciding between parameters start and end, with the SplineSurface between parameters su_start and su_end.

28.1.4.20 int Go::checkCoincide (Param1FunctionInt * *func1,* double *start,* double *end,* Param0FunctionInt * *C,* shared_ptr< GeoTol > *tol*)

Check if this function is coinciding between parameters start and end, with the Point.

28.1.4.21 int Go::checkCoincide (ParamSurfaceInt * *surf1,* ParamSurfaceInt * *surf2,* std::vector< double > & *par_loop,* const shared_ptr< GeoTol > *tol*)

by the parameter values of the intersection points representing it

Check if the two given surfaces coincide within the loop given

28.1.4.22 std::vector<float> Go::closestDistances (const std::vector< float > & *pts,* const shared_ptr< boxStructuring::BoundingBoxStructure > & *structure,* const std::vector< std::vector< double > > & *rotationMatrix,* const Point & *translation*)

Calculates the distance for each point in a point cloud to a given surface model, after a SO(3)-rotation and translation is applied on the point cloud. pts - The point cloud, of length 3N where N is the number of points, on format p[0][0], p[0][1], p[0][2], p[1][0] , ... structure - the preprocessed structure used to improve the calculation speed. This also holds the surface model. rotationMatrix - An orthogonal 3x3 matrix describing the rotation to be applied in the point cloud before starting the calculations translation - A translation vector to be added to the point cloud (after the orthogonal rotation) before starting the calculations returns a vector of length pts.size()/3, holding the distances in the same order as the input points

28.1.4.23 std::vector<float> Go::closestPointCalculations (const std::vector< float > & *pts,* const shared_ptr< boxStructuring::BoundingBoxStructure > & *structure,* const std::vector< std::vector< double > > & *rotationMatrix,* const Point & *translation,* int *return_type,* int *start_idx,* int *skip,* int *max_idx,* int *search_extend* = 3, bool *m_core* = true)

Calculates the closest points of a point cloud to a surface model, after a SO(3)-rotation and translation is applied on the point clod. The method uses polygons inside the bounding curves on paramter domains to help determining if parameter pairs are inside the parameter domain. NB! The creation of the polygons is not yet proven to guarantee inside polygons, thus there is a theoretical risk of not getting the closest point in every case. pts - The point cloud, of length 3N where N is the number of points, on format p[0][0], p[0][1], p[0][2], p[1][0] , ... structure - the preprocessed structure used to improve the calculation speed. This also holds the surface model. rotationMatrix - An orthogonal 3x3 matrix describing the rotation to be applied in the point cloud before starting the calculations translation - A translation vector to be added to the point cloud (after the orthogonal rotation) before starting the calculations

return_type - Tell whether the distances (0), signed distances (1) or closest points (2) should be returned start_idx - Used for defining the subset of the points on which the calculation should be performed, see below skip - Used for defining the subset of the points on which the calculation should be performed, see below max_idx - Used for defining the subset of the points on which the calculation should be performed. The subset consists of the points with index idx = skip + N ∗ step such that start_idx <= idx < max_idx. For calculations on the entire point cloud, use start_idx = 0, skip = 1 and max_idx >= number of points search_extend - Used to define the number of segments to be added in each direction when defining the parameter subset on which the closest point functions should be performed. Will be removed. m_core - Whether the calculations should be performed in parallell on multiple cores (only if OPENMP is included) returns A vector of the distances to the closest points for the subset on which the calculations are performed.

28.1.4.24 std::vector<float> Go::closestPointCalculations (const std::vector< float > & *pts*, const shared_ptr< boxStructuring::BoundingBoxStructure > & *structure*, const std::vector< std::vector< double > > & *rotationMatrix*, const Point & *translation*, int *return_type*)

Make closest point calculations on the entire set of a point cloud. Fot return_type == 0, the distances are returned Fot return_type == 1, the signed distances are returned Fot return_type == 2, the points are returned

28.1.4.25 std::vector<float> Go::closestPoints (const std::vector< float > & *pts*, const shared_ptr< boxStructuring::BoundingBoxStructure > & *structure*, const std::vector< std::vector< double > > & *rotationMatrix*, const Point & *translation*)

Calculates the closest point for each point in a point cloud to a given surface model, after a SO(3)-rotation and translation is applied on the point cloud. pts - The point cloud, of length 3N where N is the number of points, on format p[0][0], p[0][1], p[0][2], p[1][0] , ... structure - the preprocessed structure used to improve the calculation speed. This also holds the surface model. rotationMatrix - An orthogonal 3x3 matrix describing the rotation to be applied in the point cloud before starting the calculations translation - A translation vector to be added to the point cloud (after the orthogonal rotation) before starting the calculations returns a vector of same length as pts, holding the cloest point coordinates in the same order as the input points

28.1.4.26 void Go::closestPointSingleCalculation (int *pt_idx*, int *start_idx*, int *skip*, const std::vector< float > & *inPoints*, const std::vector< std::vector< double > > & *rotationMatrix*, const Point & *translation*, const shared_ptr< boxStructuring::BoundingBoxStructure > & *boxStructure*, std::vector< float > & *result*, std::vector< std::vector< int > > & *lastBoxCall*, int *return_type*, int *search_extend*)

28.1.4.27 void Go::closestPtCurves (SplineCurve ∗ *cv1*, SplineCurve ∗ *cv2*, double *epsge*, double & *par1*, double & *par2*, double & *dist*)

Compute the closest point between two curves

Parameters

cv1	pointer to the first curve
cv2	pointer to the second curve
epsge	geometrical tolerance

Return values

par1	parameter of the closest point in the first curve
par2	parameter of the closest point in the second curve

Return values

dist	distance between the curves at the closest point

28.1.4.28 std::vector<float> Go::closestSignedDistances (const std::vector< float > & *pts*, const shared_ptr< boxStructuring::BoundingBoxStructure > & *structure*, const std::vector< std::vector< double > > & *rotationMatrix*, const Point & *translation*)

Calculates the signed distance for each point in a point cloud to a given surface model, after a SO(3)-rotation and translation is applied on the point cloud. For every point the signed distance

- has absolute value equal to the distance between the point and the closest point on the surface model
- is positive if the point is outside the model
- is negative if the point is inside the model pts - The point cloud, of length 3N where N is the number of points, on format p[0][0], p[0][1], p[0][2], p[1][0] , ... structure - the preprocessed structure used to improve the calculation speed. This also holds the surface model. rotationMatrix - An orthogonal 3x3 matrix describing the rotation to be applied in the point cloud before starting the calculations translation - A translation vector to be added to the point cloud (after the orthogonal rotation) before starting the calculations returns a vector of length pts.size()/3, holding the signed distances in the same order as the input points

28.1.4.29 std::vector<float> Go::closestVectorsOld (const std::vector< float > & *inPoints*, const shared_ptr< boxStructuring::BoundingBoxStructure > & *boxStructure*, const std::vector< std::vector< double > > & *rotationMatrix*, const Point & *translation*, int *return_type*, int *start_idx*, int *skip*, int *max_idx*, int *search_extend* = 3)

Calculates the closest points of a point cloud to a surface model, by not using the inside polygons in closestVectors()

28.1.4.30 template<class T1 , class T2 > bool Go::compare_first (const std::pair< T1, T2 > & *x*, const std::pair< T1, T2 > & *y*)

Definition at line 254 of file IntersectionPoolUtils.h.

28.1.4.31 template<typename Iterator > int Go::compare_seq (Iterator *begin_1*, Iterator *end_1*, Iterator *begin_2*, Iterator *end_2*)

Definition at line 161 of file checks.h.

28.1.4.32 template<class PtrToCurveType > double Go::computeLoopGap (const std::vector< PtrToCurveType > & *curves*) [inline]

Computes the largest gap in the loop specified by the vector of curves.

Definition at line 55 of file CurveLoop.h.

28.1.4.33 template<class iterator > shared_ptr<IntersectionCurve> Go::constructIntersectionCurve (const iterator *begin*, const iterator *end*)

Definition at line 601 of file IntersectionCurve.h.

28.1.4.34 void Go::create_bary_coord_system2D (const SplineCurve & *curve*, BaryCoordSystem2D & *bc*)

Creates a barycentric coordinate system from a given spline curve.

28.1.4.35 void Go::create_bary_coord_system3D (const SplineCurve & *curve*, BaryCoordSystem3D & *bc*)

Creates a barycentric coordinate system from a given 3D spline curve.

28.1.4.36 void Go::create_bary_coord_system3D (const SplineSurface & *surface*, BaryCoordSystem3D & *bc*)

Creates a barycentric coordinate system from a given spline surface.

28.1.4.37 void Go::create_bary_coord_system3D (const PointCloud3D & *cloud*, BaryCoordSystem3D & *bc*)

Creates a barycentric coordinate system from a point cloud.

28.1.4.38 void Go::create_bary_coord_system3D (const BoundingBox & *box*, BaryCoordSystem3D & *bc*)

Creates a barycentric coordinate system from a bounding box.

28.1.4.39 double Go::curvatureRadius (const std::vector< Point > & *der*, std::vector< Point > & *unitder*)

Help functions in related to curvature.Given position, first and second derivative of a curve passing through a point, compute the unit tangent, curvature vector and curvature radius of this curve.

28.1.4.40 SISLCurve GO_API* Go::Curve2SISL (const SplineCurve & *cv*, bool *copy* = true)

Convert a SplineCurve to a SISLCurve

Parameters

cv	the SplineCurve to convert
copy	if 'true', then the generated SISLCurve will have its own copy of the coefficient information contained in 'cv'. Otherwise, it will share this information with 'cv' (ie. it will only contain a pointer into the corresponding storage array in 'cv'.

Returns

A newly generated SISLCurve that describes the same curve as 'cv'. The user assumes ownership and is responsible for cleaning up (which means calling the SISL function freeCurve(...) on the pointer when it should be destroyed).

28.1.4.41 SISLCurve GO_API* Go::Curve2SISL_rat (const SplineCurve & *cv*)

Convert a SplineCurve to a rational SISLCurve Arrays are copied

28.1.4.42 void Go::debug_write_line (const Point & *p1,* const Point & *p2,* const char * *fname*)

Definition at line 70 of file IntersectionPoolUtils.h.

28.1.4.43 void Go::debug_write_point (const Point & *p1,* const char * *fname*)

Definition at line 86 of file IntersectionPoolUtils.h.

28.1.4.44 bool Go::degenerate_triangle (const Vector2D & *c1,* const Vector2D & *c2,* const Vector2D & *c3*)

28.1.4.45 template<typename T > T Go::determinantOf (const Array< T, 2 > * *a*) [inline]

Calculates the determinant of a 2 x 2 matrix, represented in memory as a sequence of 2 Array s of length 2. Same function also exists for 3 x 3 matrices.

Definition at line 55 of file Volumes.h.

28.1.4.46 template<typename T > T Go::determinantOf (const Array< T, 3 > * *a*) [inline]

Calculates the determinant of a 3 x 3 matrix, represented in memory as a sequence of 3 Array s of length 3. Same function also exists for 2 x 2 matrices.

Definition at line 65 of file Volumes.h.

28.1.4.47 void Go::determine_seed (double * *par,* int *par_start,* int *par_end,* const Point & *pt,* const IntersectionPoint *const *ip1,* const IntersectionPoint *const *ip2*)

Definition at line 468 of file IntersectionPoolUtils.h.

28.1.4.48 **bool Go::determineCoincidenceRegion (const ParamObjectInt * *obj1,* const ParamObjectInt * *obj2,* shared_ptr< const GeoTol > *tol,* const double * *current_params,* int *dir,* bool *forward,* double & *last_param_val_inside,* double & *first_param_val_outside*)**

28.1.4.49 **bool Go::determineCoincidenceRegion (const ParamFunctionInt * *obj_1d,* double *C,* shared_ptr< const GeoTol > *tol,* const double * *current_params,* int *dir,* bool *forward,* double & *last_param_val_inside,* double & *first_param_val_outside*)**

28.1.4.50 **void Go::estimate_seed_by_interpolation (const IntersectionPoint * *p1,* const IntersectionPoint * *p2,* int *fixed_dir,* double *fixed_value,* double * *result*)**

Definition at line 444 of file IntersectionPoolUtils.h.

28.1.4.51 **void Go::evalDistCurve (const std::vector< Point > & *marching_curve,* const std::vector< Point > & *other_curve,* std::vector< Point > & *dist_curve*)**

28.1.4.52 **int Go::evalProjectedCurve (const std::vector< Point > & *ft,* const std::vector< Point > & *gs,* std::vector< Point > & *res*)**

28.1.4.53 **void Go::extract_chains (const std::vector< shared_ptr< IntersectionPoint > > *pts,* std::vector< std::vector< shared_ptr< IntersectionPoint > > > & *chains*)**

Definition at line 537 of file IntersectionPoolUtils.h.

28.1.4.54 **int Go::extremalPtSurfSurf (ParamSurface * *psurf1,* ParamSurface * *psurf2,* int *constraints[2],* double *constraints_par[2],* double *limit[ ],* double *enext[ ],* double *gpos[ ],* double *angle_tol*)**

Finds one point in each surface where the two normals are parallel to each other and to the difference vector between the two points. The edge info makes it possible to constrain the search to an ISO-curve in one of or both surfaces. Ported from the sisl-function `shsing_ext`.

```
METHOD :  - Start with a guess value (u,v) in domain of surface 1 (S(u,v))
      (a) - Find domain value (r,t) of closest point (to S(u,v) in surface 2 (Q(r,t))
          - If vf1(u,v) = <Su,Normal(Q> and vf2(u,v)= <Sv,Normal(Q> is small enough  stop
                (<,> means scalar prod.)
          - Find du and dv by taylorizing vf1 and vf2.
            This include finding the derivatives of the closest point function (r(u,v),t(u,v))
            with respect to u and v. (called h(u,v) in article, see comments in shsing_s9dir)
          - u:= u+du v:= v+dv, goto (a)


REFERENCES : Solutions of tangential surface and curve intersections.
             R P Markot and R L Magedson
             Computer-Aided Design; vol. 21, no 7 sept. 1989, page 421-429
```

Parameters

psurf1	Pointer to the first surface.
psurf2	Pointer to the second surface
constraints	Constraints flag. • constraints 1. constraints[0] Constraint 1. surface 2. constraints[1] Constraint 2. surface • constraints values 1. -1 : No constraints. 2. 0 : Constant in 1. par direction

---------- or ----------

- `constraints`[0] Constraint 1. surface
- `constraints`[1] Constraint 2. surface
- `-1` No constraints.
- `0` Constant in 1. par direction
- `1` Constant in 2. par direction

Parameters

constraints_par	Constraints parameters. 1. constraints_par[0] Constraints parameter 1. surface. 2. constraints_par[1] Constraints parameter 2. surface.
limit	- Parameter borders of both surfaces. 1. limit[0] - limit[1] Parameter interval. 1. surface 1. direction. 2. limit[2] - limit[3] Parameter interval. 1. surface 2. direction. 3. limit[4] - limit[5] Parameter interval. 2. surface 1. direction. 4. limit[6] - limit[7] Parameter interval. 2. surface 2. direction.
enext	Parameter start value for iteration(4 values).
angle_tol	The angular tolerance for success.
gpos	Parameter values of the found singularity(4 values).

Returns

Status message. =1 Extremum found. = 0 Extremum NOT found.

28.1.4.55 double Go::factorial (int *n*) [inline]

computes n! (n factorial)

Definition at line 82 of file binom.h.

28.1.4.56 int Go::find_point_in (IntersectionPoint * *p*, const std::vector< shared_ptr< IntersectionPoint > > & *vec*)

Definition at line 491 of file IntersectionPoolUtils.h.

28.1.4.57 RegistrationResult Go::fineRegistration (const std::vector< Point > & *points_fixed*, const std::vector< Point > & *points_transform*, bool *allow_rescaling*, RegistrationInput *params*)

Given two sequences of points in 3D, get the rotation, rescaling (optional) and translation that sends the second point set as close as possible to the first (i.e. that minimizes the sum of the square distances). The sequences must be of same length (at least three), and the points will be matched in the order they come in the vectors, i.e. points_transform[i] should, after the transformation, be close to points_fixed[i]. The method works best if the point sets already are close to each other, but not necessarily in optimal position.

28.1.4.58 Direction2D Go::flip (Direction2D *d*) [inline]

Definition at line 430 of file Mesh2D.h.

28.1.4.59 IntersectionPoint* Go::flip_intersecting_objects (IntersectionPoint * *p*)

Definition at line 106 of file IntersectionPoolUtils.h.

28.1.4.60 template<typename SquareMatrix , typename T > void Go::forwardSubstitution (const SquareMatrix & *L*, T * *x*, int *num_unknowns*)

Using forward substitution to calculate x on the system Lx = b, where L is a lower triangular matrix with unitary diagonal.

Parameters

L	The lower triangular matrix. The actually used class must support the operation [][] and return 'double'.
x	At function invocation, x should point to an array of T, containing the vector 'b'. On successful completion of the function, this array will contain the solution for x.
num_unknowns	The system size (number of unknowns).

Definition at line 151 of file LUDecomp_implementation.h.

28.1.4.61 template<typename SquareMatrix > void Go::forwardSubstitution (const SquareMatrix & *L*, std::vector< double > * *x*, int *num_unknowns*)

Using forward substitution to calculate x on the system Lx = b, where L is a lower triangular matrix with unitary diagonal.

Parameters

L	The lower triangular matrix. The actually used class must support the operation [][] and return 'double'.
x	At function invocation, x should point to a vector of doubles, containing the vector 'b'. On successful completion of the function, this vector will contain the solution for x.
num_unknowns	The system size (number of unknowns).

Definition at line 163 of file LUDecomp_implementation.h.

28.1.4.62 template<typename Functor > double Go::gaussian_quadrature (Functor & *f*, double *a*, double *b*)

Routine to calculate the integral of the functor f from a to b using Gaussian quadrature with W=1 and N=10.

Definition at line 110 of file Integration.h.

28.1.4.63 template<typename Functor2D > double Go::gaussian_quadrature2D (Functor2D & *f,* double *ax,* double *bx,* double *ay,* double *by*)

Routine to integrate the two-dimensional functor f over the rectangle defined by ax, bx, ay and by. Uses Gaussian quadrature.

Definition at line 173 of file Integration.h.

28.1.4.64 void Go::GaussQuadInner (const BsplineBasis & *basis,* int *ider,* double *lim1,* double *lim2,* double *** *integral*)

Compute all definite integrals of inner products of derivatives of B-splines up to a given order where the differentiation is of the same order for both B-splines. The interval of integration are equal to the parameter intervals of the surface in the current par. dir.

Parameters

basis	B-spline basis.
ider	Number of derivatives to compute.
lim1	Start of parameter interval.
lim2	End of parameter interval.
integral	Computed integrals.

28.1.4.65 void Go::GaussQuadInner2 (const BsplineBasis & *basis,* int *ider,* double *lim1,* double *lim2,* double ** *integral*)

Compute all definite integrals of inner products of derivatives of B-splines up to a given order where the differentiation is of the same order for both B-splines. The interval of integration are equal to the parameter intervals of the surface in the current par. dir.

Parameters

basis	B-spline basis.
ider	Number of derivatives to compute.
lim1	Start of parameter interval.
lim2	End of parameter interval.
integral	Computed integrals.

28.1.4.66 void Go::GaussQuadInnerFlat (const BsplineBasis & *basis,* int *derivs,* int *start_der,* int *gap,* double *lim1,* double *lim2,* std::vector< double > & *integral*)

Compute all definite integrals of inner products of derivatives of B-splines up to a given order where the gap between the order of differentiation on the first and second B-spline is constant. The interval of integration are equal to the parameter intervals of the surface in the current par. dir.

Parameters

basis	B-spline basis.

Parameters

derivs	Number of derivatives to compute.
gap	Difference between derivation order.
start_der	First derivative to compute.
lim1	Start of parameter interval.
lim2	End of parameter interval.
integral	Computed integrals.

28.1.4.67 void Go::GaussQuadInnerRational (const BsplineBasis & *basis*, int *ider*, double *lim1*, double *lim2*, shared_ptr< SplineCurve > *bspline_curve*, double *** *integral*)

Compute all definite integrals of inner products of derivatives of rational B-splines up to a given order where the differentiation is of the same order for both B-splines. The interval of integration are equal to the parameter intervals of the surface in the current par. dir.

Parameters

basis	B-spline basis.
ider	Number of derivatives to compute.
lim1	Start of parameter interval.
lim2	End of parameter interval.
bspline_curve	1-dim rational 0-function defining weights
coefs	Wieghts for denominator function
integral	Computed integrals.

28.1.4.68 void Go::GaussQuadValues (const BsplineBasis & *basis*, std::vector< double > & *parameters*, std::vector< double > & *par_weights*)

Functions used to compute integrals of inner products of B-splines.

Store parameters and weights used for numerical integration by Gauss quadrature. All parameter values for all Bezier segments are stored in parameters, while the weights within an interval is stored only once in weights. Thus, the lenght of weights gives the number of samples for each Bezier segment.

Parameters

basis	B-spline basis
parameters	Parameter values for all points
par_weights	Weight for each parameter

28.1.4.69 double Go::getCurrentTime ( )

Number of seconds since some (probably system-dependent) epoch.

28.1.4.70 void Go::getHermiteData (const std::vector< Point > & *der1*, const std::vector< Point > & *der2*, double & *parint*, double & *len1*, double & *len2*)

Given position, first and second derivative in both ends of an Hermite segment, compute parameter interval and tangent lengths in order to stay close to a circular segment.

28.1.4.71 SISLSurf GO_API* Go::GoSurf2SISL (const SplineSurface & *sf*, bool *copy* = true)

Convert a SplineSurface to a SISLSurface

Parameters

sf	the SplineSurface to convert
copy	if 'true', then the generated SISLSurf will have its own copy of the coefficient information contained in 'sf'. Otherwise, it will share this information with 'sf' (ie. it will only contain a pointer into the corresponding storage array in 'sf'.

Returns

a newly generated SISLSurf that describes the same surface as 'sf'. The user assumes ownership and is responsible for cleaning up (which means calling the SISL function freeSurf(...) on the pointer when it should be destroyed).

28.1.4.72 void Go::intersect2Dcurves (const ParamCurve * *cv1*, const ParamCurve * *cv2*, double *epsge*, std::vector< std::pair< double, double > > & *intersections*, std::vector< int > & *pretopology*, std::vector< std::pair< std::pair< double, double >, std::pair< double, double > > > & *int_crvs*)

Intersect two 2D spline curves. Collect intersection parameters and pretopology information.

Parameters

cv1	pointer to the first 2D curve
cv2	pointer to the second 2D curve
epsge	geometrical tolerance

Return values

intersections	this vector will contain the parameter pairs of the found intersections (one vector entry per intersection. The two parameters in the pair<> correspond to the parameter value in 'cv1' and 'cv2' for a particular intersection.
pretopology	vector containing a pretopology indicator for each detected intersection point. There is one entry per intersection point.

28.1.4.73 void Go::intersectCurvePoint (const ParamCurve * *crv*, Point *pnt*, double *epsge*, std::vector< double > & *intersections*, std::vector< std::pair< double, double > > & *int_crvs*)

28.1.4.74 void Go::intersectCurves (shared_ptr< ParamCurve > *crv1,* shared_ptr< ParamCurve > *crv2,* double *tol,* std::vector< std::pair< double, double > > & *intersection_points*)

Intersection between two parametric curves.

28.1.4.75 void Go::intersectcurves (SplineCurve * *cv1,* SplineCurve * *cv2,* double *epsge,* std::vector< std::pair< double, double > > & *intersections*)

Intersect two spline curves. Collect intersection parameters.

Parameters

cv1	pointer to the first spline curve
cv2	pointer to the second spline curve
epsge	geometrical tolerance

Return values

intersections	this vector will contain the parameter pairs of the found intersections (one vector entry per intersection. The two parameters in the pair<> correspond to the parameter value in 'cv1' and 'cv2' for a particular intersection.

28.1.4.76 void Go::intersectCurveSurf (const SplineCurve * *cv,* const SplineSurface * *sf,* double *epsge,* std::vector< std::pair< double, Point > > & *int_pts,* std::vector< int > & *pretopology,* std::vector< std::pair< std::pair< double, Point >, std::pair< double, Point > > > & *int_crvs*)

Intersect a spline curve and a spline surface.

28.1.4.77 template<typename ValueType > bool Go::interval_overlap (ValueType *front1,* ValueType *back1,* ValueType *front2,* ValueType *back2*)

Definition at line 151 of file checks.h.

28.1.4.78 int Go::is_inside (const std::vector< Go::Vector3D > & *trim_curve_p,* const std::vector< int > & *contour,* const double *u,* const double *v*)

28.1.4.79 int Go::is_on_contour (const std::vector< Go::Vector3D > & *trim_curve_p,* const std::vector< int > & *contour,* const double *u,* const double *v*)

28.1.4.80 bool Go::is_on_corner (const std::vector< Go::Vector3D > & *trim_curve_p,* const std::vector< int > & *contour,* const double *u,* const double *v*)

28.1.4.81 bool Go::link_is_iso (shared_ptr< IntersectionLink > *link*)

Definition at line 231 of file IntersectionPoolUtils.h.

28.1.4.82 bool Go::link_is_iso_in (shared_ptr< IntersectionLink > *link,* int *dir*)

Definition at line 223 of file IntersectionPoolUtils.h.

28.1.4.83 bool Go::link_is_iso_in_other_than (shared_ptr< IntersectionLink > *link,* int *dir*)

Definition at line 239 of file IntersectionPoolUtils.h.

28.1.4.84 template<typename SquareMatrix > void Go::LUDecomp (SquareMatrix & *mat,* int *num_rows,* int * *perm,* bool & *parity*)

LU decomposition algorithm, based on Crout's algorithm

Parameters

mat	The matrix to be decomposed. The actually used class must support the operation [][] and return 'double'.
num_rows	Number of rows (which is also equal to the number of columns).
perm	Should point to an n-sized array where the permutation is written.
parity	Value upon function completion is 'true' if the number of row interchanges was pair. 'false' otherwise.

Definition at line 52 of file LUDecomp_implementation.h.

28.1.4.85 template<typename SquareMatrix , typename T > void Go::LUsolveSystem (SquareMatrix & *A,* int *num_unknowns,* T * *vec*)

Solve the system Ax = b for x, using LU decomposition of the matrix A. Upon successful completion of the function, the matrix A will be LU decomposed, and the solution x will be computed and stored at the memory area pointed to by the last argument.

Parameters

A	The system matrix A. The actually used class must support the operation [][] and return 'double'.
num_unknowns	Number of unknowns in the equation system.
vec	At function invocation, 'vec' should point to an array of T, containing the vector 'b'. On successful completion of the function, this array will contain the solution for x.

Definition at line 132 of file LUDecomp_implementation.h.

28.1.4.86 shared_ptr<const CurveOnSurface> Go::make_curve_on_surface (shared_ptr< const ParamSurface > *surf,* double *u_start,* double *v_start,* double *u_end,* double *v_end,* double *p_start,* double *p_end*)

Definition at line 508 of file IntersectionPoolUtils.h.

28.1.4.87 void Go::make_implicit_gauss (std::vector< std::vector< double > > & *mat*, std::vector< double > & *b*)

Performs implicitization using Gaussian elimination. This method is suitable when the implicitization is exact. If the implicitization is approximate, make_implicit_svd() is better.

28.1.4.88 void Go::make_implicit_svd (std::vector< std::vector< double > > & *mat*, std::vector< double > & *b*, double & *sigma_min*)

Performs implicitization using SVD. This method is suitable when the implicitization is approximate. If the implicitization is exact, make_implicit_gauss() is better. Based on the function SVD() from the newmat matrix library.

28.1.4.89 void Go::make_matrix (const SplineCurve & *curve*, int *deg*, std::vector< std::vector< double > > & *mat*)

Make the matrix D.

28.1.4.90 void Go::make_matrix (const SplineSurface & *surf*, int *deg*, std::vector< std::vector< double > > & *mat*)

Make the matrix D.

28.1.4.91 void Go::make_matrix (const PointCloud4D & *cloud*, int *deg*, std::vector< std::vector< double > > & *mat*)

Make the matrix D.

28.1.4.92 void Go::make_trimmed_mesh (shared_ptr< ParamSurface > *srf*, std::vector< shared_ptr< ParamCurve > > & *crv_set*, std::vector< Vector3D > & *vert*, std::vector< Vector2D > & *vert_p*, std::vector< int > & *bd*, std::vector< Vector3D > & *norm*, std::vector< int > & *mesh*, std::vector< Vector3D > & *trim_curve*, std::vector< Vector3D > & *trim_curve_p*, const int *dn*, const int *dm*, double *bd_res_ratio*)

28.1.4.93 template<class Functor > void Go::minimise_conjugated_gradient (FunctionMinimizer< Functor > & *dfmin*)

This is the algorithm for minimising a function taking multiple parameters, using the conjugated gradient method. It is used in conjunction with the FunctionMinimizer class. Documentation for both can be found here: FunctionMinimizer

Definition at line 78 of file GeneralFunctionMinimizer_implementation.h.

28.1.4.94 bool Go::no_parent (const shared_ptr< IntersectionPoint > & *p*)

Definition at line 98 of file IntersectionPoolUtils.h.

28.1.4.95 template<typename ValueType > bool Go::nondecreasing (ValueType *a*, ValueType *b*, ValueType *c*)

Definition at line 117 of file checks.h.

28.1.4.96 template<typename ValueType > bool Go::nonincreasing (ValueType *a*, ValueType *b*, ValueType *c*)

Definition at line 125 of file checks.h.

28.1.4.97 void Go::normalNoise (double * *res*, double *mean_err*, int *num_samples*)

Gives a certain number of random samples drawn from the normal distribution.

Parameters

res	a pointer to the array where the resulting samples should be written.
mean_err	the sigma parameter to the normal distribution.
num_samples	the desired number of samples (should also be the size of the array pointed to by *res*.

28.1.4.98 Rational Go::operator∗ (const Rational & *r1,* const Rational *r2*)

Definition at line 157 of file Rational.h.

28.1.4.99 template<class T , int Dim> Array<T, Dim> Go::operator∗ (const Array< double, Dim > & *a,* const T *b*) [inline]

Definition at line 171 of file BaryCoordSystem.h.

28.1.4.100 BernsteinPoly Go::operator∗ (const BernsteinPoly & *p1,* const BernsteinPoly & *p2*) [inline]

Multiplication of two polynomials.

Definition at line 200 of file BernsteinPoly.h.

28.1.4.101 BernsteinPoly Go::operator∗ (const BernsteinPoly & *p,* double *c*) [inline]

Multiplication of a polynomial with a scalar.

Definition at line 210 of file BernsteinPoly.h.

28.1.4.102 BernsteinPoly Go::operator∗ (double *c,* const BernsteinPoly & *p*) [inline]

Multiplication of a scalar with a polynomial.

Definition at line 220 of file BernsteinPoly.h.

28.1.4.103 BernsteinTriangularPoly Go::operator∗ (const BernsteinTriangularPoly & *p1,* const BernsteinTriangularPoly & *p2*) [inline]

Multiplication of two polynomials.

Definition at line 225 of file BernsteinTriangularPoly.h.

28.1.4.104 BernsteinTriangularPoly Go::operator∗ (const BernsteinTriangularPoly & *p,* double *c*) [inline]

Multiplication of a polynomial with a scalar.

Definition at line 235 of file BernsteinTriangularPoly.h.

28.1.4.105 BernsteinTriangularPoly Go::operator∗ (double *c,* const BernsteinTriangularPoly & *p*) [inline]

Multiplication of a scalar with a polynomial.

Definition at line 245 of file BernsteinTriangularPoly.h.

28.1.4.106 BernsteinTetrahedralPoly Go::operator∗ (const BernsteinTetrahedralPoly & *p1,* const BernsteinTetrahedralPoly & *p2*) [inline]

Multiplication of two polynomials.

Definition at line 252 of file BernsteinTetrahedralPoly.h.

28.1.4.107 BernsteinTetrahedralPoly Go::operator∗ (const BernsteinTetrahedralPoly & *p,* double *c*) [inline]

Multiplication of a polynomial with a scalar.

Definition at line 263 of file BernsteinTetrahedralPoly.h.

28.1.4.108 BernsteinTetrahedralPoly Go::operator∗ (double *c,* const BernsteinTetrahedralPoly & *p*) [inline]

Multiplication of a scalar with a polynomial.

Definition at line 273 of file BernsteinTetrahedralPoly.h.

28.1.4.109 BernsteinMulti Go::operator∗ (const BernsteinMulti & *m1,* const BernsteinMulti & *m2*) [inline]

Multiplication of two polynomials.

Definition at line 300 of file BernsteinMulti.h.

28.1.4.110 BernsteinMulti Go::operator∗ (const BernsteinMulti & *m1,* double *c*) [inline]

Multiplication of a polynomial with a scalar.

Definition at line 310 of file BernsteinMulti.h.

28.1.4.111 BernsteinMulti Go::operator∗ (double *c,* const BernsteinMulti & *m1*) [inline]

Multiplication of a scalar with a polynomial.

Definition at line 320 of file BernsteinMulti.h.

28.1.4.112 template<typename T , int Dim> Go::Array<T, Dim> Go::operator*(T *d,* const Go::Array< T, Dim > & *v*) [inline]

The product of a vector and a scalar.

Definition at line 440 of file Array.h.

28.1.4.113 Point Go::operator*(double *d,* const Point & *p*) [inline]

The product of a vector and a scalar.

Definition at line 539 of file Point.h.

28.1.4.114 Rational Go::operator+(const Rational & *r1,* const Rational *r2*)

Definition at line 143 of file Rational.h.

28.1.4.115 BernsteinPoly Go::operator+(const BernsteinPoly & *p1,* const BernsteinPoly & *p2*) [inline]

Addition of two polynomials.

Definition at line 230 of file BernsteinPoly.h.

28.1.4.116 BernsteinPoly Go::operator+(double *c,* const BernsteinPoly & *p*) [inline]

Addition of a scalar with a polynomial.

Definition at line 240 of file BernsteinPoly.h.

28.1.4.117 BernsteinPoly Go::operator+(const BernsteinPoly & *p,* double *c*) [inline]

Addition of a polynomial with a scalar.

Definition at line 250 of file BernsteinPoly.h.

28.1.4.118 BernsteinTriangularPoly Go::operator+(const BernsteinTriangularPoly & *p1,* const BernsteinTriangularPoly & *p2*) [inline]

Addition of two polynomials.

Definition at line 255 of file BernsteinTriangularPoly.h.

28.1.4.119 BernsteinTriangularPoly Go::operator+(double *c,* const BernsteinTriangularPoly & *p*) [inline]

Addition of a scalar with a polynomial.

Definition at line 265 of file BernsteinTriangularPoly.h.

28.1.4.120 BernsteinTriangularPoly Go::operator+ (const BernsteinTriangularPoly & *p,* double *c*) [inline]

Addition of a polynomial with a scalar.

Definition at line 275 of file BernsteinTriangularPoly.h.

28.1.4.121 BernsteinTetrahedralPoly Go::operator+ (const BernsteinTetrahedralPoly & *p1,* const BernsteinTetrahedralPoly & *p2*) [inline]

Addition of two polynomials.

Definition at line 283 of file BernsteinTetrahedralPoly.h.

28.1.4.122 BernsteinTetrahedralPoly Go::operator+ (double *c,* const BernsteinTetrahedralPoly & *p*) [inline]

Addition of a scalar with a polynomial.

Definition at line 294 of file BernsteinTetrahedralPoly.h.

28.1.4.123 BernsteinTetrahedralPoly Go::operator+ (const BernsteinTetrahedralPoly & *p,* double *c*) [inline]

Addition of a polynomial with a scalar.

Definition at line 304 of file BernsteinTetrahedralPoly.h.

28.1.4.124 BernsteinMulti Go::operator+ (const BernsteinMulti & *m1,* const BernsteinMulti & *m2*) [inline]

Addition of two polynomials.

Definition at line 330 of file BernsteinMulti.h.

28.1.4.125 BernsteinMulti Go::operator+ (const BernsteinMulti & *m,* double *c*) [inline]

Addition of a polynomial with a scalar.

Definition at line 340 of file BernsteinMulti.h.

28.1.4.126 BernsteinMulti Go::operator+ (double *c,* const BernsteinMulti & *m*) [inline]

Addition of a scalar with a polynomial.

Definition at line 350 of file BernsteinMulti.h.

28.1.4.127 Rational Go::operator- (const Rational & *r1,* const Rational *r2*)

Definition at line 150 of file Rational.h.

28.1.4.128 BernsteinPoly Go::operator- (const BernsteinPoly & *p1,* const BernsteinPoly & *p2*) [inline]

Subtraction of two polynomials.

Definition at line 260 of file BernsteinPoly.h.

28.1.4.129 BernsteinPoly Go::operator- (double *c,* const BernsteinPoly & *p*) [inline]

Subtraction of a polynomial from a scalar.

Definition at line 270 of file BernsteinPoly.h.

28.1.4.130 BernsteinPoly Go::operator- (const BernsteinPoly & *p,* double *c*) [inline]

Subtraction of a scalar from a polynomial.

Definition at line 280 of file BernsteinPoly.h.

28.1.4.131 BernsteinTriangularPoly Go::operator- (const BernsteinTriangularPoly & *p1,* const BernsteinTriangularPoly & *p2*) [inline]

Subtraction of two polynomials.

Definition at line 285 of file BernsteinTriangularPoly.h.

28.1.4.132 BernsteinTriangularPoly Go::operator- (double *c,* const BernsteinTriangularPoly & *p*) [inline]

Subtraction of a polynomial from a scalar.

Definition at line 295 of file BernsteinTriangularPoly.h.

28.1.4.133 BernsteinTriangularPoly Go::operator- (const BernsteinTriangularPoly & *p,* double *c*) [inline]

Subtraction of a scalar from a polynomial.

Definition at line 305 of file BernsteinTriangularPoly.h.

28.1.4.134 BernsteinTetrahedralPoly Go::operator- (const BernsteinTetrahedralPoly & *p1,* const BernsteinTetrahedralPoly & *p2*) [inline]

Subtraction of two polynomials.

Definition at line 314 of file BernsteinTetrahedralPoly.h.

28.1.4.135 BernsteinTetrahedralPoly Go::operator- (double *c,* const BernsteinTetrahedralPoly & *p*) [inline]

Subtraction of a polynomial from a scalar.

Definition at line 325 of file BernsteinTetrahedralPoly.h.

28.1.4.136 BernsteinTetrahedralPoly Go::operator- (const BernsteinTetrahedralPoly & *p,* double *c*) [inline]

Subtraction of a scalar from a polynomial.

Definition at line 335 of file BernsteinTetrahedralPoly.h.

28.1.4.137 BernsteinMulti Go::operator- (const BernsteinMulti & *m1,* const BernsteinMulti & *m2*) [inline]

Subtraction of two polynomials.

Definition at line 360 of file BernsteinMulti.h.

28.1.4.138 BernsteinMulti Go::operator- (const BernsteinMulti & *m,* double *c*) [inline]

Subtraction of a scalar from a polynomial.

Definition at line 370 of file BernsteinMulti.h.

28.1.4.139 BernsteinMulti Go::operator- (double *c,* const BernsteinMulti & *m*) [inline]

Subtraction of a polynomial from a scalar.

Definition at line 380 of file BernsteinMulti.h.

28.1.4.140 Rational Go::operator/ (const Rational & *r1,* const Rational *r2*)

Definition at line 164 of file Rational.h.

28.1.4.141 BernsteinPoly Go::operator/ (const BernsteinPoly & *p,* double *c*) [inline]

Division of a polynomial with a scalar.

Definition at line 290 of file BernsteinPoly.h.

28.1.4.142 BernsteinTriangularPoly Go::operator/ (const BernsteinTriangularPoly & *p,* double *c*) [inline]

Division of a polynomial with a scalar.

Definition at line 315 of file BernsteinTriangularPoly.h.

28.1.4.143 BernsteinTetrahedralPoly Go::operator/ (const BernsteinTetrahedralPoly & *p*, double *c*) [inline]

Division of a polynomial with a scalar.

Definition at line 345 of file BernsteinTetrahedralPoly.h.

28.1.4.144 BernsteinMulti Go::operator/ (const BernsteinMulti & *m*, double *c*) [inline]

Division of a polynomial with a scalar.

Definition at line 390 of file BernsteinMulti.h.

28.1.4.145 bool Go::operator< (const Point & *p1*, const Point & *p2*) [inline]

Less than operator.

Definition at line 551 of file Point.h.

28.1.4.146 std::ostream& Go::operator<< (std::ostream & *os*, const Go::Streamable & *obj*) [inline]

Definition at line 79 of file Streamable.h.

28.1.4.147 std::ostream& Go::operator<< (std::ostream & *os*, const Rational & *p*)

Definition at line 171 of file Rational.h.

28.1.4.148 std::ostream& Go::operator<< (std::ostream & *os*, const Go::BernsteinTriangularPoly & *p*) [inline]

Write BernsteinTriangularPoly to output stream.

Definition at line 333 of file BernsteinTriangularPoly.h.

28.1.4.149 std::ostream& Go::operator<< (std::ostream & *os*, const Go::BernsteinTetrahedralPoly & *p*) [inline]

Write BernsteinTetrahedralPoly to output stream.

Definition at line 363 of file BernsteinTetrahedralPoly.h.

28.1.4.150 std::ostream& Go::operator<< (std::ostream & *os*, const LRBSpline2D & *b*) [inline]

Definition at line 374 of file LRBSpline2D.h.

28.1.4.151 std::ostream& Go::operator<< (std::ostream & *os,* const GPos & *g*) [inline]

Definition at line 437 of file Mesh2D.h.

28.1.4.152 std::ostream& Go::operator<< (std::ostream & *os,* const Mesh2D & *m*) [inline]

Definition at line 439 of file Mesh2D.h.

28.1.4.153 template<typename T , int Dim> std::ostream& Go::operator<< (std::ostream & *os,* const Go::Array< T, Dim > & *v*) [inline]

Stream insertion for Array.

Definition at line 450 of file Array.h.

28.1.4.154 template<typename T , int Dim> std::ostream& Go::operator<< (std::ostream & *os,* const MatrixXD< T, Dim > & *m*) [inline]

output operator

Specialization of the determinant function for the 1x1 case. Terminates the det() template recursion.

Definition at line 462 of file MatrixXD.h.

28.1.4.155 std::ostream& Go::operator<< (std::ostream & *os,* const Go::Point & *v*) [inline]

Stream insertion for Point.

Definition at line 547 of file Point.h.

28.1.4.156 bool Go::operator== (const Point & *p1,* const Point & *p2*) [inline]

Equal operator.

Definition at line 563 of file Point.h.

28.1.4.157 std::istream& Go::operator>> (std::istream & *is,* Go::Streamable & *obj*) [inline]

Definition at line 72 of file Streamable.h.

28.1.4.158 std::istream& Go::operator>> (std::istream & *is,* Go::BernsteinTriangularPoly & *p*) [inline]

Read BernsteinTriangularPoly from input stream.

Definition at line 325 of file BernsteinTriangularPoly.h.

28.1.4.159 std::istream& Go::operator>> (std::istream & *is,* Go::BernsteinTetrahedralPoly & *p*) [inline]

Read BernsteinTetrahedralPoly from input stream.

Definition at line 354 of file BernsteinTetrahedralPoly.h.

28.1.4.160 std::istream& Go::operator>> (std::istream & *is,* LRBSpline2D & *b*) [inline]

Definition at line 375 of file LRBSpline2D.h.

28.1.4.161 std::istream& Go::operator>> (std::istream & *is,* GPos & *g*) [inline]

Definition at line 438 of file Mesh2D.h.

28.1.4.162 std::istream& Go::operator>> (std::istream & *is,* Mesh2D & *m*) [inline]

Definition at line 440 of file Mesh2D.h.

28.1.4.163 template<typename T , int Dim> std::istream& Go::operator>> (std::istream & *is,* Go::Array< T, Dim > & *v*) [inline]

Stream extraction for Array.

Definition at line 445 of file Array.h.

28.1.4.164 std::istream& Go::operator>> (std::istream & *is,* Go::Point & *v*) [inline]

Stream extraction for Point.

Definition at line 543 of file Point.h.

28.1.4.165 bool Go::point_inside_contour (const double *x0,* const double *y0,* const double *const *vertices,* const std::vector< int > & *contour*)

28.1.4.166 shared_ptr<boxStructuring::BoundingBoxStructure> Go::preProcessClosestVectors (const std::vector< shared_ptr< GeomObject > > & *surfaces,* double *par_len_el*)

Create preprocessing data for the closest vector calculations on a surface. surfaces - a collection of the paramteric surfaces defining the surface model. Only instances of the ParamSurface subclass hierarchy are used par_len_el - a guiding for the side lengths of the segments in geometry space, used to determine the number of segments for elementary surfaces returns the preprocessing structures used as input for the closest point calculations

28.1.4.167 double Go::quadrinomial (int *n,* int *i,* int *j,* int *k*) [inline]

computes the quadrinomial coefficient: n! / (i! j! k! (n-i-j-k)!)

Definition at line 102 of file binom.h.

28.1.4.168 RegistrationResult Go::rawRegistration (const std::vector< Point > & *points_fixed,* const std::vector< Point > & *points_transform,* bool *allow_rescaling,* RegistrationInput *params*)

Given two sequences of points in 3D, get an approximate rotation, rescaling (optional) and translation that sends the second point set close to the first. The point sets should be close (but not necessarily identical) in shape, with matching points coming in the same order (i.e. point number i in the two sequences should be close to each other after performing the transformation on the second point set), but the original coordinate represenation of the two sets might be totally different.

28.1.4.169 template<class T > void Go::Register ( )

This function is used to register a class derived from GeomObject with the global Factory. By using this function rather than Factory::registerClass(), the user does not have to worry about the details of the Creator class. To register a class

```
DerivedClass
```

, it should be sufficient to run:

```
Register<DerivedClass>()
```

.

Definition at line 154 of file Factory.h.

28.1.4.170 RegistrationResult Go::registration (const std::vector< Point > & *points_fixed,* const std::vector< Point > & *points_transform,* bool *allow_rescaling,* RegistrationInput *params*)

Given two sequences of points in 3D, get the rotation, rescaling (optional) and translation that sends the second point set as close as possible to the first (i.e. that minimizes the sum of the square distances). The sequences must be of same length (at least three), and the points will be matched in the order they come in the vectors, i.e. points_transform[i] should, after the transformation, be close to points_fixed[i].

28.1.4.171 bool Go::segment_contour_intersection_for_s2m (const double *x0,* const double *y0,* const double *x1,* const double *y1,* const double *const *vertices,* const std::vector< int > & *contour,* double & *x,* double & *y,* double & *s,* const bool *snap_ends* = false)

28.1.4.172 template<typename T > T Go::signed_area (const Array< T, 3 > * *c,* const Array< T, 3 > & *normal*)

Computes the signed area of a triangle embedded in 3D space. Input is an array of corner points and a normal to determine the sign.

Definition at line 117 of file Volumes.h.

28.1.4.173 template<typename T , int Dim> T Go::simplex_volume (const Array< T, Dim > * *a*) [inline]

Computes the volume of a simplex consisting of (Dim+1) vertices embedded in Euclidean space of dimension (Dim)

Definition at line 77 of file Volumes.h.

28.1.4.174 template<typename Functor > double Go::simpsons_rule (Functor & *f,* double *a,* double *b,* const double *eps* = 1.0e-6, const int *max_iter* = 20)

Routine to calculate the integral of the functor f from a to b using Simpson's rule.

Definition at line 84 of file Integration.h.

28.1.4.175 template<typename Functor2D > double Go::simpsons_rule2D (Functor2D & *f,* double *ax,* double *bx,* double *ay,* double *by,* const double *eps* = 1.0e-6, const int *max_iter* = 20)

Help functor to simpsons_rule2D and gaussian_quadrature2DRoutine to integrate the two-dimensional functor f over the rectangle defined by ax, bx, ay and by. Uses Simpson's rule.

Definition at line 161 of file Integration.h.

28.1.4.176 SplineCurve GO_API* Go::SISLCurve2Go (const SISLCurve *const *cv*)

Convert a SISLCurve to a SplineCurve

Parameters

cv	the SISLcurve to convert

Returns

A newly generated SplineCurve that describes the same curve as 'cv'. The user assumes ownership and is responsible for cleaning up by calling the `delete` function.

28.1.4.177 SplineSurface GO_API* Go::SISLSurf2Go (SISLSurf * *sf*)

Convert a SISLSurface to a SplineSurface

Parameters

sf	the SISLSurf to convert

Returns

A newly generated SplineSurface that describes the same surface as 'sf'. The user assumes ownership and is responsible for cleaning up by calling the `delete` function.

28.1.4.178 std::vector< short_list_short_list > Go::sort_2dpoly_segments (const double *const *vertices,* const std::vector< int > & *contour,* const bool *transposed* = false)

28.1.4.179 void Go::spline_to_bernstein (const SplineCurve & *seg,* int *dd,* BernsteinPoly & *bp*)

Takes a segment (defined as having numCoefs() == order() and an order()-regular knot vector) and returns a bernstein polynomial equal to the curve's coordinate number dd. Allowed values for dd are in [0, dimension()-1] for

nonrational segments, and in [0, dimension()] for rational (NURBS) segments. The polynomials returned in the rational case are the weighted coordinate functions for dd in [0, dimension()-1] and to the weight polynomial for dd equal to dimension().

28.1.4.180 void Go::spline_to_bernstein (const SplineSurface & *pat,* int *dd,* BernsteinMulti & *bm*)

Converts the dd-component of a surface patch on SplineSurface form to a BernsteinMulti

28.1.4.181 void Go::spline_to_bernstein (const SplineCurve & *seg,* std::vector< BernsteinPoly > & *seg_bp*)

Converts a curve segment on SplineCurve form to a vector of BernsteinPolys

28.1.4.182 void Go::spline_to_bernstein (const SplineSurface & *pat,* std::vector< BernsteinMulti > & *pat_bm*)

Converts a surface patch on SplineSurface form to a vector of BernsteinMultis

28.1.4.183 template<int Ndim> void Go::splineToBernstein (const SplineCurve & *segment,* Array< BernsteinPoly, Ndim > & *curve_bp*)

Converts a Bezier curve segment on SplineCurve form to an Array of *Ndim* BernsteinPolys. If the SplineCurve is rational, *Ndim* is equal to *dim+1*, where *dim* is the dimension of space. Furthermore, in *curve_bp*, the weights are included in the space part of the coefficients, i.e. they have the form *wP1*, *wP2*, ..., *wPdim*, *w*.

Parameters

segment	the Bezier curve segment on SplineCurve form
curve_bp	the resulting Array of BernsteinPolys

Definition at line 96 of file BernsteinUtils.h.

28.1.4.184 template<int Ndim> void Go::splineToBernstein (const SplineSurface & *patch,* Array< BernsteinMulti, Ndim > & *surface_bm*)

Converts a Bezier surface patch on SplineSurface form to an Array of *Ndim* BernsteinMultis. If the SplineSurface is rational, *Ndim* is equal to *dim+1*, where *dim* is the dimension of space. Furthermore, in *surface_bm*, the weights are included in the space part of the coefficients, i.e. they have the form *wP1*, *wP2*, ..., *wPdim*, *w*.

Parameters

patch	the Bezier surface on SplineSurface form
surface_bm	the resulting Array of BernsteinMultis

Definition at line 137 of file BernsteinUtils.h.

28.1.4.185 double Go::stepLenFromRadius (double *radius,* double *aepsge*)

Computes the step length along a curve based on radius of curvature at a point on the curve, and an absolute tolerance.

28.1.4.186 int Go::stepLength (const std::vector< Point > & *ft,* const std::vector< Point > & *gs,* double *delta,* bool *forward,* double & *delta_t*)

28.1.4.187 double Go::stepLength (const std::vector< Point > & *ft,* const std::vector< Point > & *gs,* bool *forward,* std::vector< Point > & *cvder,* double *min_step,* double *max_step,* double *aepsge*)

28.1.4.188 template<typename Iterator > bool Go::strictly_decreasing (Iterator *begin,* Iterator *end*)

Definition at line 88 of file checks.h.

28.1.4.189 template<typename Array > bool Go::strictly_decreasing (const Array & *A*)

Definition at line 95 of file checks.h.

28.1.4.190 template<typename ValueType > bool Go::strictly_decreasing (ValueType *a,* ValueType *b,* ValueType *c*)

Definition at line 133 of file checks.h.

28.1.4.191 template<typename Iterator > bool Go::strictly_increasing (Iterator *begin,* Iterator *end*)

Definition at line 58 of file checks.h.

28.1.4.192 template<typename Array > bool Go::strictly_increasing (const Array & *A*)

Definition at line 66 of file checks.h.

28.1.4.193 template<typename ValueType > bool Go::strictly_increasing (ValueType *a,* ValueType *b,* ValueType *c*)

Definition at line 141 of file checks.h.

28.1.4.194 void Go::systemSleep (double *sleep_time*)

Sleep for sleep_time seconds.

28.1.4.195 double Go::tanLenFromRadius (double *radius,* double *angle*)

To create the tangent length for interpolating a circular arc with an almost equi-oscillating Hermit qubic.

28.1.4.196 template<typename Functor > void Go::trapezoidal (Functor & *f,* double *a,* double *b,* double & *s,* int *n*)

This routine computes the n'th stage of refinement of an extended trapezoidal rule. Used as a help routine for 'simpsons_rule', found further down in this file. NB: It only carries out the computation for ONE stage of the procedure, so if you want to use it to integrate a function, you must call it successively for n = 1, n = 2, ...

Definition at line 60 of file Integration.h.

28.1.4.197 double Go::trinomial (int *n,* int *i,* int *j*) [inline]

computes the trinomial coefficient: n! / (i! j! (n-i-j)!)

Definition at line 92 of file binom.h.

28.1.4.198 void Go::uniformNoise (double * *res,* double *lval,* double *uval,* int *num_samples*)

Gives a certain number of random samples drawn from the uniform distribution.

Parameters

res	a pointer to the array where the resulting samples should be written.
lval	lower bound of the range from which the samples can take their values.
uval	upper bound of the range from which the samples can take their values.
num_samples	the desired number of samples (should also be the size of the array pointed to by *res*.

28.1.4.199 template<typename T > T Go::volume (const Array< T, 3 > * *c*) [inline]

Computes the volume of a 3D simplex (embedded i 3D space).

Definition at line 110 of file Volumes.h.

28.1.4.200 template<typename Iterator > bool Go::weakly_decreasing (Iterator *begin,* Iterator *end*)

Definition at line 102 of file checks.h.

28.1.4.201 template<typename Array > bool Go::weakly_decreasing (const Array & *A*)

Definition at line 109 of file checks.h.

28.1.4.202 template<typename Iterator > bool Go::weakly_increasing (Iterator *begin,* Iterator *end*)

Definition at line 74 of file checks.h.

28.1.4.203 template<typename Array > bool Go::weakly_increasing (const Array & *A*)

Definition at line 81 of file checks.h.

28.1.4.204 void Go::writePostscriptMesh (Go::LRSplineSurface & *lr_spline_sf*, std::ostream & *out*, const bool *close* = true)

28.1.5 Variable Documentation

28.1.5.1 const int Go::MAJOR_VERSION = 1

Definition at line 51 of file GeomObject.h.

28.1.5.2 const int Go::MINOR_VERSION = 0

Definition at line 52 of file GeomObject.h.

28.2 Go::AdaptSurface Namespace Reference

Functions

- shared_ptr< SplineSurface > approxInSplineSpace (shared_ptr< ParamSurface > surf, shared_ptr< SplineSurface > surf2, double tol)
- std::vector< shared_ptr< SplineSurface > > expressInSameSplineSpace (shared_ptr< ParamSurface > surf1, shared_ptr< ParamSurface > surf2, double tol)
- bool getCornerCorrespondance (shared_ptr< ParamSurface > surf1, shared_ptr< ParamSurface > surf2, int &idx, bool &turned)
- std::vector< shared_ptr< SplineCurve > > curveApprox (shared_ptr< ParamCurve > cvs[], int nmb_cvs, const BsplineBasis &init_basis, double tol)
- std::vector< shared_ptr< SplineCurve > > curveApprox (shared_ptr< ParamCurve > cvs[], int nmb_cvs, double tol, double degree=3)
- shared_ptr< SplineSurface > adaptSurface (shared_ptr< ParamSurface > surf, shared_ptr< SplineSurface > init_surf, double tol)
- double parameterizePoints (shared_ptr< SplineSurface > init_surf, shared_ptr< ftPointSet > points, std::vector< int > corner)
- double projectPoints (shared_ptr< SplineSurface > surf, shared_ptr< ftPointSet > points)

  Parameterize by projection.
- shared_ptr< SplineSurface > doApprox (shared_ptr< SplineSurface > init_surf, int max_iter, shared_ptr< ftPointSet > points, double tol, double &max_error, double &mean_error)
- void createTriangulation (shared_ptr< ParamSurface > surf, const RectDomain &dom, shared_ptr< ftPointSet > &points, vector< int > &corner, bool consider_joint=true, int nmb=-1)

  Fetch data and create triangulation.
- void getBoundaryData (shared_ptr< ParamSurface > surf, const RectDomain &dom, int nmb_sample, shared_ptr< ftPointSet > points, std::vector< int > &corner)
- void getInnerData (shared_ptr< ParamSurface > surf, const RectDomain &dom, int nmb_sample, shared_ptr< ftPointSet > points, bool consider_joint=true)
- void updatePointTopology (shared_ptr< ParamSurface > surf, ftPointSet &points)

  Compute point set topology.

28.2.1 Detailed Description

This namespace contains functions for generating SplineSurfaces by approximation, etc.

28.2.2 Function Documentation

28.2.2.1 shared_ptr<SplineSurface> Go::AdaptSurface::adaptSurface (shared_ptr< ParamSurface > *surf,* shared_ptr< SplineSurface > *init_surf,* double *tol*)

Adapt the initial surface, init_surf, to the surface, surf, within the given tolerance, tol. The spline space of the initial surface may be refined

28.2.2.2 shared_ptr<SplineSurface> Go::AdaptSurface::approxInSplineSpace (shared_ptr< ParamSurface > *surf,* shared_ptr< SplineSurface > *surf2,* double *tol*)

Approximate surf1 within the tolerance tol in the spline space of surf2 or in a refinement of this spline space.

28.2.2.3 void Go::AdaptSurface::createTriangulation (shared_ptr< ParamSurface > *surf,* const RectDomain & *dom,* shared_ptr< ftPointSet > & *points,* vector< int > & *corner,* bool *consider_joint* = true, int *nmb* = -1)

Fetch data and create triangulation.

28.2.2.4 std::vector<shared_ptr<SplineCurve> > Go::AdaptSurface::curveApprox (shared_ptr< ParamCurve > *cvs[],* int *nmb_cvs,* const BsplineBasis & *init_basis,* double *tol*)

Approximate a number of curves in the same spline space given an initial spline space that may be refined. The approximation tolerance is tol. This function is an interface to the function CurveCreators::curveApprox in gotools-core creators

28.2.2.5 std::vector<shared_ptr<SplineCurve> > Go::AdaptSurface::curveApprox (shared_ptr< ParamCurve > *cvs[],* int *nmb_cvs,* double *tol,* double *degree* = 3)

Approximate a number of curves in the same spline space. The approximation tolerance is tol This function is an interface to the function CurveCreators::curveApprox in gotools-core creators

28.2.2.6 shared_ptr<SplineSurface> Go::AdaptSurface::doApprox (shared_ptr< SplineSurface > *init_surf,* int *max_iter,* shared_ptr< ftPointSet > *points,* double *tol,* double & *max_error,* double & *mean_error*)

Given an initial spline space and a point set, perform maximum max_iter iterations to approximate the points within the tolerance tol. The maximum and average error in the given points are returned.

28.2.2.7 std::vector<shared_ptr<SplineSurface> > Go::AdaptSurface::expressInSameSplineSpace (shared_ptr< ParamSurface > *surf1,* shared_ptr< ParamSurface > *surf2,* double *tol*)

Approximate the surfaces surf1 and surf2 in the same spline space with approximation errors less than tol

28.2.2.8 void Go::AdaptSurface::getBoundaryData (shared_ptr< ParamSurface > *surf,* const RectDomain & *dom,* int *nmb_sample,* shared_ptr< ftPointSet > *points,* std::vector< int > & *corner*)

Fetch data points at the boundaries a the surface surf. To be used in surface approximation

28.2.2.9 bool Go::AdaptSurface::getCornerCorrespondance (shared_ptr< ParamSurface > *surf1,* shared_ptr< ParamSurface > *surf2,* int & *idx,* bool & *turned*)

Compute the correspondance between corners in the surfaces surf1 and surf2. This function is used from approx↩ InSplineSpace and expressInSameSplineSpace

28.2.2.10 void Go::AdaptSurface::getInnerData (shared_ptr< ParamSurface > *surf,* const RectDomain & *dom,* int *nmb_sample,* shared_ptr< ftPointSet > *points,* bool *consider_joint* = true)

Fetch data points in the inner of the surface surf. To be used in surface approximation

28.2.2.11 double Go::AdaptSurface::parameterizePoints (shared_ptr< SplineSurface > *init_surf,* shared_ptr< ftPointSet > *points,* std::vector< int > *corner*)

Parameterize the point set points with respect to the surface init_surf. To be used in surface approximation.

28.2.2.12 double Go::AdaptSurface::projectPoints (shared_ptr< SplineSurface > *surf,* shared_ptr< ftPointSet > *points*)

Parameterize by projection.

28.2.2.13 void Go::AdaptSurface::updatePointTopology (shared_ptr< ParamSurface > *surf,* ftPointSet & *points*)

Compute point set topology.

28.3 Go::BoundedUtils Namespace Reference

Functions

- std::vector< shared_ptr< CurveOnSurface > > intersectWithSurface (CurveOnSurface &curve, Bounded↩ Surface &bounded_surf, double epsge)
- void intersectWithSurfaces (std::vector< shared_ptr< CurveOnSurface > > &curves1, shared_ptr< BoundedSurface > &bd_sf1, std::vector< shared_ptr< CurveOnSurface > > &curves2, shared_ptr< BoundedSurface > &bd_sf2, double epsge)
- std::vector< shared_ptr< CurveOnSurface > > getPlaneIntersections (const shared_ptr< ParamSurface > &surf, Point point, Point normal, double epsge, shared_ptr< BoundedSurface > &bounded_sf)
- std::vector< shared_ptr< CurveOnSurface > > getCylinderIntersections (const shared_ptr< ParamSurface > &surf, Point point, Point axis, double radius, double epsge, shared_ptr< BoundedSurface > &bounded_sf)

- void getSurfaceIntersections (const shared_ptr< ParamSurface > &surf1, const shared_ptr< ParamSurface > &surf2, double epsge, std::vector< shared_ptr< CurveOnSurface > > &int_cv1, shared_ptr< BoundedSurface > &bounded_sf1, std::vector< shared_ptr< CurveOnSurface > > &int_cv2, shared_ptr< BoundedSurface > &bounded_sf2)
- std::vector< shared_ptr< BoundedSurface > > splitWithPlane (const shared_ptr< ParamSurface > &surf, Point point, Point normal, double epsge)
- std::vector< shared_ptr< BoundedSurface > > splitBetweenParams (const shared_ptr< ParamSurface > &surf, Point parval1, Point parval2, double epsge)

  Split a parametric surface betweem specified parameter values.
- std::vector< shared_ptr< BoundedSurface > > splitBetweenParPairs (const shared_ptr< ParamSurface > &surf, std::vector< std::pair< Point, Point > > parvals, double epsge)
- std::vector< shared_ptr< CurveOnSurface > > getTrimCrvsParam (const shared_ptr< ParamSurface > &surf, Point parval1, Point parval2, double epsge, shared_ptr< BoundedSurface > &bounded_sf)

  Get the split curves between specified parameter values.
- std::vector< shared_ptr< CurveOnSurface > > getTrimCrvsPcrv (const shared_ptr< ParamSurface > &surf, shared_ptr< ParamCurve > &pcurve, double epsge, shared_ptr< BoundedSurface > &bounded_sf)
- std::vector< shared_ptr< BoundedSurface > > trimWithPlane (const shared_ptr< ParamSurface > &surf, Point point, Point normal, double epsge)
- std::vector< shared_ptr< BoundedSurface > > trimSurfWithSurf (const shared_ptr< ParamSurface > &sf1, const shared_ptr< ParamSurface > &sf2, double epsge)
- std::vector< std::vector< shared_ptr< BoundedSurface > > > trimSurfsWithSurfs (const std::vector< shared_ptr< ParamSurface > > &sfs1, const std::vector< shared_ptr< ParamSurface > > &sfs2, double epsge)
- BoundedSurface * convertToBoundedSurface (const SplineSurface &surf, double space_epsilon)
- std::vector< std::vector< shared_ptr< CurveOnSurface > > > getBoundaryLoops (const BoundedSurface &sf, std::vector< shared_ptr< CurveOnSurface > > &part_bnd_cvs, double eps, int last_split=-1)
- int checkCurveCoincidence (shared_ptr< CurveOnSurface > cv1, shared_ptr< CurveOnSurface > cv2, double tol, bool same_orient)

  Help function for getBoundaryLoops.
- std::vector< shared_ptr< BoundedSurface > > createTrimmedSurfs (std::vector< std::vector< shared_ptr< CurveOnSurface > > > &loops, shared_ptr< ParamSurface > under_sf, double epsgeo)
- std::vector< shared_ptr< BoundedSurface > > splitWithTrimSegments (shared_ptr< BoundedSurface > surf, std::vector< shared_ptr< CurveOnSurface > > &bnd_cvs, double eps)
- std::vector< shared_ptr< BoundedSurface > > subtractSfPart (shared_ptr< BoundedSurface > surf, std::vector< shared_ptr< CurveOnSurface > > &bnd_cvs, double eps)
- std::vector< shared_ptr< CurveOnSurface > > intersectWithPlane (shared_ptr< ParamSurface > &surf, Point pnt, Point normal, double geom_tol)
- std::vector< shared_ptr< CurveOnSurface > > intersectWithCylinder (shared_ptr< ParamSurface > &surf, Point pnt, Point vec, double radius, double geom_tol)
- void getIntersectionCurve (shared_ptr< ParamSurface > &sf1, shared_ptr< ParamSurface > &sf2, std::vector< shared_ptr< CurveOnSurface > > &int_segments1, std::vector< shared_ptr< CurveOnSurface > > &int_segments2, double epsge)
- void translateBoundedSurf (Point trans_vec, BoundedSurface &bd_sf, double deg_eps)
- void rotateBoundedSurf (Point rot_axis, double alpha, BoundedSurface &bf_sf, double deg_eps)
- void trimSurfaceKinks (const BoundedSurface &sf, double max_normal_angle, std::vector< double > &g1_disc_u, std::vector< double > &g1_disc_v, bool compute_g1_disc=true)
- int checkAndFixLoopOrientation (shared_ptr< BoundedSurface > surf)
- shared_ptr< Go::SplineSurface > makeTrimmedPlane (shared_ptr< Go::Plane > &plane, std::vector< shared_ptr< Go::ParamCurve > > &space_crvs)
- void translatePlaneToCurves (shared_ptr< Go::Plane > &plane, std::vector< shared_ptr< Go::ParamCurve > > &space_crvs)
- void fixInvalidBoundedSurface (shared_ptr< Go::BoundedSurface > &bd_sf, double max_tol_mult=1.0)

  Fix the boundary loops of a surface in case of inconsistencies.
- bool loopIsDegenerate (std::vector< shared_ptr< CurveOnSurface > > &loop, double epsgeo)
- bool createMissingParCvs (Go::BoundedSurface &bd_sf)
- bool createMissingParCvs (std::vector< Go::CurveLoop > &bd_loops)

28.3.1 Detailed Description

Functions related to the trimming of surfaces, etc. Also contains functions for spatial transformations of such surfaces (rotation, translation, etc.)

28.3.2 Function Documentation

28.3.2.1 int Go::BoundedUtils::checkAndFixLoopOrientation (shared_ptr< BoundedSurface > *surf*)

Check loop orientation and fix if necessary. NB! It is assumed that the loops has got the correct sequence

Parameters

surf	the BoundedSurface to check

Returns

`true` if the loop orientation was fixed, `false` otherwise

28.3.2.2 int Go::BoundedUtils::checkCurveCoincidence (shared_ptr< CurveOnSurface > *cv1,* shared_ptr< CurveOnSurface > *cv2,* double *tol,* bool *same_orient*)

Help function for getBoundaryLoops.

28.3.2.3 BoundedSurface* Go::BoundedUtils::convertToBoundedSurface (const SplineSurface & *surf,* double *space_epsilon*)

If surf already is a BoundedSurface, return clone. If SplineSurface, convert. Otherwise, Error. Return surface is created inside function. Convert a SplineSurface to a BoundedSurface. All information is copied, nothing is shared.

Parameters

surf	the SplineSurface to convert
space_epsilon	the tolerance assigned to the newly created BoundedSurface

Returns

(pointer to) a BoundedSurface that represent the same surface as 'surf'. The user assumes ownership of the object.

28.3.2.4 bool Go::BoundedUtils::createMissingParCvs (Go::BoundedSurface & *bd_sf*)

28.3.2.5 bool Go::BoundedUtils::createMissingParCvs (std::vector< Go::CurveLoop > & *bd_loops*)

28.3.2.6 std::vector<shared_ptr<BoundedSurface> > Go::BoundedUtils::createTrimmedSurfs (std::vector< std::vector< shared_ptr< CurveOnSurface > > > & *loops*, shared_ptr< ParamSurface > *under_sf*, double *epsgeo*)

All input loops are expected to be simple, lying on surface. They are sorted based on orientation. No pair of curves with the same orientation may lie inside/outside eachother. It they do the outer/inner (ccw/cw) loop(s) will be erased. Furthermore assuming no pair of loops intersect (may touch tangentially). Define the surfaces that result from trimming a given SplineSurface with a set of boundary loops. Counterclockwise loops define the interior of a parameter domain, while clockwise loops define holes in the domain. Method assumes all parameter curves exist.

Parameters

loops	each entry in the outermost vector represent a vector of curves that together specify a loop in 2D parametrical space of the surface 'under_sf'. These are the trim curves. The curves are expected to be simple, lying on the surface 'under_sf'. No pair of curve loops with the same orientation may lie inside/outside of each other; in that case, the irrelevant loop will be erased. Furthermore, we assume that no pair of loops intersect transversally (they are still allowed to touch tangentially).
under_sf	the underlying SplineSurface that we are going to trim with the curves given in 'loops'.
epsgeo	geometrical tolerance used in computations

Returns

a vector containing BoundedSurface s that each represent a trimmed part of the 'under_sf' surface.

28.3.2.7 void Go::BoundedUtils::fixInvalidBoundedSurface (shared_ptr< Go::BoundedSurface > & *bd_sf*, double *max_tol_mult* = 1.0)

Fix the boundary loops of a surface in case of inconsistencies.

28.3.2.8 std::vector< std::vector< shared_ptr< CurveOnSurface > > > Go::BoundedUtils::getBoundaryLoops (const BoundedSurface & *sf*, std::vector< shared_ptr< CurveOnSurface > > & *part_bnd_cvs*, double *eps*, int *last_split* = -1)

Given input of partial boundary curves, extract parts of boundary making it a boundary loop (or more). Input segments expected to be ordered, going in the same direction. part_bd_cvs should lie on sf (as oppsed to only parts of cvs). This function tries to complete "partial" boundary loops by filling out the missing parts using fragments from the domain boundary of a BoundedSurface.

Parameters

sf	the surface whose domain boundary will be used
part_bnd_cvs	a vector of (shared pointers to) curve segments that represent incomplete loops. Upon function return, this vector will be emptied.

Returns

a vector contained the loops that the function was able to completely close using curve segments from 'part_bnd_cvs' and the domain boundaries of 'sf'.

28.3.2.9 std::vector<shared_ptr<CurveOnSurface> > Go::BoundedUtils::getCylinderIntersections (const shared_ptr< ParamSurface > & *surf*, Point *point*, Point *axis*, double *radius*, double *epsge*, shared_ptr< BoundedSurface > & *bounded_sf*)

Intersect a parametric surface with a cylinder and fetch the intersections curves represented as curve on surface

28.3.2.10 void Go::BoundedUtils::getIntersectionCurve (shared_ptr< ParamSurface > & *sf1*, shared_ptr< ParamSurface > & *sf2*, std::vector< shared_ptr< CurveOnSurface > > & *int_segments1*, std::vector< shared_ptr< CurveOnSurface > > & *int_segments2*, double *epsge*)

Find the intersction curve(s) between two spline surfaces

Parameters

sf1	the first surface to intersect
sf2	the second surface to intersect

Return values

int_segments1	a vector of CurveOnSurface s, representing the intersection curves as lying on 'sf1'.
int_segments2	a vector of CurveOnSurface s, representing the intersection curves as lying on 'sf2'.

Parameters

epsge	geometrical tolerance to be used for intersection computations

28.3.2.11 std::vector<shared_ptr<CurveOnSurface> > Go::BoundedUtils::getPlaneIntersections (const shared_ptr< ParamSurface > & *surf*, Point *point*, Point *normal*, double *epsge*, shared_ptr< BoundedSurface > & *bounded_sf*)

Intersect a parametric surface with a plane and fetch the intersections curves represented as curve on surface

28.3.2.12 void Go::BoundedUtils::getSurfaceIntersections (const shared_ptr< ParamSurface > & *surf1*, const shared_ptr< ParamSurface > & *surf2*, double *epsge*, std::vector< shared_ptr< CurveOnSurface > > & *int_cv1*, shared_ptr< BoundedSurface > & *bounded_sf1*, std::vector< shared_ptr< CurveOnSurface > > & *int_cv2*, shared_ptr< BoundedSurface > & *bounded_sf2*)

Intersect two parametric surfaces and fetch the resulting intersection curves represented as curve on surface

28.3.2.13 std::vector<shared_ptr<CurveOnSurface> > Go::BoundedUtils::getTrimCrvsParam (const shared_ptr< ParamSurface > & *surf*, Point *parval1*, Point *parval2*, double *epsge*, shared_ptr< BoundedSurface > & *bounded_sf*)

Get the split curves between specified parameter values.

28.3.2.14 std::vector<shared_ptr<CurveOnSurface> > Go::BoundedUtils::getTrimCrvsPcrv (const shared_ptr< ParamSurface > & *surf*, shared_ptr< ParamCurve > & *pcurve*, double *epsge*, shared_ptr< BoundedSurface > & *bounded_sf*)

28.3.2.15 std::vector<shared_ptr<CurveOnSurface> > Go::BoundedUtils::intersectWithCylinder (shared_ptr< ParamSurface > & *surf*, Point *pnt*, Point *vec*, double *radius*, double *geom_tol*)

Find the intersection curve(s) between a SplineSurface and a given cylinder. The cylinder is defined by a point on the axis, the axis direction and the radius

Parameters

surf	the SplineSurface to intersect with the cylinder
pnt	a point lying on the cylinder axis
vec	is the direction of the cylinder axis is the cylinder radius
geom_tol	geometrical tolerance to be used for intersection computations

Returns

a vector with (shared pointers to) CurveOnSurface s, which represent the intersection curves found.

28.3.2.16 std::vector<shared_ptr<CurveOnSurface> > Go::BoundedUtils::intersectWithPlane (shared_ptr< ParamSurface > & *surf*, Point *pnt*, Point *normal*, double *geom_tol*)

Find the intersection curve(s) between a SplineSurface and a given plane. The plane is defined by its normal and a point on the plane.

Parameters

surf	the SplineSurface to intersect with the plane
pnt	a point lying on the plane
normal	the normal of the plane
geom_tol	geometrical tolerance to be used for intersection computations

Returns

a vector with (shared pointers to) CurveOnSurface s, which represent the intersection curves found.

28.3.2.17 std::vector<shared_ptr<CurveOnSurface> > Go::BoundedUtils::intersectWithSurface (CurveOnSurface & *curve*, BoundedSurface & *bounded_surf*, double *epsge*)

Extract those parts of a given CurveOnSurface where its parameter curve lies inside the parameter domain of a BoundedSurface.

Parameters

curve	the CurveOnSurface that we want to check
bounded_surf	the BoundedSurface whose parameter domain we will check against
epsge	geometric tolerance used in calculations

Returns

a vector containing those segments of 'curve' that have parameter descriptions inside the parameter domain of the 'bounded_surf'.

28.3.2.18 void Go::BoundedUtils::intersectWithSurfaces (std::vector< shared_ptr< CurveOnSurface > > & *curves1*, shared_ptr< BoundedSurface > & *bd_sf1*, std::vector< shared_ptr< CurveOnSurface > > & *curves2*, shared_ptr< BoundedSurface > & *bd_sf2*, double *epsge*)

We have two set of CurveOnSurface s, 'curves1' and 'curves2', and two BoundedSurface s, 'bd_sf1' and 'bd_sf2'. We extract those segments of curves in 'curves1' and 'curves2' that have parameter curves in the parameter domains of respective 'bd_sf1' and 'bd_sf2'. Then we compare the resulting segments from the two sets against each others, and keep those that overlap spatially. Segments are split in two if necessary in order to make start and end points from one set coincide with those from the other set. 'curves1' and 'curves2' are then cleared and filled with the resulting curve segments.

Parameters

curves1	see above, we suppose that the curves are NOT self-intersecting
bd_sf1	see above, we suppose that the underlying surface is the same as the one refered to by the curves in 'curves1'.
curves2	see above, we suppose that the curves are NOT self-intersecting
bd_sf2	see above, we suppose that the underlying surface is the same as the one refered to by the curves in 'curves2'.
epsge	geometric epsilon used in closest point calculations, checks for coincidence, etc.

28.3.2.19 bool Go::BoundedUtils::loopIsDegenerate (std::vector< shared_ptr< CurveOnSurface > > & *loop*, double *epsgeo*)

Check if the distance between two curves in the loop is less than the tolerance epsgeo. Common endpoints between curves are not counted.

28.3.2.20 shared_ptr<Go::SplineSurface> Go::BoundedUtils::makeTrimmedPlane (shared_ptr< Go::Plane > & *plane*, std::vector< shared_ptr< Go::ParamCurve > > & *space_crvs*)

Create spline surface description of plane. The plane should be bounded according to the space_crvs (which should lie in the plane).

Parameters

plane	
space_crvs	Curves lying in the plane,.

Returns

Spline surface description of a bounded plane.

28.3.2.21 void Go::BoundedUtils::rotateBoundedSurf (Point *rot_axis,* double *alpha,* BoundedSurface & *bf_sf,* double *deg_eps*)

Parameters

rot_axis	a vector specifying the axis of rotation
alpha	the angle of rotation (in radians)
bf_sf	the surface to rotate
deg_eps	an epsilon value used when determining degenerate boundary loops

28.3.2.22 std::vector<shared_ptr<BoundedSurface> > Go::BoundedUtils::splitBetweenParams (const shared_ptr< ParamSurface > & *surf,* Point *parval1,* Point *parval2,* double *epsge*)

Split a parametric surface betweem specified parameter values.

28.3.2.23 std::vector<shared_ptr<BoundedSurface> > Go::BoundedUtils::splitBetweenParPairs (const shared_ptr< ParamSurface > & *surf,* std::vector< std::pair< Point, Point > > *parvals,* double *epsge*)

28.3.2.24 std::vector<shared_ptr<BoundedSurface> > Go::BoundedUtils::splitWithPlane (const shared_ptr< ParamSurface > & *surf,* Point *point,* Point *normal,* double *epsge*)

Split a parametric surface by intersecting it with a plane and split along intersection curves

28.3.2.25 std::vector<shared_ptr<BoundedSurface> > Go::BoundedUtils::splitWithTrimSegments (shared_ptr< BoundedSurface > *surf,* std::vector< shared_ptr< CurveOnSurface > > & *bnd_cvs,* double *eps*)

Split a given bounded surface according to given trimming curves in this surface Notice that the function expects the given curves to actually split the surface

28.3.2.26 std::vector<shared_ptr<BoundedSurface> > Go::BoundedUtils::subtractSfPart (shared_ptr< BoundedSurface > *surf,* std::vector< shared_ptr< CurveOnSurface > > & *bnd_cvs,* double *eps*)

Subtract the part of a trimmed surface corresponding to a given boundary loop from the surface and return the remaining pieces

28.3.2.27 void Go::BoundedUtils::translateBoundedSurf (Point *trans_vec,* BoundedSurface & *bd_sf,* double *deg_eps*)

Translate a given BoundedSurface

Parameters

trans_vec	the vector specifying the translation to apply to the surface
bd_sf	the surface to translate
deg_eps	an epsilon value used when determining degenerate boundary loops

28.3.2.28 void Go::BoundedUtils::translatePlaneToCurves (shared_ptr< Go::Plane > & *plane,* std::vector< shared_ptr< Go::ParamCurve > > & *space_crvs*)

Change the position of a plane to adapt it to curves supposed to lie in this plane. Geometry fix related to external models

28.3.2.29 void Go::BoundedUtils::trimSurfaceKinks (const BoundedSurface & *sf,* double *max_normal_angle,* std::vector< double > & *g1_disc_u,* std::vector< double > & *g1_disc_v,* bool *compute_g1_disc* = true)

Surface assumed to be continuous. Return parameter values failing to achieve G1-continuity.

28.3.2.30 std::vector<std::vector<shared_ptr<BoundedSurface> > > Go::BoundedUtils::trimSurfsWithSurfs (const std::vector< shared_ptr< ParamSurface > > & *sfs1,* const std::vector< shared_ptr< ParamSurface > > & *sfs2,* double *epsge*)

28.3.2.31 std::vector<shared_ptr<BoundedSurface> > Go::BoundedUtils::trimSurfWithSurf (const shared_ptr< ParamSurface > & *sf1,* const shared_ptr< ParamSurface > & *sf2,* double *epsge*)

must be BoundedSurfaces or SplineSurface underlying surfaces must be of type SplineSurface If the argument surfaces intersect, and if the intersection curves result in new boundary loops being defined, then the new surface parts defined within these domains will be returned. Otherwise, the return vector will be empty.

Parameters

sf1	the first surface to participate in the intersection
sf2	the second surface to participate in the intersection
epsge	geometrical tolerance to be used in computations

Returns

a vector with the surfaces representing the parts of the original surfaces enclosed by new parametrical loops arising when combining existing loops with the curves defined by the intersection.

28.3.2.32 std::vector<shared_ptr<BoundedSurface> > Go::BoundedUtils::trimWithPlane (const shared_ptr< ParamSurface > & *surf,* Point *point,* Point *normal,* double *epsge*)

We intersect a parametric surface with a plane, and return the surface(s) consisting only of the part(s) of the surface that were located on the positive side of the intersection. If there was no intersection, an empty stl-vector is returned. The plane is defined by its normal and a point located on it.

Parameters

surf	the parametric surface. It must be either a BoundedSurface or a SplineSurface.
point	a point on the plane to intersect against
normal	normal of the plane to intersect against
epsge	geometric tolerance

Returns

the surface(s) consisting of the part(s) of 'surf' that were located on the positive side of the intersection.

28.4 Go::boxStructuring Namespace Reference

Classes

- class BoundingBoxStructure
- class SubSurfaceBoundingBox
- class SurfaceData

28.4.1 Detailed Description

Namespace for preprocessing structures on a surface model used to speed up closest point calculations. It consists of three classes:

- BoundingBoxStructure, the overall class where one instance holds the enitre preprocess structure data
- SurfaceData, one instance for each surface in the surface model
- SubSurfaceBoundingBox, holding preprocessed data for one specific rectangular segment in a tensor mesh sub structure of the parameter space on a surface (the underlying surface in case of a BoundedSurface)

28.5 Go::ClosestPoint Namespace Reference

Namespace for computing closest points.

Functions

- void closestPtCurves2D (ParamCurve *cv1, ParamCurve *cv2, double aepsge, double tmin1, double tmax1, double tmin2, double tmax2, double seed1, double seed2, int method, bool quick, double &par1, double &par2, double &dist, Point &ptc1, Point &ptc2, int &istat)
- void closestPtCurves (const ParamCurve *cv1, const ParamCurve *cv2, double &par1, double &par2, double &dist, Point &ptc1, Point &ptc2)
- void closestPtCurves (const ParamCurve *cv1, const ParamCurve *cv2, double tmin1, double tmax1, double tmin2, double tmax2, double seed1, double seed2, double &par1, double &par2, double &dist, Point &ptc1, Point &ptc2)
- void closestPtCurveSurf (ParamCurve *pcurve, ParamSurface *psurf, double aepsge, double astart1, double aend1, RectDomain *domain, double anext1, double enext2[], double &cpos1, double gpos2[], double &dist, Point &pt_cv, Point &pt_su, bool second_order=false)
- void closestPtCurveSurf (ParamCurve *pcurve, ParamSurface *psurf, double aepsge, double astart1, double estart2[], double aend1, double eend2[], double anext1, double enext2[], double &cpos1, double gpos2[], double &dist, Point &pt_cv, Point &pt_su, int &istat, bool second_order=false)
- void closestPtSurfSurfPlane (const std::vector< Point > &epoint, const std::vector< Point > &epnt1, const std::vector< Point > &epnt2, const Point &epar1, const Point &epar2, const ParamSurface *psurf1, const ParamSurface *psurf2, double aepsge, std::vector< Point > &gpnt1, std::vector< Point > &gpnt2, Point &gpar1, Point &gpar2, int &jstat, AlgorithmChoice algo=FUNCTIONAL)
- void closestPtSurfSurfPlaneGeometrical (const std::vector< Point > &epoint, const std::vector< Point > &epnt1, const std::vector< Point > &epnt2, const Point &epar1, const Point &epar2, const ParamSurface *psurf1, const ParamSurface *psurf2, double aepsge, std::vector< Point > &gpnt1, std::vector< Point > &gpnt2, Point &gpar1, Point &gpar2, int &jstat)
- void closestPtSurfSurfPlaneFunctional (const std::vector< Point > &epoint, const std::vector< Point > &epnt1, const std::vector< Point > &epnt2, const Point &epar1, const Point &epar2, const ParamSurface *psurf1, const ParamSurface *psurf2, double aepsge, std::vector< Point > &gpnt1, std::vector< Point > &gpnt2, Point &gpar1, Point &gpar2, int &jstat)

28.5.1 Detailed Description

Namespace for computing closest points.

28.5.2 Function Documentation

28.5.2.1 void Go::ClosestPoint::closestPtCurves (const ParamCurve * *cv1*, const ParamCurve * *cv2*, double & *par1*, double & *par2*, double & *dist*, Point & *ptc1*, Point & *ptc2*)

Compute a closest point or an intersection point between two curves. Ported from the sisl-functions s1770, s1770↩ _s9corr, s1770_s9dir

Parameters

cv1	Curve number one.
cv2	Curve number two.

Return values

par1	Parameter value of the first curve's point.
par2	Parameter value of the second curve's point.
dist	Distance between the points.
ptc1	Point on curve number one.
ptc2	Point on curve number two.

28.5.2.2 void Go::ClosestPoint::closestPtCurves (const ParamCurve * *cv1*, const ParamCurve * *cv2*, double *tmin1*, double *tmax1*, double *tmin2*, double *tmax2*, double *seed1*, double *seed2*, double & *par1*, double & *par2*, double & *dist*, Point & *ptc1*, Point & *ptc2*)

Newton iteration on the distance function between two curves to find a closest point or an intersection point. The solution is restricted to the intervals [tmin1,tmax1] and [tmin2,tmax2] in the first and second curves's parameter domain. Ported from the sisl function s1770.

Parameters

cv1	Curve number one.
cv2	Curve number two.
tmin1	Min. parameter value. First curve
tmax1	Max. parameter value. First curve
tmin2	Min. parameter value. Second curve
tmax2	Max. parameter value. Second curve
seed1	Start point for iteration along curve number one.
seed2	Start point for iteration along curve number two.

Return values

par1	Parameter value of the first curve's point.

Return values

par2	Parameter value of the second curve's point.
dist	Distance between the points.
ptc1	Point on curve number one.
ptc2	Point on curve number two.

28.5.2.3 void Go::ClosestPoint::closestPtCurves2D (ParamCurve * *cv1*, ParamCurve * *cv2*, double *aepsge*, double *tmin1*, double *tmax1*, double *tmin2*, double *tmax2*, double *seed1*, double *seed2*, int *method*, bool *quick*, double & *par1*, double & *par2*, double & *dist*, Point & *ptc1*, Point & *ptc2*, int & *istat*)

Newton iteration on the distance function between two curves in 2D to find a closest point or an intersection point. The solution is restricted to the intervals [tmin1,tmax1] and [tmin2,tmax2] in the first and second curves's parameter domain. Ported from the sisl-function `s1770_2D`.

Parameters

cv1	Curve number one.
cv2	Curve number two.
aepsge	Geometry resolution.
tmin1	Min. parameter value. First curve
tmax1	Max. parameter value. First curve
tmin2	Min. parameter value. Second curve
tmax2	Max. parameter value. Second curve
seed1	Start point for iteration along curve number one.
seed2	Start point for iteration along curve number two.
method	1 or 2. Using the the method in s1770_2D, starting with order one or two. method=3 uses the method from s1770 (order one).
quick	Reduce requirement on exactness.

Return values

par1	Parameter value of the first curve's point.
par2	Parameter value of the second curve's point.
dist	Distance in space between the points.
ptc1	Point on curve number one.
ptc2	Point on curve number two.
istat	=1 Intersection. =2 Minimum value. =3 Nothing found.

28.5.2.4 void Go::ClosestPoint::closestPtCurveSurf (ParamCurve * *pcurve*, ParamSurface * *psurf*, double *aepsge*, double *astart1*, double *aend1*, RectDomain * *domain*, double *anext1*, double *enext2[]*, double & *cpos1*, double *gpos2[]*, double & *dist*, Point & *pt_cv*, Point & *pt_su*, bool *second_order* = false)

Newton iteration on the distance function between a curve and a surface to find a closest point or an intersection point. The solution is restricted to the interval [astart1,aend1] in the curves's parameter domain and [estart2[],eend2[]] in the surface's parameter domain. Ported from the sisl-function `s1772`.

Parameters

pcurve	Pointer to the curve in the intersection.
psurf	Pointer to the surface in the intersection.
aepsge	Geometry resolution.
astart1	Start parameter value of the curve.
aend1	End parameter value of the curve.
domain	the parametric domain of interest of the surface
anext1	Start point for iteration along curve number one.
enext2[]	Start parameter values of the iteration on the surface.
second_order	if 'true' the function will attempt a second-order method directly.

Return values

cpos1	Parameter value of the curve in the intersection point.
gpos2[]	Parameter values of the surface in the intersection point.
dist	Distance between the points.
pt_cv	The point on the curve.
pt_su	The point on the surface.

28.5.2.5 void Go::ClosestPoint::closestPtCurveSurf (ParamCurve * *pcurve*, ParamSurface * *psurf*, double *aepsge*, double *astart1*, double *estart2[]*, double *aend1*, double *eend2[]*, double *anext1*, double *enext2[]*, double & *cpos1*, double *gpos2[]*, double & *dist*, Point & *pt_cv*, Point & *pt_su*, int & *istat*, bool *second_order* = false)

Newton iteration on the distance function between a curve and a surface to find a closest point or an intersection point. The solution is restricted to the interval [astart1,aend1] in the curves's parameter domain and [estart2[],eend2[]] in the surface's parameter domain. Ported from the sisl-function `s1772`.

Parameters

pcurve	Pointer to the curve in the intersection.
psurf	Pointer to the surface in the intersection.
aepsge	Geometry resolution.
astart1	Start parameter value of the curve.
estart2[]	Start parameter values of surface.
aend1	End parameter value of the curve.
eend2[]	End parameter values of the surface.
anext1	Start point for iteration along curve number one.
enext2[]	Start parameter values of the iteration on the surface.
second_order	if 'true' the function will attempt a second-order method directly.

Return values

cpos1	Parameter value of the curve in the intersection point.
gpos2[]	Parameter values of the surface in the intersection point.
dist	Distance between the points.
pt_cv	The point on the curve.
pt_su	The point on the surface.

Return values

istat	=1 Intersection. =2 Minimum value. =3 Nothing found.

28.5.2.6 void Go::ClosestPoint::closestPtSurfSurfPlane (const std::vector< Point > & *epoint*, const std::vector< Point > & *epnt1*, const std::vector< Point > & *epnt2*, const Point & *epar1*, const Point & *epar2*, const ParamSurface * *psurf1*, const ParamSurface * *psurf2*, double *aepsge*, std::vector< Point > & *gpnt1*, std::vector< Point > & *gpnt2*, Point & *gpar1*, Point & *gpar2*, int & *jstat*, AlgorithmChoice *algo* = FUNCTIONAL)

Newton iteration on the distance function between two surfaces and a plane to find a closest point or an intersection point. Ported from the sisl-function `s9iterate`.

Parameters

epoint	- Vector of Points containing parts of plane description. epoint[0] contains a point in the plane. epoint[1] contains the normal vector to the plane.
epnt1	0-2 Derivatives + normal of start point for iteration in first surface.
epnt2	0-2 Derivatives + normal of start point for iteration in second surface.
epar1	Parameter pair of start point in first surface.
epar2	Parameter pair of start point in second surface.
psurf1	Pointer to the first surface.
psurf2	Pointer to the second surface.
aepsge	Absolute tolerance.
gpnt1	0-2 Derivatives + normal of result of iteration in first surface.
gpnt2	0-2 Derivatives + normal of result of iteration in second surface.
gpar1	Parameter pair of result of iteration in first surface.
gpar2	Parameter pair of result of iteration in second surface.
jstat	=1 Intersection. =2 Minimum value. =3 Nothing found.
algo	choose whether the implementation of the algorithm should be based on general function minimization, or a geometric approach

28.5.2.7 void Go::ClosestPoint::closestPtSurfSurfPlaneFunctional (const std::vector< Point > & *epoint*, const std::vector< Point > & *epnt1*, const std::vector< Point > & *epnt2*, const Point & *epar1*, const Point & *epar2*, const ParamSurface * *psurf1*, const ParamSurface * *psurf2*, double *aepsge*, std::vector< Point > & *gpnt1*, std::vector< Point > & *gpnt2*, Point & *gpar1*, Point & *gpar2*, int & *jstat*)

This is the functional-based implementation of closestPtSurfSurfPlane. It is called from the function above (closestPtSurfSurfPlane()) if it is called with algo = FUNCTIONAL. The user can also choose to call this function directly. The parameter description is the same as in closestPtSurfSurfPlane().

28.5.2.8 void Go::ClosestPoint::closestPtSurfSurfPlaneGeometrical (const std::vector< Point > & *epoint*, const std::vector< Point > & *epnt1*, const std::vector< Point > & *epnt2*, const Point & *epar1*, const Point & *epar2*, const ParamSurface * *psurf1*, const ParamSurface * *psurf2*, double *aepsge*, std::vector< Point > & *gpnt1*, std::vector< Point > & *gpnt2*, Point & *gpar1*, Point & *gpar2*, int & *jstat*)

This is the geometrically-based implementation of closestPtSurfSurfPlane. It is called from the function above (closestPtSurfSurfPlane()) if it is called with algo = GEOMETRICAL. The user can also choose to call this function directly. The parameter description is the same as in closestPtSurfSurfPlane().

28.6 Go::cmUtils Namespace Reference

Various utility functions for the compositemodel module.

Functions

- double estimatedCurveLength (ftEdgeBase *edge, int nmb_samples=4)

  Estimate the curve length corresponding to an edge.
- RectDomain geometricParamDomain (ParamSurface *sf)

  Domain of surface is rescaled according to surface lengths in geometry space.
- bool abovePlane (Go::Point pt, Go::Point plane_pt, Go::Point normal)

  Return true if pt lies above plane as defined.
- void extendWithDegBd (std::vector< int > &corner, std::vector< shared_ptr< Go::ParamCurve > > &bd_curves, std::vector< shared_ptr< Go::ParamCurve > > &cross_curves, int idxmin)
- void updateWithNewCorners (const std::vector< Go::ftEdgeBase * > &outer_loop, std::vector< int > &corners, const std::vector< Go::Point > &add_corner_pts, double gap)

  Assuming input corner pts lie inside gap of outer_loop, and not in the middle of a segment.
- bool insideBdTrain (const Go::Vector2D &sample_pt, const std::vector< Go::Vector2D > &bd_train)

  bd_train must be a simple loop, direction may be either.
- void reparametrizeBdCvs (const std::vector< shared_ptr< Go::SplineCurve > > &bd_cvs, double appr_tol, std::vector< shared_ptr< Go::SplineCurve > > &new_bd_cvs)
- void reparametrizeBdCvs2 (const std::vector< shared_ptr< Go::SplineCurve > > &bd_cvs, double appr_tol, std::vector< shared_ptr< Go::SplineCurve > > &new_bd_cvs)
- void splitEdgesInCorners (std::vector< shared_ptr< Go::ftEdgeBase > > &edges, const std::vector< Go::Point > &corner_pts, double gap)

  interior of an edge. To be called prior to connection with twin.
- void cwOrientation (std::vector< Go::ftEdgeBase * > &meeting_edges, std::vector< bool > &start, double angle_tol=1e-05)
- void cwOrientation2 (std::vector< Go::ftEdgeBase * > &meeting_edges, std::vector< bool > &start)
- std::vector< std::pair< shared_ptr< Go::ParamCurve >, Go::ftFaceBase * > > getG1FaceCurves (Go::ftCurve &bd_curve)

  Divide the input curve into G1 segments lying on one surface only (input expected to lie on bd).
- double ccwAngle (Go::Point first_leg, Go::Point second_leg, Go::Point *normal=NULL)
- std::vector< int > removeInnerCorners (const std::vector< Go::ftEdgeBase * > &outer_loop, std::vector< int > &corners)

28.6.1 Detailed Description

Various utility functions for the compositemodel module.

28.6.2 Function Documentation

28.6.2.1 bool Go::cmUtils::abovePlane (Go::Point *pt*, Go::Point *plane_pt*, Go::Point *normal*)

Return true if pt lies above plane as defined.

28.6.2.2 double Go::cmUtils::ccwAngle (Go::Point *first_leg*, Go::Point *second_leg*, Go::Point * *normal* = NULL)

Return angle from first_leg to second_leg, in ccw direction. Dimension is 2 or 3. For dimension 3 the input normal is used to define plane. Returned angle lies in [0, 2*pi). normal assumed to exist if dim of legs equals 3, need not be normal to legs. Only defines ccw.

28.6.2.3 void Go::cmUtils::cwOrientation (std::vector< Go::ftEdgeBase * > & *meeting_edges*, std::vector< bool > & *start*, double *angle_tol* = 1e-05)

Given input of edges, meeting in a common vertex (as given by start), make sure that the edges after the first element is sorted based on angle, in cw direction. In addition we also make sure that edges with common sf_id are given in sequence. Note: Expecting that all sfs have consistent orientation (which they'll have if topology has been built)!!!

28.6.2.4 void Go::cmUtils::cwOrientation2 (std::vector< Go::ftEdgeBase * > & *meeting_edges*, std::vector< bool > & *start*)

Method does not compute tangents and angles but is based on next_, prev_ & twin_. We're assuming that at most two input edges are without twin.

28.6.2.5 double Go::cmUtils::estimatedCurveLength (ftEdgeBase * *edge*, int *nmb_samples* = 4)

Estimate the curve length corresponding to an edge.

28.6.2.6 void Go::cmUtils::extendWithDegBd (std::vector< int > & *corner*, std::vector< shared_ptr< Go::ParamCurve > > & *bd_curves*, std::vector< shared_ptr< Go::ParamCurve > > & *cross_curves*, int *idxmin*)

Extend the set of boundary curves with degenerate curves if a degenerate surface is to be created. Handles 2 or 3 bnd_curves.

28.6.2.7 RectDomain Go::cmUtils::geometricParamDomain (ParamSurface * *sf*)

Domain of surface is rescaled according to surface lengths in geometry space.

28.6.2.8 std::vector<std::pair<shared_ptr<Go::ParamCurve>, Go::ftFaceBase*> > Go::cmUtils::getG1FaceCurves (Go::ftCurve & *bd_curve*)

Divide the input curve into G1 segments lying on one surface only (input expected to lie on bd).

28.6.2.9 bool Go::cmUtils::insideBdTrain (const Go::Vector2D & *sample_pt*, const std::vector< Go::Vector2D > & *bd_train*)

bd_train must be a simple loop, direction may be either.

We decide whether sample_pt lies inside polygonial domain defined by bd_train.

28.6.2.10 std::vector<int> Go::cmUtils::removeInnerCorners (const std::vector< Go::ftEdgeBase * > & *outer_loop*, std::vector< int > & *corners*)

28.6.2.11 void Go::cmUtils::reparametrizeBdCvs (const std::vector< shared_ptr< Go::SplineCurve > > & *bd_cvs*, double *appr_tol*, std::vector< shared_ptr< Go::SplineCurve > > & *new_bd_cvs*)

28.6.2.12 void Go::cmUtils::reparametrizeBdCvs2 (const std::vector< shared_ptr< Go::SplineCurve > > & *bd_cvs*, double *appr_tol*, std::vector< shared_ptr< Go::SplineCurve > > & *new_bd_cvs*)

28.6.2.13 void Go::cmUtils::splitEdgesInCorners (std::vector< shared_ptr< Go::ftEdgeBase > > & *edges*, const std::vector< Go::Point > & *corner_pts*, double *gap*)

interior of an edge. To be called prior to connection with twin.

We make sure that all corner_pts (within gap from an edge) do not lie in the

28.6.2.14 void Go::cmUtils::updateWithNewCorners (const std::vector< Go::ftEdgeBase * > & *outer_loop*, std::vector< int > & *corners*, const std::vector< Go::Point > & *add_corner_pts*, double *gap*)

Assuming input corner pts lie inside gap of outer_loop, and not in the middle of a segment.

28.7 Go::CoonsPatchGen Namespace Reference

Classes

- class UnKnownError

  Exception class.

Functions

- SplineSurface * createCoonsPatch (const CurveLoop &boundary)
- SplineSurface * createCoonsPatch (std::vector< shared_ptr< ParamCurve > > &bd_curves, std::vector< shared_ptr< ParamCurve > > &cross_curves, double epsge, double kink_tol)
- SplineSurface * createCoonsPatch (std::vector< shared_ptr< SplineCurve > > &bd_curves, std::vector< shared_ptr< SplineCurve > > &cross_curves)
- SplineSurface * createGordonSurface (std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > &params, int &nmb_u_crvs, bool use_param_values)
- SplineSurface * createGordonSurface (std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > &params, int &nmb_u_crvs, std::vector< shared_ptr< SplineCurve > > &cross_curves, std::vector< int > &cross_index, bool use_param_values=true)
- SplineSurface * doCreateSurface (std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > &params, int &nmb_u_crvs, std::vector< shared_ptr< SplineCurve > > &cross_curves, std::vector< int > &cross_index)
- SplineSurface * loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, int nmb_crvs)
- SplineSurface * loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs)
- SplineSurface * loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs, std::vector< shared_ptr< SplineCurve > >::iterator first_cross_curve, std::vector< int > &cross_index)

- SplineSurface * tpSurface (const std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > params, int nmb_u_crvs, const std::vector< shared_ptr< SplineCurve > > &cross_curves, std::vector< int > &cross_index)
- void splitMeshCurves (std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > &params, int &nmb_u_crvs, std::vector< int > &cross_index, double epsgeo)
- void sortMeshCurves (std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > &params, int nmb_u_crvs, std::vector< int > &cross_index)
- void getCrossTangs (const std::vector< shared_ptr< SplineCurve > > &curves, std::vector< shared_ptr< SplineCurve > > &mod_cross_curves, double tol1, double tol2)
- void addMissingCrossCurves (const std::vector< shared_ptr< SplineCurve > > &bnd_curves, std::vector< shared_ptr< SplineCurve > > &cross_crvs)
- void getTangBlends (std::vector< shared_ptr< SplineCurve > > &curves, int iedge, std::vector< shared_ptr< SplineCurve > > &blend_functions)
- void blendcoef (double evecu[], double evecv[], double etang[], int idim, int isign, double *coef1, double *coef2)
- void hermit (double econd[], int icond, bool hasder1, double astart, double aend, int idim)
- void fixCrossEndPts (const std::vector< shared_ptr< SplineCurve > > &bd_curves, const std::vector< shared_ptr< SplineCurve > > &cross_curves)
- void makeLoftParams (std::vector< shared_ptr< SplineCurve > >::const_iterator first_curve, int nmb_crvs, double param_length, std::vector< double > &params)
- void reparamBoundaryCurve (std::vector< shared_ptr< SplineCurve > > &curves, double aconst)

28.7.1 Detailed Description

This namespace contains functions used to create a Coons Patch or a Gordon Surface.

28.7.2 Function Documentation

28.7.2.1 void Go::CoonsPatchGen::addMissingCrossCurves (const std::vector< shared_ptr< SplineCurve > > & *bnd_curves*, std::vector< shared_ptr< SplineCurve > > & *cross_crvs*)

Generates missing cross boundary curves. In case of missing cross_crv, we're expecting a NULL pointer. boundary_crvs form a loop. cross_crvs share spline space, and all cross curves point inwards = into the surface. A missing cross_curve is indicated by a null pointer. The added cross curve will also point inwards, following parametrization given by boundary curves.

28.7.2.2 void Go::CoonsPatchGen::blendcoef (double *evecu[]*, double *evecv[]*, double *etang[]*, int *idim*, int *isign*, double * *coef1*, double * *coef2*)

Project the etang vector onto the plane defined by evecu and evecv. The projected vector will be represented as (*coef1)*evecu + (*coef2)*evecv.

Parameters

evecu	one of the vectors spanning the plane.
evecv	one of the vectors spanning the plane.
etang	vector to be projected.
idim	the geometric dimension of the space.
isign	sign with wich etang is to be multiplied.
coef1	scalar corresponding to evecu.
coef2	scalar corresponding to evecv.

28.7.2.3 SplineSurface* Go::CoonsPatchGen::createCoonsPatch (const CurveLoop & *boundary*)

Create a new SplineSurface representing the coons patch as defined by a loop of four SplineCurves.

Parameters

boundary	the CurveLoop describing the boundary of the coons patch to be generated. There must be exactly four curves, they must all be of type 'SplineCurve', and they must be nonrational.

Returns

a pointer to a newly created SplineSurface representing the coons patch. The user assumes ownership of the object.

28.7.2.4 SplineSurface* Go::CoonsPatchGen::createCoonsPatch (std::vector< shared_ptr< ParamCurve > > & *bd_curves,* std::vector< shared_ptr< ParamCurve > > & *cross_curves,* double *epsge,* double *kink_tol*)

bd_curves form a loop, all cross curves point into the surface. cross_curves need not fulfill twist and tangent requirements. Create a new SplineSurface representing the coons patch defined by a loop of four boundary curves, and their respective cross-tangent curves.

Parameters

bd_curves	ccw loop defining the boundary of the patch, size = 4.
cross_curves	corresponding cross tangent curves, size = 4, an element may be a NULL pointer.
epsge	allowed distance between corresponding end points of bd_curves.
kink_tol	allowed angle between end tangents of bd_curves and corresponding end points of cross_curves.

Returns

pointer to the created Gordon Surface.

28.7.2.5 SplineSurface* Go::CoonsPatchGen::createCoonsPatch (std::vector< shared_ptr< SplineCurve > > & *bd_curves,* std::vector< shared_ptr< SplineCurve > > & *cross_curves*)

Create a Gordon Surface from input curves. bd_curves forms a loop, all cross curves point into the surface. Assumes curves have been preprocessed, i.e. cross_curves fulfill twist and tangent requirements.

Parameters

bd_curves	ccw loop defining the boundary of the patch, size = 4.
cross_curves	corresponding cross tangent curves, size = 4, an element may be a NULL pointer.

Returns

pointer to the created Gordon Surface.

28.7.2.6 SplineSurface* Go::CoonsPatchGen::createGordonSurface (std::vector< shared_ptr< SplineCurve > > & *mesh_curves*, std::vector< double > & *params*, int & *nmb_u_crvs*, bool *use_param_values*)

Create a Gordon Surface from input curves and parameters. We require that both boundary curves in one direction (at least) are given. If use_param_values == true, we require the curves to be ordered (with parameters as given by params), with nmb_u_crvs u-curves up front. If use_param_values == false, mesh_curves is reordered as explained in splitMeshCurves() and sortMeshCurves(). Intersection parameters of curves are found and set in params, and nmb_u_crvs is also set.

Parameters

mesh_curves	the iso-curves defining the Gordon Surface.
params	the corresponding iso parameters. Updated if use_param_values == false.
nmb_u_crvs	the number of curves parametrized in the u-direction. Updated if use_param_values == false.
use_param_values	whether to use the input parameters.

Returns

pointer to the created Gordon Surface.

28.7.2.7 SplineSurface* Go::CoonsPatchGen::createGordonSurface (std::vector< shared_ptr< SplineCurve > > & *mesh_curves*, std::vector< double > & *params*, int & *nmb_u_crvs*, std::vector< shared_ptr< SplineCurve > > & *cross_curves*, std::vector< int > & *cross_index*, bool *use_param_values* = true)

Create a Gordon Surface from input curves and parameters. cross_index refers to indexing of mesh_curves, which means that the boundary curves to which it is a tangent must be included. All cross_curves are assumed to fulfill twist and tangent requirements.

Parameters

mesh_curves	the iso-curves defining the Gordon Surface.
params	the corresponding iso parameters. Updated if use_param_values == false.
nmb_u_crvs	the number of curves parametrized in the u-direction. Updated if use_param_values == false.
cross_curves	cross tangent curves for the Gordon Surface, corresponding to element in mesh_curves.
cross_index	referring to index element in mesh_curves.
use_param_values	whether to use the input parameters.

Returns

pointer to the created Gordon Surface.

28.7.2.8 SplineSurface* Go::CoonsPatchGen::doCreateSurface (std::vector< shared_ptr< SplineCurve > > & *mesh_curves*, std::vector< double > & *params*, int & *nmb_u_crvs*, std::vector< shared_ptr< SplineCurve > > & *cross_curves*, std::vector< int > & *cross_index*)

Create a Gordon Surface interpolating the input curves in the input parameters. mesh_curves assumed to be ordered (i.e. u-curves first, with ascending parameter values), and missing boundary curve(s) in at most one direction. Expecting end conditions are satisfied.

Parameters

mesh_curves	iso-curves for Gordon Surface.
params	iso-parameters for the mesh_curves.
nmb_u_crvs	the number of curves parametrized in the u-direction. May alter as the parameter directions may swap.
cross_curves	the cross tangent curves along iso-curves for the Gordon Surface.
cross_index	index in mesh_curves of corresponding boundary curve.

Returns

pointer to the created Gordon Surface.

28.7.2.9 void Go::CoonsPatchGen::fixCrossEndPts (const std::vector< shared_ptr< SplineCurve > > & *bd_curves,* const std::vector< shared_ptr< SplineCurve > > & *cross_curves*)

Make sure that the end points of the existing cross_tangent_curves match the end derivatives of the corresponding bd_curves. Curves are oriented CCW.

Parameters

bd_curves	curves along the boundary, ccw orientated. Will not be altered.
cross_curves	the corresponding cross tangent curves (same orientation). The curve objects referred to by the pointers may be altered.

28.7.2.10 void Go::CoonsPatchGen::getCrossTangs (const std::vector< shared_ptr< SplineCurve > > & *curves,* std::vector< shared_ptr< SplineCurve > > & *mod_cross_curves,* double *tol1,* double *tol2*)

Prepare cross tangents for surface creation. curves contains boundary_curve, cross_curve; one edge at a time (iedge∗2 curves). boundary curves form a loop. All curves share spline space, and all cross curves point inwards = into the surface. A missing cross_curve is indicated by a null pointer. Output mod_cross_curves fulfills tangent and twist conditions.

28.7.2.11 void Go::CoonsPatchGen::getTangBlends (std::vector< shared_ptr< SplineCurve > > & *curves,* int *iedge,* std::vector< shared_ptr< SplineCurve > > & *blend_functions*)

Find blending functions used to blend two derivative along some boundary curves corresponding to a surface, into a cross derivative curve pr edge. Get curves for blending of two tangent curves into one cross tangent curve. Size of curves = iedge $*$ 3 (i.e. bd_curve, cross_curve, tangent curve). Boundary curves form a loop, and all curves share orientation and line space. cross-curves point inwards.

28.7.2.12 void Go::CoonsPatchGen::hermit (double *econd[ ],* int *icond,* bool *hasder1,* double *astart,* double *aend,* int *idim*)

Hermite interpolate the input points.

Parameters

econd	array containing the points and derivatives to be interpolated. The ordering is <start_pt, (start_tan,) end_der, end_pt> The array will contain the coefficients of the spline curve fulfilling the input requirements.
icond	number of interpolation conditions.
hasder1	Whether derivative is given in the start of the interval
astart	start parameter of the produced curve.
aend	end parameter of the produced curve.
idim	dimension of the geometric space.

28.7.2.13 SplineSurface* Go::CoonsPatchGen::loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator *first_curve,* int *nmb_crvs*)

Create a lofting surface based on the input curves.

Parameters

first_curve	iterator to first iso-curve in the lofted surface.
nmb_crvs	the number of curves referred to by first_curve.

Returns

pointer to the created lofting surface.

28.7.2.14 SplineSurface* Go::CoonsPatchGen::loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator *first_curve,* std::vector< double >::iterator *first_param,* int *nmb_crvs*)

Create a lofting surface interpolating the input curves in the input parameters.

Parameters

first_curve	iterator to first iso-curve in the lofted surface.
first_param	iso parameter to corresponding curve referred to by first_curve.
nmb_crvs	the number of curves referred to by first_curve.

Returns

pointer to the created lofting surface.

28.7.2.15 SplineSurface* Go::CoonsPatchGen::loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator *first_curve,* std::vector< double >::iterator *first_param,* int *nmb_crvs,* std::vector< shared_ptr< SplineCurve > >::iterator *first_cross_curve,* std::vector< int > & *cross_index*)

Create a lofting surface interpolating the input curves and cross tangent curves in the input parameters. All curves assumed to share spline space.

Parameters

first_curve	iterator to first iso-curve in the lofted surface.
first_param	iso parameter to corresponding curve referred to by first_curve.
nmb_crvs	the number of curves referred to by first_curve.
first_cross_curve	iterator to first cross tangent curve in the lofted surface.
cross_index	referring to index of corresponding boundary curve.

Returns

pointer to the created lofting surface.

28.7.2.16 void Go::CoonsPatchGen::makeLoftParams (std::vector< shared_ptr< SplineCurve > >::const_iterator *first_curve,* int *nmb_crvs,* double *param_length,* std::vector< double > & *params*)

Calculate iso parameters for the input curves. The curves are expected to be ordered, i.e. corresponding to increasing iso parameters. Curves are given iso-parameters in the range 0.0 to param_length.

Parameters

first_curve	iterator to first iso curve.
nmb_crvs	the number of input curves.
param_length	length of parameter domain.
params	the computed iso parameters for the input curves.

28.7.2.17 void Go::CoonsPatchGen::reparamBoundaryCurve (std::vector< shared_ptr< SplineCurve > > & *curves,* double *aconst*)

Check length of tangent vectors at the endpoints of a curve compared to the size of the curve. If the vectors are too long, reparametrize the curve and all the other curves in vector. All curves expected to share parametrization. First curve is a bnd curve. Optional additional curves may be cross tangent curve. Function reparametrizes bnd curve so that end tangents have length equal to aconst. Typical value is 1/3 of edge-length.

Parameters

curves	input and output curves.
aconst	scalar defining end tangent length.

28.7.2.18 void Go::CoonsPatchGen::sortMeshCurves (std::vector< shared_ptr< SplineCurve > > & *mesh_curves,* std::vector< double > & *params,* int *nmb_u_crvs,* std::vector< int > & *cross_index*)

Given that mesh_curves has been regrouped with u-curves up front, we sort the vector according to values in params.

28.7.2.19 void Go::CoonsPatchGen::splitMeshCurves (std::vector< shared_ptr< SplineCurve > > & *mesh_curves*, std::vector< double > & *params*, int & *nmb_u_crvs*, std::vector< int > & *cross_index*, double *epsgeo*)

Given input iso-curves, the curves are analyzed and the ordering altered such that the nmb_u_crvs first elements are u-curves, and the rest are v-curves. Calculated iso parameter for the curves is returned in params.

Parameters

mesh_curves	iso-curves for a surface, sorted inside function.
params	calculated parameters for the iso-curves.
nmb_u_crvs	the number of curves parametrized in the u-direction.
cross_index	elements referring to mesh_curves, updated inside function.
epsgeo	geometrical tolerance defining intersections between mesh_curves.

28.7.2.20 SplineSurface* Go::CoonsPatchGen::tpSurface (const std::vector< shared_ptr< SplineCurve > > & *mesh_curves*, std::vector< double > *params*, int *nmb_u_crvs*, const std::vector< shared_ptr< SplineCurve > > & *cross_curves*, std::vector< int > & *cross_index*)

Make tensor product surface which interpolates given grid points. All curves assumed to share spline space.

Parameters

mesh_curves	curves to be interpolated in the Gordon Surface, both u- and v-curves.
params	the iso parameters for the curves.
nmb_u_crvs	the number of curves parametrized in the u-direction.
cross_curves	cross tangent curves for the Gordon Surface.
cross_index	referring to index of corresponding boundary curve.

Returns

pointer the created lofting surface.

28.8 Go::CoonsPatchVolumeGen Namespace Reference

This namespace contains functions used to create a Coons Patch volume.

Functions

- void get_corners (shared_ptr< Go::SplineSurface > surf, std::vector< Go::Point > &pts)

  Used internally in the geometry construction.
- void push_corners (std::vector< Go::Point > &pts_to, const std::vector< Go::Point > pts_from, int pos0, int pos1, int pos2, int pos3)

  Used internally in the geometry construction.
- bool edge_curves_equal (shared_ptr< Go::SplineSurface > sf1, double par1, bool is_u_dir1, shared_ptr< Go::SplineSurface > sf2, double par2, bool is_u_dir2, double tol)

  Used internally in the geometry construction.

- SplineVolume * createCoonsPatchDirectly (const Go::SplineSurface *surf_u_min, const Go::SplineSurface *surf_u_max, const Go::SplineSurface *surf_v_min, const Go::SplineSurface *surf_v_max, const Go::SplineSurface *surf_w_min, const Go::SplineSurface *surf_w_max)
- SplineVolume * createCoonsPatch (const Go::SplineSurface *surf_u_min, const Go::SplineSurface *surf_u_max, const Go::SplineSurface *surf_v_min, const Go::SplineSurface *surf_v_max, const Go::SplineSurface *surf_w_min, const Go::SplineSurface *surf_w_max, double tol=1.0e-05)

28.8.1 Detailed Description

This namespace contains functions used to create a Coons Patch volume.

28.8.2 Function Documentation

28.8.2.1 SplineVolume* Go::CoonsPatchVolumeGen::createCoonsPatch (const Go::SplineSurface * *surf_u_min,* const Go::SplineSurface * *surf_u_max,* const Go::SplineSurface * *surf_v_min,* const Go::SplineSurface * *surf_v_max,* const Go::SplineSurface * *surf_w_min,* const Go::SplineSurface * *surf_w_max,* double *tol* = `1.0e-05`)

Create a new SplineVolume representing the coons patch of six SplineSurfaces, the six faces of the volume. We test if the faces are non-rational, lie in the same space, and have conciding edge curves where needed. The B-spline bases of the surfaces might be reversed, swapped, have order raised, knots inserted and parameter interval rescaled to [0,1], in order to be able to use createCoonsPatchDirectly()

Parameters

surf_u_min	One of faces/isosurfaces for the u-direction
surf_u_max	The other faces/isosurfaces for the u-direction
surf_v_min	One of faces/isosurfaces for the v-direction
surf_v_max	The other faces/isosurfaces for the v-direction
surf_w_min	One of faces/isosurfaces for the w-direction
surf_w_max	The other faces/isosurfaces for the w-direction
tol	Tolerance when identifiying equal curves and corners

Returns

a pointer to a newly created SplineVolume representing the coons patch. The user assumes ownership of the object

28.8.2.2 SplineVolume* Go::CoonsPatchVolumeGen::createCoonsPatchDirectly (const Go::SplineSurface * *surf_u_min,* const Go::SplineSurface * *surf_u_max,* const Go::SplineSurface * *surf_v_min,* const Go::SplineSurface * *surf_v_max,* const Go::SplineSurface * *surf_w_min,* const Go::SplineSurface * *surf_w_max*)

Create a new SplineVolume representing the coons patch of six SplineSurfaces, the six faces of the volume. Here we assume that the faces are non-rational and lie in the same space, and all have the same B-spline basis (knot vectors and degrees are the same) along coinciding sides, i.e. for two surfaces with a common side, the two conciding edge curves have the same B-spline basis. Also, all B-spline bases are assumed to have knot interval [0.0, 1.0].

Parameters

surf_u_min	The face/isosurface for u = 0.0
surf_u_max	The face/isosurface for u = 1.0
surf_v_min	The face/isosurface for v = 0.0
surf_v_max	The face/isosurface for v = 1.0
surf_w_min	The face/isosurface for w = 0.0
surf_w_max	The face/isosurface for u = 1.0

Returns

a pointer to a newly created SplineVolume representing the coons patch. The user assumes ownership of the object.

28.8.2.3 bool Go::CoonsPatchVolumeGen::edge_curves_equal (shared_ptr< Go::SplineSurface > *sf1,* double *par1,* bool *is_u_dir1,* shared_ptr< Go::SplineSurface > *sf2,* double *par2,* bool *is_u_dir2,* double *tol*)

Used internally in the geometry construction.

28.8.2.4 void Go::CoonsPatchVolumeGen::get_corners (shared_ptr< Go::SplineSurface > *surf,* std::vector< Go::Point > & *pts*)

Used internally in the geometry construction.

28.8.2.5 void Go::CoonsPatchVolumeGen::push_corners (std::vector< Go::Point > & *pts_to,* const std::vector< Go::Point > *pts_from,* int *pos0,* int *pos1,* int *pos2,* int *pos3*)

Used internally in the geometry construction.

28.9 Go::CreatorsUtils Namespace Reference

Related to the generation of cross tangent curves.

Functions

- SplineCurve GO_API * getParametricCurve (const std::vector< shared_ptr< const CurveOnSurface > > &cv)
- shared_ptr< Go::SplineCurve > GO_API createCrossTangent (const Go::CurveOnSurface &cv)
- shared_ptr< Go::SplineCurve > GO_API createCrossTangent (const Go::CurveOnSurface &cv, shared_ptr< Go::SplineCurve > basis_space_cv, const Go::SplineCurve *cross_cv_ref, bool appr_offset_cv=true)
- std::vector< Go::Point > GO_API projectPoint (const Go::ParamSurface *sf, bool closed_dir_u, bool closed_dir_v, const Go::Point &space_pt, double epsgeo=1e-04)
- shared_ptr< Go::Point > projectCurvePoint (const ParamSurface *sf, bool closed_dir_u, bool closed_dir_v, const Go::ParamCurve *space_cv, double cv_par, double epsgeo=1e-04)
- shared_ptr< Go::Point > projectCurvePoint (const SplineSurface &sf, bool closed_dir_u, bool closed_dir_v, const Go::ParamCurve *space_cv, double cv_par, double epsgeo=1e-04)
- void GO_API fixSeemCurves (shared_ptr< BoundedSurface > bd_sf, std::vector< shared_ptr< CurveOnSurface > > &loop_cvs, bool closed_dir_u, bool closed_dir_v, double tol)
- void GO_API fixTrimCurves (shared_ptr< Go::BoundedSurface > bd_sf, double epsgeo_frac=1.0, double tol=1.0e-3, double tol2=1.0e-2, double ang_tol=1.0e-2)

28.9.1 Detailed Description

Related to the generation of cross tangent curves.

28.9.2 Function Documentation

28.9.2.1 shared_ptr<Go::SplineCurve> GO_API Go::CreatorsUtils::createCrossTangent (const Go::CurveOnSurface & *cv*)

Generate the inwards pointing cross-tangent curve along the input trim curve.

Parameters

cv	the trim curve.

Returns

the inwards cross tangent curve.

28.9.2.2 shared_ptr<Go::SplineCurve> GO_API Go::CreatorsUtils::createCrossTangent (const Go::CurveOnSurface & *cv,* shared_ptr< Go::SplineCurve > *basis_space_cv,* const Go::SplineCurve * *cross_cv_ref,* bool *appr_offset_cv* = true)

The cross tangent cv along input cv is created. Length given by length of derivs in sf along cv or by input_cross_cv if it exists. Direction of created cross tangent cv is to the left of cv (i.e. it should point into the surface). If input↩ _cross_cv exists so does basis_space_cv and they must share parametrization. If input_cross_cv exists, but not basis_space_cv, it shares parametrization with cv.

Parameters

cv	the trim curve along which we are to compute the cross tangent cv.
basis_space_cv	if != NULL we use the basis and parametrization of basis_space_cv.
cross_cv_ref	if != NULL the curve defines the angle between the boundary curve and the new cross tangent curve. Additionally it defines the length of the new cross tangent curve.
appr_offset_cv	whether the method should approximate the offset curve (as opposed to the cross tangent curve).

Returns

the cross tangent (or offset) curve.

28.9.2.3 void GO_API Go::CreatorsUtils::fixSeemCurves (shared_ptr< BoundedSurface > *bd_sf,* std::vector< shared_ptr< CurveOnSurface > > & *loop_cvs,* bool *closed_dir_u,* bool *closed_dir_v,* double *tol*)

Repair erranous seem curves in bounded surfaces with closed underlying surfaces

28.9.2.4 void GO_API Go::CreatorsUtils::fixTrimCurves (shared_ptr< Go::BoundedSurface > *bd_sf,* double *epsgeo_frac* = 1.0, double *tol* = 1.0e-3, double *tol2* = 1.0e-2, double *ang_tol* = 1.0e-2)

Repair erranous trimming curves in bounded surfaces and compute missing parameter curves in the corresponding CurveOnSurface curves

28.9.2.5 SplineCurve GO_API* Go::CreatorsUtils::getParametricCurve (const std::vector< shared_ptr< const CurveOnSurface > > & *cv*)

Helper function. Returns the parametric representation of the input curve. The returned curve is created (i.e. it should be be handled by a smart ptr)! This function takes as argument a vector of (shared pointers to) CurveOn↩ Surfaces, which are assumed to lie on the same surface and to represent consecutive parts of a larger curve, and return the parametric representation of this larger curve.

Parameters

cv	a vector of (shared pointers to) CurveOnSurfaces. We suppose that these curves are all lying on the same surface and that they constitute consecutive parts of a global curve.

Returns

if successful, a pointer to the newly generated SplineCurve, which represents the global curve that is the union of the input curves. This SplineCurve is represented in the parameter plane of the surface, and is therefore a 2D curve. If it could not be constructed (due a failure of any of the provided CurveOnSurfaces to provide their internal parameter curve), a null pointer is returned instead. The user assumes ownership of the SplineCurve.

28.9.2.6 shared_ptr<Go::Point> Go::CreatorsUtils::projectCurvePoint (const ParamSurface * *sf,* bool *closed_dir_u,* bool *closed_dir_v,* const Go::ParamCurve * *space_cv,* double *cv_par,* double *epsgeo* = 1e-04)

28.9.2.7 shared_ptr<Go::Point> Go::CreatorsUtils::projectCurvePoint (const SplineSurface & *sf,* bool *closed_dir_u,* bool *closed_dir_v,* const Go::ParamCurve * *space_cv,* double *cv_par,* double *epsgeo* = 1e-04)

Project a point on a space curve onto a surface. If the surface is closed, and the curve follows the seam at the point in question, then the point corresponding to a counterclockwise curve is chosen. If the programmer knows that this is not the case, then this must be handled.

Parameters

sf	the surface the point is projected onto
closed_dir↩ _u	boolean that is `true` if the surface is closed in the u-direction
closed_dir↩ _v	boolean that is `true` if the surface is closed in the v-direction
space_cv	the curve to be projected
cv_par	the parameter of the curve point to be projected

Returns

the projected point in the form of a parameter pair

28.9.2.8 std::vector<Go::Point> GO_API Go::CreatorsUtils::projectPoint (const Go::ParamSurface * *sf*, bool *closed_dir_u*, bool *closed_dir_v*, const Go::Point & *space_pt*, double *epsgeo* = 1e-04)

Project a point in space onto a surface. If the surface is closed, and the point is on the seam, then the set of possible candidates is returned.

Parameters

sf	the surface the point is projected onto
closed_dir_u	boolean that is `true` if the surface is closed in the u-direction
closed_dir_v	boolean that is `true` if the surface is closed in the v-direction
space_pt	the point to be projected

Returns

vector of candidates of projected points in the form of parameter pairs

28.10 Go::Curvature Namespace Reference

Curvature analysis related to curves.

Functions

- void curvatureRadiusPoints (const SplineCurve &curve, double curveRad, std::vector< double > &pos)
- void minimalCurvatureRadius (const SplineCurve &curve, double &mincurv, double &pos)

28.10.1 Detailed Description

Curvature analysis related to curves.

28.10.2 Function Documentation

28.10.2.1 void Go::Curvature::curvatureRadiusPoints (const SplineCurve & *curve*, double *curveRad*, std::vector< double > & *pos*)

Get the points on a SplineCurve with a given curvature radius Result is stored in a vector as parameter values

28.10.2.2 void Go::Curvature::minimalCurvatureRadius (const SplineCurve & *curve*, double & *mincurv*, double & *pos*)

Get the minimal curvature radius, and the parameter value of the point with the minimal curvature radius

28.11 Go::CurvatureAnalysis Namespace Reference

Functions

- void computeFirstFundamentalForm (const ParamSurface &sf, double u, double v, int derivs, std::vector< double > &form)
- void computeSecondFundamentalForm (const ParamSurface &sf, double u, double v, double form1[3], double form2[3])
- void curvatures (const ParamSurface &sf, double u, double v, double &K, double &H)
- void principalCurvatures (const ParamSurface &sf, double u, double v, double &k1, Point &d1, double &k2, Point &d2)
- void minimalCurvatureRadius (const ParamSurface &sf, double tolerance, double &mincurv, double &pos_u, double &pos_v, double degenerate_eps, double curv_tol=1.0e-3)
- void evaluateMinCurvatureRadius (const ParamSurface &sf, double start_u, double end_u, double start_v, double end_v, double tolerance, std::vector< double > &param_u, std::vector< double > &param_v, std::vector< std::vector< double > > &curvs, double &mincurv, double &minpos_u, double &minpos_v, bool initialize)

28.11.1 Detailed Description

Curvature analysis related to surfaces. Functions computing fundamental forms and curvature.

28.11.2 Function Documentation

28.11.2.1 void Go::CurvatureAnalysis::computeFirstFundamentalForm (const ParamSurface & *sf*, double *u*, double *v*, int *derivs*, std::vector< double > & *form*)

Computes the coefficients of the first fundamental form. The returned values are stored { E F G [Eu Fu Gu Ev Fv Gv [Euu Fuu Guu Euv Fuv Guv Evv Fvv Gvv [...]]] }. Only one derivative is implemented so far.

Parameters

sf	reference to the concerned surface
u	first parameter of point where we want to compute the first fundamental form
v	second parameter of point where we want to compute the first fundamental form
derivs	number of (partial) derivatives of the first fundamental form that we want to include in the result. So far, only the computation of the first derivative is actually implemented.
form	the computed values, on the format described above

28.11.2.2 void Go::CurvatureAnalysis::computeSecondFundamentalForm (const ParamSurface & *sf*, double *u*, double *v*, double *form1[3]*, double *form2[3]*)

Computes the coefficients of the first and second fundamental forms. The returned values are stored { E F G } in form1 and { e f g } in form2. This function cannot compute derivatives.

Parameters

sf	reference to the concerned surface

Parameters

u	first parameter of point where we want to compute the fundamental forms.
v	second parameter of point where we want to compute the fundamental forms
form1	the values associated with the first fundamental form will be returned here.
form2	the values associated with the second fundamental form will be returned here.

28.11.2.3 void Go::CurvatureAnalysis::curvatures (const ParamSurface & *sf*, double *u*, double *v*, double & *K*, double & *H*)

Computes the Gaussian (K) and mean (H) curvatures.

Parameters

sf	reference to the concerned surface
u	first parameter of point where we want to carry out computation
v	second parameter of point where weh want to carry out computation
K	value of Gaussian curvature returned here
H	value of mean curvature returned here

28.11.2.4 void Go::CurvatureAnalysis::evaluateMinCurvatureRadius (const ParamSurface & *sf*, double *start_u*, double *end_u*, double *start_v*, double *end_v*, double *tolerance*, std::vector< double > & *param_u*, std::vector< double > & *param_v*, std::vector< std::vector< double > > & *curvs*, double & *mincurv*, double & *minpos_u*, double & *minpos_v*, bool *initialize*)

Estimate the minium curvature radius of the surface sf in the parameter domain [start_u,end_u]x[start_v,end_v] by evaluating the curvature radius in a grid and fetch the smallest one. The grid density is computed from the given tolerance

28.11.2.5 void Go::CurvatureAnalysis::minimalCurvatureRadius (const ParamSurface & *sf*, double *tolerance*, double & *mincurv*, double & *pos_u*, double & *pos_v*, double *degenerate_eps*, double *curv_tol* = `1.0e-3`)

Estimate the minimum curvature radius of the surface sf.

Parameters

sf	the given surface
tolerance	influences the density of the search
mincurve	the computed minimum curvature radius
pos_u	parameter in the first parameter direction corresponding to the minimum curvature radius
pos_v	parameter in the second parameter direction corresponding to the minimum curvature radius
degenerate_eps	maximum length of a degenenerate boundary, used to check whether special treatment is required
curv_tol	default parameter used to limit the search

28.11.2.6 void Go::CurvatureAnalysis::principalCurvatures (const ParamSurface & *sf,* double *u,* double *v,* double & *k1,* Point & *d1,* double & *k2,* Point & *d2*)

Computes the principal curvatures of a surface, sf, in the parameter value (u,v) along with the corresponding parameter directions.

28.12 Go::CurveCreators Namespace Reference

Functions

- SplineCurve GO_API * multCurveWithFunction (const SplineCurve &alpha, const SplineCurve &f)
- SplineCurve GO_API * blend (const SplineCurve &alpha_1, const SplineCurve &f_1, const SplineCurve &alpha_2, const SplineCurve &f_2)
- SplineCurve GO_API * approxCurves (shared_ptr< ParamCurve > *first_crv, shared_ptr< ParamCurve > *last_crv, const std::vector< Point > &start_pt, const std::vector< Point > &end_pt, double approxtol, double &maxdist, int max_iter=5, int degree=3)
- void projectCurve (shared_ptr< ParamCurve > &space_cv, shared_ptr< ParamSurface > &surf, double epsge, shared_ptr< SplineCurve > &proj_cv, shared_ptr< SplineCurve > &par_cv)
- std::vector< shared_ptr< SplineCurve > > curveApprox (shared_ptr< ParamCurve > cvs[], int nmb_cvs, const BsplineBasis &init_basis, double tol)
- std::vector< shared_ptr< SplineCurve > > curveApprox (shared_ptr< ParamCurve > cvs[], int nmb_cvs, double tol, double degree=3)
- SplineCurve GO_API * projectSpaceCurve (shared_ptr< ParamCurve > &space_cv, shared_ptr< ParamSurface > &surf, shared_ptr< Point > &start_par_pt, shared_ptr< Point > &end_par_pt, double epsge, const RectDomain *domain_of_interest=NULL)
- SplineCurve GO_API * liftParameterCurve (shared_ptr< ParamCurve > &parameter_cv, shared_ptr< ParamSurface > &surf, double epsge)

  Lift the parameter_cv onto surf.
- SplineCurve GO_API * createCircle (Point center, Point axis, Point normal, double radius)

  Create a circle.
- shared_ptr< Go::SplineCurve > GO_API insertParamDomain (const Go::SplineCurve &cv_1d, double knot_tol=1e-08)

  Given input of 1-dimensional curve, return the 2-dimensional visualization (x, f(x)).
- SplineCurve GO_API * offsetCurve (const SplineCurve &cv, Point offset_val)

  Return the spline curve given by cv(t) + offset_val.

28.12.1 Detailed Description

Various functions for generating SplineCurve s by approximation, blending, etc.

28.12.2 Function Documentation

28.12.2.1 SplineCurve GO_API* Go::CurveCreators::approxCurves (shared_ptr< ParamCurve > * *first_crv,* shared_ptr< ParamCurve > * *last_crv,* const std::vector< Point > & *start_pt,* const std::vector< Point > & *end_pt,* double *approxtol,* double & *maxdist,* int *max_iter* = 5, int *degree* = 3)

Given input curves, we approximate with one cubic spline curve, fulfilling end requirements. This function is used generate one SplineCurve which approximates a sequence of (supposedly end-to-end continuous) input SplineCurves. In addition, the user can define explicitly the start and end point and tangent of the generated curve.

Parameters

first_crv	pointer to the start of a range of (shared pointers to) SplineCurves, supposedly stored so that the end point of each curve coincides with the start point of the succeeding one.
last_crv	pointer to one-past-last of the range of SplineCurves.
start_pt	The user can choose to explicitly specify the start point and tangent of the curve to be generated. If so, then this vector must contain one or two elements: the start point and optionally the start tangent.
end_pt	The user can choose to explicitly specify the end point and tangent of the curve to be generated. If so, then this vector must contain one or two elements: the end point and optionally the end tangent.
approxtol	The routine will try to generate a curve that fits the given curves within a tolerance of 'approxtol', but is not guaranteed to succeed. If unsuccessful, a message will be written to standard output.
maxdist	Reports the maximum found distance between the generated curve and the input curves.

Return values

max_iter	Specify the maximum number of iterations that is allowed in order to converge to a solution.

Returns

a raw pointer to the generated SplineCurve. User assumes ownership.

28.12.2.2 SplineCurve GO_API* Go::CurveCreators::blend (const SplineCurve & *alpha_1,* const SplineCurve & *f_1,* const SplineCurve & *alpha_2,* const SplineCurve & *f_2*)

Given blend functions alpha_1 & alpha_2 (represented as 1-dimensional SplineCurves), and the spline curves f_1 and f_2, return the blended expression 'alpha_1 * f_1 + alpha_2 * f_2'. **NB:** All the curves given as input must e defined on the same parameter interval. Their knotvectors and orders do not have to be equal, though.

Parameters

alpha_1	the multiplier function for the first curve, 'f_1'. It is represented as an 1-dimensional SplineCurve.
f_1	The first SplineCurve to be blended.
alpha_2	the multiplier function for the second curve, 'f_2'. It is represented as an 1-dimensional SplineCurve
f_2	The second SplineCurve to be blended.

Returns

A raw pointer to the newly generated SplineCurve, a blend between 'f_1' and 'f_2'. The user assumes ownership.

28.12.2.3 SplineCurve GO_API* Go::CurveCreators::createCircle (Point *center,* Point *axis,* Point *normal,* double *radius*)

Create a circle.

Generate a 3D SplineCurve representing a circle. Assuming dimension is 3.

Parameters

center	the center point of the circle,
axis	a vector pointing from the center point of the circle and towards start and end point of the circle.
normal	the normal to the plane in which the circle lie.
radius	the radius of the circle to generate.

Returns

a raw pointer to the generated SplineCurve, representing the specified circle. User assumes ownership.

28.12.2.4 std::vector<shared_ptr<SplineCurve> > Go::CurveCreators::curveApprox (shared_ptr< ParamCurve > *cvs[ ],* int *nmb_cvs,* const BsplineBasis & *init_basis,* double *tol*)

Approximate a number of curves in the same spline space given an initial spline space that may be refined. The approximation tolerance is tol

28.12.2.5 std::vector<shared_ptr<SplineCurve> > Go::CurveCreators::curveApprox (shared_ptr< ParamCurve > *cvs[ ],* int *nmb_cvs,* double *tol,* double *degree* = 3)

Approximate a number of curves in the same spline space. The approximation tolerance is tol

28.12.2.6 shared_ptr<Go::SplineCurve> GO_API Go::CurveCreators::insertParamDomain (const Go::SplineCurve & *cv_1d,* double *knot_tol* = 1e-08)

Given input of 1-dimensional curve, return the 2-dimensional visualization (x, f(x)).

28.12.2.7 SplineCurve GO_API* Go::CurveCreators::liftParameterCurve (shared_ptr< ParamCurve > & *parameter_cv,* shared_ptr< ParamSurface > & *surf,* double *epsge*)

Lift the parameter_cv onto surf.

'Lift' a 2D parameter curve onto a surface. (This means generate a space curve lying *on* the surface, defined as the curved obtained when evaluating the surface at the parameter points given by the 2D curve).

Parameters

parameter_cv	the 2D parameter curve. Its values should be kept within the parameter domain of 'surf'.
surf	the surface on which the obtained 3D curve will lie.
epsge	geometrical tolerance used when generating the curve

Returns

a raw pointer to the generated spatial SplineCurve. User assumes ownership.

28.12.2.8 SplineCurve GO_API* Go::CurveCreators::multCurveWithFunction (const SplineCurve & *alpha,* const SplineCurve & *f*)

Given a spline curve f_i on a space of dimension n, and a (1-dim) spline function alpha_i (not necessarily a Bezier curve) defined on the same space, return the product. Construct a SplineCurve which is the 'product' of another SplineCurve and a function (which is given as a 1-dimensional SplineCurve). **NB:** The two SplineCurves given as argument must be defined on exactly the same parameter interval. Their knotvectors and orders do not have to be equal, though.

Parameters

alpha	the multiplier function, given here as a 1-dimensional SplineCurve
f	the SplineCurve to be multiplied with

Returns

A raw pointer to the newly generated SplineCurve, a product between 'f' and the 'alpha' function. The user assumes ownership.

28.12.2.9 SplineCurve GO_API* Go::CurveCreators::offsetCurve (const SplineCurve & *cv,* Point *offset_val*)

Return the spline curve given by cv(t) + offset_val.

28.12.2.10 void Go::CurveCreators::projectCurve (shared_ptr< ParamCurve > & *space_cv,* shared_ptr< ParamSurface > & *surf,* double *epsge,* shared_ptr< SplineCurve > & *proj_cv,* shared_ptr< SplineCurve > & *par_cv*)

28.12.2.11 SplineCurve GO_API* Go::CurveCreators::projectSpaceCurve (shared_ptr< ParamCurve > & *space_cv,* shared_ptr< ParamSurface > & *surf,* shared_ptr< Point > & *start_par_pt,* shared_ptr< Point > & *end_par_pt,* double *epsge,* const RectDomain * *domain_of_interest* = NULL)

Project the space_cv into parameter domain given by surf. start_par_pt (& end*_ not needed, but useful to ensure correct evaluation. Generate a SplineCurve which lies on a given (part of a) SplineSurface and is the projection og a given SplineCurve onto that surface.

Parameters

space_cv	the SplineCurve (in 3D space) that we want to project onto the surface.
surf	The surface we will project the curve onto. The resulting curve will therefore lie in this surface.
start_par_pt	if the user wants to explicitly define where the start point of the curve should lie, 'start_par_pt' could be set to point to this point. It can also be a zero pointer, in which case the start point is determined just like any other point
end_par_pt	if the user wants to explicitly define where the end point of the curve should lie, 'end_par_pt' could be set to point to this point. It can also be a zero pointer, in which case the end point is determined just like any other point.
epsge	The geometrical tolerance to use when generating the projected curve. Max dist in surface from exact projection.
domain_of_interest	If the user do not want a projection onto the whole 'surf', he/she can specify the part of the surface to use by limiting the parametric domain to use. If this pointer is left as a null pointer, the whole surface is used.

Returns

a raw pointer to the generated SplineCurve. User assumes ownership.

28.13 Go::CurveInterpolator Namespace Reference

Curve interpolation functionality not adapted to the Interpolator class.

Functions

- SplineCurve * regularInterpolation (const BsplineBasis &basis, std::vector< double > &par, std::vector< double > &points, int dimension, bool rational, std::vector< double > &weights)

28.13.1 Detailed Description

Curve interpolation functionality not adapted to the Interpolator class.

28.13.2 Function Documentation

28.13.2.1 SplineCurve* Go::CurveInterpolator::regularInterpolation (const BsplineBasis & *basis,* std::vector< double > & *par,* std::vector< double > & *points,* int *dimension,* bool *rational,* std::vector< double > & *weights*)

Interpolate a set of regular, parameterized interpolation points. The parameterizetion is assumed to correspond to the given B-spline basis (select interpolation points in the Greville points). The function throws if the input parameters are inconsistent

28.14 Go::FaceUtilities Namespace Reference

Functions

- void getBoundaryData (ftSurface *face, int nmb_sample, std::vector< SamplePointData > &sample_points)
- void getInnerData (ftSurface *face, int nmb_sample_u, int nmb_sample_v, std::vector< SamplePointData > &sample_points)
- bool enforceCoLinearity (ftSurface *face1, ftEdge *edge1, ftSurface *face2, double tol, double ang_tol)
- bool enforceVxCoLinearity (shared_ptr< Vertex > vx, double tol, double ang_tol)

28.14.1 Detailed Description

Utility functionality for faces in order to release the need for private functions in ftSurface

28.14.2 Function Documentation

28.14.2.1 bool Go::FaceUtilities::enforceCoLinearity (ftSurface * face1, ftEdge * edge1, ftSurface * face2, double tol, double ang_tol)

Enforce colinearity of coefficients of spline surfaces related to the given faces Return value = false : No modification

28.14.2.2 bool Go::FaceUtilities::enforceVxCoLinearity (shared_ptr< Vertex > vx, double tol, double ang_tol)

28.14.2.3 void Go::FaceUtilities::getBoundaryData (ftSurface * face, int nmb_sample, std::vector< SamplePointData > & sample_points)

28.14.2.4 void Go::FaceUtilities::getInnerData (ftSurface * face, int nmb_sample_u, int nmb_sample_v, std::vector< SamplePointData > & sample_points)

28.15 Go::ftVolumeTools Namespace Reference

This namespace contains service functions related to ftVolume.

Functions

- std::vector< shared_ptr< ftVolume > > splitVolumes (shared_ptr< ftVolume > &vol1, shared_ptr< ftVolume > &vol2, double eps, std::vector< int > &config)
- std::vector< shared_ptr< ftVolume > > splitVolumes (shared_ptr< ftVolume > &vol, shared_ptr< ftSurface > &face, double eps)

  Split one volume according to intersections with a given face.
- void updateWithSplitFaces (shared_ptr< SurfaceModel > shell, shared_ptr< ftSurface > &face1, shared_ptr< ftSurface > &face2, std::vector< std::pair< ftEdge *, ftEdge * > > &replaced_wires)

  Specific functionality. Used from ftVolume::generateMissingBdSurf.
- int boundaryStatus (ftVolume *vol, shared_ptr< ftSurface > &bd_face, double tol)

28.15.1 Detailed Description

This namespace contains service functions related to ftVolume.

28.15.2 Function Documentation

28.15.2.1 int Go::ftVolumeTools::boundaryStatus (ftVolume * vol, shared_ptr< ftSurface > & bd_face, double tol)

Given a boundary or trimming surface related to an ftVolume, check the status and update stored information if any new boundary status information is computed

Parameters

vol	the volume from which the boundary status is to be checked
bd_face	the boundary face where the requested information should be fetched/computed
tol	tolerance to check for surface coincidence

Returns

-1 = not a boundary surface, 0 = boundary surface corresponding to umin, 1 = boundary surface corresponding to umax, 2 = boundary surface corresponding to vmin, 3 = boundary surface corresponding to vmax, 4 = boundary surface corresponding to wmin, 5 = boundary surface corresponding to wmax

28.15.2.2 std::vector<shared_ptr<ftVolume> > Go::ftVolumeTools::splitVolumes (shared_ptr< ftVolume > & *vol1,* shared_ptr< ftVolume > & *vol2,* double *eps,* std::vector< int > & *config*)

Split two volumes with regard to the intersections between the boundary surfaces corresponding to these two volumes

28.15.2.3 std::vector<shared_ptr<ftVolume> > Go::ftVolumeTools::splitVolumes (shared_ptr< ftVolume > & *vol,* shared_ptr< ftSurface > & *face,* double *eps*)

Split one volume according to intersections with a given face.

28.15.2.4 void Go::ftVolumeTools::updateWithSplitFaces (shared_ptr< SurfaceModel > *shell,* shared_ptr< ftSurface > & *face1,* shared_ptr< ftSurface > & *face2,* std::vector< std::pair< ftEdge *, ftEdge * > > & *replaced_wires*)

Specific functionality. Used from ftVolume::generateMissingBdSurf.

28.16 Go::GapRemoval Namespace Reference

Functionality for removal of gaps between two adjacent surfaces of various types.

Functions

- void removeGapSpline (shared_ptr< SplineSurface > &srf1, shared_ptr< CurveOnSurface > &bd_cv1, double start1, double end1, shared_ptr< SplineSurface > &srf2, shared_ptr< CurveOnSurface > &bd_cv2, double start2, double end2, Point vertex1, Point vertex2, double epsge, bool *same_orientation=NULL)
- double removeGapTrim (shared_ptr< CurveOnSurface > &bd_cv1, double start1, double end1, shared_ptr< CurveOnSurface > &bd_cv2, double start2, double end2, Point vertex1, Point vertex2, double epsge)
- bool removeGapSplineTrim (shared_ptr< SplineSurface > &srf1, std::vector< shared_ptr< CurveOnSurface > > &bd_cv1, std::vector< double > start1, std::vector< double > end1, std::vector< shared_ptr< CurveOnSurface > > &bd_cv2, std::vector< double > start2, std::vector< double > end2, Point vertex1, Point vertex2, double epsge)
- void modifySplineSf (shared_ptr< ParamSurface > &srf1, std::vector< shared_ptr< CurveOnSurface > > &bd_cv1, std::vector< double > start1, std::vector< double > end1, shared_ptr< ParamSurface > &srf2, std::vector< shared_ptr< CurveOnSurface > > &bd_cv2, std::vector< double > start2, std::vector< double > end2, double epsge)
- void modifySplines (shared_ptr< ParamSurface > &srf1, std::vector< shared_ptr< CurveOnSurface > > &bd_cv1, std::vector< double > &start1, std::vector< double > &end1, shared_ptr< ParamSurface > &srf2, std::vector< shared_ptr< CurveOnSurface > > &bd_cv2, std::vector< double > &start2, std::vector< double > &end2, std::vector< Point > &vertex, double epsge)
- void removeGapSpline2 (std::vector< shared_ptr< CurveOnSurface > > &bd_cv1, std::vector< double > &start1, std::vector< double > &end1, std::vector< shared_ptr< CurveOnSurface > > &bd_cv2, std::vector< double > &start2, std::vector< double > &end2, std::vector< Point > &vertex, double epsge)

- std::vector< shared_ptr< sideConstraintSet > > getCoefConstraints (shared_ptr< SplineCurve > &crv1, int idx1, shared_ptr< SplineCurve > &crv2, int idx2, double tol)
- shared_ptr< SplineCurve > replaceCurvePiece (shared_ptr< SplineCurve > crv, shared_ptr< SplineCurve > sub_crv, double par1, int cont1, double par2, int cont2)
- shared_ptr< SplineSurface > getSplineAndBd (shared_ptr< ParamSurface > psurf, std::vector< shared_ptr< CurveOnSurface > > &bd_crvs)
- void getBoundarySamples (std::vector< shared_ptr< CurveOnSurface > > &all_bd, std::vector< shared_ptr< CurveOnSurface > > &bd_cvs, std::vector< double > &pts, std::vector< double > &pars, std::vector< int > &bd_idx, double epsge)
- bool modifyAtVertex (shared_ptr< SplineSurface > srf, Point face_param, Point vertex, double epsge)
- void checkBoundaryDist (shared_ptr< CurveOnSurface > bd1, shared_ptr< CurveOnSurface > bd2, double start1, double end1, double start2, double end2, int nmb_sample, double &mdist1, double &mdist2)
- void removeGapSpline (shared_ptr< SplineVolume > &vol1, shared_ptr< SurfaceOnVolume > &bd_sf1, double sf1_start1, double sf1_end1, double sf1_start2, double sf1_end2, shared_ptr< SplineVolume > &vol2, shared_ptr< SurfaceOnVolume > &bd_sf2, double sf2_start1, double sf2_end1, double sf2_start2, double sf2_end2, Point vertex_ll, Point vertex_ur, double epsge, int orientation)

28.16.1 Detailed Description

Functionality for removal of gaps between two adjacent surfaces of various types.

Removal of gaps between two adjacent volumes No implementation

28.16.2 Function Documentation

28.16.2.1 void Go::GapRemoval::checkBoundaryDist (shared_ptr< CurveOnSurface > *bd1*, shared_ptr< CurveOnSurface > *bd2*, double *start1*, double *end1*, double *start2*, double *end2*, int *nmb_sample*, double & *mdist1*, double & *mdist2*)

Compute the distance between trimming curves on adjacent surfaces along a common boundary.

Parameters

bd1	trimming curve on first surface
bd2	trimming curve on second surface
start1	start parameter to the relevant piece of bd1
end1	end parameter to the relevant piece of bd1
start2	start parameter to the relevant piece of bd2
end2	end parameter to the relevant piece of bd2
mdist1	maximum distance between given trimming curves
mdist2	maximum distance between the trimming curves projected onto the associated surface

28.16.2.2 void Go::GapRemoval::getBoundarySamples (std::vector< shared_ptr< CurveOnSurface > > & *all_bd*, std::vector< shared_ptr< CurveOnSurface > > & *bd_cvs*, std::vector< double > & *pts*, std::vector< double > & *pars*, std::vector< int > & *bd_idx*, double *epsge*)

Given the trimming curves of a bounded surface. Sort the curves followin boundaries of the underlying surface into the vector bd_cvs. The remaining curves are sampled and the corresponding points and parameter values are returned in the vectors pts and pars.

28.16.2.3 std::vector<shared_ptr<sideConstraintSet> > Go::GapRemoval::getCoefConstraints (shared_ptr< SplineCurve > & *crv1*, int *idx1*, shared_ptr< SplineCurve > & *crv2*, int *idx2*, double *tol*)

Define linear constraints between coefficients on two curves entities representing the same trace to make the trace of the two curves identical.

28.16.2.4 shared_ptr<SplineSurface> Go::GapRemoval::getSplineAndBd (shared_ptr< ParamSurface > *psurf*, std::vector< shared_ptr< CurveOnSurface > > & *bd_crvs*)

Fetch the underlying spline surface and trimming curves from a bounded surface

28.16.2.5 bool Go::GapRemoval::modifyAtVertex (shared_ptr< SplineSurface > *srf*, Point *face_param*, Point *vertex*, double *epsge*)

Modify a surface to adapt to a given point, vertex, in the parameter value face_param.

28.16.2.6 void Go::GapRemoval::modifySplines (shared_ptr< ParamSurface > & *srf1*, std::vector< shared_ptr< CurveOnSurface > > & *bd_cv1*, std::vector< double > & *start1*, std::vector< double > & *end1*, shared_ptr< ParamSurface > & *srf2*, std::vector< shared_ptr< CurveOnSurface > > & *bd_cv2*, std::vector< double > & *start2*, std::vector< double > & *end2*, std::vector< Point > & *vertex*, double *epsge*)

Modify the underlying spline surface of srf1 to improve the adaption to given trimming curves.

28.16.2.7 void Go::GapRemoval::modifySplineSf (shared_ptr< ParamSurface > & *srf1*, std::vector< shared_ptr< CurveOnSurface > > & *bd_cv1*, std::vector< double > *start1*, std::vector< double > *end1*, shared_ptr< ParamSurface > & *srf2*, std::vector< shared_ptr< CurveOnSurface > > & *bd_cv2*, std::vector< double > *start2*, std::vector< double > *end2*, double *epsge*)

Modify the underlying spline surface of srf1 to improve the adaption to given trimming curves.

28.16.2.8 void Go::GapRemoval::removeGapSpline (shared_ptr< SplineVolume > & *vol1*, shared_ptr< SurfaceOnVolume > & *bd_sf1*, double *sf1_start1*, double *sf1_end1*, double *sf1_start2*, double *sf1_end2*, shared_ptr< SplineVolume > & *vol2*, shared_ptr< SurfaceOnVolume > & *bd_sf2*, double *sf2_start1*, double *sf2_end1*, double *sf2_start2*, double *sf2_end2*, Point *vertex_ll*, Point *vertex_ur*, double *epsge*, int *orientation*)

We average the volumes along the matching faces on the rectangular domain given by vertex lower left and upper right (assuming that such a domain is well defined).

28.16.2.9 void Go::GapRemoval::removeGapSpline (shared_ptr< SplineSurface > & *srf1*, shared_ptr< CurveOnSurface > & *bd_cv1*, double *start1*, double *end1*, shared_ptr< SplineSurface > & *srf2*, shared_ptr< CurveOnSurface > & *bd_cv2*, double *start2*, double *end2*, Point *vertex1*, Point *vertex2*, double *epsge*, bool * *same_orientation* = NULL)

Both surfaces are non-trimmed spline surfaces and the common boundary are described by CurveOnSurface entities Remove gap by averaging coefficients at the common boundary. May increase the associated spline spaces.

28.16.2.10 void Go::GapRemoval::removeGapSpline2 (std::vector< shared_ptr< CurveOnSurface > > & *bd_cv1*, std::vector< double > & *start1*, std::vector< double > & *end1*, std::vector< shared_ptr< CurveOnSurface > > & *bd_cv2*, std::vector< double > & *start2*, std::vector< double > & *end2*, std::vector< Point > & *vertex*, double *epsge*)

Both surfaces are non-trimmed spline surfaces and the common boundary are described by CurveOnSurface entities Remove gap by defining conditions between coefficients at the commont boundary between the two surface and modify both surfaces accordingly

28.16.2.11 bool Go::GapRemoval::removeGapSplineTrim (shared_ptr< SplineSurface > & *srf1*, std::vector< shared_ptr< CurveOnSurface > > & *bd_cv1*, std::vector< double > *start1*, std::vector< double > *end1*, std::vector< shared_ptr< CurveOnSurface > > & *bd_cv2*, std::vector< double > *start2*, std::vector< double > *end2*, Point *vertex1*, Point *vertex2*, double *epsge*)

Both surfaces are trimmed and have an undarlying spline surface. The common boundary are described by CurveOnSurface entities limited by bounding parameters. Sub curves of the same curve on surface entity may occur several times, but are split to have correspondance between the two surfaces along the commonboundary.

28.16.2.12 double Go::GapRemoval::removeGapTrim (shared_ptr< CurveOnSurface > & *bd_cv1*, double *start1*, double *end1*, shared_ptr< CurveOnSurface > & *bd_cv2*, double *start2*, double *end2*, Point *vertex1*, Point *vertex2*, double *epsge*)

Both surfaces are trimmed of some type and the common boundary are described by CurveOnSurface entities

28.16.2.13 shared_ptr<SplineCurve> Go::GapRemoval::replaceCurvePiece (shared_ptr< SplineCurve > *crv*, shared_ptr< SplineCurve > *sub_crv*, double *par1*, int *cont1*, double *par2*, int *cont2*)

Replace a sub curve (between par1 and par2) in a given spline curve by a modified curve piece. The continuity at the joints are given by cont1 and cont2

28.17 Go::GeometryTools Namespace Reference

Functions

- int GO_API analyzePeriodicity (const SplineCurve &cv, double knot_tol=1e-12)
- int GO_API analyzePeriodicity (const SplineSurface &sf, int direction, double knot_tol=1e-12)
- int GO_API analyzePeriodicity (const BsplineBasis &basis, double knot_tol=1e-12)
- int GO_API analyzePeriodicityDerivs (const ParamCurve &cv, int max_derivs, double tol=1e-14)
- int GO_API analyzePeriodicityDerivs (const SplineSurface &sf, int direction, int max_derivs, double tol=1e-14)
- shared_ptr< SplineCurve > GO_API curveSum (const SplineCurve &crv1, double fac1, const SplineCurve &crv2, double fac2, double num_tol=1e-05)
- shared_ptr< SplineSurface > GO_API surfaceSum (const SplineSurface &sf1, double fac1, const SplineSurface &sf2, double fac2, double num_tol=1e-05)
- void GO_API estimateSurfaceSize (const ParamSurface &srf, double &length_u, double &length_v, double *area=NULL)
- void GO_API estimateIsoCurveLength (const SplineSurface &srf, bool dir_u, double par, double &length)
- bool GO_API degenerateToCurve (const SplineSurface &srf, bool dir_u, double tol)
- void GO_API makeBdDegenerate (SplineSurface &srf, int bd_idx)

  Make a specified surface boundary exactly degenerate.

- void GO_API makeUnionKnots (std::vector< BsplineBasis > &bbasis, double tol, std::vector< double > &union_knots)

  Compute the union of a set of knot vectors.
- void GO_API makeUnionKnots (std::vector< std::vector< double > > &knots, double tol, std::vector< double > &union_knots)
- bool GO_API checkConstantCoef (SplineCurve &cv, int idx, double val, double max_dist, double tol)
- void GO_API setSfBdCoefToConst (SplineSurface &srf, int bd_idx, int idx_d, double val, double deg_tol)
- void GO_API findDominant (const SplineSurface &surface, Vector3D &dominant_u, Vector3D &dominant_v)
- void GO_API getGnJoints (const ParamCurve &curve, const std::vector< double > &cont, std::vector< double > &gn_joints)
- void GO_API getGnJoints (const CurveLoop &loop, const std::vector< double > &cont, std::vector< std::vector< double > > &gn_joints)
- bool GO_API isCoincident (const ParamCurve &cv1, const ParamCurve &cv2, double epsge)
- bool GO_API negativeProj (const SplineSurface &surface, const Array< Vector3D, 2 > &refvector, const double eps=0.0)
- shared_ptr< ParamCurve > GO_API projectCurve (shared_ptr< ParamCurve > incurve, const Point &normal, bool planar)
- shared_ptr< SplineCurve > GO_API projectCurve (const SplineCurve &incurve, const Point &normal, bool planar)
- shared_ptr< SplineCurve > GO_API representSurfaceAsCurve (const SplineSurface &surface, int cv_dir)
- shared_ptr< SplineSurface > GO_API representCurveAsSurface (const SplineCurve &curve, int cv_dir, const BsplineBasis &other_bas, bool rational)
- std::vector< double > GO_API getRotationMatrix (const Point &unit_axis_dir, double alpha)
- void GO_API rotateSplineSurf (Point rot_axis, double alpha, SplineSurface &sf)
- void GO_API rotateSplineCurve (Point rot_axis, double alpha, SplineCurve &cv)
- void GO_API rotateLineCloud (Point rot_axis, double alpha, LineCloud &lc)
- void GO_API rotatePoint (Point rot_axis, double alpha, double *space_pt)
- void GO_API rotatePoint (Point rot_axis, double alpha, Point &space_pt)
- void GO_API splitCurveIntoSegments (const SplineCurve &cv, std::vector< SplineCurve > &seg)

  Split a spline curve into Bezier segments.
- std::vector< shared_ptr< SplineSurface > > GO_API splitInKinks (const SplineSurface &sf, const std::vector< double > &u_kinks, const std::vector< double > &v_kinks)

  Extract sub patches from the surface given by input parameters.
- void GO_API splitSurfaceIntoPatches (const SplineSurface &sf, std::vector< SplineSurface > &pat)

  Splits a spline surface into Bezier patches.
- void GO_API surfaceKinks (const SplineSurface &sf, double max_normal_angle, std::vector< double > &g1_disc_u, std::vector< double > &g1_disc_v, bool compute_g1_disc=true)
- void GO_API curveKinks (const SplineCurve &cv, double tol, double ang_tol, std::vector< double > &c1_discontinuous, std::vector< double > &g1_discontinuous)

  Find parameter values where a curve is G1- or C1-discontinuous.
- void GO_API translateSplineSurf (const Point &trans_vec, SplineSurface &sf)

  Translate the given SplineSurface by trans_vec.
- void GO_API translateSplineCurve (const Point &trans_vec, SplineCurve &cv)

  Translate the given SplineCurve by trans_vec.
- void GO_API translateLineCloud (const Point &trans_vec, LineCloud &lc)

  Translate the given LineCloud by trans_vec.
- void GO_API averageBoundaryCoefs (shared_ptr< SplineSurface > &srf1, int bd1, bool keep_first, shared_ptr< SplineSurface > &srf2, int bd2, bool keep_second, bool found_corner1, Point corner1, bool found_corner2, Point corner2, bool opposite)
- void GO_API unifyCurveSplineSpace (std::vector< shared_ptr< SplineCurve > > &curves, double tol)
- void GO_API unifySurfaceSplineSpace (std::vector< shared_ptr< SplineSurface > > &surfaces, double tol, int dir=0)
- void GO_API unifySurfaceSplineSpaceOneDir (std::vector< shared_ptr< SplineSurface > > &surfaces, double tol, bool unify_u_dir)

- shared_ptr< SplineSurface > GO_API joinPatches (const std::vector< shared_ptr< SplineSurface > > &patches, const SplineSurface &spline_space)
- void GO_API insertKnotsEvenly (BsplineBasis &basis, int num_knots)
- void GO_API insertKnotsEvenly (BsplineBasis &basis, double tmin, double tmax, int num_knots, double knot_diff_tol=1e-05)
- double GO_API getKnotAtLargestInterval (const BsplineBasis &basis)
- std::pair< double, double > GO_API getLargestParameterInterval (const BsplineBasis &basis)
- void setParameterDomain (std::vector< shared_ptr< BoundedSurface > > &sfs, double u1, double u2, double v1, double v2)

  Reparameterize a set of bounded surfaces to the same domain.

28.17.1 Function Documentation

28.17.1.1 int GO_API Go::GeometryTools::analyzePeriodicity (const SplineCurve & *cv,* double *knot_tol* = 1e-12)

Analyze periodicity of curve based on number of repeating knots and control points. The return value is -1 if the curve ends are disjoint, otherwise k if cv is C^k continuous. These are sufficient but not necessary conditions for periodicity, so it is possible that a call to analyzePeriodicityDerivs() will yield a higher degree of periodicity.

Parameters

cv	the curve to analyse
knot_tol	the tolerance used when comparing knot intervals.

Returns

-1 if the curve ends are disjoint, or k if the curve is proven to be C^k continuous.

28.17.1.2 int GO_API Go::GeometryTools::analyzePeriodicity (const SplineSurface & *sf,* int *direction,* double *knot_tol* = 1e-12)

Analyze periodicity of surface based on number of repeating knots and control points. The return value is -1 if the surface edges are disjoint, otherwise k if sf is C^k continuous across the seam. These are sufficient but not necessary conditions for periodicity, so it is possible that a call to analyzePeriodicityDerivs() will yield a higher degree of periodicity. The current implementation is quite slow, and not optimized for speed.

Parameters

sf	reference to the SplineSurface to be analyzed
direction	specify 'direction' to be '0' to check for periodicity in the first parameter direction, or '1' to check the second parameter direction.
knot_tol	the tolerance used when comparing knot intervals

Returns

-1 if the surface edges are disjoint, otherwise k if the

28.17.1.3 int GO_API Go::GeometryTools::analyzePeriodicity (const BsplineBasis & *basis*, double *knot_tol* = 1e-12)

Analyze periodicity of basis based on number of repeating knots. The return value is -1 if there is no repeating (or order-tuple end knots), up to k if there are (order-1-k)-tuple end knots and sufficient repeats for a C^k curve. This is mostly a helper function for the curve and surface analysis functions.

Parameters

basis	reference to the BsplineBasis to analyze
knot_tol	the tolerance used when comparing knots and knot intervals

Returns

-1 if there is no repeating (or order-tuple end knots), up to k if there are (order-1-k)-tuple end knots and sufficient repeats for a C^k curve.

28.17.1.4 int GO_API Go::GeometryTools::analyzePeriodicityDerivs (const ParamCurve & *cv*, int *max_derivs*, double *tol* = 1e-14)

Analyze periodicity of curve based on evaluating derivatives at both endpoints. The return value is -1 if the curve ends are disjoint, otherwise k if cv is C^k continuous. A maximum of max_derivs derivatives are computed, so the analysis cannot yield a higher return value then max_derivs. The tolerance is the amount the point and derivatives are allowed to be different at the two ends. The default is quite tight!

Parameters

cv	the curve to be analyzed for periodicity
max_derivs	the maximum of computed derivatives (the analysis can not detect continuities beyond this value).
tol	the tolerance used when comparing points and derivatives for approximate equality

Returns

-1 if the curve ends are disjoint, k if the curve is proven to be C^k continuous.

28.17.1.5 int GO_API Go::GeometryTools::analyzePeriodicityDerivs (const SplineSurface & *sf*, int *direction*, int *max_derivs*, double *tol* = 1e-14)

Analyze periodicity of surface based on evaluating derivatives at opposing ends of the surface. The return value is -1 if the surface edges are disjoint, otherwise k if sf is C^k continuous across the seam. These are sufficient but not necessary conditions for periodicity, so it is possible that a call to analyzePeriodicityDerivs() will yield a higher degree of periodicity. The current implementation is quite slow, and not optimized for speed.

Parameters

sf	the SplineSurface to analyze for periodicity
direction	the parameter direction to check for periodicity (0 to check in the first parameter direction, 1 to check in the second.
max_derivs	the maximum of computed derivatives (the analysis cannot detect continuities beyond this value
tol	the tolerance used when comparing points and derivatives for approximate equality.

Returns

-1 if the surface edges are disjoint, or k if the surface is proven to be C^k continuous across the seam.

28.17.1.6 void GO_API Go::GeometryTools::averageBoundaryCoefs (shared_ptr< SplineSurface > & *srf1,* int *bd1,* bool *keep_first,* shared_ptr< SplineSurface > & *srf2,* int *bd2,* bool *keep_second,* bool *found_corner1,* Point *corner1,* bool *found_corner2,* Point *corner2,* bool *opposite*)

Average specified boundary coefficients between two spline surfaces to ensure a C0 transition

28.17.1.7 bool GO_API Go::GeometryTools::checkConstantCoef (SplineCurve & *cv,* int *idx,* double *val,* double *max_dist,* double *tol*)

Check if a curve coefficient is equal to a constant in a specified dimension provided it already lies close

28.17.1.8 void GO_API Go::GeometryTools::curveKinks (const SplineCurve & *cv,* double *tol,* double *ang_tol,* std::vector< double > & *c1_disconts,* std::vector< double > & *g1_disconts*)

Find parameter values where a curve is G1- or C1-discontinuous.

28.17.1.9 shared_ptr<SplineCurve> GO_API Go::GeometryTools::curveSum (const SplineCurve & *crv1,* double *fac1,* const SplineCurve & *crv2,* double *fac2,* double *num_tol* = `1e-05`)

Addition of two signed SplineCurves, i.e. this function can also be used for subtraction. The curves is assumed to live on the same parameter domain, but may have different knot vectors. resulting curve = fac1 $*$ crv1 + fac2 $*$ crv2

Parameters

crv1	the first of the curves to be added
fac1	multiplicative factor of the first curve
crv2	the second of the curves to be added
fac2	multiplicative factor of the second curve
num_tol	tolerance used when unifying the spline spaces in which 'crv1' and 'crv2' lie.

Returns

shared pointed to a newly created SplineCurve which is the sum of 'crv1' and 'crv2'.

28.17.1.10 bool GO_API Go::GeometryTools::degenerateToCurve (const SplineSurface & *srf,* bool *dir_u,* double *tol*)

Check if a given spline surface degnerates to a curve within a given tolerance

28.17.1.11 void GO_API Go::GeometryTools::estimateIsoCurveLength (const SplineSurface & *srf,* bool *dir_u,* double *par,* double & *length*)

estimate the length of an iso-curve on the surface

Parameters

srf	the surface containing the iso-curve
dir_u	'true' if the iso-curve is along the first parameter (second parameter fixed), 'false' if it is the first parameter that is fixed.
par	parameter value for the fixed parameter
length	returns the estimated length of the iso-curve

28.17.1.12 void GO_API Go::GeometryTools::estimateSurfaceSize (const ParamSurface & *srf,* double & *length_u,* double & *length_v,* double * *area* = NULL)

Rough estimate of the size of a parametric surface

Parameters

srf	the surface we want to estimate the size of
length_u	the estimated average length of the surface, moving along the first parameter
length_v	the estimated average length of the surface, moving along the second parameter

28.17.1.13 void GO_API Go::GeometryTools::findDominant (const SplineSurface & *surface,* Vector3D & *dominant_u,* Vector3D & *dominant_v*)

Finds the "dominant u- and v-vectors" for a surface, defined to be the sum of all the vectors pointing from one control point to the next in the u- and v-directions

Parameters

surface	the surface we want to analyze
dominant_u	returns the dominant u-vector for the surface
dominant_v	returns the dominant v-vector for the surface

28.17.1.14 void GO_API Go::GeometryTools::getGnJoints (const ParamCurve & *curve,* const std::vector< double > & *cont,* std::vector< double > & *gn_joints*)

Partition the given curve into segments where each segment is at least G^n continuous (currently supporting up to G2 continuity).

Parameters

curve	the curve to analyze
cont	the tolerance used for defining continuity. cont[0] is the tolerance used for defining the G^0 continuity, cont[1] is used for checking G^1 continuity, etc. The length of this vector also determines 'n' ('n' is equal to cont.size() - 1).

Return values

gn_joints	returns the parameter values where one segment stops and the next begins. The vector will at least contain two values (the start and end parameter of the curve).

28.17.1.15 void GO_API Go::GeometryTools::getGnJoints (const CurveLoop & *loop*, const std::vector< double > & *cont*, std::vector< std::vector< double > > & *gn_joints*)

Partition a given CurveLoop into segments where each segment is at least G^n continuous (currently supporting up to G2 continuity).

Parameters

loop	the CurveLoop to analyze
cont	the tolerance used for defining continuity. cont[0] is the tolerance used for defining the G^0 continuity, cont[1] is used for checking G^1 continuity, etc. The length of this vector also determines 'n' ('n' is equal to cont.size() - 1).
gn_joints	a vector of a vector, reporting the result of the analysis. The outer vector contains one entry per curve in the CurveLoop. This entry contains the parameters for which that curve must be split in order to obtain G^n segments. NB: the start- and end parameters are NOT included here, as opposed to the result obtained from the other getGnJoints() function. The exception to this is when there is an G^n discontinuity at the transition between the curve 'i-1' and curve 'i' in the CurveLoop. To indicate this, the start parameter value for curve 'i' will be included in the corresponding entry in 'gn_joints'.

28.17.1.16 double GO_API Go::GeometryTools::getKnotAtLargestInterval (const BsplineBasis & *basis*)

Return the mid parameter of the largest parameter interval in a given B-spline basis. If several knot intervals have the same size, the first is returned.

28.17.1.17 std::pair<double, double> GO_API Go::GeometryTools::getLargestParameterInterval (const BsplineBasis & *basis*)

Return the start and end parameter corresponding to the largest parameter interval in a given B-spline basis. If several knot intervals have the same size, the first is returned.

28.17.1.18 std::vector<double> GO_API Go::GeometryTools::getRotationMatrix (const Point & *unit_axis_dir*, double *alpha*)

Compute the elements of the matrix describing a rotation or a given number of radians around a given axis going through the origin.

Parameters

unit_axis_dir	this vector defines the axis of rotation. It must be of unit length, although this is not checked by the function.
alpha	the angle of rotation, in radians

Returns

a vector containing the matrix elements of the corresponding rotation matrix, stored row-wise.

28.17.1.19 void GO_API Go::GeometryTools::insertKnotsEvenly (BsplineBasis & *basis,* int *num_knots*)

Insert num_knots new knots in the num_knots largest knot intervals in the B-spline basis basis. The knots are inserted one by one. Thus, more than one knot may be inserted in one knot interval of the initial basis. And we do not end up with the most even distribution of knots possible.

28.17.1.20 void GO_API Go::GeometryTools::insertKnotsEvenly (BsplineBasis & *basis,* double *tmin,* double *tmax,* int *num_knots,* double *knot_diff_tol* = 1e-05)

Insert num_knots new knots in the num_knots largest knot intervals in the B-spline basis basis in the parameter interval [tmin,tmax]. The knots are inserted one by one. Thus, more than one knot may be inserted in one knot interval of the initial basis. And we do not end up with the most even distribution of knots possible.

28.17.1.21 bool GO_API Go::GeometryTools::isCoincident (const ParamCurve & *cv1,* const ParamCurve & *cv2,* double *epsge*)

Returns true if the curves are approximately coincident (that is, they have the same parameter space and overlap in space). The function uses a (possibly high) number of closest point calculations to check for spatial coincidence.

Parameters

cv1	the first curve to check for coincidence
cv2	the second curve to check for coincidence
epsge	the tolerance for specifying what we mean by *approximately* coincident

Returns

'true' if the curves are found to be approximately coincident, 'false' otherwise.

28.17.1.22 shared_ptr<SplineSurface> GO_API Go::GeometryTools::joinPatches (const std::vector< shared_ptr< SplineSurface > > & *patches,* const SplineSurface & *spline_space*)

Join patches with continuity according to input basis_u & basis_v. The patches are assumed to be in Bezier form, and form a continuous set. There should be num_u x num_v patches, where num_u = numcoefs_u/order_u and num_v = numcoefs_v/order_v (as given by basis_u and basis_v).

28.17.1.23 void GO_API Go::GeometryTools::makeBdDegenerate (SplineSurface & *srf,* int *bd_idx*)

Make a specified surface boundary exactly degenerate.

28.17.1.24 void GO_API Go::GeometryTools::makeUnionKnots (std::vector< BsplineBasis > & *bbasis,* double *tol,* std::vector< double > & *union_knots*)

Compute the union of a set of knot vectors.

28.17.1.25 void GO_API Go::GeometryTools::makeUnionKnots (std::vector< std::vector< double > > & *knots,* double *tol,* std::vector< double > & *union_knots*)

28.17.1.26 bool GO_API Go::GeometryTools::negativeProj (const SplineSurface & *surface,* const Array< Vector3D, 2 > & *refvector,* const double *eps* = 0.0)

Returns true if any vector difference between neighboring control points in the u- or v-directions has negative projection on the given reference vector.

Parameters

surface	the SplineSurface containing the control points
refvector	the vector onto which we carry out the projection
eps	toleance used when defining whether a vector has a negative projection onto 'refvector' (the scalar product must be less than -eps).

Returns

'true' if we have found a difference between neighboring control points that has a negative projection on the reference vector.

28.17.1.27 shared_ptr<ParamCurve> GO_API Go::GeometryTools::projectCurve (shared_ptr< ParamCurve > *incurve,* const Point & *normal,* bool *planar*)

Project a 3D parametric curve into a given plane. The curve can be returned either as a 3D curve lying in the plane or as a 2D curve. In the latter case, the coordinate system is rotated such that the given plane normal coincides with the z-axis.

Parameters

incurve	the curve to project
normal	the normal to the plane of projection
planar	'true' if we want the returned curve to be a 2D curve.

Returns

a shared pointer to a newly constructed, planar SplineCurve represented as a parametric curve expressing the projection of 'incurve' onto the given plane.

28.17.1.28 shared_ptr<SplineCurve> GO_API Go::GeometryTools::projectCurve (const SplineCurve & *incurve,* const Point & *normal,* bool *planar*)

Project a 3D SplineCurve into a given plane. The curve can be returned either as a 3D curve lying in the plane or as a 2D curve. In the latter case, the coordinate system is rotated such that the given plane normal coincides with

the z-axis.

Parameters

incurve	the curve to project
normal	the normal to the plane of projection
planar	'true' if we want the returned curve to be a 2D curve.

Returns

a shared pointer to a newly constructed, planar SplineCurve expressing the projection of 'incurve' onto the given plane.

28.17.1.29 shared_ptr<SplineSurface> GO_API Go::GeometryTools::representCurveAsSurface (const SplineCurve & *curve,* int *cv_dir,* const BsplineBasis & *other_bas,* bool *rational*)

Describe a curve as surface in a given direction. The surface output is rational if the argument rational is set to 'true'. In that case the curve is supposed to live in homogenous space. Describe a curve as a lower-dimensional surface in a given direction.

Parameters

curve	the curve that we want to express as a surface
cv_dir	If this variable is set to '1', then the curve's parameter will become the *first* parameter in the generated surface. If it is set to '2', the curve's parameter will become the *second* parameter in the generated surface. Other values are illegal.
other_bas	the BsplineBasis for the additional parameter direction.
rational	define whether the generated surface shall be specified as *rational* or not.

Returns

a shared pointer to a new SplineSurface, expressing the curve in a space of lower dimensionality.

28.17.1.30 shared_ptr<SplineCurve> GO_API Go::GeometryTools::representSurfaceAsCurve (const SplineSurface & *surface,* int *cv_dir*)

Describe a surface as a high-dimensional curve in a given direction. If the surface is rational, the curve will be non-rational and living in the homogenous space.

Parameters

surface	the surface to express as a curve
cv_dir	the parameter direction that will be kept when defining the curve (the other one will disappear, as the control points in this direction will be lumped together and expressed as single control points in a higher-dimensional space. 'cv_dir' takes either the value '1' (keep the first parameter direction) or '2' (keep the second parameter direction).

Returns

shared pointer to a new SplineCurve, expressing the surface as a curve in a high-dimensional space.

28.17.1.31 void GO_API Go::GeometryTools::rotateLineCloud (Point *rot_axis*, double *alpha*, LineCloud & *lc*)

Rotate the given LineCloud a certain angle around a given axis.

Parameters

rot_axis	the axis of rotation. It does not have to be normalized, but must of course be nonzero.
alpha	the angle of rotation, given in radians
lc	reference to the LineCloud that is to be rotated

28.17.1.32 void GO_API Go::GeometryTools::rotatePoint (Point *rot_axis*, double *alpha*, double * *space_pt*)

Rotate the given 3D point a certain angle around a certain axis.

Parameters

rot_axis	the axis of rotation. It does not have to be normalized, but must of course be nonzero.
alpha	the angle of rotation, given in radians
space_pt	pointer to the memory location where the 3D coordinates of the point are stored. These will be overwritten with the rotated coordinates.

28.17.1.33 void GO_API Go::GeometryTools::rotatePoint (Point *rot_axis*, double *alpha*, Point & *space_pt*)

Rotate the given 3D point a certain angle around a certain axis.

Parameters

rot_axis	the axis of rotation. It does not have to be normalized, but must of course be nonzero.
alpha	the angle of rotation, given in radians
space_pt	reference to teh point to be rotated. This will be overwritten with the rotated coordinates.

28.17.1.34 void GO_API Go::GeometryTools::rotateSplineCurve (Point *rot_axis*, double *alpha*, SplineCurve & *cv*)

Rotate the given SplineCurve a certain angle around a given axis.

Parameters

rot_axis	the axis of rotation. It does not have to be normalized, but must of course be nonzero.
alpha	the angle of rotation, given in radians
cv	reference to the curve that is to be rotated

28.17.1.35 void GO_API Go::GeometryTools::rotateSplineSurf (Point *rot_axis*, double *alpha*, SplineSurface & *sf*)

Rotate the given SplineSurface a certain angle around a given axis.

Parameters

rot_axis	the axis of rotation. It does not have to be normalized, but must of course be nonzero.
alpha	the angle of rotation, given in radians
sf	reference to the surface that is to be rotated.

28.17.1.36 void Go::GeometryTools::setParameterDomain (std::vector< shared_ptr< BoundedSurface > > & *sfs*, double *u1*, double *u2*, double *v1*, double *v2*)

Reparameterize a set of bounded surfaces to the same domain.

28.17.1.37 void GO_API Go::GeometryTools::setSfBdCoefToConst (SplineSurface & *srf*, int *bd_idx*, int *idx_d*, double *val*, double *deg_tol*)

Modify surface along specified boundary to match a specific constant in one direction. Currently only non-rational surfaces

28.17.1.38 void GO_API Go::GeometryTools::splitCurveIntoSegments (const SplineCurve & *cv*, std::vector< SplineCurve > & *seg*)

Split a spline curve into Bezier segments.

28.17.1.39 std::vector<shared_ptr<SplineSurface> > GO_API Go::GeometryTools::splitInKinks (const SplineSurface & *sf*, const std::vector< double > & *u_kinks*, const std::vector< double > & *v_kinks*)

Extract sub patches from the surface given by input parameters.

28.17.1.40 void GO_API Go::GeometryTools::splitSurfaceIntoPatches (const SplineSurface & *sf*, std::vector< SplineSurface > & *pat*)

Splits a spline surface into Bezier patches.

28.17.1.41 void GO_API Go::GeometryTools::surfaceKinks (const SplineSurface & *sf*, double *max_normal_angle*, std::vector< double > & *g1_disc_u*, std::vector< double > & *g1_disc_v*, bool *compute_g1_disc* = true)

Surface assumed to be continuous. Return parameter values failing to achieve G1-continuity.

28.17.1.42 shared_ptr<SplineSurface> GO_API Go::GeometryTools::surfaceSum (const SplineSurface & *sf1,* double *fac1,* const SplineSurface & *sf2,* double *fac2,* double *num_tol* = 1e-05)

28.17.1.43 void GO_API Go::GeometryTools::translateLineCloud (const Point & *trans_vec,* LineCloud & *lc*)

Translate the given LineCloud by trans_vec.

28.17.1.44 void GO_API Go::GeometryTools::translateSplineCurve (const Point & *trans_vec,* SplineCurve & *cv*)

Translate the given SplineCurve by trans_vec.

28.17.1.45 void GO_API Go::GeometryTools::translateSplineSurf (const Point & *trans_vec,* SplineSurface & *sf*)

Translate the given SplineSurface by trans_vec.

28.17.1.46 void GO_API Go::GeometryTools::unifyCurveSplineSpace (std::vector< shared_ptr< SplineCurve > > & *curves,* double *tol*)

Make sure that a set of curves live on the same knot vector tol-equal knots are set equal (i.e. if they differ within tol).

28.17.1.47 void GO_API Go::GeometryTools::unifySurfaceSplineSpace (std::vector< shared_ptr< SplineSurface > > & *surfaces,* double *tol,* int *dir* = 0)

Make sure that a set of surfaces live on the same knot vectors tol-equal knots are set equal (i.e. if they differ within tol). dir 0 means both, 1 is u, 2 is v

28.17.1.48 void GO_API Go::GeometryTools::unifySurfaceSplineSpaceOneDir (std::vector< shared_ptr< SplineSurface > > & *surfaces,* double *tol,* bool *unify_u_dir*)

Make sure that a set of surfaces live on the same knot vectors in one parameter direction. tol-equal knots are set equal (i.e. if they differ within tol). Nothing is changed in the other parameter direction (as opposed to unify↩ SurfaceSplineSpace() where orders are raised to same value for all surfaces in both directions) Warning! Objects being pointed to may be recreated inside function. Remember to update other shared pointers if needed.

Parameters

surfaces	Surfaces to end up with common knot vectors
tol	tolerance for identifying equal knot values
unify_u_dir	if 'true', unify bases in first parameter direction if 'false', unify bases in second parameter direction

28.18 Go::HahnsSurfaceGen Namespace Reference

Functions

- std::vector< shared_ptr< Go::ParamSurface > > constructPolygonialSurface (std::vector< shared_ptr< Go::ParamCurve > > &bnd_curves, std::vector< shared_ptr< Go::ParamCurve > > &cross_curves, double neighbour_tol, double kink_tol, double knot_diff_tol)
- std::vector< shared_ptr< Go::ParamSurface > > constructHahnsSurface (std::vector< shared_ptr< Go::SplineCurve > > &bnd_curves, std::vector< shared_ptr< Go::SplineCurve > > &mod_cross_curves, double neighbour_tol, double kink_tol, double knot_diff_tol)

28.18.1 Detailed Description

This namespace contains functions used to create a number of surface covering a whole defined by of a number of boundary curves (3<=nmb_cvs<=6). Hahns method is used in the construction. Typically used for patching a model in which one or more surfaces are missing.

28.18.2 Function Documentation

28.18.2.1 std::vector<shared_ptr<Go::ParamSurface> > Go::HahnsSurfaceGen::constructHahnsSurface (std::vector< shared_ptr< Go::SplineCurve > > & *bnd_curves*, std::vector< shared_ptr< Go::SplineCurve > > & *mod_cross_curves*, double *neighbour_tol*, double *kink_tol*, double *knot_diff_tol*)

Given input of bnd_curves and cross_tangent curves, create the corresponding Hahns Surfaces. Assuming input curves fulfill corner conditions. All curves expected to live in 3-dimensional space.

Parameters

bnd_curves	edge curves for the Hahns Surface.
mod_cross_curves	corresponding cross tangent curves.
neighbour_tol	allowed distance between corresponding end points.
kink_tol	allowed angle between corresponding tangents.
knot_diff_tol	parametric tolerance for equality of knots.

Returns

vector containing the Hahns Surface.

28.18.2.2 std::vector<shared_ptr<Go::ParamSurface> > Go::HahnsSurfaceGen::constructPolygonialSurface (std::vector< shared_ptr< Go::ParamCurve > > & *bnd_curves*, std::vector< shared_ptr< Go::ParamCurve > > & *cross_curves*, double *neighbour_tol*, double *kink_tol*, double *knot_diff_tol*)

The routine which actually creates vector of blending surfaces, with given curves as their total bnd curve. # of return surfaces equals # of curves. All bnd curves share orientation (clockwise), and all cross curves point inwards. A missing cross curve is indicated by a 0 pointer. bnd_curves must form a loop. As we approximate modified cross curves, we include parameters to denote the exactness of the approximation. All curves expected to live in 3-dimensional space.

Parameters

bnd_curves	edge curves for the Hahns Surface.

Parameters

cross_curves	corresponding cross tangent curves.
neighbour_tol	allowed distance between corresponding end points.
kink_tol	allowed angle between corresponding tangents.
knot_diff_tol	parametric tolerance for equality of knots.

Returns

vector containing the Hahns Surface.

28.19 Go::IntersectionUtils Namespace Reference

Various functions related to the intersection algorithms.

Functions

- shared_ptr< SplineCurve > create1DSplineCurve (const SplineCurve &cv, int dim_id)
- shared_ptr< SplineSurface > create1DSplineSurface (const SplineSurface &sf, int dim_id)
- shared_ptr< SplineCurve > splineCurveProduct (std::vector< shared_ptr< SplineCurve > > &cv, Alg2D↩ Elem term)
- shared_ptr< SplineSurface > splineSurfaceProduct (std::vector< shared_ptr< SplineSurface > > &sf, Alg3DElem term)
- shared_ptr< SplineCurve > insertCvInAlgcv (const SplineCurve &cv, AlgObj2DInt *alg_obj2d_int)
- shared_ptr< SplineSurface > insertSfInAlgsf (const SplineSurface &sf, AlgObj3DInt *alg_obj3d_int)
- shared_ptr< SplineSurface > insertSfInAlgsf2 (const SplineSurface &sf, AlgObj3DInt *alg_obj3d_int)
- shared_ptr< SplineSurface > insertSfInImplObj (const SplineSurface &spline_sf, const Bernstein↩ TetrahedralPoly &impl, const BaryCoordSystem3D &bc)
- double distImplRepresentationCompFunction (const SplineSurface &spline_sf, const BernsteinTetrahedral↩ Poly &impl, const BaryCoordSystem3D &bc, const SplineSurface &comp_1d_sf, double upar, double vpar)

28.19.1 Detailed Description

Various functions related to the intersection algorithms.

28.19.2 Function Documentation

28.19.2.1 shared_ptr<SplineCurve> Go::IntersectionUtils::create1DSplineCurve (const SplineCurve & *cv,* int *dim_id*)

28.19.2.2 shared_ptr<SplineSurface> Go::IntersectionUtils::create1DSplineSurface (const SplineSurface & *sf,* int *dim_id*)

28.19.2.3 double Go::IntersectionUtils::distImplRepresentationCompFunction (const SplineSurface & *spline_sf,* const BernsteinTetrahedralPoly & *impl,* const BaryCoordSystem3D & *bc,* const SplineSurface & *comp_1d_sf,* double *upar,* double *vpar*)

28.19.2.4 shared_ptr<SplineCurve> Go::IntersectionUtils::insertCvInAlgcv (const SplineCurve & *cv,* AlgObj2DInt * *alg_obj2d_int*)

28.19.2.5 shared_ptr<SplineSurface> Go::IntersectionUtils::insertSfInAlgsf (const SplineSurface & *sf,* AlgObj3DInt * *alg_obj3d_int*)

28.19.2.6 shared_ptr<SplineSurface> Go::IntersectionUtils::insertSfInAlgsf2 (const SplineSurface & *sf,* AlgObj3DInt * *alg_obj3d_int*)

28.19.2.7 shared_ptr<SplineSurface> Go::IntersectionUtils::insertSfInImplObj (const SplineSurface & *spline_sf,* const BernsteinTetrahedralPoly & *impl,* const BaryCoordSystem3D & *bc*)

28.19.2.8 shared_ptr<SplineCurve> Go::IntersectionUtils::splineCurveProduct (std::vector< shared_ptr< SplineCurve > > & *cv,* Alg2DElem *term*)

28.19.2.9 shared_ptr<SplineSurface> Go::IntersectionUtils::splineSurfaceProduct (std::vector< shared_ptr< SplineSurface > > & *sf,* Alg3DElem *term*)

28.20 Go::LinDepUtils Namespace Reference

Functions

- bool isPeelable (const LRSplineSurface &)
- std::vector< LRBSpline2D * > unpeelableBasisFunctions (const LRSplineSurface &)

28.20.1 Function Documentation

28.20.1.1 bool Go::LinDepUtils::isPeelable (const LRSplineSurface &)

28.20.1.2 std::vector<LRBSpline2D*> Go::LinDepUtils::unpeelableBasisFunctions (const LRSplineSurface &)

28.21 Go::LoftSurfaceCreator Namespace Reference

This namespace contains functions used to create lofted surfaces.

Functions

- SplineSurface * loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, int nmb_crvs)
- SplineSurface * loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs)
- SplineSurface * loftSurface (std::vector< shared_ptr< SplineCurve > > &loft_curves, int nmb_crvs)
- std::vector< shared_ptr< SplineCurve > > unifiedCurvesCopy (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, int nmb_crvs)
- void makeLoftParams (std::vector< shared_ptr< SplineCurve > >::const_iterator first_curve, int nmb_crvs, double param_length, std::vector< double > &params)
- SplineSurface * loftSurfaceFromUnifiedCurves (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs)
- SplineSurface * loftNonrationalSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs)
- SplineSurface * loftRationalSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs)

28.21.1 Detailed Description

This namespace contains functions used to create lofted surfaces.

28.21.2 Function Documentation

28.21.2.1 SplineSurface* Go::LoftSurfaceCreator::loftNonrationalSurface (std::vector< shared_ptr< SplineCurve > >::iterator *first_curve,* std::vector< double >::iterator *first_param,* int *nmb_crvs*)

Create a lofting surface interpolating the input curves in the input parameters. The input curves are expected to have identical B-spline space. Either all or none of the curves are expected to be rational. In case the curves are rational, we also loft the denominator function. In this way, we might risk that the resulting surface has negative controll points, this must be handled by the calling function. The returned lofted surface will be non-rational if the curves are non-rational.

Parameters

first_curve	iterator to first iso-curve in the lofted surface.
first_param	iso parameter to corresponding curve referred to by first_curve.
nmb_crvs	the number of curves referred to by first_curve.

Returns

pointer to the created lofting surface.

28.21.2.2 SplineSurface* Go::LoftSurfaceCreator::loftRationalSurface (std::vector< shared_ptr< SplineCurve > >::iterator *first_curve,* std::vector< double >::iterator *first_param,* int *nmb_crvs*)

Create a lofting surface interpolating the input rational curves in the input parameters by Hermite interpolation, to ensure positive denominator function. The input curves are expected to have identical B-spline space. All of the curves are expected to be rational. The returned lofted surface will also be rational.

Parameters

first_curve	iterator to first iso-curve in the lofted surface.
first_param	iso parameter to corresponding curve referred to by first_curve.
nmb_crvs	the number of curves referred to by first_curve.

Returns

pointer to the created lofting surface.

28.21.2.3 SplineSurface* Go::LoftSurfaceCreator::loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator *first_curve,* int *nmb_crvs*)

Create a lofting surface based on the input curves. The curves are not changed during the lofting process. The curves must all lie in the same space

Parameters

first_curve	iterator to first iso-curve in the lofted surface.
nmb_crvs	the number of curves referred to by first_curve.

Returns

pointer to the created lofting surface.

28.21.2.4 SplineSurface* Go::LoftSurfaceCreator::loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator *first_curve*, std::vector< double >::iterator *first_param*, int *nmb_crvs*)

Create a lofting surface interpolating the input curves in the input parameters. The curves are not changed during the lofting process. The curves must all lie in the same space

Parameters

first_curve	iterator to first iso-curve in the lofted surface.
first_param	iso parameter to corresponding curve referred to by first_curve.
nmb_crvs	the number of curves referred to by first_curve.

Returns

pointer to the created lofting surface.

28.21.2.5 SplineSurface* Go::LoftSurfaceCreator::loftSurface (std::vector< shared_ptr< SplineCurve > > & *loft_curves*, int *nmb_crvs*)

Create a lofting surface based on the input curves. The curves are changed during the lofting process. The curves must all lie in the same space.

Parameters

loft_curves	the input curves.
nmb_crvs	the number of input curves.

Returns

pointer to the created lofting surface.

28.21.2.6 SplineSurface* Go::LoftSurfaceCreator::loftSurfaceFromUnifiedCurves (std::vector< shared_ptr< SplineCurve > >::iterator *first_curve*, std::vector< double >::iterator *first_param*, int *nmb_crvs*)

Create a lofting surface interpolating the input curves in the input parameters. The input curves are expected to have identical B-spline space. Either all or none of the curves are expected to be rational. ??? The returned lofted surface will be rational if and only if the curves are rational.

Parameters

first_curve	iterator to first iso-curve in the lofted surface.
first_param	iso parameter to corresponding curve referred to by first_curve.
nmb_crvs	the number of curves referred to by first_curve.

Returns

pointer to the created lofting surface.

28.21.2.7 void Go::LoftSurfaceCreator::makeLoftParams (std::vector< shared_ptr< SplineCurve > >::const_iterator *first_curve,* int *nmb_crvs,* double *param_length,* std::vector< double > & *params*)

Calculate iso parameters for the input curves. The curves are expected to be ordered, i.e. corresponding to increasing iso parameters. Curves are given iso-parameters in the range 0.0 to param_length. All the paramter differences between two neighbouring curves will be propotional to the quadratic mean of the distance between corresponding control points, i.e. if, for two curves S=first_curve[i] and T=first_curve[i+1], Q is the quadratic mean of the distance between corresponding control points of S and T, and P is the difference between the calculated parameter values for S and T, then the ratio Q/P is the same for all i.

Parameters

first_curve	iterator to first iso curve.
nmb_crvs	the number of input curves.
param_length	length of parameter domain.
params	the computed iso parameters for the input curves.

28.21.2.8 std::vector<shared_ptr<SplineCurve> > Go::LoftSurfaceCreator::unifiedCurvesCopy (std::vector< shared_ptr< SplineCurve > >::iterator *first_curve,* int *nmb_crvs*)

Create a vector of curves holding a copy of the input curves, but where the spline bases have been changed (reparametrized, knot inserted and order raised) so that the B-spline spaces for the new curves all are identical, and where all curves are now rational if at least on of the input curves were rational. The input curves are not changed during the process. The curves must all lie in the same space.

Parameters

first_curve	iterator to first input curve.
nmb_crvs	the number of curves referred to by first_curve.

Returns

vector holding the unified curves.

28.22 Go::LoftVolumeCreator Namespace Reference

This namespace contains functions used to create lofted volumes.

Functions

- SplineVolume * loftVolume (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, int nmb_srfs)
- SplineVolume * loftVolume (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, std::vector< double >::iterator first_param, int nmb_srfs)
- std::vector< shared_ptr< SplineSurface > > unifiedSurfacesCopy (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, int nmb_srfs)
- void makeLoftParams (std::vector< shared_ptr< SplineSurface > >::const_iterator first_surface, int nmb_crvs, double param_length, std::vector< double > &params)
- SplineVolume * loftVolumeFromUnifiedSurfaces (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, std::vector< double >::iterator first_param, int nmb_srfs)
- SplineVolume * loftNonrationalVolume (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, std::vector< double >::iterator first_param, int nmb_srfs)
- SplineVolume * loftRationalVolume (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, std::vector< double >::iterator first_param, int nmb_srfs)

28.22.1 Detailed Description

This namespace contains functions used to create lofted volumes.

28.22.2 Function Documentation

28.22.2.1 SplineVolume* Go::LoftVolumeCreator::loftNonrationalVolume (std::vector< shared_ptr< SplineSurface > >::iterator *first_surface*, std::vector< double >::iterator *first_param*, int *nmb_srfs*)

Create a lofting volume interpolating the input surfaces in the input parameters. For each parameter direction (u or v), the input surfaces are expected to have identical B-spline space. Either all or none of the surfaces are expected to be rational. In case the surfaces are rational, we also loft the denominator function. In this way, we might risk that the resulting volume has negative controll points, this must be handled by the calling function. The returned lofted volume will non-rational if the surfaces are non-rational.

Parameters

first_surface	iterator to first iso-surface in the lofted volume.
first_param	iso parameter to corresponding surface referred to by first_surface.
nmb_srfs	the number of surfaces referred to by first_surface.

Returns

pointer to the created lofting volume.

28.22.2.2 SplineVolume* Go::LoftVolumeCreator::loftRationalVolume (std::vector< shared_ptr< SplineSurface > >::iterator *first_surface*, std::vector< double >::iterator *first_param*, int *nmb_srfs*)

Create a lofting volume interpolating the input rational surfaces in the input parameters by Hermite interpolation, to ensure positive denominator function. For each parameter direction (u or v), the input surfaces are expected to have identical B-spline space. All of the surfaces are expected to be rational. The returned lofted volume will also be rational.

Parameters

first_surface	iterator to first iso-surface in the lofted volume.
first_param	iso parameter to corresponding surface referred to by first_surface.
nmb_srfs	the number of surfaces referred to by first_surface.

Returns

pointer to the created lofting volume.

28.22.2.3 SplineVolume* Go::LoftVolumeCreator::loftVolume (std::vector< shared_ptr< SplineSurface > >::iterator *first_surface,* int *nmb_srfs*)

Create a lofting volume based on the input surfaces. The surfaces are not changed during the lofting process. The surfaces must all lie in the same space

Parameters

first_surface	iterator to first iso-surface in the lofted volume.
nmb_srfs	the number of surfaces referred to by first_surface.

Returns

pointer to the created lofting volume.

28.22.2.4 SplineVolume* Go::LoftVolumeCreator::loftVolume (std::vector< shared_ptr< SplineSurface > >::iterator *first_surface,* std::vector< double >::iterator *first_param,* int *nmb_srfs*)

Create a lofting volume interpolating the input surfaces in the input parameters. The surfaces are not changed during the lofting process. The surfaces must all lie in the same space

Parameters

first_surface	iterator to first iso-surface in the lofted volume.
first_param	iso parameter to corresponding surface referred to by first_surface.
nmb_srfs	the number of surfaces referred to by first_surface.

Returns

pointer to the created lofting volume.

28.22.2.5 SplineVolume* Go::LoftVolumeCreator::loftVolumeFromUnifiedSurfaces (std::vector< shared_ptr< SplineSurface > >::iterator *first_surface,* std::vector< double >::iterator *first_param,* int *nmb_srfs*)

Create a lofting volume interpolating the input surfaces in the input parameters. For each parameter direction (u or v), the input surfaces are expected to have identical B-spline space. Either all or none of the surfaces are expected to be rational. The returned lofted volume will be rational if and only if the surfaces are rational.

Parameters

first_surface	iterator to first iso-surface in the lofted volume.
first_param	iso parameter to corresponding surface referred to by first_surface.
nmb_srfs	the number of surfaces referred to by first_surface.

Returns

pointer to the created lofting volume.

28.22.2.6 void Go::LoftVolumeCreator::makeLoftParams (std::vector< shared_ptr< SplineSurface > >::const_iterator *first_surface,* int *nmb_crvs,* double *param_length,* std::vector< double > & *params*)

Calculate iso parameters for the input surfaces. The surfaces are expected to be ordered, i.e. corresponding to increasing iso parameters. Surfaces are given iso-parameters in the range 0.0 to param_length. All the paramter differences between two neighbouring surfaces will be propotional to the quadratic mean of the distance between corresponding control points, i.e. if, for two surfaces S=first_surface[i] and T=first_surface[i+1], Q is the quadratic mean of the distance between corresponding control points of S and T, and P is the difference between the calculated parameter values for S and T, then the ratio Q/P is the same for all i.

Parameters

first_surface	iterator to first iso surface.
nmb_crvs	the number of input surfaces.
param_length	length of parameter domain.
params	the computed iso parameters for the input surfaces.

28.22.2.7 std::vector<shared_ptr<SplineSurface> > Go::LoftVolumeCreator::unifiedSurfacesCopy (std::vector< shared_ptr< SplineSurface > >::iterator *first_surface,* int *nmb_srfs*)

Create a vector of surfaces holding a copy of the input surfaces, but where the spline bases have been changed (reparametrized, knot inserted and order raised) so that the B-spline spaces in the u-direction for the new surfaces all are identical, same with v-direction, and where all surfaces are now rational if at least on of the input surfaces were rational. The input surfaces are not changed during the process. The surfaces must all lie in the same space.

Parameters

first_surface	iterator to first input surface.
nmb_srfs	the number of surfaces referred to by first_surface.

Returns

vector holding the unified surfaces.

28.23 Go::LoopUtils Namespace Reference

Functions

- void representAsSurfaceCurves (std::vector< shared_ptr< ParamCurve > > &curves, shared_ptr< BoundedSurface > surf, std::vector< shared_ptr< CurveOnSurface > > &cvs_on_sf)
- bool loopIsCCW (const std::vector< shared_ptr< Go::SplineCurve > > &simple_par_loop, double space↩ _epsilon, double int_tol)
- bool paramIsCCW (const std::vector< shared_ptr< Go::CurveOnSurface > > &loop, double space_epsilon, double int_tol)
- bool loopIsCCW (const CurveLoop &loop, double int_tol)
- bool firstLoopInsideSecond (const std::vector< shared_ptr< Go::CurveOnSurface > > &first_loop, const std::vector< shared_ptr< Go::CurveOnSurface > > &second_loop, double loop_tol, double int_tol)

  Loops expected to be disjoint, except possibly share part of boundary.
- bool makeLoopCCW (std::vector< shared_ptr< ParamCurve > > &loop_cvs, double tol)

28.23.1 Detailed Description

Functions for checking the orientation of loops (closed curves), and whether one loop on a surface encloses another.

28.23.2 Function Documentation

28.23.2.1 bool Go::LoopUtils::firstLoopInsideSecond (const std::vector< shared_ptr< Go::CurveOnSurface > > & *first_loop,* const std::vector< shared_ptr< Go::CurveOnSurface > > & *second_loop,* double *loop_tol,* double *int_tol*)

Loops expected to be disjoint, except possibly share part of boundary.

Test whether one loop lies entirely within another. This function does not work in the general case; it makes the assumption that the loops do NOT intersect each other transversally (their boundaries are allowed to tangentially touch though). The algorithm works by testing a single point on the first loop for being inside the second loop, so if the first loop lay partially inside, partially outside the second, the answer would be arbitrary.

Parameters

first_loop	the first loop
second_loop	the second loop
loop_tol	the tolerance for defining coincidence between start/endpoints on the consecutive curve segments consituting a loop.
int_tol	tolerance used for intersection calculations

Returns

'true' if 'first_loop' was found to be located inside 'second_loop' (given the assumptions above). 'false' otherwise.

28.23.2.2 bool Go::LoopUtils::loopIsCCW (const std::vector< shared_ptr< Go::SplineCurve > > & *simple_par_loop,* double *space_epsilon,* double *int_tol*)

Check if a closed 2D-loop is oriented counterclockwise or not.

Parameters

simple_par_loop	a sequence of 2D curves that are joined start-to-end and that form a closed loop in the plane.
int_tol	(geometric) tolerance used for internal computations (intersection detections)

Returns

'true' if the loop was found to be oriented CCW, otherwise 'false'.

28.23.2.3 bool Go::LoopUtils::loopIsCCW (const CurveLoop & *loop*, double *int_tol*)

Check if a closed 2D-loop is oriented counterclockwise or not. The loop is given as a CurveLoop.

28.23.2.4 bool Go::LoopUtils::makeLoopCCW (std::vector< shared_ptr< ParamCurve > > & *loop_cvs*, double *tol*)

Reorganize curves to create a ccw loop The curves are assumed to have correct sequence, but possible wrong parameter direction Return value: false = reorganization not possible

28.23.2.5 bool Go::LoopUtils::paramIsCCW (const std::vector< shared_ptr< Go::CurveOnSurface > > & *loop*, double *space_epsilon*, double *int_tol*)

Check if a loop defined by CurveOnSurface s is oriented counterclockwise in the surface's parametric domain.

Parameters

loop	a sequence of CurveOnSurface s that are jointed start-to-end and that form a closed loop on the surface.
int_tol	(geometric) tolerance used for internal computations (intersection detections)

Returns

'true' if the loop was found to be oriented CCW, otherwise 'false'.

28.23.2.6 void Go::LoopUtils::representAsSurfaceCurves (std::vector< shared_ptr< ParamCurve > > & *curves*, shared_ptr< BoundedSurface > *surf*, std::vector< shared_ptr< CurveOnSurface > > & *cvs_on_sf*)

Represent a vector of ParamCurve curves as a vector of CurveOnSurface curves The surface is given as additional input Note that the function throws if the surface information is inconsistent

28.24 Go::LRApproxApp Namespace Reference

Functions

- void pointCloud2Spline (std::vector< double > &points, int dim, double domain[ ], double reduced_domain[ ], double eps, int max_iter, shared_ptr< LRSplineSurface > &surf, double &maxdist, double &avdist, double &avdist_out, int &nmb_out)

- void computeDistPointSpline (std::vector< double > &points, shared_ptr< LRSplineSurface > &surf, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< double > &pointsdist)
- void computeDistPointSpline_omp (std::vector< double > &points, shared_ptr< LRSplineSurface > &surf, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< double > &pointsdist)
- void classifyCloudFromDist (std::vector< double > &points, shared_ptr< LRSplineSurface > &surf, std::vector< double > &limits, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< std::vector< double > > &level_points, std::vector< int > &nmb_group)
- void classifyCloudFromDist_omp (std::vector< double > &points, shared_ptr< LRSplineSurface > &surf, std::vector< double > &limits, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< std::vector< double > > &level_points, std::vector< int > &nmb_group)
- void categorizeCloudFromDist (std::vector< double > &points, shared_ptr< LRSplineSurface > &surf, std::vector< double > &limits, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< int > &classification, std::vector< int > &nmb_group)
- void categorizeCloudFromDist_omp (std::vector< double > &points, shared_ptr< LRSplineSurface > &surf, std::vector< double > &limits, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< int > &classification, std::vector< int > &nmb_group)

28.24.1 Function Documentation

28.24.1.1 void Go::LRApproxApp::categorizeCloudFromDist (std::vector< double > & *points*, shared_ptr< LRSplineSurface > & *surf*, std::vector< double > & *limits*, double & *max_above*, double & *max_below*, double & *avdist*, int & *nmb_points*, std::vector< int > & *classification*, std::vector< int > & *nmb_group*)

28.24.1.2 void Go::LRApproxApp::categorizeCloudFromDist_omp (std::vector< double > & *points*, shared_ptr< LRSplineSurface > & *surf*, std::vector< double > & *limits*, double & *max_above*, double & *max_below*, double & *avdist*, int & *nmb_points*, std::vector< int > & *classification*, std::vector< int > & *nmb_group*)

28.24.1.3 void Go::LRApproxApp::classifyCloudFromDist (std::vector< double > & *points*, shared_ptr< LRSplineSurface > & *surf*, std::vector< double > & *limits*, double & *max_above*, double & *max_below*, double & *avdist*, int & *nmb_points*, std::vector< std::vector< double > > & *level_points*, std::vector< int > & *nmb_group*)

28.24.1.4 void Go::LRApproxApp::classifyCloudFromDist_omp (std::vector< double > & *points*, shared_ptr< LRSplineSurface > & *surf*, std::vector< double > & *limits*, double & *max_above*, double & *max_below*, double & *avdist*, int & *nmb_points*, std::vector< std::vector< double > > & *level_points*, std::vector< int > & *nmb_group*)

28.24.1.5 void Go::LRApproxApp::computeDistPointSpline (std::vector< double > & *points*, shared_ptr< LRSplineSurface > & *surf*, double & *max_above*, double & *max_below*, double & *avdist*, int & *nmb_points*, std::vector< double > & *pointsdist*)

28.24.1.6 void Go::LRApproxApp::computeDistPointSpline_omp (std::vector< double > & *points*, shared_ptr< LRSplineSurface > & *surf*, double & *max_above*, double & *max_below*, double & *avdist*, int & *nmb_points*, std::vector< double > & *pointsdist*)

28.24.1.7 void Go::LRApproxApp::pointCloud2Spline (std::vector< double > & *points*, int *dim*, double *domain[ ]*, double *reduced_domain[ ]*, double *eps*, int *max_iter*, shared_ptr< LRSplineSurface > & *surf*, double & *maxdist*, double & *avdist*, double & *avdist_out*, int & *nmb_out*)

28.25 Go::LRBSpline2DUtils Namespace Reference

Functions

- std::vector< int > derive_knots (const Mesh2D &m, Direction2D d, int beg, int end, int orto_min, int orto_max)

- void split_several (const double *knotvals, const std::vector< int > &k_vec_in, const std::vector< int > &new_knots, std::vector< int > &k_vec_out, std::vector< double > &b_spline_weigths)
- void split_function (const LRBSpline2D &orig, const Mesh2D &mesh, Direction2D d, const double *const knotvalues, int new_knot_ix, LRBSpline2D *&new_1, LRBSpline2D *&new_2)
- bool try_split_once (const LRBSpline2D &b, const Mesh2D &mesh, LRBSpline2D *&b1, LRBSpline2D *&b2)

28.25.1 Function Documentation

28.25.1.1 std::vector<int> Go::LRBSpline2DUtils::derive_knots (const Mesh2D & *m,* Direction2D *d,* int *beg,* int *end,* int *orto_min,* int *orto_max*)

28.25.1.2 void Go::LRBSpline2DUtils::split_function (const LRBSpline2D & *orig,* const Mesh2D & *mesh,* Direction2D *d,* const double *const *knotvalues,* int *new_knot_ix,* LRBSpline2D *& *new_1,* LRBSpline2D *& *new_2*)

28.25.1.3 void Go::LRBSpline2DUtils::split_several (const double * *knotvals,* const std::vector< int > & *k_vec_in,* const std::vector< int > & *new_knots,* std::vector< int > & *k_vec_out,* std::vector< double > & *b_spline_weigths*)

28.25.1.4 bool Go::LRBSpline2DUtils::try_split_once (const LRBSpline2D & *b,* const Mesh2D & *mesh,* LRBSpline2D *& *b1,* LRBSpline2D *& *b2*)

28.26 Go::LRSplineMBA Namespace Reference

Functions

- void MBADistAndUpdate (LRSplineSurface *srf)
- void MBADistAndUpdate_omp (LRSplineSurface *srf)
- void MBAUpdate (LRSplineSurface *srf)
- void MBAUpdate_omp (LRSplineSurface *srf)
- void MBAUpdate (LRSplineSurface *srf, std::vector< Element2D * > &elems, std::vector< Element2D * > &elems2)
- void add_contribution (int dim, std::map< const LRBSpline2D *, Array< double, 2 > > &target, const LRBSpline2D *bspline, double nom[ ], double denom)
- void add_contribution2 (int dim, std::map< const LRBSpline2D *, Array< double, 4 > > &target, const LRBSpline2D *bspline, double nom[ ], double denom)

28.26.1 Function Documentation

28.26.1.1 void Go::LRSplineMBA::add_contribution (int *dim,* std::map< const LRBSpline2D *, Array< double, 2 > > & *target,* const LRBSpline2D * *bspline,* double *nom[ ],* double *denom*)

28.26.1.2 void Go::LRSplineMBA::add_contribution2 (int *dim,* std::map< const LRBSpline2D *, Array< double, 4 > > & *target,* const LRBSpline2D * *bspline,* double *nom[ ],* double *denom*)

28.26.1.3 void Go::LRSplineMBA::MBADistAndUpdate (LRSplineSurface * *srf*)

28.26.1.4 void Go::LRSplineMBA::MBADistAndUpdate_omp (LRSplineSurface * *srf*)

28.26.1.5 void Go::LRSplineMBA::MBAUpdate (LRSplineSurface * *srf*)

28.26.1.6 void Go::LRSplineMBA::MBAUpdate (LRSplineSurface * *srf*, std::vector< Element2D * > & *elems*, std::vector< Element2D * > & *elems2*)

28.26.1.7 void Go::LRSplineMBA::MBAUpdate_omp (LRSplineSurface * *srf*)

28.27 Go::LRSplineUtils Namespace Reference

Classes

- struct support_compare

Functions

- LRSplineSurface::ElementMap identify_elements_from_mesh (const Mesh2D &m)
- void update_elements_with_single_bspline (LRBSpline2D *b, LRSplineSurface::ElementMap &emap, const Mesh2D &mesh, bool remove)
- int locate_interval (const Mesh2D &m, Direction2D d, double value, double other_value, bool at_end)
- void increment_knotvec_indices (LRSplineSurface::BSplineMap &bmap, Direction2D d, int from_ix)
- LRBSpline2D * insert_basis_function (std::unique_ptr< LRBSpline2D > &b, const Mesh2D &mesh, LR↩SplineSurface::BSplineMap &bmap)
- std::vector< int > set_uniform_meshlines (Direction2D d, Mesh2D &mesh)
- bool all_meshlines_uniform (Direction2D d, const Mesh2D &m)
- double compute_greville (const std::vector< int > &v_ixs, const double *const vals)
- std::vector< double > compute_greville (int deg, const std::vector< int > &k_vec_in, const double *const knotvals)
- std::vector< int > knots_to_insert (const std::vector< int > &ref, const std::vector< int > &mults)
- double compute_alpha (int degree, const int *const oldvec_ix, const int *const newvec_ix, const double *const kvals)
- std::tuple< std::vector< double >, std::vector< int > > insert_knots (const std::vector< int > &new_knots, std::unique_ptr< LRBSpline2D > &bfun, const Direction2D d, const double *const kvals)
- void tensor_split (std::unique_ptr< LRBSpline2D > &bfun, const std::vector< int > &x_mults, const std↩::vector< int > &y_mults, const Mesh2D &tensor_mesh, LRSplineSurface::BSplineMap &bmap)
- void iteratively_split (std::vector< std::unique_ptr< LRBSpline2D > > &bfuns, const Mesh2D &mesh)
- void iteratively_split2 (std::vector< LRBSpline2D * > &bsplines, const Mesh2D &mesh, LRSplineSurface↩::BSplineMap &bmap, double domain[])
- std::tuple< int, int, int, int > refine_mesh (Direction2D d, double fixed_val, double start, double end, int mult, bool absolute, int spline_degree, double knot_tol, Mesh2D &mesh, LRSplineSurface::BSplineMap &bmap)
- bool support_equal (const LRBSpline2D *b1, const LRBSpline2D *b2)
- bool elementOK (const Element2D *elem, const Mesh2D &m)
- void insertParameterFunctions (LRSplineSurface *lr_spline_sf)
- SplineSurface * fullTensorProductSurface (const LRSplineSurface &lr_spline_sf)
- LRBSpline2D * mostComparableBspline (LRSplineSurface *lr_spline_sf, Point pos)
- std::vector< std::vector< double > > elementLineClouds (const LRSplineSurface &lr_spline_sf)
- void distributeDataPoints (LRSplineSurface *srf, std::vector< double > &points, bool add_distance_↩field=false, bool primary_points=true)

28.27.1 Function Documentation

28.27.1.1 **bool** Go::LRSplineUtils::all_meshlines_uniform (**Direction2D** *d,* **const Mesh2D &** *m*)

28.27.1.2 **double** Go::LRSplineUtils::compute_alpha (int *degree,* **const** int ∗**const** *oldvec_ix,* **const** int ∗**const** *newvec_ix,* **const double** ∗**const** *kvals*)

28.27.1.3 **double** Go::LRSplineUtils::compute_greville (**const** std::vector< int > & *v_ixs,* **const double** ∗**const** *vals*)

28.27.1.4 std::vector<**double**> Go::LRSplineUtils::compute_greville (int *deg,* **const** std::vector< int > & *k_vec_in,* **const double** ∗**const** *knotvals*)

28.27.1.5 void Go::LRSplineUtils::distributeDataPoints (**LRSplineSurface** ∗ *srf,* std::vector< **double** > & *points,* **bool** *add_distance_field* = **false,** **bool** *primary_points* = **true**)

28.27.1.6 std::vector<std::vector<**double**> > Go::LRSplineUtils::elementLineClouds (**const LRSplineSurface &** *lr_spline_sf*)

28.27.1.7 **bool** Go::LRSplineUtils::elementOK (**const Element2D** ∗ *elem,* **const Mesh2D &** *m*)

28.27.1.8 **SplineSurface**∗ Go::LRSplineUtils::fullTensorProductSurface (**const LRSplineSurface &** *lr_spline_sf*)

28.27.1.9 **LRSplineSurface::ElementMap** Go::LRSplineUtils::identify_elements_from_mesh (**const Mesh2D &** *m*)

28.27.1.10 void Go::LRSplineUtils::increment_knotvec_indices (**LRSplineSurface::BSplineMap &** *bmap,* **Direction2D** *d,* int *from_ix*)

28.27.1.11 **LRBSpline2D**∗ Go::LRSplineUtils::insert_basis_function (std::unique_ptr< **LRBSpline2D** > & *b,* **const Mesh2D &** *mesh,* **LRSplineSurface::BSplineMap &** *bmap*)

28.27.1.12 std::tuple<std::vector<**double**>, std::vector<int> > Go::LRSplineUtils::insert_knots (**const** std::vector< int > & *new_knots,* std::unique_ptr< **LRBSpline2D** > & *bfun,* **const Direction2D** *d,* **const double** ∗**const** *kvals*)

28.27.1.13 void Go::LRSplineUtils::insertParameterFunctions (**LRSplineSurface** ∗ *lr_spline_sf*)

28.27.1.14 void Go::LRSplineUtils::iteratively_split (std::vector< std::unique_ptr< **LRBSpline2D** > > & *bfuns,* **const Mesh2D &** *mesh*)

28.27.1.15 void Go::LRSplineUtils::iteratively_split2 (std::vector< **LRBSpline2D** ∗ > & *bsplines,* **const Mesh2D &** *mesh,* **LRSplineSurface::BSplineMap &** *bmap,* **double** *domain[ ]*)

28.27.1.16 std::vector<int> Go::LRSplineUtils::knots_to_insert (**const** std::vector< int > & *ref,* **const** std::vector< int > & *mults*)

28.27.1.17 int Go::LRSplineUtils::locate_interval (**const Mesh2D &** *m,* **Direction2D** *d,* **double** *value,* **double** *other_value,* **bool** *at_end*)

28.27.1.18 **LRBSpline2D∗ Go::LRSplineUtils::mostComparableBspline (LRSplineSurface ∗ *lr_spline_sf,* Point *pos*)**

28.27.1.19 **std::tuple<int, int, int, int> Go::LRSplineUtils::refine_mesh (Direction2D *d,* double *fixed_val,* double *start,* double *end,* int *mult,* bool *absolute,* int *spline_degree,* double *knot_tol,* Mesh2D & *mesh,* LRSplineSurface::BSplineMap & *bmap*)**

28.27.1.20 **std::vector<int> Go::LRSplineUtils::set_uniform_meshlines (Direction2D *d,* Mesh2D & *mesh*)**

28.27.1.21 **bool Go::LRSplineUtils::support_equal (const LRBSpline2D ∗ *b1,* const LRBSpline2D ∗ *b2*)**

28.27.1.22 **void Go::LRSplineUtils::tensor_split (std::unique_ptr< LRBSpline2D > & *bfun,* const std::vector< int > & *x_mults,* const std::vector< int > & *y_mults,* const Mesh2D & *tensor_mesh,* LRSplineSurface::BSplineMap & *bmap*)**

28.27.1.23 **void Go::LRSplineUtils::update_elements_with_single_bspline (LRBSpline2D ∗ *b,* LRSplineSurface::ElementMap & *emap,* const Mesh2D & *mesh,* bool *remove*)**

28.28 Go::LRSurfStitch Namespace Reference

Functions

- int averageCorner (std::vector< std::pair< shared_ptr< ParamSurface >, int > > &sfs, double tol)
- bool averageEdge (shared_ptr< ParamSurface > surf1, int edge1, shared_ptr< ParamSurface > surf2, int edge2, double tol)
- bool averageEdge (shared_ptr< LRSplineSurface > surf1, int edge1, shared_ptr< LRSplineSurface > surf2, int edge2, double tol)
- void fetchEdgeCorners (shared_ptr< LRSplineSurface > surf, int edge, double &u1, double &v1, double &u2, double &v2)
- void extractMissingKnots (std::vector< double > &union_vec, std::vector< double > &vec, double tol, int order, std::vector< double > &resvec)
- void defineRefinements (const Mesh2D &mesh, Direction2D dir, int edge, int ix, std::vector< double > &knot_vals, int element_width, std::vector< LRSplineSurface::Refinement2D > &refs)
- void extractBoundaryBsplines (shared_ptr< LRSplineSurface > surf, int edge, std::vector< LRBSpline2D ∗ > &bsplines)

28.28.1 Function Documentation

28.28.1.1 **int Go::LRSurfStitch::averageCorner (std::vector< std::pair< shared_ptr< ParamSurface >, int > > & *sfs,* double *tol*)**

28.28.1.2 **bool Go::LRSurfStitch::averageEdge (shared_ptr< ParamSurface > *surf1,* int *edge1,* shared_ptr< ParamSurface > *surf2,* int *edge2,* double *tol*)**

28.28.1.3 **bool Go::LRSurfStitch::averageEdge (shared_ptr< LRSplineSurface > *surf1,* int *edge1,* shared_ptr< LRSplineSurface > *surf2,* int *edge2,* double *tol*)**

28.28.1.4 **void Go::LRSurfStitch::defineRefinements (const Mesh2D & *mesh,* Direction2D *dir,* int *edge,* int *ix,* std::vector< double > & *knot_vals,* int *element_width,* std::vector< LRSplineSurface::Refinement2D > & *refs*)**

28.28.1.5 void Go::LRSurfStitch::extractBoundaryBsplines (shared_ptr< LRSplineSurface > *surf,* int *edge,* std::vector< LRBSpline2D * > & *bsplines*)

28.28.1.6 void Go::LRSurfStitch::extractMissingKnots (std::vector< double > & *union_vec,* std::vector< double > & *vec,* double *tol,* int *order,* std::vector< double > & *resvec*)

28.28.1.7 void Go::LRSurfStitch::fetchEdgeCorners (shared_ptr< LRSplineSurface > *surf,* int *edge,* double & *u1,* double & *v1,* double & *u2,* double & *v2*)

28.29 Go::Mesh2DUtils Namespace Reference

Functions

- int last_nonlarger_knotvalue_ix (const Mesh2D &m, Direction2D d, double par)
- int first_larger_knotvalue_ix (const Mesh2D &m, Direction2D d, double par)
- bool identify_patch_lower_left (const Mesh2D &m, double u, double v, int &x_ix, int &y_ix)
- bool identify_patch_upper_right (const Mesh2D &m, double u, double v, int &x_ix, int &y_ix)
- int search_downwards_for_nonzero_multiplicity (const Mesh2D &m, Direction2D d, int start_ix, int other_ix)
- int search_upwards_for_nonzero_multiplicity (const Mesh2D &m, Direction2D d, int start_ix, int other_ix)
- int search_downwards_for_nonzero_multiplicity (const Mesh2D &m, Direction2D d, int start_ix, int ix1, int ix2)
- int search_upwards_for_nonzero_multiplicity (const Mesh2D &m, Direction2D d, int start_ix, int ix1, int ix2)

28.29.1 Function Documentation

28.29.1.1 int Go::Mesh2DUtils::first_larger_knotvalue_ix (const Mesh2D & *m,* Direction2D *d,* double *par*)

28.29.1.2 bool Go::Mesh2DUtils::identify_patch_lower_left (const Mesh2D & *m,* double *u,* double *v,* int & *x_ix,* int & *y_ix*)

28.29.1.3 bool Go::Mesh2DUtils::identify_patch_upper_right (const Mesh2D & *m,* double *u,* double *v,* int & *x_ix,* int & *y_ix*)

28.29.1.4 int Go::Mesh2DUtils::last_nonlarger_knotvalue_ix (const Mesh2D & *m,* Direction2D *d,* double *par*)

28.29.1.5 int Go::Mesh2DUtils::search_downwards_for_nonzero_multiplicity (const Mesh2D & *m,* Direction2D *d,* int *start_ix,* int *other_ix*)

28.29.1.6 int Go::Mesh2DUtils::search_downwards_for_nonzero_multiplicity (const Mesh2D & *m,* Direction2D *d,* int *start_ix,* int *ix1,* int *ix2*)

28.29.1.7 int Go::Mesh2DUtils::search_upwards_for_nonzero_multiplicity (const Mesh2D & *m,* Direction2D *d,* int *start_ix,* int *other_ix*)

28.29.1.8 int Go::Mesh2DUtils::search_upwards_for_nonzero_multiplicity (const Mesh2D & *m,* Direction2D *d,* int *start_ix,* int *ix1,* int *ix2*)

28.30 Go::ModifySurf Namespace Reference

Functions

- void replaceBoundary (shared_ptr< SplineSurface > surf, shared_ptr< SplineCurve > curve, int bd_idx, double tol)
- bool enforceCoefCoLinearity (shared_ptr< SplineSurface > sf1, int bd1, shared_ptr< SplineSurface > sf2, int bd2, double tol, std::vector< std::vector< int > > &enumeration)
- bool enforceVxCoefCoLinearity (std::vector< shared_ptr< SplineSurface > > &sfs, std::vector< int > &vx↩ _enum, std::vector< std::pair< std::vector< int >, std::pair< int, int > > > &coef_cond, double tol)

28.30.1 Detailed Description

Functionality used to modify one or more spline surfaces with respect to given conditions

28.30.2 Function Documentation

28.30.2.1 bool Go::ModifySurf::enforceCoefCoLinearity (shared_ptr< SplineSurface > *sf1*, int *bd1*, shared_ptr< SplineSurface > *sf2*, int *bd2*, double *tol*, std::vector< std::vector< int > > & *enumeration*)

Enforce colinearity between coeffients at the common boundary between two spline surfaces. The two outer rows of coefficients are involved in the linearity constraints, but a few additional rows are modified for reasons of smoothness. All surface boundaries, except the affected one, are kept fixed.

28.30.2.2 bool Go::ModifySurf::enforceVxCoefCoLinearity (std::vector< shared_ptr< SplineSurface > > & *sfs*, std::vector< int > & *vx_enum*, std::vector< std::pair< std::vector< int >, std::pair< int, int > > > & *coef_cond*, double *tol*)

Enforce colinearity at vertices where 4 edge pairs meet. The two outer rows of coefficients around the vertex are involved in the linearity constraints, but a few additional rows are modified for reasons of smoothness.

28.30.2.3 void Go::ModifySurf::replaceBoundary (shared_ptr< SplineSurface > *surf*, shared_ptr< SplineCurve > *curve*, int *bd_idx*, double *tol*)

Replace one boundary curve of a SplineSurface Approximate the initial surface bd_idx = 0: umin 1: umax 2: vmin

28.31 Go::OffsetSurfaceUtils Namespace Reference

Functions

- OffsetSurfaceStatus offsetSurfaceSet (const std::vector< shared_ptr< ParamSurface > > &param_sfs, double offset_dist, double epsgeo, shared_ptr< SplineSurface > &offset_sf)

28.31.1 Function Documentation

28.31.1.1 OffsetSurfaceStatus Go::OffsetSurfaceUtils::offsetSurfaceSet (const std::vector< shared_ptr< ParamSurface > > & *param_sfs*, double *offset_dist*, double *epsgeo*, shared_ptr< SplineSurface > & *offset_sf*)

Compute the offset surface for a set of parametric surfaces (possibly 1 surface only). The surface set must have 4 corners.

Parameters

param_sfs	input parametric surfaces
offset_dist	distance for the offset surface.
epsgeo	geometric tolerance for the offset surface.

Returns

status of the offset function. 0 => success, everything else a failure.

28.32 Go::OffsetUtils Namespace Reference

Related to the generation of cross tangent curves.

Functions

- void blend_s1421 (const SplineSurface *ps, double aoffset, int ider, const Point &epar, int &ilfs, int &ilft, std::vector< Point > &eoffpnt, std::vector< Point > &epnt, int *jstat)

28.32.1 Detailed Description

Related to the generation of cross tangent curves.

28.32.2 Function Documentation

28.32.2.1 void Go::OffsetUtils::blend_s1421 (const SplineSurface * *ps*, double *aoffset*, int *ider*, const Point & *epar*, int & *ilfs*, int & *ilft*, std::vector< Point > & *eoffpnt*, std::vector< Point > & *epnt*, int * *jstat*)

28.33 Go::orientCurves Namespace Reference

Sorts and orients a set of curves.

Functions

- template<class PtrToCurveType >
  void orientCurves (const std::vector< PtrToCurveType > &curves, std::vector< int > &permutation, std::vector< bool > &reversed, double neighbour_tol, bool assume_manifold=true)

28.33.1 Detailed Description

Sorts and orients a set of curves.

28.33.2 Function Documentation

28.33.2.1 template<class PtrToCurveType > void Go::orientCurves::orientCurves (const std::vector< PtrToCurveType > & *curves*, std::vector< int > & *permutation*, std::vector< bool > & *reversed*, double *neighbour_tol*, bool *assume_manifold* = true) [inline]

This function sorts and orients a set of curves so that curves whose endpoints coincide will be ordered consecutively, and eventually 'reversed' so that startpoints meet endpoints. It is assumed that the set of curves given constitute one or several manifolds, ie., that there will not be cases where three or more endpoints meet at a common point (this would make the above mentionned ordering impossible).

Parameters

curves	a vector containing the set of (pointers to) curves to be analysed. It is expected that they constitute one or more 1-manifolds.
permutation	upon return, this vector will contain a permutation of the indices to the input curves such that after this permutation, curves whose endpoints are connected will become 'consecutive'.
reversed	upon return, this vector, whose length will be equal to that of 'curves' and 'permutation', will contain bool values. If curve at position 'i' in the 'curves' vector needs to be reversed in order to connect startpoint-to-endpoint with its neighbours, then the corresponding value in 'reversed' will be 'true', and 'false' if no reversal is necessary.
neighbour_tol	the tolerance used when checking for coincident points.
assume_manifold	if the user specifies 'true', then the manifold property will be assumed, but will not be explicitly checked. If 'false' is specified, then the input *will* be checked for consistency with respect to this, and an exception will be cast if the manifold condition is violated.

Definition at line 74 of file orientCurves.h.

28.34 Go::Path Namespace Reference

Functions related to sequence of edges.

Functions

- bool estimateHoleInfo (const std::vector< ftEdge * > &edges, Point &centre, Point &axis, double &radius, double &angle)

  sequence
- void classifyCorners (const std::vector< ftEdge * > &edges, double tol, std::vector< shared_ptr< Vertex > > &corner, std::vector< shared_ptr< Vertex > > &non_corner)
- std::vector< ftEdge * > identifyLoop (std::vector< ftEdge * > edges, shared_ptr< Vertex > vx)
- void closestPoint (std::vector< ftEdge * > edges, const Point &pt, int &clo_ind, double &clo_par, Point &clo_pt, double &clo_dist)
- void getEdgeCurves (std::vector< ftEdge * > &loop, std::vector< shared_ptr< ParamCurve > > &space_cvs, std::vector< Point > &joint_points, double eps, double tol, bool corner_in_Tjoint=true)
- std::vector< ftEdge * > edgeChain (ftEdge *edg, double angtol, shared_ptr< Vertex > &v1, shared_ptr< Vertex > &v2)

28.34.1 Detailed Description

Functions related to sequence of edges.

28.34.2 Function Documentation

28.34.2.1 void Go::Path::classifyCorners (const std::vector< ftEdge * > & *edges,* double *tol,* std::vector< shared_ptr< Vertex > > & *corner,* std::vector< shared_ptr< Vertex > > & *non_corner*)

Classify vertices in a path of edges as corner or non-corner depending on a given tolerance

28.34.2.2 void Go::Path::closestPoint (std::vector< ftEdge * > *edges,* const Point & *pt,* int & *clo_ind,* double & *clo_par,* Point & *clo_pt,* double & *clo_dist*)

28.34.2.3 std::vector<ftEdge*> Go::Path::edgeChain (ftEdge * *edg,* double *angtol,* shared_ptr< Vertex > & *v1,* shared_ptr< Vertex > & *v2*)

Extract edge chain with no joints between more than two edges or corners

28.34.2.4 bool Go::Path::estimateHoleInfo (const std::vector< ftEdge * > & *edges,* Point & *centre,* Point & *axis,* double & *radius,* double & *angle*)

sequence

Estimate mid point, normal and radius defined by an edge

28.34.2.5 void Go::Path::getEdgeCurves (std::vector< ftEdge * > & *loop,* std::vector< shared_ptr< ParamCurve > > & *space_cvs,* std::vector< Point > & *joint_points,* double *eps,* double *tol,* bool *corner_in_Tjoint* = true)

Combine edges into 4 curves, preferably with splits in real corners

28.34.2.6 std::vector<ftEdge*> Go::Path::identifyLoop (std::vector< ftEdge * > *edges,* shared_ptr< Vertex > *vx*)

Identify a loops starting and ending in a given vertex in an ordered sequence of edges

28.35 Go::PointSetApp Namespace Reference

Point set and triangulation applicitions.

Functions

- void parameterizeTriang (const double *xyz_points, int nmbp, const int *triangles, int nmbt, std::vector< double > &uv_pars)

  Parameterize triangulated point set.
- bool recognizeBoundary (shared_ptr< ftPointSet > &triang, std::vector< int > &corner_ix)

  Service functionality for parameterizeTriang.
- bool recognizeCornerNodes (const shared_ptr< ftPointSet > &triang, const std::vector< int > &bd_nodes, std::vector< int > &corner_ix)

28.35.1 Detailed Description

Point set and triangulation applicitions.

28.35.2 Function Documentation

28.35.2.1 void Go::PointSetApp::parameterizeTriang (const double * *xyz_points*, int *nmbp*, const int * *triangles*, int *nmbt*, std::vector< double > & *uv_pars*)

Parameterize triangulated point set.

28.35.2.2 bool Go::PointSetApp::recognizeBoundary (shared_ptr< ftPointSet > & *triang*, std::vector< int > & *corner_ix*)

Service functionality for parameterizeTriang.

28.35.2.3 bool Go::PointSetApp::recognizeCornerNodes (const shared_ptr< ftPointSet > & *triang*, const std::vector< int > & *bd_nodes*, std::vector< int > & *corner_ix*)

28.36 Go::qualityUtils Namespace Reference

Functions

- bool isSliverFace (shared_ptr< ParamSurface >, double thickness, double factor=2.0)
- bool isSliverFace (const SplineSurface &sf, double thickness, double factor=2.0)
- bool isSliverFace (const BoundedSurface &sf, double thickness, double factor=2.0)
- bool isSliverFace2 (const BoundedSurface &sf, double thickness, double factor=2.0)
- bool hasIndistinctKnots (shared_ptr< ParamSurface > surf, double tol, std::vector< shared_ptr< ParamCurve > > &trim_cv_knots)
- double estimateArea (shared_ptr< ParamSurface > surf)
- double estimateLoopArea (shared_ptr< CurveLoop > loop)

28.36.1 Function Documentation

28.36.1.1 double Go::qualityUtils::estimateArea (shared_ptr< ParamSurface > *surf*)

28.36.1.2 double Go::qualityUtils::estimateLoopArea (shared_ptr< CurveLoop > *loop*)

28.36.1.3 bool Go::qualityUtils::hasIndistinctKnots (shared_ptr< ParamSurface > *surf*, double *tol*, std::vector< shared_ptr< ParamCurve > > & *trim_cv_knots*)

28.36.1.4 bool Go::qualityUtils::isSliverFace (shared_ptr< ParamSurface > , double *thickness*, double *factor* = 2.0)

28.36.1.5 bool Go::qualityUtils::isSliverFace (const SplineSurface & *sf*, double *thickness*, double *factor* = 2.0)

28.36.1.6 bool Go::qualityUtils::isSliverFace (const BoundedSurface & *sf*, double *thickness*, double *factor* = 2.0)

28.36.1.7 bool Go::qualityUtils::isSliverFace2 (const BoundedSurface & *sf*, double *thickness*, double *factor* = 2.0)

28.37 Go::RegularizeUtils Namespace Reference

Utility functionality for RegularizeFace and RegularizeFaceSet.

Functions

- std::vector< shared_ptr< ftSurface > > divideVertex (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, std::vector< shared_ptr< Vertex > > &cand_vx, ftEdge *cand_edge, std::vector< shared_ptr< Vertex > > &prio_vx, double epsge, double tol2, double angtol, double bend, std::vector< shared_ptr< Vertex > > &non_corner, const Point &centre, const Point &axis, bool strong=false)
- std::vector< shared_ptr< CurveOnSurface > > findVertexSplit (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, std::vector< shared_ptr< Vertex > > &cand_vx, ftEdge *cand_edge, std::vector< shared_ptr< Vertex > > &prio_vx, double epsge, double tol2, double angtol, double bend, std::vector< shared_ptr< Vertex > > &non_corner, const Point &centre, const Point &axis, shared_ptr< BoundedSurface > &bd_sf, bool strong=false)
- std::vector< shared_ptr< ftSurface > > createFaces (std::vector< shared_ptr< BoundedSurface > > &sub_sfs, shared_ptr< ftSurface > face, double epsge, double tol2, double angtol, std::vector< shared_ptr< Vertex > > non_corner)
- void getDivisionPlane (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, double epsge, Point &pnt, Point &normal)
- void getClosestBoundaryPar (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, std::vector< shared_ptr< ParamCurve > > &vx_cvs, const Point &pnt, double epsge, int &close_idx, double &close_dist, Point &close_par, int loop_idx=-1)
- bool cornerInShortestPath (shared_ptr< Vertex > vx1, shared_ptr< Vertex > vx2, shared_ptr< ftSurface > face, double angtol)
- bool getPath (ftEdge *edg, shared_ptr< Vertex > vx, shared_ptr< Vertex > last, shared_ptr< ftSurface > face, std::vector< ftEdge * > &path)
- int noExtension (shared_ptr< Vertex > vx, ftSurface *face, shared_ptr< Vertex > &vx2, std::pair< Point, Point > &co_par1, std::pair< Point, Point > &co_par2, int &dir1, int &dir2, double &val1, double &val2, double angtol, bool check_constant_curve)
- bool mergeSituationContinuation (ftSurface *init_face, shared_ptr< Vertex > vx, ftEdge *edge, double angtol)
- double getMaxParFrac (shared_ptr< ftSurface > face)
- int selectCandVx (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, const Point &in_vec, vector< shared_ptr< Vertex > > cand_vx, RectDomain &dom, double epsge, double angtol, const Point &centre, const Point &normal, std::vector< shared_ptr< ParamCurve > > &vx_cvs, double close_dist, const Point &close_pt, double &cyl_rad, bool strong=false)
- void adjustTrimSeg (std::vector< shared_ptr< CurveOnSurface > > &trim_segments, Point *parval1, Point *parval2, shared_ptr< ftSurface > face, shared_ptr< BoundedSurface > &bd_sf, std::vector< shared_ptr< Vertex > > &non_corner, double tol, double epsge)
- void checkTrimSeg (std::vector< shared_ptr< CurveOnSurface > > &trim_segments, std::vector< shared_ptr< Vertex > > &next_vxs, const Point &vx_point, const Point &other_pt, double epsge)
- void checkTrimSeg2 (std::vector< shared_ptr< CurveOnSurface > > &trim_segments, const Point &vx_par1, const Point &vx_par2, double epsge)
- void checkTrimSeg3 (std::vector< shared_ptr< CurveOnSurface > > &trim_segments, const Point &vx_par1, const Point &vx_par2, double epsge)
- void checkTrimConfig (shared_ptr< ftSurface > face, std::vector< shared_ptr< CurveOnSurface > > &trim_segments, shared_ptr< Vertex > vx, std::vector< shared_ptr< Vertex > > &corners, double epsge)
- ftEdge * getOppositeBoundaryPar (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, std::vector< shared_ptr< Vertex > > &corners, double epsge, Point &point, double &par, double &dist)
- Point getInVec (shared_ptr< Vertex > vx, shared_ptr< ftSurface > face)
- shared_ptr< ParamCurve > checkStrightParCv (shared_ptr< ftSurface > face, const Point &pos1, const Point &pos2, double epsge)
- shared_ptr< ParamCurve > checkStrightParCv (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx1, shared_ptr< Vertex > vx2, double epsge)
- shared_ptr< ParamCurve > checkStrightParCv (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx1, const Point &mid, double epsge)
- bool checkPath (shared_ptr< Vertex > vx1, shared_ptr< Vertex > vx2, shared_ptr< Vertex > vx, shared_ptr< ftSurface > face, double angtol)
- bool checkRegularity (std::vector< shared_ptr< Vertex > > &cand_vx, shared_ptr< ftSurface > face, bool checkConvex=true)

- std::vector< shared_ptr< Vertex > > endVxInChain (shared_ptr< ftSurface > face, ftSurface *face1, ftSurface *face2, shared_ptr< Vertex > vx, shared_ptr< Vertex > prev, shared_ptr< Vertex > vx0, std::vector< shared_ptr< Vertex > > &met_already)
- int traverseUntilTJoint (std::vector< ftSurface * > vx_faces, shared_ptr< Vertex > vx, shared_ptr< Vertex > &vx2, std::vector< ftSurface * > &vx_faces2)
- void angleInEndpoints (shared_ptr< CurveOnSurface > seg, shared_ptr< Vertex > vx1, shared_ptr< Vertex > vx2, shared_ptr< ftSurface > face, double &min_ang1, double &min_ang2)
- void getSourceCvs (std::vector< shared_ptr< ftEdge > > &all_edg, std::vector< shared_ptr< ParamCurve > > &all_cvs)

28.37.1 Detailed Description

Utility functionality for RegularizeFace and RegularizeFaceSet.

28.37.2 Function Documentation

28.37.2.1 void Go::RegularizeUtils::adjustTrimSeg (std::vector< shared_ptr< CurveOnSurface > > & *trim_segments*, Point * *parval1*, Point * *parval2*, shared_ptr< ftSurface > *face*, shared_ptr< BoundedSurface > & *bd_sf*, std::vector< shared_ptr< Vertex > > & *non_corner*, double *tol*, double *epsge*)

28.37.2.2 void Go::RegularizeUtils::angleInEndpoints (shared_ptr< CurveOnSurface > *seg*, shared_ptr< Vertex > *vx1*, shared_ptr< Vertex > *vx2*, shared_ptr< ftSurface > *face*, double & *min_ang1*, double & *min_ang2*)

28.37.2.3 bool Go::RegularizeUtils::checkPath (shared_ptr< Vertex > *vx1*, shared_ptr< Vertex > *vx2*, shared_ptr< Vertex > *vx*, shared_ptr< ftSurface > *face*, double *angtol*)

28.37.2.4 bool Go::RegularizeUtils::checkRegularity (std::vector< shared_ptr< Vertex > > & *cand_vx*, shared_ptr< ftSurface > *face*, bool *checkConvex* = true)

28.37.2.5 shared_ptr<ParamCurve> Go::RegularizeUtils::checkStrightParCv (shared_ptr< ftSurface > *face*, const Point & *pos1*, const Point & *pos2*, double *epsge*)

28.37.2.6 shared_ptr<ParamCurve> Go::RegularizeUtils::checkStrightParCv (shared_ptr< ftSurface > *face*, shared_ptr< Vertex > *vx1*, shared_ptr< Vertex > *vx2*, double *epsge*)

28.37.2.7 shared_ptr<ParamCurve> Go::RegularizeUtils::checkStrightParCv (shared_ptr< ftSurface > *face*, shared_ptr< Vertex > *vx1*, const Point & *mid*, double *epsge*)

28.37.2.8 void Go::RegularizeUtils::checkTrimConfig (shared_ptr< ftSurface > *face*, std::vector< shared_ptr< CurveOnSurface > > & *trim_segments*, shared_ptr< Vertex > *vx*, std::vector< shared_ptr< Vertex > > & *corners*, double *epsge*)

28.37.2.9 void Go::RegularizeUtils::checkTrimSeg (std::vector< shared_ptr< CurveOnSurface > > & *trim_segments*, std::vector< shared_ptr< Vertex > > & *next_vxs*, const Point & *vx_point*, const Point & *other_pt*, double *epsge*)

28.37.2.10 void Go::RegularizeUtils::checkTrimSeg2 (std::vector< shared_ptr< CurveOnSurface > > & *trim_segments*, const Point & *vx_par1*, const Point & *vx_par2*, double *epsge*)

28.37.2.11 void Go::RegularizeUtils::checkTrimSeg3 (std::vector< shared_ptr< CurveOnSurface > > & *trim_segments*, const Point & *vx_par1*, const Point & *vx_par2*, double *epsge*)

28.37.2.12 bool Go::RegularizeUtils::cornerInShortestPath (shared_ptr< Vertex > *vx1*, shared_ptr< Vertex > *vx2*, shared_ptr< ftSurface > *face*, double *angtol*)

28.37.2.13 std::vector<shared_ptr<ftSurface> > Go::RegularizeUtils::createFaces (std::vector< shared_ptr< BoundedSurface > > & *sub_sfs*, shared_ptr< ftSurface > *face*, double *epsge*, double *tol2*, double *angtol*, std::vector< shared_ptr< Vertex > > *non_corner*)

28.37.2.14 std::vector<shared_ptr<ftSurface> > Go::RegularizeUtils::divideVertex (shared_ptr< ftSurface > *face*, shared_ptr< Vertex > *vx*, std::vector< shared_ptr< Vertex > > & *cand_vx*, ftEdge * *cand_edge*, std::vector< shared_ptr< Vertex > > & *prio_vx*, double *epsge*, double *tol2*, double *angtol*, double *bend*, std::vector< shared_ptr< Vertex > > & *non_corner*, const Point & *centre*, const Point & *axis*, bool *strong* = false)

28.37.2.15 std::vector<shared_ptr<Vertex> > Go::RegularizeUtils::endVxInChain (shared_ptr< ftSurface > *face*, ftSurface * *face1*, ftSurface * *face2*, shared_ptr< Vertex > *vx*, shared_ptr< Vertex > *prev*, shared_ptr< Vertex > *vx0*, std::vector< shared_ptr< Vertex > > & *met_already*)

28.37.2.16 std::vector<shared_ptr<CurveOnSurface> > Go::RegularizeUtils::findVertexSplit (shared_ptr< ftSurface > *face*, shared_ptr< Vertex > *vx*, std::vector< shared_ptr< Vertex > > & *cand_vx*, ftEdge * *cand_edge*, std::vector< shared_ptr< Vertex > > & *prio_vx*, double *epsge*, double *tol2*, double *angtol*, double *bend*, std::vector< shared_ptr< Vertex > > & *non_corner*, const Point & *centre*, const Point & *axis*, shared_ptr< BoundedSurface > & *bd_sf*, bool *strong* = false)

28.37.2.17 void Go::RegularizeUtils::getClosestBoundaryPar (shared_ptr< ftSurface > *face*, shared_ptr< Vertex > *vx*, std::vector< shared_ptr< ParamCurve > > & *vx_cvs*, const Point & *pnt*, double *epsge*, int & *close_idx*, double & *close_dist*, Point & *close_par*, int *loop_idx* = -1)

28.37.2.18 void Go::RegularizeUtils::getDivisionPlane (shared_ptr< ftSurface > *face*, shared_ptr< Vertex > *vx*, double *epsge*, Point & *pnt*, Point & *normal*)

28.37.2.19 Point Go::RegularizeUtils::getInVec (shared_ptr< Vertex > *vx*, shared_ptr< ftSurface > *face*)

28.37.2.20 double Go::RegularizeUtils::getMaxParFrac (shared_ptr< ftSurface > *face*)

28.37.2.21 ftEdge* Go::RegularizeUtils::getOppositeBoundaryPar (shared_ptr< ftSurface > *face*, shared_ptr< Vertex > *vx*, std::vector< shared_ptr< Vertex > > & *corners*, double *epsge*, Point & *point*, double & *par*, double & *dist*)

28.37.2.22 bool Go::RegularizeUtils::getPath (ftEdge * *edg*, shared_ptr< Vertex > *vx*, shared_ptr< Vertex > *last*, shared_ptr< ftSurface > *face*, std::vector< ftEdge * > & *path*)

28.37.2.23 void Go::RegularizeUtils::getSourceCvs (std::vector< shared_ptr< ftEdge > > & *all_edg*, std::vector< shared_ptr< ParamCurve > > & *all_cvs*)

28.37.2.24 bool Go::RegularizeUtils::mergeSituationContinuation (ftSurface * *init_face*, shared_ptr< Vertex > *vx*, ftEdge * *edge*, double *angtol*)

28.37.2.25 int Go::RegularizeUtils::noExtension (shared_ptr< Vertex > *vx*, ftSurface * *face*, shared_ptr< Vertex > & *vx2*, std::pair< Point, Point > & *co_par1*, std::pair< Point, Point > & *co_par2*, int & *dir1*, int & *dir2*, double & *val1*, double & *val2*, double *angtol*, bool *check_constant_curve*)

28.37.2.26 int Go::RegularizeUtils::selectCandVx (shared_ptr< ftSurface > *face*, shared_ptr< Vertex > *vx*, const Point & *in_vec*, vector< shared_ptr< Vertex > > *cand_vx*, RectDomain & *dom*, double *epsge*, double *angtol*, const Point & *centre*, const Point & *normal*, std::vector< shared_ptr< ParamCurve > > & *vx_cvs*, double *close_dist*, const Point & *close_pt*, double & *cyl_rad*, bool *strong* = false)

28.37.2.27 int Go::RegularizeUtils::traverseUntilTJoint (std::vector< ftSurface * > *vx_faces*, shared_ptr< Vertex > *vx*, shared_ptr< Vertex > & *vx2*, std::vector< ftSurface * > & *vx_faces2*)

28.38 Go::Singular Namespace Reference

Functions

- void vanishingNormal (shared_ptr< ParamSurface > srf, double tol, std::vector< Point > &singular_pts, std::vector< std::vector< Point > > &singular_sequences)
- void vanishingTangent (shared_ptr< ParamCurve > crv, double start, double end, double tol, std::vector< double > &singular_pts, std::vector< std::vector< double > > &singular_sequences)

28.38.1 Function Documentation

28.38.1.1 void Go::Singular::vanishingNormal (shared_ptr< ParamSurface > *srf*, double *tol*, std::vector< Point > & *singular_pts*, std::vector< std::vector< Point > > & *singular_sequences*)

28.38.1.2 void Go::Singular::vanishingTangent (shared_ptr< ParamCurve > *crv*, double *start*, double *end*, double *tol*, std::vector< double > & *singular_pts*, std::vector< std::vector< double > > & *singular_sequences*)

28.39 Go::SplineDebugUtils Namespace Reference

Functions

- void GO_API writeSpaceParamCurve (const SplineCurve &pcurve, std::ostream &os, double z=0.0)
- void GO_API writeSpaceParamCurve (const Line &pline, std::ostream &os, double z=0.0)
- void GO_API writeTrimmedInfo (BoundedSurface &bd_sf, std::ostream &os, double z=0.0)
- void GO_API writeOuterBoundaryLoop (ParamSurface &sf, std::ostream &os)
- void GO_API objToFile (GeomObject *geom_obj, char *to_file)
- void GO_API objsToFile (std::vector< shared_ptr< GeomObject > > &geom_objs, char *to_file)
- void GO_API writeSISLFormat (const SplineCurve &spline_cv, std::ostream &os)
- void GO_API writeCvsOnSf (const std::vector< shared_ptr< Go::ParamCurve > > &loop_cvs, double epsgeo, std::ofstream &fileout)
- void GO_API writeCvsOnSf (const std::vector< shared_ptr< Go::CurveOnSurface > > &loop_cvs, double epsgeo, std::ofstream &fileout)

28.39.1 Detailed Description

For debugging. Writes a parameter curve in the xy-plane. Remove when GoViewer handles 2D curves.

28.39.2 Function Documentation

28.39.2.1 void GO_API Go::SplineDebugUtils::objsToFile (std::vector< shared_ptr< GeomObject > > & *geom_objs*, char * *to_file*)

writes the geometric objects (with header) to the specified file name.

Parameters

geom_objs	the objects to write to file.
to_file	the file name to which the objects will be written.

28.39.2.2 void GO_API Go::SplineDebugUtils::objToFile (GeomObject * *geom_obj*, char * *to_file*)

writes the geometric object (with header) to the specified file name.

Parameters

geom_obj	the object to write to file.
to_file	the file name to which the object will be written.

28.39.2.3 void GO_API Go::SplineDebugUtils::writeCvsOnSf (const std::vector< shared_ptr< Go::ParamCurve > > & *loop_cvs*, double *epsgeo*, std::ofstream & *fileout*)

28.39.2.4 void GO_API Go::SplineDebugUtils::writeCvsOnSf (const std::vector< shared_ptr< Go::CurveOnSurface > > & *loop_cvs*, double *epsgeo*, std::ofstream & *fileout*)

28.39.2.5 void GO_API Go::SplineDebugUtils::writeOuterBoundaryLoop (ParamSurface & *sf*, std::ostream & *os*)

28.39.2.6 void GO_API Go::SplineDebugUtils::writeSISLFormat (const SplineCurve & *spline_cv*, std::ostream & *os*)

Write a SplineCurve to a stream using the SISL file format (not the Go format).

Parameters

spline_cv	the curve to write to a stream
os	the stream to which the curve will be written (in SISL format)x

28.39.2.7 void GO_API Go::SplineDebugUtils::writeSpaceParamCurve (const SplineCurve & *pcurve*, std::ostream & *os*, double *z* = 0.0)

For debugging. Writes a parameter curve (2D) in the xy-plane, for a given z-value. It will be written (with header) to the specified stream as a 3D curve.

Parameters

pcurve	the parameter curve we want to write as a 3D curve
os	the stream to which we want to write the 3D curve
z	the constant z-value for the generated curve

28.39.2.8 void GO_API Go::SplineDebugUtils::writeSpaceParamCurve (const Line & *pline,* std::ostream & *os,* double *z* = 0.0)

28.39.2.9 void GO_API Go::SplineDebugUtils::writeTrimmedInfo (BoundedSurface & *bd_sf,* std::ostream & *os,* double *z* = 0.0)

Write the parameter curve (if existing) and the space curve (if existing) to the output stream. Both curves are written as 3D curves extending 2D curves with the given z-value.

28.40 Go::SplineUtils Namespace Reference

Functions

- void GO_API transpose_array (int dim, int m, int n, double *array_start)
- int GO_API closest_in_array (const double *pt, const double *array, int n, int dim)
- Vector3D GO_API closest_on_triangle (const Vector3D &pt, const Vector3D tri[3], double &clo_dist2)
- double GO_API closest_on_line_segment (const Vector3D &pt, const Vector3D &beg, const Vector3D &end)
- void GO_API closest_on_rectgrid (const double *pt, const double *array, int m, int n, double &clo_u, double &clo_v)
- void GO_API closest_on_rectgrid (const double *pt, const double *array, int u_min, int u_max, int v_min, int v_max, int nmb_coefs_u, double &clo_u, double &clo_v)
- void GO_API make_coef_array_from_rational_coefs (const double *rationals, double *coefs, int num_coefs, int dim)
- void GO_API curve_ratder (double const eder[ ], int idim, int ider, double gder[ ])
- void GO_API surface_ratder (double const eder[ ], int idim, int ider, double gder[ ])
- void GO_API osloalg (int ij, int imy, int ik, int in, int *jpl, int *jfi, int *jla, const double *et, const double *etau, double *galfa)
- void GO_API refmatrix (const double *et, int im, int ik, const double *etau, int in, double *ea, int *nfirst, int *nlast)
- void GO_API splineToBezierTransfMat (const double *knots, std::vector< double > &transf_mat)
- void GO_API extractBezierCoefs (const double *coefs, const int num_coefs_u, const int num_coefs_v, const int ind_u_min, const int ind_v_min, const std::vector< double > &transf_mat_u, const std::vector< double > &transf_mat_v, std::vector< double > &bezier_coefs)
- void GO_API refinedBezierCoefsCubic (Go::SplineSurface &spline_sf, int ind_u_min, int ind_v_min, std::vector< double > &bez_coefs)

  Method expecting bi-cubic input.
- shared_ptr< SplineSurface > GO_API refineToBezier (const Go::SplineSurface &spline_sf)
- shared_ptr< SplineSurface > GO_API insertKnots (const Go::SplineSurface &spline_sf, const std::vector< double > new_knots_u, const std::vector< double > new_knots_v)

28.40.1 Detailed Description

Utility functionality related to spline curves and surfaces or functions operating on spline curves and surfaces

28.40.2 Function Documentation

28.40.2.1 int GO_API Go::SplineUtils::closest_in_array (const double * *pt,* const double * *array,* int *n,* int *dim*)

Find the point in an array closest to the given base point (measured in the usual, Euclidean distance)

Parameters

pt	pointer to the base point (of dimension 'n')
array	pointer to the array in which we will search
n	number of elements in the array
dim	dimension of the elements/base point

28.40.2.2 double GO_API Go::SplineUtils::closest_on_line_segment (const Vector3D & *pt,* const Vector3D & *beg,* const Vector3D & *end*)

Find the closest point on a line segment to a given point.

Parameters

pt	the point for which we want to find the closest point on the line segment
beg	the start point of the line segment
end	the end point of the line segment

Returns

the barycentric coordinate of the closest point on the line segment (number between 0 and 1, where 0 is the start point and 1 is the end point)

28.40.2.3 void GO_API Go::SplineUtils::closest_on_rectgrid (const double * *pt,* const double * *array,* int *m,* int *n,* double & *clo_u,* double & *clo_v*)

Find an approximate closest point on a rectangular grid of 3-dimensional points. The method used is to 'triangulate' the grid, and locate the closest point on this triangulation. We imagine that the point grid is uniformly parametrized from 0 to m-1 along each row and from 0 to n-1 along each column, and we refer to these parameters as 'u' and 'v'.

Parameters

pt	the point we want to search the closest point for
array	pointer to the array of 3D-points; coordinates should be stored consecutively in a row-wise fashion.
m	number of columns in the point array
n	number of rows in the point array
clo_u	upon function return; the u-parameter of the closest point, using the parametrization explained above.
clo_v	upon function return; the v-parameter of the closest point, using the parametrization explained above.

28.40.2.4 void GO_API Go::SplineUtils::closest_on_rectgrid (const double * *pt,* const double * *array,* int *u_min,* int *u_max,* int *v_min,* int *v_max,* int *nmb_coefs_u,* double & *clo_u,* double & *clo_v*)

Find an approximate closest point on a sub-grid of a rectangular grid of 3-dimensional points. The method used is to 'triangulate' the grid, and locate the closest point on this triangulation. We imagine that the parametrization of the sub-grid is from 'u_min' to 'u_max' along each row and from 'v_min' to 'v_max' along each column.

Parameters

pt	the point we want to search the closest point for
array	pointer to the array of 3D-points; coordinates should be stored consecutively in a row-wise fashion.
u_min	lowest column index of the subgrid we want to search
u_max	highest column index of the subgrid we want to search
v_min	lowest row index of the subgrid we want to search
v_max	highest row index of the subgrid we want to search
nmb_coefs_u	total number of columns in the complete grid (necessary to know in order to determine how far to jump to get to the next row in the subgrid.
clo_u	upon function return; the u-parameter of the closest point, using the parametrization explained above.
clo_v	upon function return; the v-parameter of the closest point, using the parametrization explained above.

28.40.2.5 Vector3D GO_API Go::SplineUtils::closest_on_triangle (const Vector3D & *pt,* const Vector3D *tri[3],* double & *clo_dist2*)

Find the closest point on a triangle, in barycentric coordinates.

Parameters

pt	the point for which we want to find the closest point on the triangle
tri	the triangle, specified by its three corners
clo_dist2	the squared Euclidean distance from 'pt' to the closest point in the triangle.

Returns

the barycentric coordinates of the closest point on the triangle

28.40.2.6 void GO_API Go::SplineUtils::curve_ratder (double const *eder[ ],* int *idim,* int *ider,* double *gder[ ]*)

This function takes as input the position and a certain number of derivatives in homogenous space of a point on a rational curve. It outputs the position and derivatives of this point in non-homogenous ("ordinary") space. (Corresponds to s6ratder in SISL)

Parameters

eder	pointer to the array where the point's position and derivatives in homogenous coordinates (input) are consecutively stored
idim	the dimension of the non-homogenous space
ider	the number of derivatives sought (0 means that we only want to convert the *position* to non-homogenous coordinates).
gder	pointer to the array where the result will be written (in same order as 'eder').

28.40.2.7 void GO_API Go::SplineUtils::extractBezierCoefs (const double * *coefs*, const int *num_coefs_u*, const int *num_coefs_v*, const int *ind_u_min*, const int *ind_v_min*, const std::vector< double > & *transf_mat_u*, const std::vector< double > & *transf_mat_v*, std::vector< double > & *bezier_coefs*)

Assuming surface is bi-cubic (i.e. order 4). Extract the bezier patch corr to the domain (knots_u[ind_u_min], knots_u[int_u_min+1])x(knots_v[ind_v_min], knots_v[int_v_min+1]).

Parameters

ind_u_min	Basis pointer corresponding to umin.
ind_v_min	Basis pointer corresponding to vmin.

28.40.2.8 shared_ptr<SplineSurface> GO_API Go::SplineUtils::insertKnots (const Go::SplineSurface & *spline_sf*, const std::vector< double > *new_knots_u*, const std::vector< double > *new_knots_v*)

28.40.2.9 void GO_API Go::SplineUtils::make_coef_array_from_rational_coefs (const double * *rationals*, double * *coefs*, int *num_coefs*, int *dim*)

convert an array of rational coefficients to an array of nonrational coefficients

Parameters

rationals	pointer to the array of rational coefficients
coefs	pointer to the array where the nonrational coefficients are to be written
num_coefs	total number of coefficients
dim	dimension of coefficients (not counting the rational component).

28.40.2.10 void GO_API Go::SplineUtils::osloalg (int *ij*, int *imy*, int *ik*, int *in*, int * *jpl*, int * *jfi*, int * *jla*, const double * *et*, const double * *etau*, double * *galfa*)

Corresponds to s1701 in SISL This function computes in a compact format a line in the discrete B-spline matrix converting between an orginal basis "etau" and a new basis "et".

Parameters

ij	The index of the new vertice
imy	An index on etau, where the input value are to be etau(imy) <= et(ij) < etau(imy + 1).
ik	The order of the B-spline.
in	The number of the orginal vertices.
et	The new knot vector.
etau	The old knot vector.
et	An array ep(ik) to local use. Such that we do not need to allocate the array locally after each call.
jpl	The negativ difference between the index in galfa and the real knot inserten matrix.
jfi	The index of the first element in the line j in the the real knot inserten matrix whice is not zero. The element with the index (jfi+jpl) in galfa is the same as the element with index jfi in the real line j in the knot inserten matrix.
jla	The index of the last element in the line j in the real knot inserten matrix whice is not zero. The element with the index (jla+jpl) in galfa is the same as the element with index jla in the real line j in the knot inserten matrix.
galfa	A compressed line in the knot inserten matrix.

28.40.2.11 void GO_API Go::SplineUtils::refinedBezierCoefsCubic (Go::SplineSurface & *spline_sf,* int *ind_u_min,* int *ind_v_min,* std::vector< double > & *bez_coefs*)

Method expecting bi-cubic input.

28.40.2.12 shared_ptr<SplineSurface> GO_API Go::SplineUtils::refineToBezier (const Go::SplineSurface & *spline_sf*)

28.40.2.13 void GO_API Go::SplineUtils::refmatrix (const double * *et,* int *im,* int *ik,* const double * *etau,* int *in,* double * *ea,* int * *nfirst,* int * *nlast*)

Corresponds to sh1922 in SISL Computes the B-spline refinement transformation matrix from the spline space generated by the knot vector etau to the refined spline space generated by the refined knot vector et.

Parameters

et	Real array of length (im+ik) containing the refined knot vector.
im	The dimension of the spline space corresponding to et.
ik	The order of the spline space.
etau	Real array of length (in+ik) containing the original knot vector.
in	The dimension of the spline space corresponding to etau.
ea	Real array of dimension (im∗ik) containing the B-spline refinement matrix from the knot vector etau to the knot vector et. This matrix has dimension im∗in but since at most ik entries are nonzero in each row, it can be stored in a im∗ik array together with two integer arrays indicating the position of the first and last nonzero elements in each row.
nfirst	Integer array of dimension (im) containing pointers to the first nonzero element of each row of the B-spline refinement matrix from etau to et.
nlast	Integer array of dimension (im) containing pointers to the last nonzero element of each row of the B-spline refinement matrix from etau to et.

28.40.2.14 void GO_API Go::SplineUtils::splineToBezierTransfMat (const double * *knots,* std::vector< double > & *transf_mat*)

Assuming basis is cubic (i.e. order 4). Create the transformation matrix which extract the bezier coefs for the interval (knots[3], knots[4]).

28.40.2.15 void GO_API Go::SplineUtils::surface_ratder (double const *eder[ ],* int *idim,* int *ider,* double *gder[ ]*)

This function takes as input the position and a certain number of derivatives in homogenous space of a point on a rational surface. It outputs the positioin and derivatives of this point in non-homogenous ("ordinary") space. (Corresponds to s6strider in SISL)

Parameters

eder	pointer to double array of dimenson [(ider+1)∗(ider+2)∗(idim+1)/2] containing the position and the derivative vectors of the homogeneous surface at the point with parameter value (epar[0],epar[1]). (idim+1 is the number of components of each B-spline coefficient, i.e. the dimension of the homogemous space in which the surface lies.) These vectors are stored in the following order: First the idim+1 components of the position vector, then the idim+1 components of the D(1,0) vector, then the idim+1 components of the D(0,1) vector, then the idim+1 components of the D(2,0) vector, followed by D(1,1), D(0,2) and so on up to the idim+1 components of the D(0,ider).
idim	The dimension of the non homogenous space
ider	The number of input derivatives with respect to both parameter directions.
gder	pointer to the array where the result will be written (in same order as 'eder').

28.40.2.16 void GO_API Go::SplineUtils::transpose_array (int *dim,* int *m,* int *n,* double ∗ *array_start*)

Utility functionality related to spline curves and surfaces or functions operating on spline curves and surfaces Transpose an (m x n) matrix of dim-dimensional points stored as an array in row-major order (i.e. all elements of a single row are stored together).

Parameters

dim	the dimension of each of the points in the array
m	number of lines in the matrix
n	number of columns in the matrix
array_start	pointer to the start of array where matrix is stored

28.41 Go::SplitModelUtils Namespace Reference

Utility functionality for splitting of surface models.

Functions

- void splitInFreeCorners (shared_ptr< SurfaceModel > sfmodel, const Point &pnt, const Point &axis)
- void splitInNonCorners (shared_ptr< SurfaceModel > sfmodel, const Point &pnt, const Point &axis)
- void splitInOuterVertices (shared_ptr< SurfaceModel > sfmodel, shared_ptr< ftSurface > face, const Point &pnt, const Point &axis)

28.41.1 Detailed Description

Utility functionality for splitting of surface models.

28.41.2 Function Documentation

28.41.2.1 void Go::SplitModelUtils::splitInFreeCorners (shared_ptr< SurfaceModel > *sfmodel,* const Point & *pnt,* const Point & *axis*)

The model is split from corners vertices belonging only to one face towards the axis defined by pnt and axis

28.41.2.2 void Go::SplitModelUtils::splitInNonCorners (shared_ptr< SurfaceModel > *sfmodel,* const Point & *pnt,* const Point & *axis*)

The model is split from vertices that do not constitute a corner for the current face towards the axis defined by pnt and axis

28.41.2.3 void Go::SplitModelUtils::splitInOuterVertices (shared_ptr< SurfaceModel > *sfmodel,* shared_ptr< ftSurface > *face,* const Point & *pnt,* const Point & *axis*)

The model is split from vertices in outer loops towards the axis defined by pnt and axis or towards vertices in inner loops

28.42 Go::SurfaceCreators Namespace Reference

Functions

- shared_ptr< SplineSurface > createSmoothTransition (const std::vector< shared_ptr< const ParamSurface > > &surfs, const std::vector< shared_ptr< const CurveOnSurface > > &int_cvs, double dist_0, double dist_1, double epsge, std::vector< shared_ptr< SplineCurve > > &trim_crvs)
- shared_ptr< SplineSurface > mult1DSurfaces (const SplineSurface &sf1, const SplineSurface &sf2)
- shared_ptr< SplineSurface > mult1DBezierPatches (const SplineSurface &patch1, const SplineSurface &patch2)
- shared_ptr< Go::SplineSurface > mergeRationalParts (const Go::SplineSurface &nom_sf, const Go::SplineSurface &den_sf, bool weights_in_first=false)
- shared_ptr< Go::SplineSurface > insertParamDomain (const Go::SplineSurface &sf_1d)
- std::vector< shared_ptr< Go::SplineSurface > > separateRationalParts (const Go::SplineSurface &sf)

28.42.1 Detailed Description

Various functions for generating SplineSurface s by approximation, blending, etc.

28.42.2 Function Documentation

28.42.2.1 shared_ptr<SplineSurface> Go::SurfaceCreators::createSmoothTransition (const std::vector< shared_ptr< const ParamSurface > > & *surfs,* const std::vector< shared_ptr< const CurveOnSurface > > & *int_cvs,* double *dist_0,* double *dist_1,* double *epsge,* std::vector< shared_ptr< SplineCurve > > & *trim_crvs*)

Given input of two parametric surfaces, which intersect along an edge, create a smooth surface by moving boundary of surfs to inner part of current surfs. Normals of input surfs are assumed to be consistent.

Parameters

surfs	the input surfaces, size of vector is 2.
int_cvs	intersection curves between the two surfaces. Vector has size 2. Both parameter curves should exist, the space curve should be the same.
dist_0	the offset space distance in surfs[0].
dist_1	the offset space distance in surfs[1].
epsge	the geometrical tolerance when offsetting.
trim_crvs	the offset trim curves: par_cv0, space_cv0, par_cv1, space_cv1.

28.42.2.2 shared_ptr<Go::SplineSurface> Go::SurfaceCreators::insertParamDomain (const Go::SplineSurface & *sf_1d*)

Given input of 1d-sf, return the 3d visualization (u, v, f(u, v)).

Parameters

sf_1d	1-dimensional surface.

Returns

the 3-dimensional surface.

28.42.2.3 shared_ptr<Go::SplineSurface> Go::SurfaceCreators::mergeRationalParts (const Go::SplineSurface & *nom_sf,* const Go::SplineSurface & *den_sf,* bool *weights_in_first* = false)

Return the rational surface 'nom_sf/den_sf'.

Parameters

nom_sf	the nominator surface.
den_sf	the denominator surface.
weights_in_first	true if the coefficients of the nom_sf have been multiplied by the corresonding rational coefficients in den_sf.

Returns

the rational surface.

28.42.2.4 shared_ptr<SplineSurface> Go::SurfaceCreators::mult1DBezierPatches (const SplineSurface & *patch1,* const SplineSurface & *patch2*)

Return the product of the two Bezier patches. Expecting them to be non-rational.

Parameters

patch1	SplineSurface of Bezier type (i.e. no inner knots).
patch2	SplineSurface of Bezier type (i.e. no inner knots).

Returns

the surface product.

28.42.2.5 shared_ptr<SplineSurface> Go::SurfaceCreators::mult1DSurfaces (const SplineSurface & *sf1,* const SplineSurface & *sf2*)

Return the product of the two spline surfaces. Expecting them to be non-rational.

Parameters

sf1	the first surface.
sf2	the second surface.

Returns

the surface product.

28.42.2.6 std::vector<shared_ptr<Go::SplineSurface> > Go::SurfaceCreators::separateRationalParts (const Go::SplineSurface & *sf*)

Assuming the sf is rational, separate the geometric space from the homogenuous.

Parameters

sf	the input spline surface.

Returns

the non-rational parts of sf.

28.43 Go::SurfaceInterpolator Namespace Reference

Functionality for creating interpolating surfaces.

Functions

- SplineSurface * regularInterpolation (const BsplineBasis &basis_u, const BsplineBasis &basis_v, std::vector< double > &par_u, std::vector< double > &par_v, std::vector< double > &points, int dimension, bool rational, std::vector< double > &weights)

28.43.1 Detailed Description

Functionality for creating interpolating surfaces.

28.43.2 Function Documentation

28.43.2.1 SplineSurface* Go::SurfaceInterpolator::regularInterpolation (const BsplineBasis & *basis_u*, const BsplineBasis & *basis_v*, std::vector< double > & *par_u*, std::vector< double > & *par_v*, std::vector< double > & *points*, int *dimension*, bool *rational*, std::vector< double > & *weights*)

Interpolate a set of regular, parameterized interpolation points. The parameterizetion is assumed to correspond to the given B-spline basises (select interpolation points in the Greville points). The function throws if the input parameters are inconsistent

28.44 Go::SurfaceModelUtils Namespace Reference

Utility functionality for splitting of surface models.

Functions

- std::vector< shared_ptr< ParamSurface > > checkClosedFaces (shared_ptr< ParamSurface > surface, double tol)

28.44.1 Detailed Description

Utility functionality for splitting of surface models.

28.44.2 Function Documentation

28.44.2.1 std::vector<shared_ptr<ParamSurface>> Go::SurfaceModelUtils::checkClosedFaces (shared_ptr< ParamSurface > *surface,* double *tol*)

28.45 Go::SurfaceOnVolumeTools Namespace Reference

Functions

- CurveLoop getOuterBoundaryLoop (shared_ptr< SurfaceOnVolume > sf, double eps)

28.45.1 Detailed Description

This namespace contains functions used to fetch boundary curves from surface on volumes

28.45.2 Function Documentation

28.45.2.1 CurveLoop Go::SurfaceOnVolumeTools::getOuterBoundaryLoop (shared_ptr< SurfaceOnVolume > *sf,* double *eps*)

Fetch the outer loop of the surface. This function is implemented outside of SurfaceOnVolume to allow the resulting curves to be of type CurveOnSurface and possess all the information related to this curve type.

28.46 Go::SurfaceTools Namespace Reference

Free functions operating on parametric surfaces.

Functions

- CurveLoop outerBoundarySfLoop (shared_ptr< ParamSurface > surf, double degenerate_epsilon)

  Fetch the outer boundary loop of a parametric surface.
- std::vector< CurveLoop > allBoundarySfLoops (shared_ptr< ParamSurface > surf, double degenerate_↩ epsilon)

  Fetch all boundary loops of a parametric surface.
- std::vector< CurveLoop > absolutelyAllBoundarySfLoops (shared_ptr< ParamSurface > surf, double degenerate_epsilon)
- void iterateCornerPos (Point &vertex, std::vector< std::pair< shared_ptr< ParamSurface >, Point > > sfs, double tol)
- bool cornerToCornerSfs (shared_ptr< ParamSurface > sf1, shared_ptr< CurveOnSurface > sf_cv1, shared_ptr< ParamSurface > sf2, shared_ptr< CurveOnSurface > sf_cv2, double tol)
- bool getSfAdjacencyInfo (shared_ptr< ParamSurface > sf1, shared_ptr< CurveOnSurface > sf_cv1, shared_ptr< ParamSurface > sf2, shared_ptr< CurveOnSurface > sf_cv2, double tol, int &bd1, int &bd2, bool &same_orient)
- bool getCorrCoefEnum (shared_ptr< SplineSurface > sf1, shared_ptr< SplineSurface > sf2, int bd1, int bd2, bool same_orient, std::vector< std::pair< int, int > > &enumeration)
- bool getCoefEnumeration (shared_ptr< SplineSurface > sf, int bd, std::vector< int > &enumeration)
- bool getCoefEnumeration (shared_ptr< SplineSurface > sf, int bd, std::vector< int > &enumeration_bd, std::vector< int > &enumeration_bd2)
- bool getCornerCoefEnum (shared_ptr< SplineSurface > sf, int bd1, int bd2, int &enumeration)
- int checkCoefCoLinearity (shared_ptr< SplineSurface > sf1, shared_ptr< SplineSurface > sf2, int bd1, int bd2, bool same_orient, double tol, double ang_tol, std::vector< std::vector< int > > &enumeration)
- void surface_seedfind (const Point &pt, const ParamSurface &sf, const RectDomain *rd, double &u, double &v)
- void parameterizeByBaseSurf (const ParamSurface &sf, const std::vector< double > &points, std::vector< double > &parvals)
- double estimateTangentLength (SplineSurface *surf, int pardir, bool at_start)
- void GO_API checkSurfaceClosed (const Go::ParamSurface &sf, bool &closed_dir_u, bool &closed_dir_v, double closed_tol=1e-06)
- void GO_API surfaceClosed (const Go::SplineSurface &sf, bool &closed_dir_u, bool &closed_dir_v, double closed_tol=1e-06)
- Point getParEpsilon (const ParamSurface &sf, double epsgeo)

28.46.1 Detailed Description

Free functions operating on parametric surfaces.

28.46.2 Function Documentation

28.46.2.1 std::vector<CurveLoop> Go::SurfaceTools::absolutelyAllBoundarySfLoops (shared_ptr< ParamSurface > *surf,* double *degenerate_epsilon*)

Fetch all boundary loops of a parametric surface including degenerate curves

28.46.2.2 std::vector<CurveLoop> Go::SurfaceTools::allBoundarySfLoops (shared_ptr< ParamSurface > *surf,* double *degenerate_epsilon*)

Fetch all boundary loops of a parametric surface.

28.46.2.3 int Go::SurfaceTools::checkCoefCoLinearity (shared_ptr< SplineSurface > *sf1,* shared_ptr< SplineSurface > *sf2,* int *bd1,* int *bd2,* bool *same_orient,* double *tol,* double *ang_tol,* std::vector< std::vector< int > > & *enumeration*)

Find coefficient enumeration of possible colinear coefficients at a common edge and check whether the coefficients are indeed colinear (return value: 0 = no correspondance, 1 = almost colinear, 2 = conditions defined)

28.46.2.4 void GO_API Go::SurfaceTools::checkSurfaceClosed (const Go::ParamSurface & *sf,* bool & *closed_dir_u,* bool & *closed_dir_v,* double *closed_tol* = `1e-06`)

Check if the surface is closed in one or both paramater directions

28.46.2.5 bool Go::SurfaceTools::cornerToCornerSfs (shared_ptr< ParamSurface > *sf1,* shared_ptr< CurveOnSurface > *sf_cv1,* shared_ptr< ParamSurface > *sf2,* shared_ptr< CurveOnSurface > *sf_cv2,* double *tol*)

Check if two neighbouring surfaces in a surface set have a corner-to-corner configuration, i.e. no T-joints

Parameters

sf1	one surface
sf_cv1	the boundary curve/trimming curve corresponding to sf1 at the boundary common with sf2
sf2	the other surface
sf_cv2	the boundary curve/trimming curve corresponding to sf2 at the boundary common with sf1
return	parameter true of the configuration is corner-to-corner

28.46.2.6 double Go::SurfaceTools::estimateTangentLength (SplineSurface * *surf,* int *pardir,* bool *at_start*)

Estimate the average length of the cross tangent of a spline surface at a given boundary

Parameters

surf	the surface
pardir	= 1 : the cross tangent curve has constant u-parameter pardir = 0 : the cross tangent curve has constant v-parameter
at_start	the cross tangent curve is evaluated at the start of the parameter domain in the given parameter direction

28.46.2.7 bool Go::SurfaceTools::getCoefEnumeration (shared_ptr< SplineSurface > *sf,* int *bd,* std::vector< int > & *enumeration*)

Fetch the local enumeration of the surface coefficients along a specified boundary (bd=0 - umin, bd=1 - umax, bd=2 - vmin, bd=3 - vmax)

28.46.2.8 bool Go::SurfaceTools::getCoefEnumeration (shared_ptr< SplineSurface > *sf,* int *bd,* std::vector< int > & *enumeration_bd,* std::vector< int > & *enumeration_bd2*)

Return both the boundary coefficients as well as coefficient row number 2 when counting from the edge.

28.46.2.9 bool Go::SurfaceTools::getCornerCoefEnum (shared_ptr< SplineSurface > *sf,* int *bd1,* int *bd2,* int & *enumeration*)

Fetch the coefficient enumeration of the corner of a spline surface specified by the two boundaries meeting in this corner

28.46.2.10 bool Go::SurfaceTools::getCorrCoefEnum (shared_ptr< SplineSurface > *sf1,* shared_ptr< SplineSurface > *sf2,* int *bd1,* int *bd2,* bool *same_orient,* std::vector< std::pair< int, int > > & *enumeration*)

Given two spline surfaces and information about a common boundary between these surfaces, compute the enumeration of corresponding coefficients along this boundary provided that the surfaces have got the same spline space along the boundary

Parameters

sf1	first surface
sf2	second surface
bd1	boundary curve of first surface which follows the common boundary, -1=no such boundary curve, 0=umin, 1=umax, 2=vmin, 3=vmax
bd2	boundary curve of second surface which follows the common boundary
same_orient	whether or not the surface boundaries have got the same orientation along the common boundary
return	value whether or not the surfaces have got the same spline space
enumeration	pairwise enumeration of the corresponding coefficients in the two surfaces

28.46.2.11 Point Go::SurfaceTools::getParEpsilon (const ParamSurface & *sf,* double *epsgeo*)

28.46.2.12 bool Go::SurfaceTools::getSfAdjacencyInfo (shared_ptr< ParamSurface > *sf1,* shared_ptr< CurveOnSurface > *sf_cv1,* shared_ptr< ParamSurface > *sf2,* shared_ptr< CurveOnSurface > *sf_cv2,* double *tol,* int & *bd1,* int & *bd2,* bool & *same_orient*)

Given two neighbouring surfaces, sf1 and sf2, and information about the common boundary, fetch information about the adjacency configuration

Parameters

sf1	one surface
sf_cv1	the boundary curve/trimming curve corresponding to sf1 at the boundary common with sf2
sf2	the other surface
sf_cv2	the boundary curve/trimming curve corresponding to sf2 at the boundary common with sf1
tol	adjacency tolerance
return	parameter true if the two surfaces share the same boundary and that boundary is boundary trimmed in both surfaces

Parameters

bd1	boundary curve of first surface which follows the common boundary, -1=no such boundary curve, 0=umin, 1=umax, 2=vmin, 3=vmax
bd2	boundary curve of second surface which follows the common boundary
same_orient	whether or not the surface boundaries have got the same orientation along the common boundary

28.46.2.13 void Go::SurfaceTools::iterateCornerPos (Point & *vertex,* std::vector< std::pair< shared_ptr< ParamSurface >, Point > > *sfs,* double *tol*)

Compute the corner where a number of surfaces meet. This function is relevant if the surfaces almost interpolate the same corner. If the surface is elementary (cone, sphere, ...), then this surface has more influence on the the corner position than spline surfaces.

Parameters

vertex	the position of the corner. This point is moved during the computation to get closer to a point shared by all surfaces
sfs	the surfaces meeting in this corner and the surface parameter associated with the corner. Note that the parameter does not necessarily lie at a corner of the underlying non-trimmed surface and it might also represent a vertex in a surface model and may lie internally at a surface boundary

28.46.2.14 CurveLoop Go::SurfaceTools::outerBoundarySfLoop (shared_ptr< ParamSurface > *surf,* double *degenerate_epsilon*)

Fetch the outer boundary loop of a parametric surface.

28.46.2.15 void Go::SurfaceTools::parameterizeByBaseSurf (const ParamSurface & *sf,* const std::vector< double > & *points,* std::vector< double > & *parvals*)

Parameterize a point set by projecting the points onto a given base surface

28.46.2.16 void Go::SurfaceTools::surface_seedfind (const Point & *pt,* const ParamSurface & *sf,* const RectDomain * *rd,* double & *u,* double & *v*)

Estimate a start point to a closest point iteration between a given point, pt, and a given surface, sf, possibly restriced to the parameter domain rd.

28.46.2.17 void GO_API Go::SurfaceTools::surfaceClosed (const Go::SplineSurface & *sf,* bool & *closed_dir_u,* bool & *closed_dir_v,* double *closed_tol* = 1e-06)

Check if the surface is closed in one or both paramater directions

28.47 Go::TesselatorUtils Namespace Reference

Related to the relative resolution of tesselation.

Functions

- void getResolution (const ParamSurface *surf, int &u_nmb, int &v_nmb, int uv_nmb=400)
- shared_ptr< LineCloud > getCtrPol (GeomObject *obj)

  Fetch the control polygon of some geometric entity.

28.47.1 Detailed Description

Related to the relative resolution of tesselation.

28.47.2 Function Documentation

28.47.2.1 shared_ptr<LineCloud> Go::TesselatorUtils::getCtrPol (GeomObject * *obj*)

Fetch the control polygon of some geometric entity.

28.47.2.2 void Go::TesselatorUtils::getResolution (const ParamSurface * *surf*, int & *u_nmb*, int & *v_nmb*, int *uv_nmb* = 400)

Get the mesh size of a surface in the two parameter directions given the total number of nodes in the mesh. NB! u_nmb*v_nmb are probably not exactly equal to uv_nmb

28.48 Go::tpUtils Namespace Reference

Functions

- template<class edgeType >
  void adjacentEdges (edgeType *edge, bool at_start_of_edge, std::vector< edgeType * > &adjacent, std::vector< bool > &at_start)
- template<class edgeType >
  tpJointType checkContinuity (const edgeType *edge1, const edgeType *edge2, double neighbour, double gap, double bend, double kink)

  Return continuity between end of edge1 and start of edge2.

28.48.1 Function Documentation

28.48.1.1 template<class edgeType > void Go::tpUtils::adjacentEdges (edgeType * *edge*, bool *at_start_of_edge*, std::vector< edgeType * > & *adjacent*, std::vector< bool > & *at_start*)

Consider the 'node' or 'corner' implied by the startpoint (if at_start_of_edge is true) or endpoint (if it is false). The vector adjacent is filled with all edges with that 'node' as a startpoint (indicated by a true at the corresponding place in the at_start vector) or endpoint (false in at_start). The edge originally asked for is not included.

Definition at line 60 of file tpUtils.h.

28.48.1.2 template<class edgeType > tpJointType Go::tpUtils::checkContinuity (const edgeType * *edge1,* const edgeType * *edge2,* double *neighbour,* double *gap,* double *bend,* double *kink*)

Return continuity between end of edge1 and start of edge2.

Definition at line 138 of file tpUtils.h.

28.49 Go::Utils Namespace Reference

Namespace for some utility functions.

Functions

- template<typename ForwardIterator >
  go_iterator_traits< ForwardIterator >::value_type sum (ForwardIterator first, ForwardIterator last)

  sum finds the sum of the elements
- template<typename ForwardIterator >
  go_iterator_traits< ForwardIterator >::value_type sum_squared (ForwardIterator first, ForwardIterator last)

  sum_squared finds the squared sum of the elements
- template<typename ForwardIterator >
  go_iterator_traits< ForwardIterator >::value_type distance_squared (ForwardIterator first1, ForwardIterator last1, ForwardIterator first2)

  distance_squared
- template<typename ForwardIterator >
  void normalize (ForwardIterator first, ForwardIterator last)

  normalize makes the length of a vector 1.0
- template<typename ForwardIterator >
  go_iterator_traits< ForwardIterator >::value_type inner (ForwardIterator first, ForwardIterator last, Forward↩ Iterator second)

  inner product
- template<typename InputStream >
  InputStream & eatwhite (InputStream &is)

  eat white space

28.49.1 Detailed Description

Namespace for some utility functions.

28.49.2 Function Documentation

28.49.2.1 template<typename ForwardIterator > go_iterator_traits<ForwardIterator>::value_type Go::Utils::distance_squared (ForwardIterator *first1,* ForwardIterator *last1,* ForwardIterator *first2*) [inline]

distance_squared

Definition at line 113 of file Utils.h.

28.49.2.2 template<typename InputStream > InputStream& Go::Utils::eatwhite (InputStream & *is*) [inline]

eat white space

Definition at line 151 of file Utils.h.

28.49.2.3 template<typename ForwardIterator > go_iterator_traits<ForwardIterator>::value_type Go::Utils::inner (ForwardIterator *first,* ForwardIterator *last,* ForwardIterator *second*) [inline]

inner product

Definition at line 139 of file Utils.h.

28.49.2.4 template<typename ForwardIterator > void Go::Utils::normalize (ForwardIterator *first,* ForwardIterator *last*) [inline]

normalize makes the length of a vector 1.0

Definition at line 126 of file Utils.h.

28.49.2.5 template<typename ForwardIterator > go_iterator_traits<ForwardIterator>::value_type Go::Utils::sum (ForwardIterator *first,* ForwardIterator *last*) [inline]

sum finds the sum of the elements

Definition at line 89 of file Utils.h.

28.49.2.6 template<typename ForwardIterator > go_iterator_traits<ForwardIterator>::value_type Go::Utils::sum_squared (ForwardIterator *first,* ForwardIterator *last*) [inline]

sum_squared finds the squared sum of the elements

Definition at line 101 of file Utils.h.

28.50 Go::VolumeInterpolator Namespace Reference

This namespace contains functions used to interpolate a set of points.

Functions

- SplineVolume * regularInterpolation (const BsplineBasis &basis_u, const BsplineBasis &basis_v, const BsplineBasis &basis_w, std::vector< double > &par_u, std::vector< double > &par_v, std::vector< double > &par_w, std::vector< double > &points, int dimension, bool rational, std::vector< double > &weights)

28.50.1 Detailed Description

This namespace contains functions used to interpolate a set of points.

28.50.2 Function Documentation

28.50.2.1 SplineVolume* Go::VolumeInterpolator::regularInterpolation (const BsplineBasis & *basis_u*, const BsplineBasis & *basis_v*, const BsplineBasis & *basis_w*, std::vector< double > & *par_u*, std::vector< double > & *par_v*, std::vector< double > & *par_w*, std::vector< double > & *points*, int *dimension*, bool *rational*, std::vector< double > & *weights*)

Interpolate a set of regular, parameterized interpolation points. The parameterization is assumed to correspond to the given B-spline basises (select interpolation points in the Greville points). The function throws if the input parameters are inconsistent

Parameters

basis_u	spline basis in the first parameter direction
basis_v	spline basis in the second parameter direction
basis_w	spline basis in the third parameter direction
par_u	parameter values in 1. parameter direction corresponding to point
par_v	parameter values in 2. parameter direction corresponding to point
par_w	parameter values in 2. parameter direction corresponding to point
points	the regular point set
dimension	dimension of geometry space
rational	whether or not a rational surface is expected
weights	the weights of the rational volume, used only if rational==true

28.51 Go::VolumeModelCreator Namespace Reference

Functions

- bool createRotationalModel (shared_ptr< SurfaceModel > &sfmodel, shared_ptr< VolumeModel > &volmodel)
- bool linearSweptModel (shared_ptr< SurfaceModel > &sfmodel, shared_ptr< VolumeModel > &volmodel)

28.51.1 Function Documentation

28.51.1.1 bool Go::VolumeModelCreator::createRotationalModel (shared_ptr< SurfaceModel > & *sfmodel*, shared_ptr< VolumeModel > & *volmodel*)

28.51.1.2 bool Go::VolumeModelCreator::linearSweptModel (shared_ptr< SurfaceModel > & *sfmodel*, shared_ptr< VolumeModel > & *volmodel*)

28.52 Go::VolumeTools Namespace Reference

This namespace contains free functions operating on parametric volumes.

Functions

- int GO_API analyzePeriodicity (const SplineVolume &sf, int direction, double knot_tol=1e-12)
- shared_ptr< SplineCurve > representVolumeAsCurve (const SplineVolume &volume, int cv_dir)
- shared_ptr< SplineVolume > representCurveAsVolume (const SplineCurve &curve, int cv_dir, const BsplineBasis &other_bas1, const BsplineBasis &other_bas2, bool rational)
- shared_ptr< SplineSurface > representVolumeAsSurface (const SplineVolume &volume, int sf_dir1, int sf↩ _dir2)
- shared_ptr< SplineVolume > representSurfaceAsVolume (const SplineSurface &surface, int sf_dir1, int sf↩ _dir2, const BsplineBasis &other_bas, bool rational)
- bool cornerToCornerVols (shared_ptr< ParamVolume > vol1, shared_ptr< SurfaceOnVolume > vol_sf1, shared_ptr< ParamVolume > vol2, shared_ptr< SurfaceOnVolume > vol_sf2, double tol)
- bool getVolAdjacencyInfo (shared_ptr< ParamVolume > vol1, shared_ptr< SurfaceOnVolume > vol_sf1, shared_ptr< ParamVolume > vol2, shared_ptr< SurfaceOnVolume > vol_sf2, double tol, int &bd1, int &bd2, int &orientation, bool &same_seq)
- bool getCorrCoefVolEnum (shared_ptr< SplineVolume > vol1, shared_ptr< SplineVolume > vol2, int bd1, int bd2, int orientation, bool same_seq, std::vector< std::pair< int, int > > &enumeration)
- bool getVolCoefEnumeration (shared_ptr< SplineVolume > vol, int bd, std::vector< int > &enumeration)
- bool getVolCoefEnumeration (shared_ptr< SplineVolume > vol, int bd, std::vector< int > &enumeration_bd, std::vector< int > &enumeration_bd2)
- bool getVolBdCoefEnumeration (shared_ptr< SplineVolume > vol, int bd, int bd_cv, std::vector< int > &enumeration)
- std::vector< shared_ptr< ParamSurface > > getBoundarySurfaces (shared_ptr< ParamVolume > vol)

  Given a parametric volume, fetch all boundary surfaces.
- std::vector< shared_ptr< ParamSurface > > getOrientedBoundarySurfaces (shared_ptr< ParamVolume > vol)
- shared_ptr< SurfaceOnVolume > getBoundarySurface (shared_ptr< SplineVolume > vol, int idx)

  Given a spline volume, fetch all boundary surfaces.
- shared_ptr< SurfaceOnVolume > getOrientedBoundarySurface (shared_ptr< SplineVolume > vol, int idx)
- void volCommonSplineSpace (shared_ptr< SplineVolume > vol1, int bd1, shared_ptr< SplineVolume > vol2, int bd2, int orientation, bool same_seq)
- shared_ptr< SplineCurve > liftVolParamCurve (shared_ptr< ParamCurve > pcurve, shared_ptr< Param↩ Volume > vol, double tol)
- shared_ptr< SplineCurve > projectVolParamCurve (shared_ptr< ParamCurve > spacecurve, shared_ptr< ParamVolume > vol, double tol)
- shared_ptr< SplineCurve > approxVolParamCurve (shared_ptr< ParamCurve > spacecurve, shared_ptr< ParamVolume > vol, double tol, int max_iter, double &maxdist)

28.52.1 Detailed Description

This namespace contains free functions operating on parametric volumes.

28.52.2 Function Documentation

28.52.2.1 int GO_API Go::VolumeTools::analyzePeriodicity (const SplineVolume & *sf*, int *direction*, double *knot_tol* = 1e-12)

Analyze periodicity of volume based on number of repeating knots and control points. The return value is -1 if the volume edges are disjoint, otherwise k if sf is C^k continuous across the seam. These are sufficient but not necessary conditions for periodicity, so it is possible that a call to analyzePeriodicityDerivs() will yield a higher degree of periodicity. The current implementation is quite slow, and not optimized for speed.

Parameters

sf	reference to the SplineVolume to be analyzed
direction	specify 'direction' to be '0' to check for periodicity in the first parameter direction, or '1' to check the second parameter direction, or 2 for the third.
knot_tol	the tolerance used when comparing knot intervals

Returns

-1 if the volume edges are disjoint, otherwise k if the

28.52.2.2 shared_ptr<SplineCurve> Go::VolumeTools::approxVolParamCurve (shared_ptr< ParamCurve > *spacecurve,* shared_ptr< ParamVolume > *vol,* double *tol,* int *max_iter,* double & *maxdist*)

28.52.2.3 bool Go::VolumeTools::cornerToCornerVols (shared_ptr< ParamVolume > *vol1,* shared_ptr< SurfaceOnVolume > *vol_sf1,* shared_ptr< ParamVolume > *vol2,* shared_ptr< SurfaceOnVolume > *vol_sf2,* double *tol*)

Check if two neighbouring volumes in a volume set have a corner-to-corner configuration, i.e. no T-joints

Parameters

vol1	one volume
vol_sf1	the boundary face corresponding to vol1 at the boundary common with vol2
vol2	the other volume
vol_sf1	the boundary face corresponding to vol2 at the boundary common with vol1
return	parameter true of the configuration is corner-to-corner

28.52.2.4 shared_ptr<SurfaceOnVolume> Go::VolumeTools::getBoundarySurface (shared_ptr< SplineVolume > *vol,* int *idx*)

Given a spline volume, fetch all boundary surfaces.

28.52.2.5 std::vector<shared_ptr<ParamSurface> > Go::VolumeTools::getBoundarySurfaces (shared_ptr< ParamVolume > *vol*)

Given a parametric volume, fetch all boundary surfaces.

28.52.2.6 bool Go::VolumeTools::getCorrCoefVolEnum (shared_ptr< SplineVolume > *vol1,* shared_ptr< SplineVolume > *vol2,* int *bd1,* int *bd2,* int *orientation,* bool *same_seq,* std::vector< std::pair< int, int > > & *enumeration*)

Given information about the adjacency relationship between two spline volumes (the enumeration of the common boundary and the correspondance in parameterization, see the function getVolAdjacencyInfo), fetch the enumeration of pairwise corresponding coefficients. The function returns false if the spline spaces of the two surfaces at the common boundary are not the same.

28.52.2.7 shared_ptr<SurfaceOnVolume> Go::VolumeTools::getOrientedBoundarySurface (shared_ptr< SplineVolume > *vol,* int *idx*)

Given a spline volume, fetch all boundary surfaces and ensure a constistent normal vector direction of these surfaces

28.52.2.8 std::vector<shared_ptr<ParamSurface> > Go::VolumeTools::getOrientedBoundarySurfaces (shared_ptr< ParamVolume > *vol*)

Given a parametric volume, fetch all boundary surfaces and ensure a constistent normal vector direction of these surfaces

28.52.2.9 bool Go::VolumeTools::getVolAdjacencyInfo (shared_ptr< ParamVolume > *vol1,* shared_ptr< SurfaceOnVolume > *vol_sf1,* shared_ptr< ParamVolume > *vol2,* shared_ptr< SurfaceOnVolume > *vol_sf2,* double *tol,* int & *bd1,* int & *bd2,* int & *orientation,* bool & *same_seq*)

Given two neighbouring volumes, vol1 and vol2, and information about the common boundary, fetch information about the adjacency configuration

Parameters

vol1	the first volume
vol_sf1	the boundary surface/trimming surface corresponding to vol1 at the boundary common with vol2
vol2	the other volume
vol_sf2	the boundary surface/trimming surface corresponding to vol2 at the boundary common with vol1
tol	adjacency tolerance
return	parameter true if the two volumes share the same boundary and that boundary is boundary trimmed in both volumes
bd1	boundary surface of first volume which follows the common boundary, -1=no such boundary surface, 0=umin, 1=umax, 2=vmin, 3=vmax, 4=wmin, 5=wmax
bd2	boundary surface of second volume which follows the common boundary
orientation	=0: The surfaces at the common boundary have the same orientation in both parameter directions, =1: the orientation is opposite in the first parameter direction, =2: the orientation is opposite in the second parameter direction, =3: the orientation is opposite in both parameter directions
same_seq	tells if 1. parameter direction of the first boundary surface corresponds to the 1. parameter direction of the second boundary surface (true) or if the parameter directions are swapped (false)

28.52.2.10 bool Go::VolumeTools::getVolBdCoefEnumeration (shared_ptr< SplineVolume > *vol,* int *bd,* int *bd_cv,* std::vector< int > & *enumeration*)

Given a spline volume, a boundary surface enumeration (bd=0:umin, bd=1:umax, bd=2:vmin, bd=3:vmax, bd=4↩ :wmin, bd=5:wmax) and a boundary curve enumeration corresponding to the boundary surface (bd_cv=0:umin, bd↩ _cv=1:umax, bd_cv=2:vmin, bd_cv=3:vmax), fetch the enumeration of the volume coefficents along that boundary curve

28.52.2.11 **bool Go::VolumeTools::getVolCoefEnumeration (shared_ptr< SplineVolume > *vol,* int *bd,* std::vector< int > & *enumeration*)**

Given a spline volume and a boundary enumeration (bd=0:umin, bd=1:umax, bd=2:vmin, bd=3:vmax, bd=4:wmin, bd=5:wmax), fetch the enumeration of the volume coefficents at that boundary surface

28.52.2.12 **bool Go::VolumeTools::getVolCoefEnumeration (shared_ptr< SplineVolume > *vol,* int *bd,* std::vector< int > & *enumeration_bd,* std::vector< int > & *enumeration_bd2*)**

Given a spline volume and a boundary enumeration (bd=0:umin, bd=1:umax, bd=2:vmin, bd=3:vmax, bd=4:wmin, bd=5:wmax), fetch the enumeration of the volume coefficents at that boundary surface

28.52.2.13 **shared_ptr<SplineCurve> Go::VolumeTools::liftVolParamCurve (shared_ptr< ParamCurve > *pcurve,* shared_ptr< ParamVolume > *vol,* double *tol*)**

Approximate a parameter curve in the parameter space of a given volume by a space curve

28.52.2.14 **shared_ptr<SplineCurve> Go::VolumeTools::projectVolParamCurve (shared_ptr< ParamCurve > *spacecurve,* shared_ptr< ParamVolume > *vol,* double *tol*)**

Approximate a given space curve by a curve in the parameter space of a given volume

28.52.2.15 **shared_ptr<SplineVolume> Go::VolumeTools::representCurveAsVolume (const SplineCurve & *curve,* int *cv_dir,* const BsplineBasis & *other_bas1,* const BsplineBasis & *other_bas2,* bool *rational*)**

Describe a curve as a lower-dimensional volume in a given direction.

Parameters

curve	the curve that we want to express as a volume
cv_dir	If this variable is set to 0, then the curve's parameter will become the *first* parameter in the generated volume. If it is set to 1, the curve's parameter will become the *second* parameter in the generated volume. If it is set to 2, the curve's parameter will become the *third* parameter in the generated volume. Other values are illegal.
other_bas1	the first BsplineBasis for the additional parameter directions. If cv_dir is 0, this will be the second parameter direction on the volume. Otherwise, it wil be the first parameter direction
other_bas2	the second BsplineBasis for the additional parameter directions. If cv_dir is 2, this will be the second parameter direction on the volume. Otherwise, it wil be the third parameter direction
rational	define whether the generated volume shall be specified as *rational* or not.

Returns

a shared pointer to a new SplineVolume, expressing the curve in a space of lower dimensionality.

28.52.2.16 **shared_ptr<SplineVolume> Go::VolumeTools::representSurfaceAsVolume (const SplineSurface & *surface,* int *sf_dir1,* int *sf_dir2,* const BsplineBasis & *other_bas,* bool *rational*)**

Describe a surface as a lower-dimensional volume in given directions.

Parameters

surface	the surface that we want to express as a volume
sf_dir1	The volume parameter direction from the first surface parameter direction. The value of sf_dir1 must be either 0, 1 or 2. Other values are illegal.
sf_dir2	The volume parameter direction from the second surface parameter direction. The value of sf_dir2 must be either 0, 1 or 2, and different from sf_dir1. Other values are illegal.
other_bas	the BsplineBasis for the additional volume parameter direction, different sf_dir1 and sfdir_2.
rational	define whether the generated volume shall be specified as *rational* or not.

Returns

a shared pointer to a new SplineVolume, expressing the surface in a space of lower dimensionality.

28.52.2.17 shared_ptr<SplineCurve> Go::VolumeTools::representVolumeAsCurve (const SplineVolume & *volume*, int *cv_dir*)

Describe a volume as a high-dimensional curve in a given direction. If the volume is rational, the curve will be non-rational and living in the homogenous space.

Parameters

volume	the volume to express as a curve
cv_dir	the parameter direction that will be kept when defining the curve (the other two will disappear, as the control points in this direction will be lumped together and expressed as single control points in a higher-dimensional space. 'cv_dir' takes the values 0, 1 or 2 for keeping the first, second or third parameter direction respectively

Returns

shared pointer to a new SplineCurve, expressing the volume as a curve in a high-dimensional space.

28.52.2.18 shared_ptr<SplineSurface> Go::VolumeTools::representVolumeAsSurface (const SplineVolume & *volume*, int *sf_dir1*, int *sf_dir2*)

Describe a volume as a high-dimensional surface in two given directions. If the volume is rational, the surface will be non-rational and living in the homogenous space.

Parameters

volume	the volume to express as a surface
sf_dir1	the volume parameter direction to become the first parameter direction of the surface, either 0, 1 or 2.
sf_dir2	the volume parameter direction to become the second parameter direction of the surface, either 0, 1 or 2, and different from sf_dir1. The control points in the direction different from sf_dir1 and sf_dir2 will be lumped together and expressed as single control points in a higher-dimensional space.

Returns

shared pointer to a new SplineSurface, expressing the volume as a surface in a high-dimensional space.

28.52.2.19 void Go::VolumeTools::volCommonSplineSpace (shared_ptr< SplineVolume > *vol1*, int *bd1*, shared_ptr< SplineVolume > *vol2*, int *bd2*, int *orientation*, bool *same_seq*)

Given two spline volumes sharing a common boundary and information about the configuration of this boundary in the spline volumes (see the explanation of getVolAdjacencyInfo), ensure that the two volumes share the same spline space at the common boundary

28.53 hed Namespace Reference

Classes

- class Dart

  Dart *class for the half-edge data structure.*
- class Edge

  Edge *class in the in the half-edge data structure.*
- class Node

  Node *class for data structures (Inherits from HandleId)*
- class Triangulation

  Triangulation *class for the half-edge data structure with adaption to TTL.*
- struct TTLtraits

  Traits *class (static struct) for the half-edge data structure.*

28.54 hetriang Namespace Reference

Classes

- class Dart

  Dart *class for the half-edge data structure.*
- class Edge

  Edge *class in the half-edge data structure*
- class Node

  Node *class in the half-edge data structure*
- class Triangulation

  Triangulation *class for the half-edge data structure with adaption to TTL.*
- struct TTLtraits

  Traits *class (static struct) for the half-edge data structure.*

28.55 NEWMAT Namespace Reference

Classes

- class AddedMatrix
- class ArrayLengthSpecifier
- class BandLUMatrix
- class BandMatrix
- class BaseMatrix
- class CannotBuildException
- class ColedMatrix
- class ColumnVector
- class ConcatenatedMatrix
- class ConvergenceException
- class CroutMatrix
- class DiagedMatrix
- class DiagonalMatrix
- class FFT_Controller
- class FindMaximum2
- class FloatingPointPrecision

  Floating point precision (type double).
- class GeneralMatrix
- class GenericMatrix
- class GetSubMatrix
- class IdentityMatrix
- class IncompatibleDimensionsException
- class IndexException
- class InternalException
- class InvertedMatrix
- class KPMatrix
- class LinearEquationSolver
- class LL_D_FI
- class LogAndSign
- class LowerBandMatrix
- class LowerTriangularMatrix
- class MatedMatrix
- class Matrix
- class MatrixBandWidth
- class MatrixInput
- class MatrixType
- class MLE_D_FI
- class MultipliedMatrix
- class MultiRadixCounter
- class NegatedMatrix
- class NegShiftedMatrix
- class NonLinearLeastSquares
- class NotDefinedException
- class NotSquareException
- class NPDException
- class nricMatrix
- class OverflowException
- class ProgramException
- class R1_Col_I_D
- class ReturnMatrixX

- class ReversedMatrix
- class RowedMatrix
- class RowVector
- class ScaledMatrix
- class ShiftedMatrix
- class SimpleIntArray
- class SingularException
- class SolvedMatrix
- class SPMatrix
- class StackedMatrix
- class SubMatrixDimensionException
- class SubtractedMatrix
- class SymmetricBandMatrix
- class SymmetricEigenAnalysis
- class SymmetricMatrix
- class TransposedMatrix
- class UpperBandMatrix
- class UpperTriangularMatrix
- class VectorException

Functions

- void MatrixErrorNoSpace (void *)
- bool operator== (const GeneralMatrix &A, const GeneralMatrix &B)
- bool operator== (const BaseMatrix &A, const BaseMatrix &B)
- bool operator!= (const GeneralMatrix &A, const GeneralMatrix &B)
- bool operator!= (const BaseMatrix &A, const BaseMatrix &B)
- bool operator<= (const BaseMatrix &A, const BaseMatrix &)
- bool operator>= (const BaseMatrix &A, const BaseMatrix &)
- bool operator< (const BaseMatrix &A, const BaseMatrix &)
- bool operator> (const BaseMatrix &A, const BaseMatrix &)
- bool IsZero (const BaseMatrix &A)
- bool Rectangular (MatrixType a, MatrixType b, MatrixType c)
- bool Compare (const MatrixType &, MatrixType &)
- Real DotProduct (const Matrix &A, const Matrix &B)
- SPMatrix SP (const BaseMatrix &, const BaseMatrix &)
- KPMatrix KP (const BaseMatrix &, const BaseMatrix &)
- ShiftedMatrix operator+ (Real f, const BaseMatrix &BM)
- NegShiftedMatrix operator- (Real, const BaseMatrix &)
- ScaledMatrix operator* (Real f, const BaseMatrix &BM)
- LogAndSign LogDeterminant (const BaseMatrix &B)
- Real Determinant (const BaseMatrix &B)
- Real SumSquare (const BaseMatrix &B)
- Real NormFrobenius (const BaseMatrix &B)
- Real Trace (const BaseMatrix &B)
- Real SumAbsoluteValue (const BaseMatrix &B)
- Real Sum (const BaseMatrix &B)
- Real MaximumAbsoluteValue (const BaseMatrix &B)
- Real MinimumAbsoluteValue (const BaseMatrix &B)
- Real Maximum (const BaseMatrix &B)
- Real Minimum (const BaseMatrix &B)
- Real Norm1 (const BaseMatrix &B)
- Real Norm1 (RowVector &RV)
- Real NormInfinity (const BaseMatrix &B)

- Real NormInfinity (ColumnVector &CV)
- bool IsZero (const GeneralMatrix &A)
- void QRZT (Matrix &, LowerTriangularMatrix &)
- void QRZT (const Matrix &, Matrix &, Matrix &)
- void QRZ (Matrix &, UpperTriangularMatrix &)
- void QRZ (const Matrix &, Matrix &, Matrix &)
- void HHDecompose (Matrix &X, LowerTriangularMatrix &L)
- void HHDecompose (const Matrix &X, Matrix &Y, Matrix &M)
- ReturnMatrix Cholesky (const SymmetricMatrix &)
- ReturnMatrix Cholesky (const SymmetricBandMatrix &)
- void SVD (const Matrix &, DiagonalMatrix &, Matrix &, Matrix &, bool=true, bool=true)
- void SVD (const Matrix &, DiagonalMatrix &)
- void SVD (const Matrix &A, DiagonalMatrix &D, Matrix &U, bool withU=true)
- void SortSV (DiagonalMatrix &D, Matrix &U, bool ascending=false)
- void SortSV (DiagonalMatrix &D, Matrix &U, Matrix &V, bool ascending=false)
- void Jacobi (const SymmetricMatrix &, DiagonalMatrix &)
- void Jacobi (const SymmetricMatrix &, DiagonalMatrix &, SymmetricMatrix &)
- void Jacobi (const SymmetricMatrix &, DiagonalMatrix &, Matrix &)
- void Jacobi (const SymmetricMatrix &, DiagonalMatrix &, SymmetricMatrix &, Matrix &, bool=true)
- void EigenValues (const SymmetricMatrix &, DiagonalMatrix &)
- void EigenValues (const SymmetricMatrix &, DiagonalMatrix &, SymmetricMatrix &)
- void EigenValues (const SymmetricMatrix &, DiagonalMatrix &, Matrix &)
- void SortAscending (GeneralMatrix &)
- void SortDescending (GeneralMatrix &)
- void FFT (const ColumnVector &, const ColumnVector &, ColumnVector &, ColumnVector &)
- void FFTI (const ColumnVector &, const ColumnVector &, ColumnVector &, ColumnVector &)
- void RealFFT (const ColumnVector &, ColumnVector &, ColumnVector &)
- void RealFFTI (const ColumnVector &, const ColumnVector &, ColumnVector &)
- void DCT_II (const ColumnVector &, ColumnVector &)
- void DCT_II_inverse (const ColumnVector &, ColumnVector &)
- void DST_II (const ColumnVector &, ColumnVector &)
- void DST_II_inverse (const ColumnVector &, ColumnVector &)
- void DCT (const ColumnVector &, ColumnVector &)
- void DCT_inverse (const ColumnVector &, ColumnVector &)
- void DST (const ColumnVector &, ColumnVector &)
- void DST_inverse (const ColumnVector &, ColumnVector &)
- std::ostream & operator<< (std::ostream &, const BaseMatrix &)
- std::ostream & operator<< (std::ostream &, const GeneralMatrix &)

28.55.1 Function Documentation

28.55.1.1 ReturnMatrix NEWMAT::Cholesky (const SymmetricMatrix &)

28.55.1.2 ReturnMatrix NEWMAT::Cholesky (const SymmetricBandMatrix &)

28.55.1.3 bool NEWMAT::Compare (const MatrixType &, MatrixType &)

28.55.1.4 void NEWMAT::DCT (const ColumnVector &, ColumnVector &)

28.55.1.5 void NEWMAT::DCT_II (const ColumnVector &, ColumnVector &)

28.55.1.6 void NEWMAT::DCT_II_inverse (const ColumnVector &, ColumnVector &)

28.55.1.7 void NEWMAT::DCT_inverse (const ColumnVector &, ColumnVector &)

28.55.1.8 Real NEWMAT::Determinant (const BaseMatrix & *B*) [inline]

Definition at line 1744 of file newmat.h.

28.55.1.9 **Real NEWMAT::DotProduct (const Matrix & *A*, const Matrix & *B*)**

28.55.1.10 **void NEWMAT::DST (const ColumnVector & , ColumnVector &)**

28.55.1.11 **void NEWMAT::DST_II (const ColumnVector & , ColumnVector &)**

28.55.1.12 **void NEWMAT::DST_II_inverse (const ColumnVector & , ColumnVector &)**

28.55.1.13 **void NEWMAT::DST_inverse (const ColumnVector & , ColumnVector &)**

28.55.1.14 **void NEWMAT::EigenValues (const SymmetricMatrix & , DiagonalMatrix &)**

28.55.1.15 **void NEWMAT::EigenValues (const SymmetricMatrix & , DiagonalMatrix & , SymmetricMatrix &)**

28.55.1.16 **void NEWMAT::EigenValues (const SymmetricMatrix & , DiagonalMatrix & , Matrix &)**

28.55.1.17 **void NEWMAT::FFT (const ColumnVector & , const ColumnVector & , ColumnVector & , ColumnVector &)**

28.55.1.18 **void NEWMAT::FFTI (const ColumnVector & , const ColumnVector & , ColumnVector & , ColumnVector &)**

28.55.1.19 **void NEWMAT::HHDecompose (Matrix & *X*, LowerTriangularMatrix & *L*)** `[inline]`

Definition at line 26 of file newmatap.h.

28.55.1.20 **void NEWMAT::HHDecompose (const Matrix & *X*, Matrix & *Y*, Matrix & *M*)** `[inline]`

Definition at line 29 of file newmatap.h.

28.55.1.21 **bool NEWMAT::IsZero (const BaseMatrix & *A*)**

28.55.1.22 **bool NEWMAT::IsZero (const GeneralMatrix & *A*)** `[inline]`

Definition at line 1764 of file newmat.h.

28.55.1.23 **void NEWMAT::Jacobi (const SymmetricMatrix & , DiagonalMatrix &)**

28.55.1.24 **void NEWMAT::Jacobi (const SymmetricMatrix & , DiagonalMatrix & , SymmetricMatrix &)**

28.55.1.25 **void NEWMAT::Jacobi (const SymmetricMatrix & , DiagonalMatrix & , Matrix &)**

28.55.1.26 **void NEWMAT::Jacobi (const SymmetricMatrix & , DiagonalMatrix & , SymmetricMatrix & , Matrix & , bool = true)**

28.55.1.27 **KPMatrix NEWMAT::KP (const BaseMatrix & , const BaseMatrix &)**

28.55.1.28 **LogAndSign NEWMAT::LogDeterminant (const BaseMatrix & *B*)** `[inline]`

Definition at line 1742 of file newmat.h.

28.55.1.29 void NEWMAT::MatrixErrorNoSpace (void *)

Definition at line 275 of file newmatex.cpp.

28.55.1.30 Real NEWMAT::Maximum (const BaseMatrix & *B*) [inline]

Definition at line 1757 of file newmat.h.

28.55.1.31 Real NEWMAT::MaximumAbsoluteValue (const BaseMatrix & *B*) [inline]

Definition at line 1753 of file newmat.h.

28.55.1.32 Real NEWMAT::Minimum (const BaseMatrix & *B*) [inline]

Definition at line 1758 of file newmat.h.

28.55.1.33 Real NEWMAT::MinimumAbsoluteValue (const BaseMatrix & *B*) [inline]

Definition at line 1755 of file newmat.h.

28.55.1.34 Real NEWMAT::Norm1 (const BaseMatrix & *B*) [inline]

Definition at line 1759 of file newmat.h.

28.55.1.35 Real NEWMAT::Norm1 (RowVector & *RV*) [inline]

Definition at line 1760 of file newmat.h.

28.55.1.36 Real NEWMAT::NormFrobenius (const BaseMatrix & *B*) [inline]

Definition at line 1747 of file newmat.h.

28.55.1.37 Real NEWMAT::NormInfinity (const BaseMatrix & *B*) [inline]

Definition at line 1761 of file newmat.h.

28.55.1.38 Real NEWMAT::NormInfinity (ColumnVector & *CV*) [inline]

Definition at line 1762 of file newmat.h.

28.55.1.39 **bool NEWMAT::operator!= (const GeneralMatrix & *A*, const GeneralMatrix & *B*)** [inline]

Definition at line 1703 of file newmat.h.

28.55.1.40 **bool NEWMAT::operator!= (const BaseMatrix & *A*, const BaseMatrix & *B*)** [inline]

Definition at line 1705 of file newmat.h.

28.55.1.41 **ScaledMatrix NEWMAT::operator∗ (Real *f*, const BaseMatrix & *BM*)** [inline]

Definition at line 1778 of file newmat.h.

28.55.1.42 **ShiftedMatrix NEWMAT::operator+ (Real *f*, const BaseMatrix & *BM*)** [inline]

Definition at line 1776 of file newmat.h.

28.55.1.43 **NegShiftedMatrix NEWMAT::operator- (Real , const BaseMatrix &)**

28.55.1.44 **bool NEWMAT::operator< (const BaseMatrix & *A*, const BaseMatrix &)** [inline]

Definition at line 1714 of file newmat.h.

28.55.1.45 **std::ostream& NEWMAT::operator<< (std::ostream & , const BaseMatrix &)**

28.55.1.46 **std::ostream& NEWMAT::operator<< (std::ostream & , const GeneralMatrix &)**

28.55.1.47 **bool NEWMAT::operator<= (const BaseMatrix & *A*, const BaseMatrix &)** [inline]

Definition at line 1710 of file newmat.h.

28.55.1.48 **bool NEWMAT::operator== (const GeneralMatrix & *A*, const GeneralMatrix & *B*)**

28.55.1.49 **bool NEWMAT::operator== (const BaseMatrix & *A*, const BaseMatrix & *B*)**

28.55.1.50 **bool NEWMAT::operator> (const BaseMatrix & *A*, const BaseMatrix &)** [inline]

Definition at line 1716 of file newmat.h.

28.55.1.51 **bool NEWMAT::operator>= (const BaseMatrix & *A*, const BaseMatrix &)** [inline]

Definition at line 1712 of file newmat.h.

28.55.1.52 void NEWMAT::QRZ (Matrix & , UpperTriangularMatrix &)

28.55.1.53 void NEWMAT::QRZ (const Matrix & , Matrix & , Matrix &)

28.55.1.54 void NEWMAT::QRZT (Matrix & , LowerTriangularMatrix &)

28.55.1.55 void NEWMAT::QRZT (const Matrix & , Matrix & , Matrix &)

28.55.1.56 void NEWMAT::RealFFT (const ColumnVector & , ColumnVector & , ColumnVector &)

28.55.1.57 void NEWMAT::RealFFTI (const ColumnVector & , const ColumnVector & , ColumnVector &)

28.55.1.58 bool NEWMAT::Rectangular (MatrixType *a,* MatrixType *b,* MatrixType *c*)

28.55.1.59 void NEWMAT::SortAscending (GeneralMatrix &)

28.55.1.60 void NEWMAT::SortDescending (GeneralMatrix &)

28.55.1.61 void NEWMAT::SortSV (DiagonalMatrix & *D,* Matrix & *U,* bool *ascending* = false)

28.55.1.62 void NEWMAT::SortSV (DiagonalMatrix & *D,* Matrix & *U,* Matrix & *V,* bool *ascending* = false)

28.55.1.63 SPMatrix NEWMAT::SP (const BaseMatrix & , const BaseMatrix &)

28.55.1.64 Real NEWMAT::Sum (const BaseMatrix & *B*) [inline]

Definition at line 1751 of file newmat.h.

28.55.1.65 Real NEWMAT::SumAbsoluteValue (const BaseMatrix & *B*) [inline]

Definition at line 1749 of file newmat.h.

28.55.1.66 Real NEWMAT::SumSquare (const BaseMatrix & *B*) [inline]

Definition at line 1746 of file newmat.h.

28.55.1.67 void NEWMAT::SVD (const Matrix & , DiagonalMatrix & , Matrix & , Matrix & , bool = true, bool = true)

28.55.1.68 void NEWMAT::SVD (const Matrix & , DiagonalMatrix &)

28.55.1.69 void NEWMAT::SVD (const Matrix & *A,* DiagonalMatrix & *D,* Matrix & *U,* bool *withU* = true) [inline]

Definition at line 41 of file newmatap.h.

28.55.1.70 Real NEWMAT::Trace (const BaseMatrix & *B*) [inline]

Definition at line 1748 of file newmat.h.

28.56 RBD_COMMON Namespace Reference

Classes

- class Bad_alloc
- class BaseException
- class Domain_error
- class Invalid_argument
- class Janitor
- class Length_error
- class Logic_error
- class OneDimSolve
- class Out_of_range
- class Overflow_error
- class R1_R1
- class Range_error
- class Runtime_error
- class SolutionException
- class Tracer

Typedefs

- typedef double Real
- typedef long double long_Real
- typedef BaseException Exception

Functions

- void Terminate ()

28.56.1 Typedef Documentation

28.56.1.1 typedef BaseException RBD_COMMON::Exception

Definition at line 98 of file myexcept.h.

28.56.1.2 typedef long double RBD_COMMON::long_Real

Definition at line 313 of file include.h.

28.56.1.3 typedef double RBD_COMMON::Real

Definition at line 312 of file include.h.

28.56.2 Function Documentation

28.56.2.1 void RBD_COMMON::Terminate ( )

Definition at line 226 of file myexcept.cpp.

28.57 RBD_LIBRARIES Namespace Reference

28.58 std Namespace Reference

Functions

- template<int Dim>
  std::istream & operator>> (std::istream &is, Go::BaryCoordSystem< Dim > &bc)
  Read BaryCoordSystem from input stream.
- template<int Dim>
  std::ostream & operator<< (std::ostream &os, const Go::BaryCoordSystem< Dim > &bc)
  Write BaryCoordSystem to output stream.
- std::istream & operator>> (std::istream &is, Go::BoundingBox &bbox)
  Read BoundingBox from input stream.
- std::ostream & operator<< (std::ostream &os, const Go::BoundingBox &bbox)
  Write BoundingBox to output stream.
- std::istream & operator>> (std::istream &is, Go::BernsteinMulti &m)
  Read BernsteinMulti from input stream.
- std::ostream & operator<< (std::ostream &os, const Go::BernsteinMulti &m)
  Write BernsteinMulti to output stream.
- std::istream & operator>> (std::istream &is, Go::BernsteinPoly &p)
  Read BernsteinPoly from input stream.
- std::ostream & operator<< (std::ostream &os, const Go::BernsteinPoly &p)
  Write BernsteinPoly to output stream.
- template<class _Tp >
  _Tp identity_element (plus< _Tp >)
- template<class _Tp >
  _Tp identity_element (multiplies< _Tp >)
- template<class _Tp , class _Integer , class _MonoidOperation >
  _Tp __power (_Tp __x, _Integer __n, _MonoidOperation __oper)
- template<class _Tp , class _Integer >
  _Tp __power (_Tp __x, _Integer __n)
- template<class _Tp , class _Integer , class _MonoidOperation >
  _Tp power (_Tp __x, _Integer __n, _MonoidOperation __oper)
- template<class _Tp , class _Integer >
  _Tp power (_Tp __x, _Integer __n)

28.58.1 Detailed Description

We implement two extensions: **identity_element** and **power**.

28.58.2 Function Documentation

28.58.2.1 template<class _Tp , class _Integer , class _MonoidOperation > _Tp std::__power (_Tp *__x,* _Integer *__n,* _MonoidOperation *__oper*)

Definition at line 72 of file BezierTriangle.h.

28.58.2.2 template<class _Tp , class _Integer > _Tp std::__power (_Tp *__x,* _Integer *__n*) [inline]

Definition at line 96 of file BezierTriangle.h.

28.58.2.3 template<class _Tp > _Tp std::identity_element (plus< _Tp >) [inline]

Definition at line 59 of file BezierTriangle.h.

28.58.2.4 template<class _Tp > _Tp std::identity_element (multiplies< _Tp >) [inline]

Definition at line 62 of file BezierTriangle.h.

28.58.2.5 template<int Dim> std::ostream& std::operator<< (std::ostream & *os,* const Go::BaryCoordSystem< Dim > & *bc*) [inline]

Write BaryCoordSystem to output stream.

Definition at line 205 of file BaryCoordSystem.h.

28.58.2.6 std::ostream& std::operator<< (std::ostream & *os,* const Go::BoundingBox & *bbox*) [inline]

Write BoundingBox to output stream.

Definition at line 217 of file BoundingBox.h.

28.58.2.7 std::ostream& std::operator<< (std::ostream & *os,* const Go::BernsteinPoly & *p*) [inline]

Write BernsteinPoly to output stream.

Definition at line 315 of file BernsteinPoly.h.

28.58.2.8 std::ostream& std::operator<< (std::ostream & *os,* const Go::BernsteinMulti & *m*) [inline]

Write BernsteinMulti to output stream.

Definition at line 415 of file BernsteinMulti.h.

28.58.2.9 template<int Dim> std::istream& std::operator>> (std::istream & *is,* Go::BaryCoordSystem< Dim > & *bc*) [inline]

Read BaryCoordSystem from input stream.

Definition at line 195 of file BaryCoordSystem.h.

28.58.2.10 std::istream& std::operator>> (std::istream & *is,* Go::BoundingBox & *bbox*) [inline]

Read BoundingBox from input stream.

Definition at line 208 of file BoundingBox.h.

28.58.2.11 std::istream& std::operator>> (std::istream & *is,* Go::BernsteinPoly & *p*) [inline]

Read BernsteinPoly from input stream.

Definition at line 306 of file BernsteinPoly.h.

28.58.2.12 std::istream& std::operator>> (std::istream & *is,* Go::BernsteinMulti & *m*) [inline]

Read BernsteinMulti from input stream.

Definition at line 406 of file BernsteinMulti.h.

28.58.2.13 template<class _Tp , class _Integer , class _MonoidOperation > _Tp std::power (_Tp *__x,* _Integer *__n,* _MonoidOperation *__oper*) [inline]

Definition at line 105 of file BezierTriangle.h.

28.58.2.14 template<class _Tp , class _Integer > _Tp std::power (_Tp *__x,* _Integer *__n*) [inline]

Definition at line 111 of file BezierTriangle.h.

28.59 ttl Namespace Reference

Main interface to TTL.

Functions

Delaunay Triangulation

- template<class TraitsType , class DartType , class PointType >
  bool insertNode (DartType &dart, PointType &point)
- template<class TraitsType , class DartType >
  void removeRectangularBoundary (DartType &dart)
- template<class TraitsType , class DartType >
  void removeNode (DartType &dart)
- template<class TraitsType , class DartType >
  void removeBoundaryNode (DartType &dart)
- template<class TraitsType , class DartType >
  void removeInteriorNode (DartType &dart)
- template<class TraitsType , class ForwardIterator , class DartType >
  void insertNodes (ForwardIterator first, ForwardIterator last, DartType &dart)

Topological and Geometric Queries

- template<class TraitsType , class PointType , class DartType >
  bool locateFaceSimplest (const PointType &point, DartType &dart)
- template<class TraitsType , class PointType , class DartType >
  bool locateTriangle (const PointType &point, DartType &dart)
- template<class TraitsType , class PointType , class DartType >
  bool inTriangleSimplest (const PointType &point, const DartType &dart)
- template<class TraitsType , class PointType , class DartType >
  bool inTriangle (const PointType &point, const DartType &dart)
- template<class DartType , class DartListType >
  void getBoundary (const DartType &dart, DartListType &boundary)
- template<class DartType >
  bool isBoundaryEdge (const DartType &dart)
- template<class DartType >
  bool isBoundaryFace (const DartType &dart)
- template<class DartType >
  bool isBoundaryNode (const DartType &dart)
- template<class DartType >
  int getDegreeOfNode (const DartType &dart)
- template<class DartType , class DartListType >
  void get_0_orbit_interior (const DartType &dart, DartListType &orbit)
- template<class DartType , class DartListType >
  void get_0_orbit_boundary (const DartType &dart, DartListType &orbit)
- template<class DartType >
  bool same_0_orbit (const DartType &d1, const DartType &d2)
- template<class DartType >
  bool same_1_orbit (const DartType &d1, const DartType &d2)
- template<class DartType >
  bool same_2_orbit (const DartType &d1, const DartType &d2)
- template<class TraitsType , class DartType >
  bool swappableEdge (const DartType &dart, bool allowDegeneracy=false)
- template<class DartType >
  void positionAtNextBoundaryEdge (DartType &dart)
- template<class TraitsType , class DartType >
  bool convexBoundary (const DartType &dart)
- template<class TopologyElementType , class DartType >
  bool isMemberOfFace (const TopologyElementType &topologyElement, const DartType &dart)
- template<class TraitsType , class NodeType , class DartType >
  bool locateFaceWithNode (const NodeType &node, DartType &dart_iter)
- template<class DartType >
  void getAdjacentTriangles (const DartType &dart, DartType &t1, DartType &t2, DartType &t3)
- template<class DartType >
  void getNeighborNodes (const DartType &dart, std::list< DartType > &node_list, bool &boundary)

- template<class TraitsType , class DartType >
  bool degenerateTriangle (const DartType &dart)

Utilities for Delaunay Triangulation

- template<class TraitsType , class DartType , class DartListType >
  void optimizeDelaunay (DartListType &elist)
- template<class TraitsType , class DartType , class DartListType >
  void optimizeDelaunay (DartListType &elist, const typename DartListType::iterator end)
- template<class TraitsType , class DartType >
  bool swapTestDelaunay (const DartType &dart, bool cycling_check=false)
- template<class TraitsType , class DartType >
  void recSwapDelaunay (DartType &diagonal)
- template<class TraitsType , class DartType , class ListType >
  void swapEdgesAwayFromInteriorNode (DartType &dart, ListType &swapped_edges)
- template<class TraitsType , class DartType , class ListType >
  void swapEdgesAwayFromBoundaryNode (DartType &dart, ListType &swapped_edges)
- template<class TraitsType , class DartType , class DartListType >
  void swapEdgeInList (const typename DartListType::iterator &it, DartListType &elist)

Constrained (Delaunay) Triangulation

- template<class TraitsType , class DartType >
  DartType insertConstraint (DartType &dstart, DartType &dend, bool optimize_delaunay)

28.59.1 Detailed Description

Main interface to TTL.

This namespace contains the basic generic algorithms for the TTL, the Triangulation Template Library.
Examples of functionality are:

- Incremental Delaunay triangulation
- Constrained triangulation
- Insert/remove nodes and constrained edges
- Traversal operations
- Misc. queries for extracting information for visualisation systems etc.

General requirements and assumptions:

- *DartType* and *TraitsType* should be implemented in accordance with the description in Application Programming Interface to TTL (API).
- A **"Requires:"** section in the documentation of a function template shows which functionality is required in *TraitsType* to support that specific function.
  Functionalty required in *DartType* is the same (almost) for all function templates; see Application Programming Interface to TTL (API) and the example referred to.
- When a reference to a *dart* object is passed to a function in TTL, it is assumed that it is oriented *counterclockwise* (CCW) in a triangle unless it is explicitly mentioned that it can also be *clockwise* (CW). The same applies for a dart that is passed from a function in TTL to the users TraitsType class (or struct).
- When an edge (represented with a dart) is swapped, it is assumed that darts outside the quadrilateral where the edge is a diagonal are not affected by the swap. Thus, TraitsType::swapEdge must be implemented in accordance with this rule.

Glossary:

- General terms are explained in Application Programming Interface to TTL (API).
- *CCW* - counterclockwise
- *CW* - clockwise
- *0_orbit*, *1_orbit* and *2_orbit*: A sequence of darts around a node, around an edge and in a triangle respectively; see ttl::get_0_orbit_interior and ttl::get_0_orbit_boundary
- *arc* - In a triangulation an arc is equivalent with an edge

See also

ttl_util and Application Programming Interface to TTL (API)

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28.59.2 Function Documentation

28.59.2.1 template<class TraitsType , class DartType > bool ttl::convexBoundary (const DartType & *dart*)

Checks if the boundary of a triangulation is convex.

Parameters

dart	A CCW dart at the boundary of the triangulation

- TraitsType::crossProduct2d (const Dart&, const Dart&)

Definition at line 1368 of file ttl.h.

28.59.2.2 template<class TraitsType , class DartType > bool ttl::degenerateTriangle (const DartType & *dart*)

Definition at line 1262 of file ttl.h.

28.59.2.3 template<class DartType , class DartListType > void ttl::get_0_orbit_boundary (const DartType & *dart*, DartListType & *orbit*)

Gets the 0-orbit around a node at the boundary

Parameters

dart	A dart (CCW or CW) positioned at a *boundary node* and at a *boundary edge*.

Return values

orbit	Sequence of darts with one orbit for each arc. All the darts, *exept the last* one, have the same orientation (CCW or CW) as *dart*, and *dart* is the first element in the sequence.

- DartListType::push_back (DartType&)

Note

- The last dart in the sequence have opposite orientation compared to the others!

See also

ttl::get_0_orbit_interior

Definition at line 1171 of file ttl.h.

28.59.2.4 template<class DartType , class DartListType > void ttl::get_0_orbit_interior (const DartType & *dart*, DartListType & *orbit*)

Gets the 0-orbit around an interior node.

Parameters

dart	A dart (CCW or CW) positioned at an *interior* node.

Return values

orbit	Sequence of darts with one orbit for each arc. All the darts have the same orientation (CCW or CW) as *dart*, and *dart* is the first element in the sequence.

- DartListType::push_back (DartType&)

See also

ttl::get_0_orbit_boundary

Definition at line 1137 of file ttl.h.

28.59.2.5 template<class DartType > void ttl::getAdjacentTriangles (const DartType & *dart*, DartType & *t1*, DartType & *t2*, DartType & *t3*)

Definition at line 844 of file ttl.h.

28.59.2.6 template<class DartType , class DartListType > void ttl::getBoundary (const DartType & *dart,* DartListType & *boundary*)

Gets the boundary as sequence of darts, where the edges associated with the darts are boundary edges, given a dart with an associating edge at the boundary of a topology structure. The first dart in the sequence will be the given one, and the others will have the same orientation (CCW or CW) as the first. Assumes that the given dart is at the boundary.

Parameters

dart	A dart at the boundary (CCW or CW)
boundary	A sequence of darts, where the associated edges are the boundary edges

- DartListType::push_back (DartType&)

Definition at line 889 of file ttl.h.

28.59.2.7 template<class DartType > int ttl::getDegreeOfNode (const DartType & *dart*)

Returns the degree of the node associated with *dart*.

Definition:

The *degree* (or valency) of a node *V* in a triangulation, is defined as the number of edges incident with *V*, i.e., the number of edges joining *V* with another node in the triangulation.

Definition at line 1012 of file ttl.h.

28.59.2.8 template<class DartType > void ttl::getNeighborNodes (const DartType & *dart,* std::list< DartType > & *node_list,* bool & *boundary*)

Definition at line 1072 of file ttl.h.

28.59.2.9 template<class TraitsType , class DartType > DartType ttl::insertConstraint (DartType & *dstart,* DartType & *dend,* bool *optimize_delaunay*)

Inserts a constrained edge between two existing nodes in a triangulation. If the constraint falls on one or more existing nodes and this is detected by the predicate `TraitsType::orient2d`, which should return zero in this case, the constraint is split. Otherwise a degenerate triangle will be made along the constraint.

Parameters

dstart	A CCW dart with the start node of the constraint as the source node
dend	A CCW dart with the end node of the constraint as the source node
optimize_delaunay	If set to `true`, the resulting triangulation will be a *constrained Delaunay triangulation*. If set to `false`, the resulting triangulation will not necessarily be of constrained Delaunay type.

Return values

DartType	A dart representing the constrained edge.

- TraitsType::orient2d (DartType&, DartType&, PointType&)
- TraitsType::swapEdge (DartType&)

- ttl::optimizeDelaunay if *optimize_delaunay* is set to `true`

Assumes:

- The constrained edge must be inside the existing triangulation (and it cannot cross the boundary of the triangulation).

Definition at line 556 of file ttl_constr.h.

28.59.2.10 template<class TraitsType , class DartType , class PointType > bool ttl::insertNode (DartType & *dart*, PointType & *point*)

Inserts a new node in an existing Delaunay triangulation and swaps edges to obtain a new Delaunay triangulation. This is the basic function for incremental Delaunay triangulation. When starting from a set of points, an initial Delaunay triangulation can be created as two triangles forming a rectangle that contains all the points. After `insertNode` has been called repeatedly with all the points, ttl::removeRectangularBoundary can be called to remove triangles at the boundary of the triangulation so that the boundary form the convex hull of the points.

Note that this incremetal scheme will run much faster if the points have been sorted lexicographically on *x* and *y*.

Parameters

dart	An arbitrary CCW dart in the tringulation. Output: A CCW dart incident to the new node.
point	A point (node) to be inserted in the triangulation.

Return values

bool	`true` if *point* was inserted; `false` if not. If *point* is outside the triangulation, or the input dart is not valid, `false` is returned.

- TraitsType::splitTriangle (DartType&, const PointType&)

- ttl::locateTriangle
- ttl::recSwapDelaunay

Note

- For efficiency reasons *dart* should be close to the insertion *point*.

See also

ttl::removeRectangularBoundary

Definition at line 281 of file ttl.h.

28.59.2.11 template<class TraitsType , class ForwardIterator , class DartType > void ttl::insertNodes (ForwardIterator *first,* ForwardIterator *last,* DartType & *dart*)

Definition at line 335 of file ttl.h.

28.59.2.12 template<class TraitsType , class PointType , class DartType > bool ttl::inTriangle (const PointType & *point,* const DartType & *dart*)

Checks if *point* is inside the triangle associated with *dart*. This function deals with degeneracy to some extent, but round-off errors may still lead to wrong result if the triangle is degenerate.

Parameters

dart	A CCW dart in the triangle

- TraitsType::crossProduct2d (DartType&, PointType&)
- TraitsType::scalarProduct2d (DartType&, PointType&)

See also

ttl::inTriangleSimplest

Definition at line 763 of file ttl.h.

28.59.2.13 template<class TraitsType , class PointType , class DartType > bool ttl::inTriangleSimplest (const PointType & *point,* const DartType & *dart*)

Checks if *point* is inside the triangle associated with *dart*. A fast and simple function that does not deal with degeneracy.

Parameters

dart	A CCW dart in the triangle

- TraitsType::orient2d (DartType&, DartType&, PointType&)

See also

ttl::inTriangle for a more robust function

Definition at line 719 of file ttl.h.

28.59.2.14 template<class DartType > bool ttl::isBoundaryEdge (const DartType & *dart*)

Checks if the edge associated with *dart* is at the boundary of the triangulation.

Implements:

```
DartType dart_iter = dart;
if (dart_iter.alpha2() == dart)
  return true;
else
  return false;
```

Definition at line 935 of file ttl.h.

28.59.2.15 template<class DartType > bool ttl::isBoundaryFace (const DartType & *dart*)

Checks if the face associated with *dart* is at the boundary of the triangulation.

Definition at line 950 of file ttl.h.

28.59.2.16 template<class DartType > bool ttl::isBoundaryNode (const DartType & *dart*)

Checks if the node associated with *dart* is at the boundary of the triangulation.

Definition at line 979 of file ttl.h.

28.59.2.17 template<class TopologyElementType , class DartType > bool ttl::isMemberOfFace (const TopologyElementType & *topologyElement,* const DartType & *dart*)

Definition at line 530 of file ttl.h.

28.59.2.18 template<class TraitsType , class PointType , class DartType > bool ttl::locateFaceSimplest (const PointType & *point,* DartType & *dart*)

Locates the face containing a given point. It is assumed that the tessellation (e.g. a triangulation) is *regular* in the sense that there are no holes, the boundary is convex and there are no degenerate faces.

Parameters

point	A point to be located
dart	An arbitrary CCW dart in the triangulation Output: A CCW dart in the located face

Return values

bool	`true` if a face is found; `false` if not.

- TraitsType::orient2d (DartType&, DartType&, PointType&)

Note

- If `false` is returned, *point* may still be inside a face if the tessellation is not *regular* as explained above.

See also

ttl::locateTriangle

Definition at line 600 of file ttl.h.

28.59.2.19 template<class TraitsType , class NodeType , class DartType > bool ttl::locateFaceWithNode (const NodeType & *node,* DartType & *dart_iter*)

Definition at line 550 of file ttl.h.

28.59.2.20 template<class TraitsType , class PointType , class DartType > bool ttl::locateTriangle (const PointType & *point,* DartType & *dart*)

Locates the triangle containing a given point. It is assumed that the triangulation is *regular* in the sense that there are no holes and the boundary is convex. This function deals with degeneracy to some extent, but round-off errors may still lead to a wrong result if triangles are degenerate.

Parameters

point	A point to be located
dart	An arbitrary CCW dart in the triangulation Output: A CCW dart in the located triangle

Return values

bool	`true` if a triangle is found; `false` if not. If *point* is outside the triangulation, in which case `false` is returned, then the edge associated with *dart* will be at the boundary of the triangulation.

- ttl::locateFaceSimplest
- ttl::inTriangle

Definition at line 667 of file ttl.h.

28.59.2.21 template<class TraitsType , class DartType , class DartListType > void ttl::optimizeDelaunay (DartListType & *elist*)

Optimizes the edges in the given sequence according to the *Delaunay* criterion, i.e., such that the edge will fullfill the *circumcircle* criterion (or equivalently the *MaxMin* angle criterion) with respect to the quadrilaterals where they are diagonals.

Parameters

elist	The sequence of edges

- TraitsType::swapEdge (DartType& *dart*)
  Note: Must be implemented such that *dart* is delivered back in a position as seen if it was glued to the edge when swapping (rotating) the edge CCW

- ttl::swapTestDelaunay

Definition at line 1434 of file ttl.h.

28.59.2.22 template<class TraitsType , class DartType , class DartListType > void ttl::optimizeDelaunay (DartListType & *elist*, const typename DartListType::iterator *end*)

Definition at line 1441 of file ttl.h.

28.59.2.23 template<class DartType > void ttl::positionAtNextBoundaryEdge (DartType & *dart*)

Given a *dart*, CCW or CW, positioned in a 0-orbit at the boundary of a tessellation. Position *dart* at a boundary edge in the same 0-orbit.
If the given *dart* is CCW, *dart* is positioned at the left boundary edge and will be CW.
If the given *dart* is CW, *dart* is positioned at the right boundary edge and will be CCW.

Note

- The given *dart* must have a source node at the boundary, otherwise an infinit loop occurs.

Definition at line 1343 of file ttl.h.

28.59.2.24 template<class TraitsType , class DartType > void ttl::recSwapDelaunay (DartType & *diagonal*)

Recursively swaps edges in the triangulation according to the *Delaunay* criterion.

Parameters

diagonal	A CCW dart representing the edge where the recursion starts from.

- TraitsType::swapEdge (DartType&)
  Note: Must be implemented such that the darts outside the quadrilateral are not affected by the swap.

- Calls itself recursively

Definition at line 1630 of file ttl.h.

28.59.2.25 template<class TraitsType , class DartType > void ttl::removeBoundaryNode (DartType & *dart*)

Removes the boundary node associated with *dart* and updates the triangulation to be Delaunay.

- ttl::swapEdgesAwayFromBoundaryNode
- ttl::optimizeDelaunay
- TraitsType::removeBoundaryTriangle (Dart&)

Definition at line 415 of file ttl.h.

28.59.2.26 template<class TraitsType , class DartType > void ttl::removeInteriorNode (DartType & *dart*)

Removes the interior node associated with *dart* and updates the triangulation to be Delaunay.

- ttl::swapEdgesAwayFromInteriorNode
- ttl::optimizeDelaunay
- TraitsType::reverse_splitTriangle (Dart&)

Note

- The node cannot belong to a fixed (constrained) edge that is not swappable. (An endless loop is likely to occur in this case).

Definition at line 479 of file ttl.h.

28.59.2.27 template<class TraitsType , class DartType > void ttl::removeNode (DartType & *dart*)

Removes the node associated with *dart* and updates the triangulation to be Delaunay.

- ttl::removeBoundaryNode if *dart* represents a node at the boundary
- ttl::removeInteriorNode if *dart* represents an interior node

Note

- The node cannot belong to a fixed (constrained) edge that is not swappable. (An endless loop is likely to occur in this case).

Definition at line 394 of file ttl.h.

28.59.2.28 template<class TraitsType , class DartType > void ttl::removeRectangularBoundary (DartType & *dart*)

Removes the rectangular boundary of a triangulation as a final step of an incremental Delaunay triangulation. The four nodes at the corners will be removed and the resulting triangulation will have a convex boundary and be Delaunay.

Parameters

dart	A CCW dart at the boundary of the triangulation Output: A CCW dart at the new boundary

- ttl::removeBoundaryNode

Note

- This function requires that the boundary of the triangulation is a rectangle with four nodes (one in each corner).

Definition at line 365 of file ttl.h.

28.59.2.29 template<class DartType > bool ttl::same_0_orbit (const DartType & *d1*, const DartType & *d2*)

Checks if the two darts belong to the same 0-orbit, i.e., if they share a node. *d1* and/or *d2* can be CCW or CW.

(This function also examines if the the node associated with *d1* is at the boundary, which slows down the function (slightly). If it is known that the node associated with *d1* is an interior node and a faster version is needed, the user should implement his/her own version.)

Definition at line 1198 of file ttl.h.

28.59.2.30 template<class DartType > bool ttl::same_1_orbit (const DartType & *d1*, const DartType & *d2*)

Checks if the two darts belong to the same 1-orbit, i.e., if they share an edge. *d1* and/or *d2* can be CCW or CW.

Definition at line 1232 of file ttl.h.

28.59.2.31 template<class DartType > bool ttl::same_2_orbit (const DartType & *d1*, const DartType & *d2*)

Checks if the two darts belong to the same 2-orbit, i.e., if they lie in the same triangle. *d1* and/or *d2* can be CCW or CW

Definition at line 1248 of file ttl.h.

28.59.2.32 template<class TraitsType , class DartType , class DartListType > void ttl::swapEdgeInList (const typename DartListType::iterator & *it*, DartListType & *elist*)

Swap the the edge associated with iterator *it* and update affected darts in *elist* accordingly. The darts affected by the swap are those in the same quadrilateral. Thus, if one want to preserve one or more of these darts on should keep them in *elist*.

Definition at line 1842 of file ttl.h.

28.59.2.33 template<class TraitsType , class DartType , class ListType > void ttl::swapEdgesAwayFromBoundaryNode (DartType & *dart*, ListType & *swapped_edges*)

Swaps edges away from the (boundary) node associated with *dart* in such a way that when removing the edges that remain incident with the node, the boundary of the triangulation will be convex. This function is used as a first step in ttl::removeBoundaryNode

Return values

dart	A CCW dart incident with the node

- TraitsType::swapEdge (DartType& *dart*)
  Note: Must be implemented such that *dart* is delivered back in a position as seen if it was glued to the edge when swapping (rotating) the edge CCW

Assumes:

- The node associated with *dart* is at the boundary of the triangulation.

See also

ttl::swapEdgesAwayFromInteriorNode

Definition at line 1753 of file ttl.h.

28.59.2.34 template<class TraitsType , class DartType , class ListType > void ttl::swapEdgesAwayFromInteriorNode (DartType & *dart,* ListType & *swapped_edges*)

Swaps edges away from the (interior) node associated with *dart* such that that exactly three edges remain incident with the node. This function is used as a first step in ttl::removeInteriorNode

Return values

dart	A CCW dart incident with the node

Assumes:

- The node associated with *dart* is interior to the triangulation.

- TraitsType::swapEdge (DartType& *dart*)
  Note: Must be implemented such that *dart* is delivered back in a position as seen if it was glued to the edge when swapping (rotating) the edge CCW

Note

- A degenerate triangle may be left at the node.
- The function is not unique as it depends on which dart at the node that is given as input.

See also

ttl::swapEdgesAwayFromBoundaryNode

Definition at line 1695 of file ttl.h.

28.59.2.35 template<class TraitsType , class DartType > bool ttl::swappableEdge (const DartType & *dart,* bool *allowDegeneracy*)

Checks if the edge associated with *dart* is swappable, i.e., if the edge is a diagonal in a *strictly* convex (or convex) quadrilateral.

Parameters

allowDegeneracy	If set to true, the function will also return true if the numerical calculations indicate that the quadrilateral is convex only, and not necessarily strictly convex.

- TraitsType::crossProduct2d (Dart&, Dart&)

Definition at line 1290 of file ttl.h.

28.59.2.36 template<class TraitsType , class DartType > bool ttl::swapTestDelaunay (const DartType & *dart*, bool *cycling_check*)

Checks if the edge associated with *dart* should be swapped according to the *Delaunay* criterion, i.e., the *circumcircle* criterion (or equivalently the *MaxMin* angle criterion).

Parameters

cycling_check	Must be set to `true` when used in connection with optimization algorithms, e.g., optimizeDelaunay. This will avoid cycling and infinite loops in nearly neutral cases.

- TraitsType::scalarProduct2d (DartType&, DartType&)
- TraitsType::crossProduct2d (DartType&, DartType&)

Definition at line 1518 of file ttl.h.

28.60 ttl_constr Namespace Reference

Constrained Delaunay triangulation.

Functions

- template<class DartType >
  bool isTheConstraint (const DartType &dart, const DartType &dstart, const DartType &dend)
- template<class TraitsType , class DartType >
  bool crossesConstraint (DartType &dstart, DartType &dend, DartType &d1, DartType &d2)
- template<class TraitsType , class DartType >
  DartType getAtSmallestAngle (const DartType &dstart, const DartType &dend)
- template<class TraitsType , class DartType , class ListType >
  DartType findCrossingEdges (const DartType &dstart, const DartType &dend, ListType &elist)
- template<class TraitsType , class DartType >
  void transformToConstraint (DartType &dstart, DartType &dend, std::list< DartType > &elist)

28.60.1 Detailed Description

Constrained Delaunay triangulation.

Basic generic algorithms in TTL for inserting a constrained edge between two existing nodes.
See documentation for the namespace ttl for general requirements and assumptions.

Author

Oyvind Hjelle, oyvindhj@ifi.uio.no

28.60.2 Function Documentation

28.60.2.1 template<class TraitsType , class DartType > bool ttl_constr::crossesConstraint (DartType & *dstart,* DartType & *dend,* DartType & *d1,* DartType & *d2*)

Definition at line 126 of file ttl_constr.h.

28.60.2.2 template<class TraitsType , class DartType , class ListType > DartType ttl_constr::findCrossingEdges (const DartType & *dstart,* const DartType & *dend,* ListType & *elist*)

Definition at line 276 of file ttl_constr.h.

28.60.2.3 template<class TraitsType , class DartType > DartType ttl_constr::getAtSmallestAngle (const DartType & *dstart,* const DartType & *dend*)

Definition at line 164 of file ttl_constr.h.

28.60.2.4 template<class DartType > bool ttl_constr::isTheConstraint (const DartType & *dart,* const DartType & *dstart,* const DartType & *dend*)

Definition at line 95 of file ttl_constr.h.

28.60.2.5 template<class TraitsType , class DartType > void ttl_constr::transformToConstraint (DartType & *dstart,* DartType & *dend,* std::list< DartType > & *elist*)

Definition at line 396 of file ttl_constr.h.

28.61 ttl_util Namespace Reference

Utilities.

Functions

Computational geometry

- template<class real_type >
  real_type scalarProduct2d (real_type dx1, real_type dy1, real_type dx2, real_type dy2)
- template<class real_type >
  real_type crossProduct2d (real_type dx1, real_type dy1, real_type dx2, real_type dy2)
- template<class real_type >
  real_type orient2dfast (real_type pa[2], real_type pb[2], real_type pc[2])

Utilities involving points

- template<class PointType >
  std::vector< PointType * > * createRandomData (int noPoints, int seed=1)

28.61.1 Detailed Description

Utilities.

This name space contains utility functions for TTL.
Point and vector algebra such as scalar product and cross product between vectors are implemented here. These functions are required by functions in the ttl namespace, where they are assumed to be present in the TTLtraits class. Thus, the user can call these functions from the traits class. For efficiency reasons, the user may consider implementing these functions in the the API directly on the actual data structure; see Application Programming Interface to TTL (API).

Note

- Cross product between vectors in the xy-plane delivers a scalar, which is the z-component of the actual cross product (the x and y components are both zero).

See also

ttl and Application Programming Interface to TTL (API)

Author

Oyvind Hjelle, oyvindhj@ifi.uio.no

28.61.2 Function Documentation

28.61.2.1 template<class PointType > std::vector<PointType*>* ttl_util::createRandomData (int *noPoints*, int *seed* = 1)

Creates random data on the unit square.

Parameters

noPoints	Number of random points to be generated
seed	Initial value for pseudorandom number generator

- Constructor `PointType::PointType(double x, double y)`.
  For example, one can use `pair<double, double>`.

Note

- To deduce template argument for PointType the function must be called with the syntax: `create↩RandomData<MyPoint>(...)` where `MyPoint` is the actual point type.

Definition at line 279 of file ttl_util.h.

28.61.2.2 template<class real_type > real_type ttl_util::crossProduct2d (real_type *dx1*, real_type *dy1*, real_type *dx2*, real_type *dy2*)

Cross product between two 2D vectors. (The z-component of the actual cross product.)

Returns:

```
dx1*dy2 - dy1*dx2
```

Definition at line 117 of file ttl_util.h.

28.61.2.3 template<class real_type > real_type ttl_util::orient2dfast (real_type *pa[2]*, real_type *pb[2]*, real_type *pc[2]*)

Returns a positive value if the 2D nodes/points *pa*, *pb*, and *pc* occur in counterclockwise order; a negative value if they occur in clockwise order; and zero if they are collinear.

Note

- This is a finite arithmetic fast version. It can be made more robust using exact arithmetic schemes by Jonathan Richard Shewchuk. See http://www-2.cs.cmu.edu/~quake/robust.html

Definition at line 133 of file ttl_util.h.

28.61.2.4 template<class real_type > real_type ttl_util::scalarProduct2d (real_type *dx1*, real_type *dy1*, real_type *dx2*, real_type *dy2*)

Scalar product between two 2D vectors.

Returns:

```
dx1*dx2 + dy1*dy2
```

Definition at line 103 of file ttl_util.h.

Chapter 29

Class Documentation

29.1 Go::AdaptCurve Class Reference

`#include <AdaptCurve.h>`

Public Member Functions

- AdaptCurve (const EvalCurve *evalcrv, double aepsge)
- AdaptCurve (const EvalCurve *evalcrv, double aepsge, int in, int ik)
- AdaptCurve (const EvalCurve *evalcrv, double aepsge, int in, int ik, std::vector< double > &knots)
- AdaptCurve (const EvalCurve *evalcrv, double aepsge, shared_ptr< SplineCurve > curve)
- ~AdaptCurve ()

  Destructor.
- void setSmooth (double w)
- void unsetSmooth ()

  Unset smoothing weight (set it to zero)
- void setEndPoints (const std::vector< Point > &start_point, const std::vector< Point > &end_point)
- int approximate (int max_iter=5)
- shared_ptr< SplineCurve > getAdaptCurve (double &maxdist, double &avdist, int max_iter=5)

Protected Member Functions

- AdaptCurve ()

  Default constructor.

29.1.1 Detailed Description

This class can generate a B-spline curve that approximates an evaluator based curve within a given accuracy

Definition at line 68 of file AdaptCurve.h.

29.1.2 Constructor & Destructor Documentation

29.1.2.1 Go::AdaptCurve::AdaptCurve (const EvalCurve * *evalcrv*, double *aepsge*)

Constructor where the evaluator based curve and the approximation tolerance are specified. The generated curve will have a spline basis of order 4 (cubic).

Parameters

evalcrv	curve to adapt to
aepsge	geometric tolerance

29.1.2.2 Go::AdaptCurve::AdaptCurve (const EvalCurve * *evalcrv,* double *aepsge,* int *in,* int *ik*)

Constructor where the evaluator based curve and the approximation tolerance are specified as well as the size of the initial spline space

Parameters

evalcrv	curve to adapt to
aepsge	geometric tolerance
in	the number of control points of the initial spline curve
ik	the order of the initial spline curve (pol. degree + 1)

29.1.2.3 Go::AdaptCurve::AdaptCurve (const EvalCurve * *evalcrv,* double *aepsge,* int *in,* int *ik,* std::vector< double > & *knots*)

Constructor where the evaluator based curve and the approximation tolerance are specified as well as the initial spline space

Parameters

evalcrv	curve to adapt to
aepsge	geometric tolerance
in	the number of control points of the initial spline curve
ik	the order of the initial spline curve (pol. degree + 1)
knots	specifies the knotvector of the resulting spline curve.

29.1.2.4 Go::AdaptCurve::AdaptCurve (const EvalCurve * *evalcrv,* double *aepsge,* shared_ptr< SplineCurve > *curve*)

Constructor where the evaluator based curve and the approximation tolerance are specified as well as an initial spline curve

Parameters

evalcrv	curve to adapt to
aepsge	geometric tolerance
crv	initial spline curve

29.1.2.5 Go::AdaptCurve::~AdaptCurve ( )

Destructor.

29.1.2.6 Go::AdaptCurve::AdaptCurve ( ) [protected]

Default constructor.

29.1.3 Member Function Documentation

29.1.3.1 int Go::AdaptCurve::approximate (int *max_iter* = 5)

Perform the approximation

Parameters

max_iter	specify the maximum number of iterations to use

29.1.3.2 shared_ptr<SplineCurve> Go::AdaptCurve::getAdaptCurve (double & *maxdist*, double & *avdist*, int *max_iter* = 5)

Fetch the approximating curve

Return values

maxdist	report the maximum distance between the generated curve and the data points generated from the input curve
avdist	report the average distance between the generated curve and the datapoints

Returns

a shared pointer to the generated SplineCurve, approximating the input evaluatorbased curve

29.1.3.3 void Go::AdaptCurve::setEndPoints (const std::vector< Point > & *start_point*, const std::vector< Point > & *end_point*)

The user may decide upon end tangents of approximation curve. If these are not set, the final end tangents result from smoothing equation. The user may specifically decide the start and end points and tangents of the approximation curve (if these are not set, this information will result from the smoothing equation). This function lets the user specify the start and end points and tangents.

Parameters

start_point	this vector should contain one or two elements: the start point and optionally the start tangent of the curve.
end_point	this vector should contain one or two elements: the end point and optionally the end tangent of the curve.

29.1.3.4 void Go::AdaptCurve::setSmooth (double *w*)

Set smoothing weight $0 < w < 1$

Parameters

w	the smoothing weight

29.1.3.5 void Go::AdaptCurve::unsetSmooth ( )

Unset smoothing weight (set it to zero)

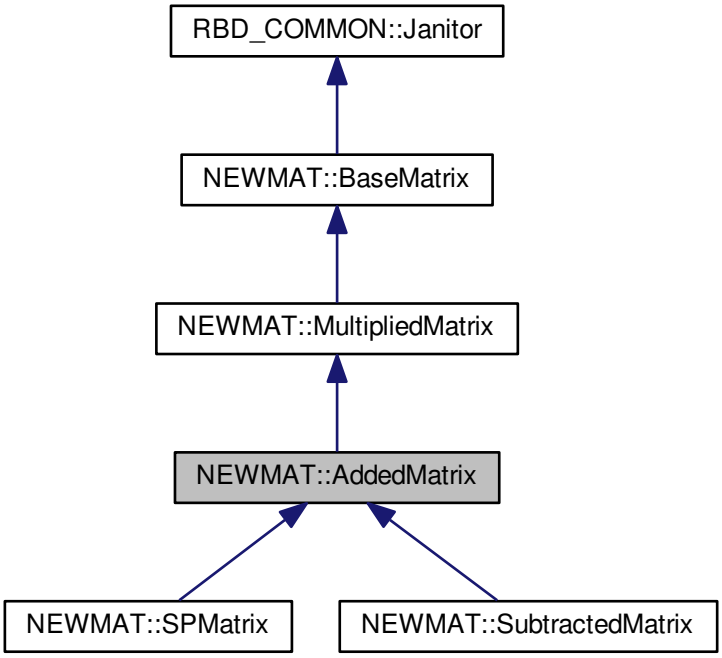
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/AdaptCurve.h

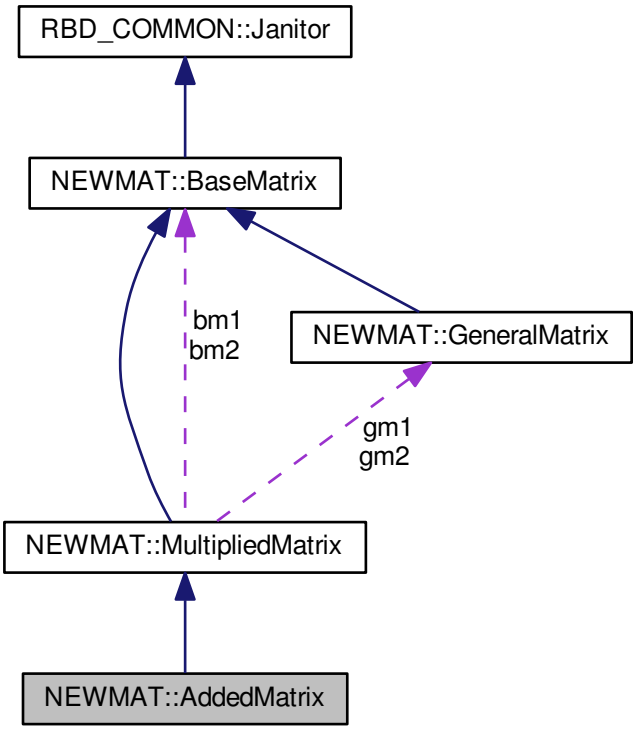
29.2 NEWMAT::AddedMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::AddedMatrix:



Collaboration diagram for NEWMAT::AddedMatrix:



Public Member Functions

- ~AddedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Protected Member Functions

- AddedMatrix (const BaseMatrix *bm1x, const BaseMatrix *bm2x)

Friends

- class BaseMatrix
- class GeneralMatrix
- class GenericMatrix

Additional Inherited Members

29.2.1 Detailed Description

Definition at line 1194 of file newmat.h.

29.2.2 Constructor & Destructor Documentation

29.2.2.1 NEWMAT::AddedMatrix::AddedMatrix (const BaseMatrix * *bm1x*, const BaseMatrix * *bm2x*) [inline], [protected]

Definition at line 1197 of file newmat.h.

29.2.2.2 NEWMAT::AddedMatrix::~AddedMatrix ( ) [inline]

Definition at line 1204 of file newmat.h.

29.2.3 Member Function Documentation

29.2.3.1 MatrixBandWidth AddedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::MultipliedMatrix.

Reimplemented in NEWMAT::SPMatrix.

Definition at line 418 of file newmat4.cpp.

29.2.3.2 GeneralMatrix * AddedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::MultipliedMatrix.

Reimplemented in NEWMAT::SubtractedMatrix, and NEWMAT::SPMatrix.

Definition at line 509 of file newmat7.cpp.

29.2.4 Friends And Related Function Documentation

29.2.4.1 friend class BaseMatrix [friend]

Definition at line 1200 of file newmat.h.

29.2.4.2 friend class GeneralMatrix [friend]

Definition at line 1201 of file newmat.h.

29.2.4.3 friend class GenericMatrix [friend]

Definition at line 1202 of file newmat.h.

The documentation for this class was generated from the following files:

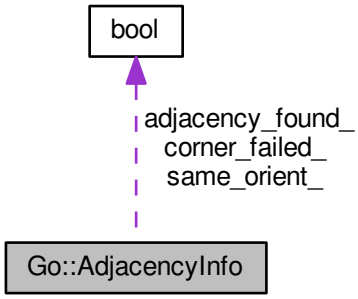
- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp

29.3 Go::AdjacencyInfo Struct Reference

Struct to store information about adjacency relations between two faces.

`#include <ftSurface.h>`

Collaboration diagram for Go::AdjacencyInfo:



Public Member Functions

- AdjacencyInfo ()

Public Attributes

- bool adjacency_found_

  True if adjacency was found, false if not.
- int bd_idx_1_

  Boundary index of first surface. 0 = umin, 1 = umax, 2 = vmin, 3 = vmax.
- int bd_idx_2_

  Boundary index of second surface. 0 = umin, 1 = umax, 2 = vmin, 3 = vmax.
- bool same_orient_

  True if the surfaces are equally oriented along the common boundary.
- bool corner_failed_

29.3.1 Detailed Description

Struct to store information about adjacency relations between two faces.

Definition at line 61 of file ftSurface.h.

29.3.2 Constructor & Destructor Documentation

29.3.2.1 Go::AdjacencyInfo::AdjacencyInfo ( ) [inline]

Definition at line 76 of file ftSurface.h.

29.3.3 Member Data Documentation

29.3.3.1 bool Go::AdjacencyInfo::adjacency_found_

True if adjacency was found, false if not.

Definition at line 65 of file ftSurface.h.

29.3.3.2 int Go::AdjacencyInfo::bd_idx_1_

Boundary index of first surface. 0 = umin, 1 = umax, 2 = vmin, 3 = vmax.

Definition at line 67 of file ftSurface.h.

29.3.3.3 int Go::AdjacencyInfo::bd_idx_2_

Boundary index of second surface. 0 = umin, 1 = umax, 2 = vmin, 3 = vmax.

Definition at line 69 of file ftSurface.h.

29.3.3.4 bool Go::AdjacencyInfo::corner_failed_

True if adjacency is found, user wanted to test if the surfaces meet in corner-to-corner configuration, and the test failed. Otherwise false.

Definition at line 74 of file ftSurface.h.

29.3.3.5 bool Go::AdjacencyInfo::same_orient_

True if the surfaces are equally oriented along the common boundary.

Definition at line 71 of file ftSurface.h.

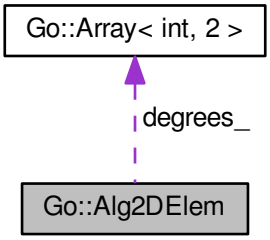
The documentation for this struct was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftSurface.h

29.4 Go::Alg2DElem Struct Reference

`#include <AlgObj2DInt.h>`

Collaboration diagram for Go::Alg2DElem:



Public Member Functions

- Alg2DElem (double factor, int degree_x, int degree_y)
  Constructor.

Public Attributes

- double factor_
  The factor a in ax^iy^j.
- Array< int, 2 > degrees_
  The degrees i and j in ax^iy^j.

29.4.1 Detailed Description

Struct that represents a monomial in two variables. By this we mean a term in a polynomial of the form ax^iy^j. This struct is used by AlgObj2DInt.

Definition at line 56 of file AlgObj2DInt.h.

29.4.2 Constructor & Destructor Documentation

29.4.2.1 Go::Alg2DElem::Alg2DElem (double *factor*, int *degree_x*, int *degree_y*) [inline]

Constructor.

Definition at line 65 of file AlgObj2DInt.h.

29.4.3 Member Data Documentation

29.4.3.1 Array<int, 2> Go::Alg2DElem::degrees_

The degrees *i* and *j* in ax^iy^j.

Definition at line 62 of file AlgObj2DInt.h.

29.4.3.2 double Go::Alg2DElem::factor_

The factor *a* in ax^iy^j.

Definition at line 59 of file AlgObj2DInt.h.

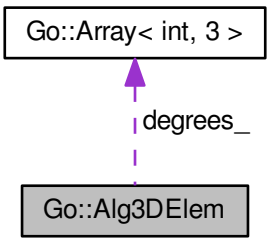
The documentation for this struct was generated from the following file:

- intersections/include/GoTools/intersections/AlgObj2DInt.h

29.5 Go::Alg3DElem Struct Reference

`#include <AlgObj3DInt.h>`

Collaboration diagram for Go::Alg3DElem:



Public Member Functions

- Alg3DElem (double factor, int degree_x, int degree_y, int degree_z)
  Constructor.

Public Attributes

- double factor_
  The factor a in $ax^iy^jx^k$.
- Array< int, 3 > degrees_
  The degrees i, j and k in $ax^iy^jx^k$.

29.5.1 Detailed Description

Struct that represents a monomial in three variables. By this we mean a term in a polynomial of the form $ax^iy^jx^k$. This struct is used by AlgObj3DInt.

Definition at line 58 of file AlgObj3DInt.h.

29.5.2 Constructor & Destructor Documentation

29.5.2.1 Go::Alg3DElem::Alg3DElem (double *factor*, int *degree_x*, int *degree_y*, int *degree_z*) [inline]

Constructor.

Definition at line 67 of file AlgObj3DInt.h.

29.5.3 Member Data Documentation

29.5.3.1 Array<int, 3> Go::Alg3DElem::degrees_

The degrees *i*, *j* and *k* in $ax^iy^jx^k$.

Definition at line 64 of file AlgObj3DInt.h.

29.5.3.2 double Go::Alg3DElem::factor_

The factor *a* in $ax^iy^jx^k$.

Definition at line 61 of file AlgObj3DInt.h.

The documentation for this struct was generated from the following file:

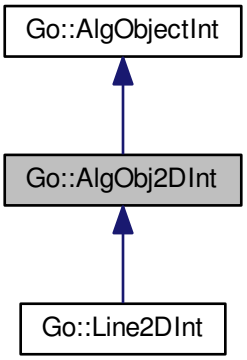
- intersections/include/GoTools/intersections/AlgObj3DInt.h

29.6 Go::AlgObj2DInt Class Reference

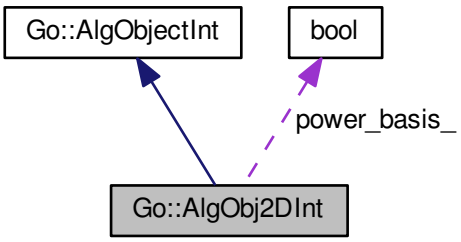
Class for 2-dimensional algebraic intersection objects.

`#include <AlgObj2DInt.h>`

Inheritance diagram for Go::AlgObj2DInt:



Collaboration diagram for Go::AlgObj2DInt:



Public Member Functions

- AlgObj2DInt (int degree)
- AlgObj2DInt (const std::vector< Alg2DElem > &terms)
- virtual ~AlgObj2DInt ()

  Destructor.
- int numTerms ()
- Alg2DElem term (int index)

Protected Attributes

- int degree_
- std::vector< Alg2DElem > terms_
- bool power_basis_

29.6.1 Detailed Description

Class for 2-dimensional algebraic intersection objects.

Definition at line 73 of file AlgObj2DInt.h.

29.6.2 Constructor & Destructor Documentation

29.6.2.1 Go::AlgObj2DInt::AlgObj2DInt (int *degree*)

Constructor.

Parameters

degree	the total degree of the algebraic expression, i.e. the maximum sum of exponents of a factor.

29.6.2.2 Go::AlgObj2DInt::AlgObj2DInt (const std::vector< Alg2DElem > & *terms*)

Constructor.

Parameters

terms	the terms in the algebraic expression, i.e. elements on the form $a_{ij}x^iy^j$.

29.6.2.3 virtual Go::AlgObj2DInt::~AlgObj2DInt ( ) [virtual]

Destructor.

29.6.3 Member Function Documentation

29.6.3.1 int Go::AlgObj2DInt::numTerms ( ) [inline]

Get the number of terms in the algebraic object.

Returns

The number of terms in the object.

Definition at line 90 of file AlgObj2DInt.h.

29.6.3.2 Alg2DElem Go::AlgObj2DInt::term (int *index*)

Get a term from the algebraic object.

Returns

the term with index *index*

29.6.4 Member Data Documentation

29.6.4.1 int Go::AlgObj2DInt::degree_ [protected]

Definition at line 99 of file AlgObj2DInt.h.

29.6.4.2 bool Go::AlgObj2DInt::power_basis_ [protected]

Definition at line 101 of file AlgObj2DInt.h.

29.6.4.3 std::vector<Alg2DElem> Go::AlgObj2DInt::terms_ [protected]

Definition at line 100 of file AlgObj2DInt.h.

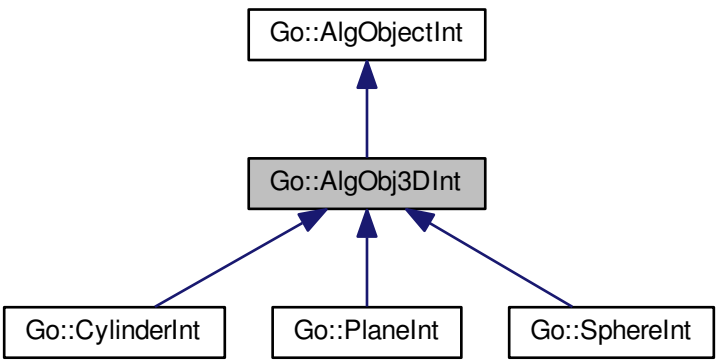
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/AlgObj2DInt.h

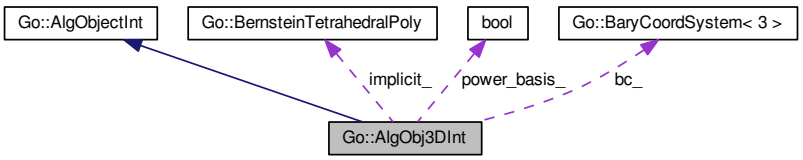
29.7 Go::AlgObj3DInt Class Reference

`#include <AlgObj3DInt.h>`

Inheritance diagram for Go::AlgObj3DInt:



Collaboration diagram for Go::AlgObj3DInt:



Public Member Functions

- AlgObj3DInt (int degree)
- AlgObj3DInt (const std::vector< Alg3DElem > &terms)
- AlgObj3DInt (const BernsteinTetrahedralPoly &implicit, const BaryCoordSystem3D &bc)
- virtual ~AlgObj3DInt ()

  Destructor.
- int numTerms ()
- int degree ()
- Alg3DElem term (int index)
- void getImplicit (BernsteinTetrahedralPoly &impl, BaryCoordSystem3D &bc)
- bool usingPowerBasis ()

Protected Attributes

- int degree_
- std::vector< Alg3DElem > terms_
- bool power_basis_
- BernsteinTetrahedralPoly implicit_
- BaryCoordSystem3D bc_

29.7.1 Detailed Description

Class for 3-dimensional algebraic intersection objects. Supports two different representations: Polynomials on power basis, or Bernstein polynomials on a tetrahedron.

Definition at line 78 of file AlgObj3DInt.h.

29.7.2 Constructor & Destructor Documentation

29.7.2.1 Go::AlgObj3DInt::AlgObj3DInt (int *degree*)

Constructor.

Parameters

degree	the total degree of the algebraic expression, i.e. the maximum sum of exponents of a term.

29.7.2.2 Go::AlgObj3DInt::AlgObj3DInt (const std::vector< Alg3DElem > & *terms*)

Constructor.

Parameters

terms	the terms in the algebraic expression, i.e. elements on the form $a_{ijk}x^iy^jz^k$.

29.7.2.3 Go::AlgObj3DInt::AlgObj3DInt (const BernsteinTetrahedralPoly & *implicit,* const BaryCoordSystem3D & *bc*)

Constructor. We define the algebraic expression using another representation than the standard power basis formulation. This will (typically) be the result from an approximative implicitization of a spline surface.

Parameters

implicit	the implicit object.
bc	the barycentric coordinate system for the representation.

29.7.2.4 virtual Go::AlgObj3DInt::~AlgObj3DInt ( ) [virtual]

Destructor.

29.7.3 Member Function Documentation

29.7.3.1 int Go::AlgObj3DInt::degree ( ) [inline]

Get the degree of the algebraic object

Returns

the degree

Definition at line 111 of file AlgObj3DInt.h.

29.7.3.2 void Go::AlgObj3DInt::getImplicit (BernsteinTetrahedralPoly & *impl,* BaryCoordSystem3D & *bc*) [inline]

Get the implicit representation of the object.

Parameters

impl	the implicit representation.
bc	the corresponding coordinate system.

Definition at line 122 of file AlgObj3DInt.h.

29.7.3.3 int Go::AlgObj3DInt::numTerms ( ) [inline]

Get the number of terms in the algebraic object.

Returns

The number of terms in the object.

Definition at line 106 of file AlgObj3DInt.h.

29.7.3.4 Alg3DElem Go::AlgObj3DInt::term (int *index*)

Get the corresponding term from the algebraic object.

Parameters

index	the index of the term in question. Indexing starts at 0.

29.7.3.5 bool Go::AlgObj3DInt::usingPowerBasis ( ) [inline]

Verify whether we are using a standard power basis representation for the object.

Returns

True if we are using a standard power basis representation. For typical algebraic objects like spheres this will be the case, but not for approximative implicitizations of spline surfaces.

Definition at line 134 of file AlgObj3DInt.h.

29.7.4 Member Data Documentation

29.7.4.1 BaryCoordSystem3D Go::AlgObj3DInt::bc_ [protected]

Definition at line 156 of file AlgObj3DInt.h.

29.7.4.2 int Go::AlgObj3DInt::degree_ [protected]

Definition at line 139 of file AlgObj3DInt.h.

29.7.4.3 BernsteinTetrahedralPoly Go::AlgObj3DInt::implicit_ [protected]

Definition at line 153 of file AlgObj3DInt.h.

29.7.4.4 bool Go::AlgObj3DInt::power_basis_ [protected]

Definition at line 143 of file AlgObj3DInt.h.

29.7.4.5 std::vector<Alg3DElem> Go::AlgObj3DInt::terms_ [protected]

Definition at line 142 of file AlgObj3DInt.h.

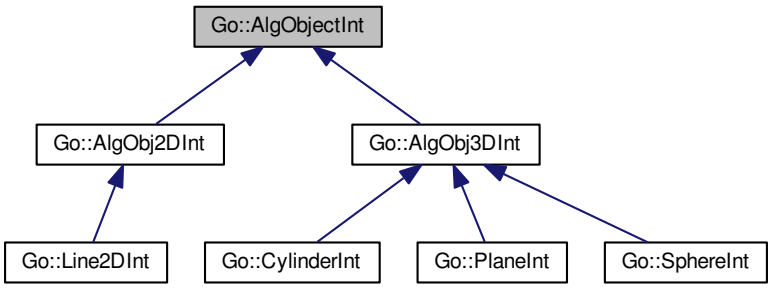
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/AlgObj3DInt.h

29.8 Go::AlgObjectInt Class Reference

`#include <AlgObjectInt.h>`

Inheritance diagram for Go::AlgObjectInt:



Public Member Functions

- AlgObjectInt ()
  Constructor.
- virtual ~AlgObjectInt ()
  Destructor.

29.8.1 Detailed Description

This class is a purely abstract base class, providing an interface to the algebraic intersection objects.

Definition at line 50 of file AlgObjectInt.h.

29.8.2 Constructor & Destructor Documentation

29.8.2.1 Go::AlgObjectInt::AlgObjectInt ( ) [inline]

Constructor.

Definition at line 54 of file AlgObjectInt.h.

29.8.2.2 virtual Go::AlgObjectInt::~AlgObjectInt ( ) [inline], [virtual]

Destructor.

Definition at line 57 of file AlgObjectInt.h.

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/AlgObjectInt.h

29.9 Go::ApproxCrvToSeqs Class Reference

`#include <ApproxCrvToSeqs.h>`

Public Member Functions

- ApproxCrvToSeqs (const std::vector< std::vector< double > > &points, const std::vector< std::vector< double > > &parvals, int dim, double aepsge)
- ApproxCrvToSeqs (const std::vector< std::vector< double > > &points, const std::vector< std::vector< double > > &parvals, int dim, double aepsge, int in, int ik)
- ApproxCrvToSeqs (const std::vector< std::vector< double > > &points, const std::vector< std::vector< double > > &parvals, int dim, double aepsge, int in, int ik, std::vector< double > &knots)
- ~ApproxCrvToSeqs ()

  Destructor.
- void setSmooth (double w)
- void unsetSmooth ()

  Unset smoothing weight (set it to zero)
- void setEndPoints (const std::vector< std::vector< Point > > &start_point, const std::vector< std::vector< Point > > &end_point)
- void setC1Approx (double fac)

  Approximate C1 continuity with a given impartance 0 <= fac.
- std::vector< shared_ptr< SplineCurve > > getApproxCurves (double &maxdist, double &avdist, int max_iter=5)

Protected Member Functions

- ApproxCrvToSeqs ()

  Default constructor.

29.9.1 Detailed Description

This class can generate B-spline curves that approximates sequences of points for a given accuracy.

Definition at line 67 of file ApproxCrvToSeqs.h.

29.9.2 Constructor & Destructor Documentation

29.9.2.1 Go::ApproxCrvToSeqs::ApproxCrvToSeqs (const std::vector< std::vector< double > > & *points*, const std::vector< std::vector< double > > & *parvals*, int *dim*, double *aepsge*)

Constructor where the user specifies a set of parameterized points and a tolerance to be used. The generated curve will have a spline basis of order 4 (cubic), and a number of control points equal to one-sixth of the number of input points. The knotvector of the curve's basis will be set to uniform.

Parameters

points	vector containing the sequences points to approximate. These are stored consecutively in "xyzxyzxyz-fashion". The dimension of all points is expected to be the same, but the number of points in the sequences may differ
parvals	the parameter values associated with the points to approximate. The parameter values must correspond for all sequences
dim	the spatial dimension of the points (usually 3)
aepsge	the geometric tolerance to work with

29.9.2.2 Go::ApproxCrvToSeqs::ApproxCrvToSeqs (const std::vector< std::vector< double > > & *points*, const std::vector< std::vector< double > > & *parvals*, int *dim*, double *aepsge*, int *in*, int *ik*)

Constructor where the user specifies a set of parameterized points and a tolerance to be used, as well as the spline order and number of control points. The knotvector of the curve's basis will be set to uniform.

Parameters

points	vector containing the sequences points to approximate. These are stored consecutively in "xyzxyzxyz-fashion". The dimension of all points is expected to be the same, but the number of points in the sequences may differ
parvals	the parameter values associated with the points to approximate. The parameter values must correspond for all sequences
dim	the spatial dimension of the points (usually 3)
aepsge	the geometric tolerance to work with
in	the number of control points of the resulting spline curve
ik	the order of the resulting spline curve (pol. degree + 1)

29.9.2.3 Go::ApproxCrvToSeqs::ApproxCrvToSeqs (const std::vector< std::vector< double > > & *points,* const std::vector< std::vector< double > > & *parvals,* int *dim,* double *aepsge,* int *in,* int *ik,* std::vector< double > & *knots*)

Constructor where the user specifies a set of parameterized points, a tolerance and the spline space to use for constructing the curve. Constructor where the user specifies a set of parameterized points and a tolerance to be used, as well as the spline order and number of control points. The knotvector of the curve's basis will be set to uniform.

Parameters

points	vector containing the sequences points to approximate. These are stored consecutively in "xyzxyzxyz-fashion". The dimension of all points is expected to be the same, but the number of points in the sequences may differ
parvals	the parameter values associated with the points to approximate. The parameter values must correspond for all sequences
dim	the spatial dimension of the points (usually 3)
aepsge	the geometric tolerance to work with
in	the number of control points of the resulting spline curve
ik	the order of the resulting spline curve (pol. degree + 1)
knots	specifies the knotvector of the resulting spline curve.

29.9.2.4 Go::ApproxCrvToSeqs::~ApproxCrvToSeqs ( )

Destructor.

29.9.2.5 Go::ApproxCrvToSeqs::ApproxCrvToSeqs ( ) [protected]

Default constructor.

29.9.3 Member Function Documentation

29.9.3.1 std::vector<shared_ptr<SplineCurve> > Go::ApproxCrvToSeqs::getApproxCurves (double & *maxdist,* double & *avdist,* int *max_iter* = 5)

When everything else is set, this function can be used to fetch the approximating curves

Return values

maxdist	report the maximum distance between the generated curves and the data points
avdist	report the average distance between the generated curves and the datapoints

Parameters

max_iter	specify the maximum number of iterations to use

Returns

a shared pointer to the generated SplineCurve, approximating the points as specified.

29.9.3.2 void Go::ApproxCrvToSeqs::setC1Approx (double *fac*)

Approximate C1 continuity with a given impartance 0 <= fac.

29.9.3.3 void Go::ApproxCrvToSeqs::setEndPoints (const std::vector< std::vector< Point > > & *start_point*, const std::vector< std::vector< Point > > & *end_point*)

The user may decide upon end tangents of approximation curve. If these are not set, the final end tangents result from smoothing equation. The user may specifically decide the start and end points and tangents of the approximation curve (if these are not set, this information will result from the smoothing equation). This function lets the user specify the start and end points and tangents.

Parameters

start_point	for each curve, this vector should contain up to two elements: the start point and optionally the start tangent of the curve.
end_point	for each curve, this vector should contain up to two elements: the end point and optionally the end tangent of the curve.

29.9.3.4 void Go::ApproxCrvToSeqs::setSmooth (double *w*)

Set smoothing weight 0 < w < 1

Parameters

w	the smoothing weight

29.9.3.5 void Go::ApproxCrvToSeqs::unsetSmooth ( )

Unset smoothing weight (set it to zero)

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/ApproxCrvToSeqs.h

29.10 Go::ApproxCurve Class Reference

`#include <ApproxCurve.h>`

Public Member Functions

- ApproxCurve (const std::vector< double > &points, const std::vector< double > &parvals, int dim, double aepsge)
- ApproxCurve (const std::vector< double > &points, const std::vector< double > &parvals, int dim, double aepsge, int in, int ik)
- ApproxCurve (const std::vector< double > &points, const std::vector< double > &parvals, int dim, double aepsge, int in, int ik, const std::vector< double > &knots)
- ~ApproxCurve ()

  Destructor.
- void setSmooth (double w)
- void unsetSmooth ()

  Unset smoothing weight (set it to zero)
- void setEndPoints (const std::vector< Point > &start_point, const std::vector< Point > &end_point)
- void setC1Approx (double fac)

  Approximate C1 continuity with a given impartance 0 <= fac < 1.
- shared_ptr< SplineCurve > getApproxCurve (double &maxdist, double &avdist, int max_iter=5)

Protected Member Functions

- ApproxCurve ()

  Default constructor.

29.10.1 Detailed Description

This class can generate a B-spline curve that approximates a set of points for a given accuracy.

Definition at line 67 of file ApproxCurve.h.

29.10.2 Constructor & Destructor Documentation

29.10.2.1 Go::ApproxCurve::ApproxCurve (const std::vector< double > & *points*, const std::vector< double > & *parvals*, int *dim*, double *aepsge*)

Constructor where the user specifies a set of parameterized points and a tolerance to be used. The generated curve will have a spline basis of order 4 (cubic), and a number of control points equal to one-sixth of the number of input points. The knotvector of the curve's basis will be set to uniform.

Parameters

points	vector containing the points to approximate. These are stored consecutively in "xyzxyzxyz-fashion".
parvals	the parameter values associated with the points to approximate
dim	the spatial dimension of the points (usually 3)
aepsge	the geometric tolerance to work with

29.10.2.2 Go::ApproxCurve::ApproxCurve (const std::vector< double > & *points,* const std::vector< double > & *parvals,* int *dim,* double *aepsge,* int *in,* int *ik*)

Constructor where the user specifies a set of parameterized points and a tolerance to be used, as well as the spline order and number of control points. The knotvector of the curve's basis will be set to uniform.

Parameters

points	vector containing the points to approximate. These are stored consecutively in "xyzxyzxyz-fashion".
parvals	the parameter values associated with the points to approximate
dim	the spatial dimension of the points (usually 3)
aepsge	the geometric tolerance to work with
in	the number of control points of the resulting spline curve
ik	the order of the resulting spline curve (pol. degree + 1)

29.10.2.3 Go::ApproxCurve::ApproxCurve (const std::vector< double > & *points,* const std::vector< double > & *parvals,* int *dim,* double *aepsge,* int *in,* int *ik,* const std::vector< double > & *knots*)

Constructor where the user specifies a set of parameterized points, a tolerance and the spline space to use for constructing the curve.

Parameters

points	vector containing the points to approximate. These are stored consecutively in "xyzxyzxyz-fashion".
parvals	the parameter values associated with the points to approximate
dim	the spatial dimension of the points (usually 3)
aepsge	the geometric tolerance to work with
in	the number of control points of the resulting spline curve
ik	the order of the resulting spline curve (pol. degree + 1)
knots	specifies the knotvector of the resulting spline curve.

29.10.2.4 Go::ApproxCurve::~ApproxCurve ( )

Destructor.

29.10.2.5 Go::ApproxCurve::ApproxCurve ( ) [protected]

Default constructor.

29.10.3 Member Function Documentation

29.10.3.1 shared_ptr<SplineCurve> Go::ApproxCurve::getApproxCurve (double & *maxdist,* double & *avdist,* int *max_iter* = 5)

When everything else is set, this function can be used to fetch the approximating curve

Return values

maxdist	report the maximum distance between the generated curve and the data points
avdist	report the average distance between the generated curve and the datapoints

Parameters

max_iter	specify the maximum number of iterations to use

Returns

a shared pointer to the generated SplineCurve, approximating the points as specified.

29.10.3.2 void Go::ApproxCurve::setC1Approx (double *fac*)

Approximate C1 continuity with a given impartance 0 <= fac < 1.

29.10.3.3 void Go::ApproxCurve::setEndPoints (const std::vector< Point > & *start_point,* const std::vector< Point > & *end_point*)

The user may decide upon end tangents of approximation curve. If these are not set, the final end tangents result from smoothing equation. The user may specifically decide the start and end points and tangents of the approximation curve (if these are not set, this information will result from the smoothing equation). This function lets the user specify the start and end points and tangents.

Parameters

start_point	this vector should contain one or two elements: the start point and optionally the start tangent of the curve.
end_point	this vector should contain one or two elements: the end point and optionally the end tangent of the curve.

29.10.3.4 void Go::ApproxCurve::setSmooth (double *w*)

Set smoothing weight 0 < w < 1

Parameters

w	the smoothing weight

29.10.3.5 void Go::ApproxCurve::unsetSmooth ( )

Unset smoothing weight (set it to zero)

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/ApproxCurve.h

29.11 Go::ApproxSurf Class Reference

`#include <ApproxSurf.h>`

Public Member Functions

- ApproxSurf (std::vector< shared_ptr< SplineCurve > > &crvs, const std::vector< double > &points, const std::vector< double > &parvals, double domain[ ], int dim, double aepsge, int constdir=0, bool repar=true)
- ApproxSurf (shared_ptr< SplineSurface > &srf, const std::vector< double > &points, const std::vector< double > &parvals, int dim, double aepsge, int constdir=0, bool approx_orig=false, bool close_belt=false, int nmb_stabil=0, bool repar=true)
- ~ApproxSurf ()

  Destructor.
- void setSmoothingWeight (double smooth)
- void setFixBoundary (bool fix_boundary)
- void edgeFix (int edge_fix[ ])
- void setNormalConditions (const std::vector< double > &points, const std::vector< double > &parvals, int nmb_stabil=0)
- void setC1Approx (double fac1, double fac2)

  Approximate C1 continuity with a given impartance 0 <= fac < 1.
- shared_ptr< SplineSurface > getApproxSurf (double &maxdist, double &avdist, int &nmb_out_eps, int max_iter=4, int keep_init=0)

  Fetch the approximating surface.
- int reParam ()
- bool getDoRefine ()
- void setDoRefine (bool refine)

Protected Member Functions

- ApproxSurf ()

  Default constructor.

29.11.1 Detailed Description

This class can generate a B-spline surface that approximates a set of points for a given accuracy.

Definition at line 71 of file ApproxSurf.h.

29.11.2 Constructor & Destructor Documentation

29.11.2.1 Go::ApproxSurf::ApproxSurf (std::vector< shared_ptr< SplineCurve > > & *crvs*, const std::vector< double > & *points*, const std::vector< double > & *parvals*, double *domain[ ]*, int *dim*, double *aepsge*, int *constdir* = 0, bool *repar* = true)

Constructor where the user specifies the boundary curves of the surface to generate, a parameter domain for the surface, the points to approximate and their parameter values, as well as the geometric tolerance. The two spline basises of the generated tensor product spline surface will be determined by unifying basises of opposing boundary curves.

Parameters

crvs	the boundary curves of the surface to be generated. This vector should contain exactly *four* curves, whose endpoints are connected so that they form a loop.
points	vector containing the coordinates of the points that this surface should interpolate. They are stored in "xyzxyz...-fashion".
parvals	vector containing the parameter values of the points given in the 'points' vector. They are stored in "uvuv...-fashion".
domain	pointer to an array of four doubles specifying the parametric domain for the surface to be generated. They should be stored as "u_min, u_max, v_min, v_max".
dim	spatial dimension of the points (usually 3).
aepsge	geometric tolerance to use internally
constdir	The points *will* be reparameterized internally according to their spatial position with respect to the surface that shall be generated. However, they might be reparameterized in both their u and v parameters, only in their u parameters or only in their v parameters. The user can specify this with 'constdir'. If 'constdir' is set to 0, the points will be reparameterized in both u and v. If 'constdir' is set to 1, they will only be reparameterized in the v parameter. If 'constdir' is set to 2, they will only be reparameterized in the u parameter.

29.11.2.2 Go::ApproxSurf::ApproxSurf (shared_ptr< SplineSurface > & *srf*, const std::vector< double > & *points*, const std::vector< double > & *parvals*, int *dim*, double *aepsge*, int *constdir* = 0, bool *approx_orig* = false, bool *close_belt* = false, int *nmb_stabil* = 0, bool *repar* = true)

Constructor where the user specifies a spline surface that should be modified, the points to approximate and their parameter values, as well as the geometric tolerance. The surface that is given as argument is not copied internally, only pointed to, so it *will* be modified.

Parameters

srf	the surface that will be modified to approximate the points. Assumed to contain k-regular knots.
points	vector containing the coordinates of the points that this surface should interpolate. They are stored in "xyzxyz...-fashion".
parvals	vector containing the parameter values of the points given in the 'points' vector. They are stored in "uvuv...-fashion".
dim	spatial dimension of the points (usually 3).
aepsge	geometric tolerance to use internally
constdir	The points *will* be reparameterized internally according to their spatial position with respect to the surface that shall be generated. However, they might be reparameterized in both their u and v parameters, only in their u parameters or only in their v parameters. The user can specify this with 'constdir'. If 'constdir' is set to 0, the points will be reparameterized in both u and v. If 'constdir' is set to 1, they will only be reparameterized in the v parameter. If 'constdir' is set to 2, they will only be reparameterized in the u parameter.
close_belt	Indicates if only coeffiecients close to the sampling points should be modified

29.11.2.3 Go::ApproxSurf::~ApproxSurf ( )

Destructor.

29.11.2.4 Go::ApproxSurf::ApproxSurf ( ) [protected]

Default constructor.

29.11.3 Member Function Documentation

29.11.3.1 void Go::ApproxSurf::edgeFix (int *edge_fix[ ]*) [inline]

Decide whether specific edges of the surface's boundary should be kept fixed (i.e. unchanged by approximation process), as well as a certain number of cross- derivatives across these curves.

Parameters

edge_fix	pointer to an array of four integers specifying to which extent each surface edge should be kept fixed during the approximation process. A value of 0 means that it will not be kept fixed, 1 means that its position will be kept fixed, 2 means that its position and cross-tangent will be kept fixed, etc. The integers are associated with the surface edges starting with the edge 'v=vmin' and moving counterclockwise.

Definition at line 181 of file ApproxSurf.h.

29.11.3.2 shared_ptr<SplineSurface> Go::ApproxSurf::getApproxSurf (double & *maxdist,* double & *avdist,* int & *nmb_out_eps,* int *max_iter* = 4, int *keep_init* = 0)

Fetch the approximating surface.

When everything else is set, this function can be used to run the approximation process and fetch the approximated surface.

Return values

maxdist	report the maximum distance between the approximated surface and the data points
avdist	report the average distance between the approximated surface and the datapoints

Parameters

nmb_out_eps	report the number of data points that were found to lie outside the geometric tolerance (as specified by the 'aepsge' argument to the ApproxSurf constructor.
max_iter	maximum number of iterations

Returns

a shared pointer to the generated SplineCurve, approximating the points as specified.

29.11.3.3 bool Go::ApproxSurf::getDoRefine ( ) [inline]

Check whether or not the spline space will be refined during the approximation iterations

Definition at line 232 of file ApproxSurf.h.

29.11.3.4 int Go::ApproxSurf::reParam ( )

Reparameterize the data points by a closest point match against the current surface.

29.11.3.5 void Go::ApproxSurf::setC1Approx (double *fac1*, double *fac2*)

Approximate C1 continuity with a given impartance 0 <= fac < 1.

29.11.3.6 void Go::ApproxSurf::setDoRefine (bool *refine*) [inline]

Set whether or not the spline space is to be refined during the approximation iterations

Definition at line 239 of file ApproxSurf.h.

29.11.3.7 void Go::ApproxSurf::setFixBoundary (bool *fix_boundary*) [inline]

Decide whether or not the total bondary of the surface should be kept fixed (i.e. unchanged by approximation process). Default is true. Cross derivatives will not be kept fixed. (If you want to keep cross derivatives fixed, use the edgeFix() member function instead).

Parameters

fix_boundary	if 'true' the boundary of the surface will not be modified, if 'false' it will be open to modification.

Definition at line 164 of file ApproxSurf.h.

29.11.3.8 void Go::ApproxSurf::setNormalConditions (const std::vector< double > & *points*, const std::vector< double > & *parvals*, int *nmb_stabil* = 0) [inline]

Forces the surface to approximate certain normals at certain parameter values.

Parameters

points	this vector contains the normals that should be approximated. They are stored in 'xyzxyz... fashion'.
parvals	this vector contains the parameter values of the normals that should be approximated. They are stored in 'uvuv... fashion'.

Definition at line 193 of file ApproxSurf.h.

29.11.3.9 void Go::ApproxSurf::setSmoothingWeight (double *smooth*) [inline]

Sets the smoothing weight to something other than the default (1e-9). The value should lie in the unit interval, typically close to 0.

Parameters

smooth	the new smoothing weight.

Definition at line 152 of file ApproxSurf.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/ApproxSurf.h

29.12 Go::Array< T, Dim > Class Template Reference

`#include <Array.h>`

Public Member Functions

- Array ()
  Default constructor, does not initialize elements.
- Array (T x)
- Array (T x, T y)
- Array (T x, T y, T z)
- Array (T x, T y, T z, T w)
- Array (const Array &v)
  Copy constructor.
- template<typename RandomAccessIterator >
  Array (RandomAccessIterator start)
- template<typename RandomAccessIterator >
  void setValue (RandomAccessIterator from)
- template<typename U >
  Array (const Array< U, Dim > &v)
- template<typename RandomAccessIterator >
  void setValueConvert (RandomAccessIterator from)
- Array & operator= (const Array &v)
  Assignment operator.
- void read (std::istream &is)
- void write (std::ostream &os) const
- const T & x () const
- T & x ()
- const T & y () const
- T & y ()
- const T & z () const
- T & z ()
- const T & operator[ ] (int i) const
  Read-only index access.
- T & operator[ ] (int i)
  Index access.
- const T * begin () const
  Get a read-only start iterator.
- T * begin ()
  Get a start iterator.
- const T * end () const
  Get a read-only end iterator.
- T * end ()
  Get a end iterator.
- int size () const
  Get the dimension of the Array.

- T length2 () const
- T length () const
- T lengthInf () const
- T dist2 (const Array &v) const
- T dist (const Array &v) const
- T distInf (const Array &v) const
- void normalize ()
- Array operator+ (const Array &v) const

  The sum of two vectors.
- bool operator== (const Array &v) const

  Add a vector to this vector.
- Array & operator+= (const Array &v)

  Add a vector to this vector.
- Array operator- (const Array &v) const

  The difference between two vectors.
- Array & operator-= (const Array &v)

  Subtract a vector from this vector.
- Array operator* (T d) const

  The product of a vector and a scalar.
- Array & operator*= (T d)

  Multiply this vector by a scalar.
- Array operator/ (double d) const

  A vector divided by a scalar.
- Array & operator/= (double d)

  Divide this vector with a scalar.
- Array operator- () const

  The negation of a vector.
- T operator* (const Array &v) const
- Array operator% (const Array &v) const
- Array cross (const Array &v) const
- T cosAngle (const Array &v) const
- T angle (const Array &v) const
- void zero ()

  Sets the vector to the zero vector.

29.12.1 Detailed Description

template<typename T, int Dim>
class Go::Array< T, Dim >

Compile-time sized array. Encapsulates an array with full value semantics, i.e. copying and assignment works as expected. The class also has some vector algebra functionality, such as scalar product, multiplication by scalars etc. In such contexts the objects are talked about as 'vectors' and not 'Arrays'.

Definition at line 61 of file Array.h.

29.12.2 Constructor & Destructor Documentation

29.12.2.1 template<typename T, int Dim> Go::Array< T, Dim >::Array ( ) [inline]

Default constructor, does not initialize elements.

Definition at line 68 of file Array.h.

29.12.2.2 template<typename T, int Dim> Go::Array< T, Dim >::Array (T *x*) [inline], [explicit]

Constructor filling the 'Dim'-tuple with the same value. (J.O. 080211) I don't think this one should interfere with other constructors, particularly since there doesn't seem to be support for an M==1 case already...?!

Definition at line 74 of file Array.h.

29.12.2.3 template<typename T, int Dim> Go::Array< T, Dim >::Array (T *x*, T *y*) [inline]

Constructor taking 2 arguments, only compiles if Array dimension argument is 2.

Definition at line 82 of file Array.h.

29.12.2.4 template<typename T, int Dim> Go::Array< T, Dim >::Array (T *x*, T *y*, T *z*) [inline]

Constructor taking 3 arguments, only compiles if Array dimension argument is 3.

Definition at line 90 of file Array.h.

29.12.2.5 template<typename T, int Dim> Go::Array< T, Dim >::Array (T *x*, T *y*, T *z*, T *w*) [inline]

Constructor taking 4 arguments, only compiles if Array dimension argument is 4.

Definition at line 99 of file Array.h.

29.12.2.6 template<typename T, int Dim> Go::Array< T, Dim >::Array (const Array< T, Dim > & *v*) [inline]

Copy constructor.

Definition at line 108 of file Array.h.

29.12.2.7 template<typename T, int Dim> template<typename RandomAccessIterator > Go::Array< T, Dim >::Array (RandomAccessIterator *start*) [inline], [explicit]

Constructor taking a pointer or other random access iterator and copying all elements into the Array.

Definition at line 116 of file Array.h.

29.12.2.8 template<typename T, int Dim> template<typename U > Go::Array< T, Dim >::Array (const Array< U, Dim > & *v*) [inline], [explicit]

Constructor that takes an Array of a compatible type.

Definition at line 132 of file Array.h.

29.12.3 Member Function Documentation

29.12.3.1 template<typename T, int Dim> T Go::Array< T, Dim >::angle (const Array< T, Dim > & *v*) const [inline]

The angle between this and another vector.

Definition at line 411 of file Array.h.

29.12.3.2 template<typename T, int Dim> const T* Go::Array< T, Dim >::begin ( ) const [inline]

Get a read-only start iterator.

Definition at line 198 of file Array.h.

29.12.3.3 template<typename T, int Dim> T* Go::Array< T, Dim >::begin ( ) [inline]

Get a start iterator.

Definition at line 200 of file Array.h.

29.12.3.4 template<typename T, int Dim> T Go::Array< T, Dim >::cosAngle (const Array< T, Dim > & *v*) const [inline]

The cosine of the angle between this and another vector.

Definition at line 399 of file Array.h.

29.12.3.5 template<typename T, int Dim> Array Go::Array< T, Dim >::cross (const Array< T, Dim > & *v*) const [inline]

The cross product of two vectors. Only compiles if dimension is 3.

Definition at line 392 of file Array.h.

29.12.3.6 template<typename T, int Dim> T Go::Array< T, Dim >::dist (const Array< T, Dim > & *v*) const [inline]

Get the euclidian length of the difference between this vector and another vector.

Definition at line 254 of file Array.h.

29.12.3.7 template<typename T, int Dim> T Go::Array< T, Dim >::dist2 (const Array< T, Dim > & *v*) const [inline]

Get the square of the euclidian length of the difference between this vector and another vector.

Definition at line 241 of file Array.h.

29.12.3.8 template<typename T, int Dim> T Go::Array< T, Dim >::distInf (const Array< T, Dim > & *v*) const [inline]

Get the infinity-norm (or max-norm) length of the difference between this vector and another vector.

Definition at line 265 of file Array.h.

29.12.3.9 template<typename T, int Dim> const T* Go::Array< T, Dim >::end ( ) const [inline]

Get a read-only end iterator.

Definition at line 202 of file Array.h.

29.12.3.10 template<typename T, int Dim> T* Go::Array< T, Dim >::end ( ) [inline]

Get a end iterator.

Definition at line 204 of file Array.h.

29.12.3.11 template<typename T, int Dim> T Go::Array< T, Dim >::length ( ) const [inline]

Get the euclidian length of the vector.

Definition at line 220 of file Array.h.

29.12.3.12 template<typename T, int Dim> T Go::Array< T, Dim >::length2 ( ) const [inline]

Get the square of the euclidian length of the vector.

Definition at line 211 of file Array.h.

29.12.3.13 template<typename T, int Dim> T Go::Array< T, Dim >::lengthInf ( ) const [inline]

Get the infinity-norm (or max-norm) length of the vector.

Definition at line 230 of file Array.h.

29.12.3.14 template<typename T, int Dim> void Go::Array< T, Dim >::normalize ( ) [inline]

Normalize this vector, i.e. divide every element by length().

Definition at line 278 of file Array.h.

29.12.3.15 template<typename T, int Dim> Array Go::Array< T, Dim >::operator% (const Array< T, Dim > & *v*) const [inline]

The cross product of two vectors. Only compiles if dimension is 3.

Definition at line 376 of file Array.h.

29.12.3.16 template<typename T, int Dim> Array Go::Array< T, Dim >::operator* (T *d*) const [inline]

The product of a vector and a scalar.

Definition at line 325 of file Array.h.

29.12.3.17 template<typename T, int Dim> T Go::Array< T, Dim >::operator* (const Array< T, Dim > & *v*) const [inline]

The scalar product (or inner product, or dot product) of two vectors.

Definition at line 366 of file Array.h.

29.12.3.18 template<typename T, int Dim> Array& Go::Array< T, Dim >::operator*= (T *d*) [inline]

Multiply this vector by a scalar.

Definition at line 333 of file Array.h.

29.12.3.19 template<typename T, int Dim> Array Go::Array< T, Dim >::operator+ (const Array< T, Dim > & *v*) const [inline]

The sum of two vectors.

Definition at line 284 of file Array.h.

29.12.3.20 template<typename T, int Dim> Array& Go::Array< T, Dim >::operator+= (const Array< T, Dim > & *v*) [inline]

Add a vector to this vector.

Definition at line 300 of file Array.h.

29.12.3.21 template<typename T, int Dim> Array Go::Array< T, Dim >::operator- (const Array< T, Dim > & *v*) const [inline]

The difference between two vectors.

Definition at line 308 of file Array.h.

29.12.3.22 template<typename T, int Dim> Array Go::Array< T, Dim >::operator- ( ) const [inline]

The negation of a vector.

Definition at line 356 of file Array.h.

29.12.3.23 template<typename T, int Dim> Array& Go::Array< T, Dim >::operator-= (const Array< T, Dim > & *v*) [inline]

Subtract a vector from this vector.

Definition at line 316 of file Array.h.

29.12.3.24 template<typename T, int Dim> Array Go::Array< T, Dim >::operator/ (double *d*) const [inline]

A vector divided by a scalar.

Definition at line 341 of file Array.h.

29.12.3.25 template<typename T, int Dim> Array& Go::Array< T, Dim >::operator/= (double *d*) [inline]

Divide this vector with a scalar.

Definition at line 348 of file Array.h.

29.12.3.26 template<typename T, int Dim> Array& Go::Array< T, Dim >::operator= (const Array< T, Dim > & *v*) [inline]

Assignment operator.

Definition at line 147 of file Array.h.

29.12.3.27 template<typename T, int Dim> bool Go::Array< T, Dim >::operator== (const Array< T, Dim > & *v*) const [inline]

Add a vector to this vector.

Definition at line 292 of file Array.h.

29.12.3.28 template<typename T, int Dim> const T& Go::Array< T, Dim >::operator[ ] (int *i*) const [inline]

Read-only index access.

Definition at line 193 of file Array.h.

29.12.3.29 template<typename T, int Dim> T& Go::Array< T, Dim >::operator[ ] (int *i*) [inline]

Index access.

Definition at line 195 of file Array.h.

29.12.3.30 template<typename T, int Dim> void Go::Array< T, Dim >::read (std::istream & *is*) [inline]

Reads an Array elementwise from a standard istream.

Definition at line 157 of file Array.h.

29.12.3.31 template<typename T, int Dim> template<typename RandomAccessIterator > void Go::Array< T, Dim >::setValue (RandomAccessIterator *from*) [inline]

Takes a pointer or other random access iterator and copies all elements into the Array.

Definition at line 124 of file Array.h.

29.12.3.32 template<typename T, int Dim> template<typename RandomAccessIterator > void Go::Array< T, Dim >::setValueConvert (RandomAccessIterator *from*) [inline]

Takes a pointer or other random access iterator with compatible value type and copies all elements into the Array.

Definition at line 141 of file Array.h.

29.12.3.33 template<typename T, int Dim> int Go::Array< T, Dim >::size ( ) const [inline]

Get the dimension of the Array.

Definition at line 207 of file Array.h.

29.12.3.34 template<typename T, int Dim> void Go::Array< T, Dim >::write (std::ostream & *os*) const [inline]

Writes an Array elementwise to a standard ostream. Precision is set to 16 by this function.

Definition at line 165 of file Array.h.

29.12.3.35 template<typename T, int Dim> const T& Go::Array< T, Dim >::x ( ) const [inline]

Access to first element. (Deprecated, kept for backward compatibility)

Definition at line 175 of file Array.h.

29.12.3.36 template<typename T, int Dim> T& Go::Array< T, Dim >::x ( ) [inline]

Access to first element. (Deprecated, kept for backward compatibility)

Definition at line 178 of file Array.h.

29.12.3.37 template<typename T, int Dim> const T& Go::Array< T, Dim >::y ( ) const [inline]

Access to first element. (Deprecated, kept for backward compatibility)

Definition at line 181 of file Array.h.

29.12.3.38 template<typename T, int Dim> T& Go::Array< T, Dim >::y ( ) [inline]

Access to first element. (Deprecated, kept for backward compatibility)

Definition at line 184 of file Array.h.

29.12.3.39 template<typename T, int Dim> const T& Go::Array< T, Dim >::z ( ) const [inline]

Access to first element. (Deprecated, kept for backward compatibility)

Definition at line 187 of file Array.h.

29.12.3.40 template<typename T, int Dim> T& Go::Array< T, Dim >::z ( ) [inline]

Access to first element. (Deprecated, kept for backward compatibility)

Definition at line 190 of file Array.h.

29.12.3.41 template<typename T, int Dim> void Go::Array< T, Dim >::zero ( ) [inline]

Sets the vector to the zero vector.

Definition at line 421 of file Array.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/Array.h

29.13 NEWMAT::ArrayLengthSpecifier Class Reference

`#include <newmat.h>`

Public Member Functions

- int Value () const
- ArrayLengthSpecifier (int l)

29.13.1 Detailed Description

Definition at line 216 of file newmat.h.

29.13.2 Constructor & Destructor Documentation

29.13.2.1 NEWMAT::ArrayLengthSpecifier::ArrayLengthSpecifier (int l) [inline]

Definition at line 221 of file newmat.h.

29.13.3 Member Function Documentation

29.13.3.1 int NEWMAT::ArrayLengthSpecifier::Value ( ) const [inline]

Definition at line 220 of file newmat.h.

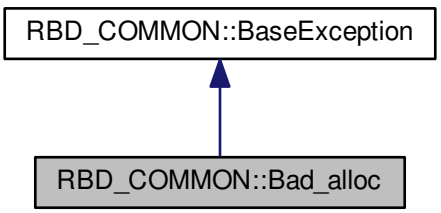
The documentation for this class was generated from the following file:

- newmat/include/newmat.h

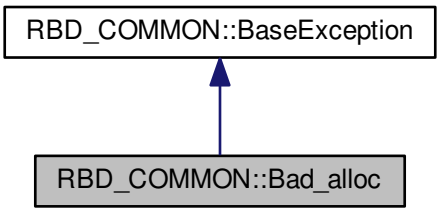
29.14 RBD_COMMON::Bad_alloc Class Reference

`#include <myexcept.h>`

Inheritance diagram for RBD_COMMON::Bad_alloc:



Collaboration diagram for RBD_COMMON::Bad_alloc:



- static unsigned long Select
- Bad_alloc (const char *a_what=0)

Additional Inherited Members

29.14.1 Detailed Description

Definition at line 427 of file myexcept.h.

29.14.2 Constructor & Destructor Documentation

29.14.2.1 Bad_alloc::Bad_alloc (const char * *a_what* = 0)

Definition at line 468 of file myexcept.cpp.

29.14.3 Member Data Documentation

29.14.3.1 unsigned long Bad_alloc::Select [static]

Definition at line 430 of file myexcept.h.

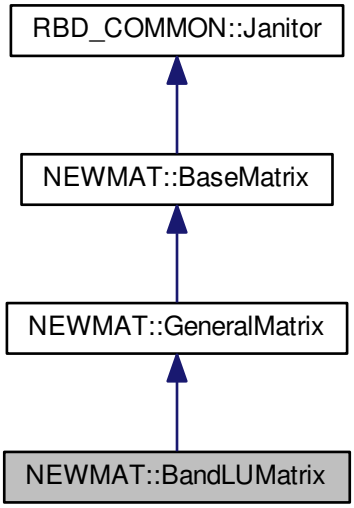
The documentation for this class was generated from the following files:

- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

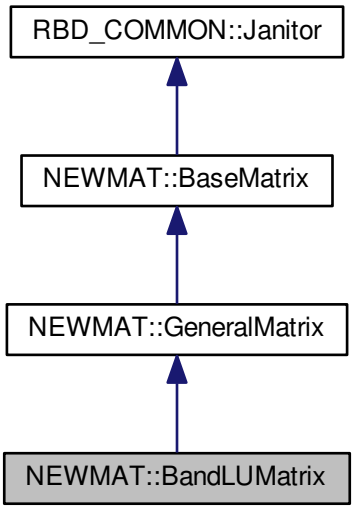
29.15 NEWMAT::BandLUMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::BandLUMatrix:



Collaboration diagram for NEWMAT::BandLUMatrix:



Public Member Functions

- BandLUMatrix (const BaseMatrix &)
- MatrixType Type () const
- void lubksb (Real *, int=0)
- ~BandLUMatrix ()
- GeneralMatrix * MakeSolver ()
- LogAndSign LogDeterminant () const
- void Solver (MatrixColX &, const MatrixColX &)
- void GetRow (MatrixRowCol &)
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &c)
- void operator= (const BaseMatrix &)
- void operator= (const BandLUMatrix &m)
- void CleanUp ()
- bool IsEqual (const GeneralMatrix &) const
- bool IsSingular () const

Additional Inherited Members

29.15.1 Detailed Description

Definition at line 1070 of file newmat.h.

29.15.2 Constructor & Destructor Documentation

29.15.2.1 BandLUMatrix::BandLUMatrix (const BaseMatrix & *m*)

Definition at line 225 of file bandmat.cpp.

29.15.2.2 BandLUMatrix::~BandLUMatrix ( )

Definition at line 243 of file bandmat.cpp.

29.15.3 Member Function Documentation

29.15.3.1 void BandLUMatrix::CleanUp ( ) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 844 of file newmat4.cpp.

29.15.3.2 void BandLUMatrix::GetCol (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 292 of file newmatex.cpp.

29.15.3.3 void NEWMAT::BandLUMatrix::GetCol (MatrixColX & *c*) [inline], [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 1090 of file newmat.h.

29.15.3.4 void BandLUMatrix::GetRow (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 290 of file newmatex.cpp.

29.15.3.5 bool BandLUMatrix::IsEqual (const GeneralMatrix & *A*) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 1028 of file newmat7.cpp.

29.15.3.6 bool NEWMAT::BandLUMatrix::IsSingular ( ) const [inline]

Definition at line 1095 of file newmat.h.

29.15.3.7 LogAndSign BandLUMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 254 of file bandmat.cpp.

29.15.3.8 void BandLUMatrix::lubksb (Real * *B,* int *mini* = 0)

Definition at line 313 of file bandmat.cpp.

29.15.3.9 GeneralMatrix* NEWMAT::BandLUMatrix::MakeSolver ( ) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 1085 of file newmat.h.

29.15.3.10 void BandLUMatrix::operator= (const BaseMatrix &)

Definition at line 294 of file newmatex.cpp.

29.15.3.11 void NEWMAT::BandLUMatrix::operator= (const BandLUMatrix & *m*) [inline]

Definition at line 1092 of file newmat.h.

29.15.3.12 void BandLUMatrix::Solver (MatrixColX & *mcout*, const MatrixColX & *mcin*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 340 of file bandmat.cpp.

29.15.3.13 MatrixType BandLUMatrix::Type ( ) const [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 251 of file bandmat.cpp.

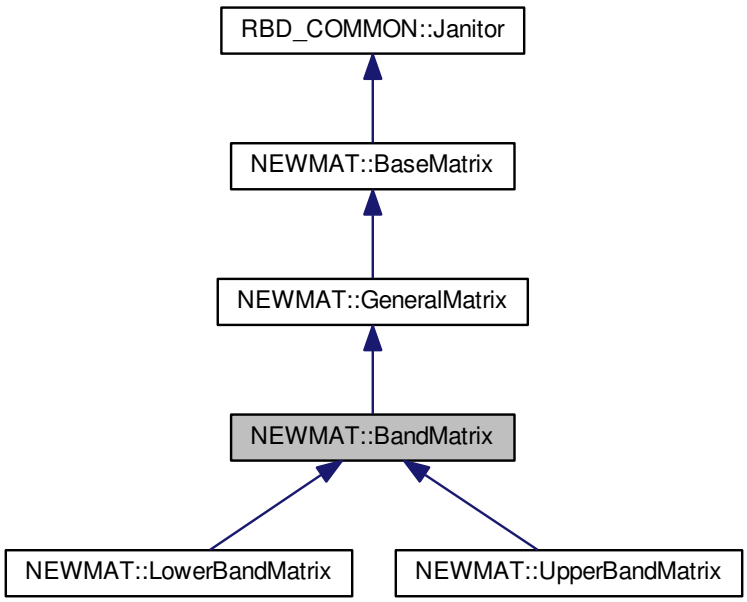
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/bandmat.cpp
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp
- newmat/src/newmatex.cpp

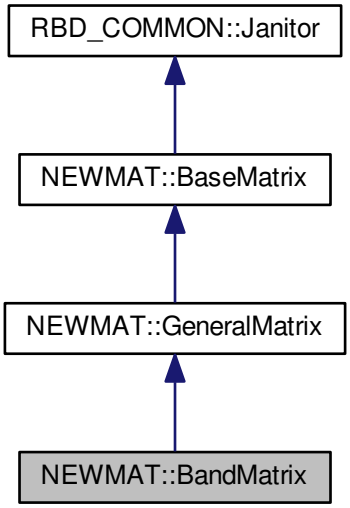
29.16 NEWMAT::BandMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::BandMatrix:



Collaboration diagram for NEWMAT::BandMatrix:



Public Member Functions

- BandMatrix ()
- ~BandMatrix ()
- BandMatrix (int n, int lb, int ub)
- BandMatrix (const BaseMatrix &)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- void operator= (const BandMatrix &m)
- MatrixType Type () const
- Real & operator() (int, int)
- Real & element (int, int)
- Real operator() (int, int) const
- Real element (int, int) const
- BandMatrix (const BandMatrix &gm)
- LogAndSign LogDeterminant () const
- GeneralMatrix * MakeSolver ()
- Real Trace () const
- Real SumSquare () const
- Real SumAbsoluteValue () const
- Real Sum () const
- Real MaximumAbsoluteValue () const
- Real MinimumAbsoluteValue () const
- Real Maximum () const
- Real Minimum () const
- void GetRow (MatrixRowCol &)
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &)
- void RestoreCol (MatrixRowCol &)

- void RestoreCol (MatrixColX &c)
- void NextRow (MatrixRowCol &)
- virtual void ReSize (int, int, int)
- void ReSize (const GeneralMatrix &A)
- bool SameStorageType (const GeneralMatrix &A) const
- void ReSizeForAdd (const GeneralMatrix &A, const GeneralMatrix &B)
- void ReSizeForSP (const GeneralMatrix &A, const GeneralMatrix &B)
- MatrixBandWidth BandWidth () const
- void SetParameters (const GeneralMatrix *)
- MatrixInput operator<< (Real)
- MatrixInput operator<< (int f)
- void operator<< (const Real *r)
- void operator<< (const BaseMatrix &X)

Public Attributes

- int lower
- int upper

Protected Member Functions

- void CornerClear () const
- short SimpleAddOK (const GeneralMatrix *gm)

Additional Inherited Members

29.16.1 Detailed Description

Definition at line 889 of file newmat.h.

29.16.2 Constructor & Destructor Documentation

29.16.2.1 NEWMAT::BandMatrix::BandMatrix ( ) [inline]

Definition at line 897 of file newmat.h.

29.16.2.2 NEWMAT::BandMatrix::~BandMatrix ( ) [inline]

Definition at line 898 of file newmat.h.

29.16.2.3 NEWMAT::BandMatrix::BandMatrix (int *n*, int *lb*, int *ub*) [inline]

Definition at line 899 of file newmat.h.

29.16.2.4 NEWMAT::BandMatrix::BandMatrix (const BaseMatrix &)

29.16.2.5 NEWMAT::BandMatrix::BandMatrix (const BandMatrix & *gm*) [inline]

Definition at line 914 of file newmat.h.

29.16.3 Member Function Documentation

29.16.3.1 MatrixBandWidth BandMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 412 of file newmat4.cpp.

29.16.3.2 void BandMatrix::CornerClear ( ) const [protected]

Definition at line 156 of file bandmat.cpp.

29.16.3.3 Real& NEWMAT::BandMatrix::element (int , int)

29.16.3.4 Real NEWMAT::BandMatrix::element (int , int) const

29.16.3.5 void NEWMAT::BandMatrix::GetCol (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.16.3.6 void NEWMAT::BandMatrix::GetCol (MatrixColX &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.16.3.7 void BandMatrix::GetRow (MatrixRowCol & *mrc*) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 566 of file newmat3.cpp.

29.16.3.8 LogAndSign BandMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::LowerBandMatrix, and NEWMAT::UpperBandMatrix.

Definition at line 397 of file bandmat.cpp.

29.16.3.9 GeneralMatrix * BandMatrix::MakeSolver ( ) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::LowerBandMatrix, and NEWMAT::UpperBandMatrix.

Definition at line 264 of file bandmat.cpp.

29.16.3.10 Real NEWMAT::BandMatrix::Maximum ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 927 of file newmat.h.

29.16.3.11 Real NEWMAT::BandMatrix::MaximumAbsoluteValue ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 923 of file newmat.h.

29.16.3.12 Real NEWMAT::BandMatrix::Minimum ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 928 of file newmat.h.

29.16.3.13 Real NEWMAT::BandMatrix::MinimumAbsoluteValue ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 925 of file newmat.h.

29.16.3.14 void BandMatrix::NextRow (MatrixRowCol & *mrc*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 578 of file newmat3.cpp.

29.16.3.15 Real& NEWMAT::BandMatrix::operator() (int , int)

29.16.3.16 Real NEWMAT::BandMatrix::operator() (int , int) const

29.16.3.17 MatrixInput BandMatrix::operator<< (Real)

Definition at line 528 of file newmat5.cpp.

29.16.3.18 MatrixInput NEWMAT::BandMatrix::operator<< (int *f*) [inline]

Definition at line 1785 of file newmat.h.

29.16.3.19 void NEWMAT::BandMatrix::operator<< (const Real * *r*)

29.16.3.20 void NEWMAT::BandMatrix::operator<< (const BaseMatrix & *X*) [inline]

Definition at line 947 of file newmat.h.

29.16.3.21 void NEWMAT::BandMatrix::operator= (const BaseMatrix &)

29.16.3.22 void NEWMAT::BandMatrix::operator= (Real *f*) [inline]

Definition at line 903 of file newmat.h.

29.16.3.23 void NEWMAT::BandMatrix::operator= (const BandMatrix & *m*) [inline]

Definition at line 904 of file newmat.h.

29.16.3.24 virtual void NEWMAT::BandMatrix::ReSize (int , int , int) [virtual]

Reimplemented in NEWMAT::LowerBandMatrix, and NEWMAT::UpperBandMatrix.

29.16.3.25 void BandMatrix::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::LowerBandMatrix, and NEWMAT::UpperBandMatrix.

Definition at line 102 of file bandmat.cpp.

29.16.3.26 void BandMatrix::ReSizeForAdd (const GeneralMatrix & *A*, const GeneralMatrix & *B*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 122 of file bandmat.cpp.

29.16.3.27 void BandMatrix::ReSizeForSP (const GeneralMatrix & *A*, const GeneralMatrix & *B*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 135 of file bandmat.cpp.

29.16.3.28 void NEWMAT::BandMatrix::RestoreCol (MatrixRowCol &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

29.16.3.29 void NEWMAT::BandMatrix::RestoreCol (MatrixColX & *c*) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 933 of file newmat.h.

29.16.3.30 bool BandMatrix::SameStorageType (const GeneralMatrix & *A*) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 115 of file bandmat.cpp.

29.16.3.31 void BandMatrix::SetParameters (const GeneralMatrix * *gmx*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 38 of file bandmat.cpp.

29.16.3.32 short BandMatrix::SimpleAddOK (const GeneralMatrix * *gm*) [protected], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 63 of file bandmat.cpp.

29.16.3.33 Real NEWMAT::BandMatrix::Sum ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 921 of file newmat.h.

29.16.3.34 Real NEWMAT::BandMatrix::SumAbsoluteValue ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 919 of file newmat.h.

29.16.3.35 Real NEWMAT::BandMatrix::SumSquare ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 918 of file newmat.h.

29.16.3.36 Real BandMatrix::Trace ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 580 of file newmat8.cpp.

29.16.3.37 MatrixType BandMatrix::Type ( ) const [virtual]

Implements NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::LowerBandMatrix, and NEWMAT::UpperBandMatrix.

Definition at line 393 of file newmat4.cpp.

29.16.4 Member Data Documentation

29.16.4.1 int NEWMAT::BandMatrix::lower

Definition at line 896 of file newmat.h.

29.16.4.2 int NEWMAT::BandMatrix::upper

Definition at line 896 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/bandmat.cpp
- newmat/src/newmat3.cpp
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp
- newmat/src/newmat8.cpp

29.17 Go::BaryCoordSystem< Dim > Class Template Reference

`#include <BaryCoordSystem.h>`

Public Member Functions

- BaryCoordSystem ()
  Empty default constructor.
- BaryCoordSystem (const Array< double, Dim > *corners)
- void setCorners (const Array< double, Dim > *corners)
  Set corners.
- const Array< double, Dim > & corner (int i) const
  Returns the corner points.
- template<class T >
  Array< T, Dim > baryToCart (const Array< T, Dim+1 > &bary_pt) const
- template<class T >
  Array< T, Dim+1 > cartToBary (const Array< T, Dim > &cart_pt) const
- void read (std::istream &is)
  Read from input stream.
- void write (std::ostream &os) const
  Write to output stream.

29.17.1 Detailed Description

template<int Dim>
class Go::BaryCoordSystem< Dim >

Encapsulates a barycentric coordinate system. It is designed to work in any dimension, but at the time of writing, only dimension 2 and 3 is supported by the functions in the included header "Volumes.h"

You specify the dimension with a template parameter:

```
BaryCoordSystem<2> bc(corner_pointer);
```

... or by using the supplied typedefs:

```
BaryCoordSystem2D bc(corner_pointer);
```

This file also contains the small function called triangle_area_signed().

Definition at line 68 of file BaryCoordSystem.h.

29.17.2 Constructor & Destructor Documentation

29.17.2.1 template<int Dim> Go::BaryCoordSystem< Dim >::BaryCoordSystem ( ) [inline]

Empty default constructor.

Definition at line 71 of file BaryCoordSystem.h.

29.17.2.2 template<int Dim> Go::BaryCoordSystem< Dim >::BaryCoordSystem (const Array< double, Dim > * *corners*) [inline]

Constructor. Takes an array of points that will become the corners of the coordinate simplex.

Definition at line 75 of file BaryCoordSystem.h.

29.17.3 Member Function Documentation

29.17.3.1 template<int Dim> template<class T > Array< T, Dim > Go::BaryCoordSystem< Dim >::baryToCart (const Array< T, Dim+1 > & *bary_pt*) const [inline]

Input is a barycentric point, output is the corresponding cartesian point.

Definition at line 135 of file BaryCoordSystem.h.

29.17.3.2 template<int Dim> template<class T > Array< T, Dim+1 > Go::BaryCoordSystem< Dim >::cartToBary (const Array< T, Dim > & *cart_pt*) const [inline]

Input is a cartesian point, output is the corresponding barycentric point.

Definition at line 148 of file BaryCoordSystem.h.

29.17.3.3 template<int Dim> const Array<double,Dim>& Go::BaryCoordSystem< Dim >::corner (int *i*) const [inline]

Returns the corner points.

Definition at line 89 of file BaryCoordSystem.h.

29.17.3.4 template<int Dim> void Go::BaryCoordSystem< Dim >::read (std::istream & *is*) [inline]

Read from input stream.

Definition at line 105 of file BaryCoordSystem.h.

29.17.3.5 template<int Dim> void Go::BaryCoordSystem< Dim >::setCorners (const Array< double, Dim > * *corners*) [inline]

Set corners.

Definition at line 82 of file BaryCoordSystem.h.

29.17.3.6 template<int Dim> void Go::BaryCoordSystem< Dim >::write (std::ostream & *os*) const [inline]

Write to output stream.

Definition at line 117 of file BaryCoordSystem.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/BaryCoordSystem.h

29.18 Go::BaryCoordSystemTriangle3D Class Reference

`#include <BaryCoordSystemTriangle3D.h>`

Public Member Functions

- BaryCoordSystemTriangle3D ()

  Empty default constructor.
- BaryCoordSystemTriangle3D (const Array< double, 3 > *corners)
- template<typename T >
  Array< T, 3 > baryToCart (const Array< T, 3 > &bary_pt) const
- template<typename T >
  Array< T, 3 > cartToBary (const Array< T, 3 > &cart_pt) const

29.18.1 Detailed Description

A barycentric coordinate system for a triangle (2-manifold) embedded in 3D. Note that this differs from what can be expressed using the BaryCoordSystem template in that for the latter, the dimension of the simplex and the dimension of the space is equal.

Definition at line 58 of file BaryCoordSystemTriangle3D.h.

29.18.2 Constructor & Destructor Documentation

29.18.2.1 Go::BaryCoordSystemTriangle3D::BaryCoordSystemTriangle3D ( ) [inline]

Empty default constructor.

Definition at line 61 of file BaryCoordSystemTriangle3D.h.

29.18.2.2 Go::BaryCoordSystemTriangle3D::BaryCoordSystemTriangle3D (const Array< double, 3 > * *corners*) [inline]

Constructor. Takes an array of points that will become the corners of the coordinate simplex.

Definition at line 65 of file BaryCoordSystemTriangle3D.h.

29.18.3 Member Function Documentation

29.18.3.1 template<typename T > Array<T, 3> Go::BaryCoordSystemTriangle3D::baryToCart (const Array< T, 3 > & *bary_pt*) const [inline]

Input is a barycentric point, output is the corresponding cartesian point.

Definition at line 76 of file BaryCoordSystemTriangle3D.h.

29.18.3.2 template<typename T > Array<T, 3> Go::BaryCoordSystemTriangle3D::cartToBary (const Array< T, 3 > & *cart_pt*) const [inline]

Input is a cartesian point, output is the corresponding barycentric point.

Definition at line 90 of file BaryCoordSystemTriangle3D.h.

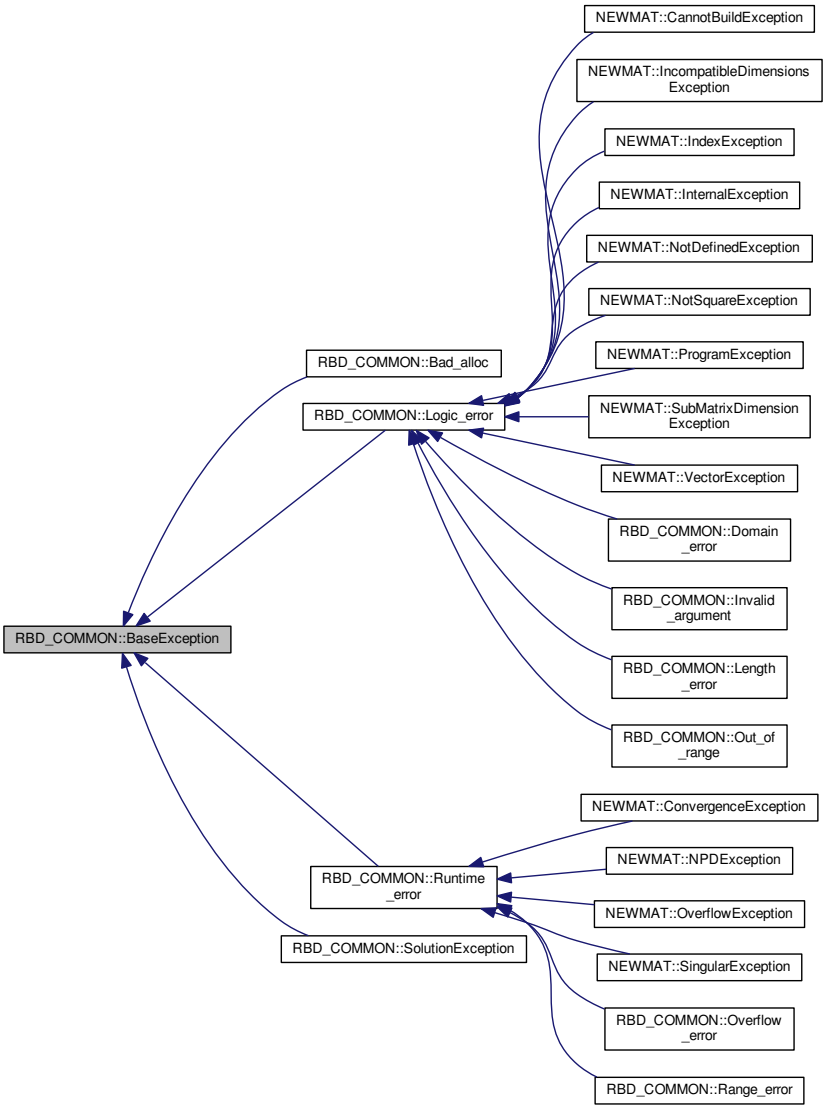
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/BaryCoordSystemTriangle3D.h

29.19 RBD_COMMON::BaseException Class Reference

`#include <myexcept.h>`

Inheritance diagram for RBD_COMMON::BaseException:



Static Public Member Functions

- static const char ∗ what ()

- static char ∗ what_error
- static int SoFar
- static int LastOne
- static unsigned long Select
- static void AddMessage (const char ∗a_what)
- static void AddInt (int value)
- BaseException (const char ∗a_what=0)

29.19.1 Detailed Description

Definition at line 81 of file myexcept.h.

29.19.2 Constructor & Destructor Documentation

29.19.2.1 BaseException::BaseException (const char * *a_what* = 0)

Definition at line 55 of file myexcept.cpp.

29.19.3 Member Function Documentation

29.19.3.1 void BaseException::AddInt (int *value*) [static]

Definition at line 88 of file myexcept.cpp.

29.19.3.2 void BaseException::AddMessage (const char * *a_what*) [static]

Definition at line 73 of file myexcept.cpp.

29.19.3.3 static const char* RBD_COMMON::BaseException::what ( ) [inline], [static]

Definition at line 93 of file myexcept.h.

29.19.4 Member Data Documentation

29.19.4.1 int BaseException::LastOne [static], [protected]

Definition at line 86 of file myexcept.h.

29.19.4.2 unsigned long BaseException::Select [static]

Definition at line 91 of file myexcept.h.

29.19.4.3 int BaseException::SoFar [static], [protected]

Definition at line 85 of file myexcept.h.

29.19.4.4 char * BaseException::what_error [static],[protected]

Definition at line 84 of file myexcept.h.

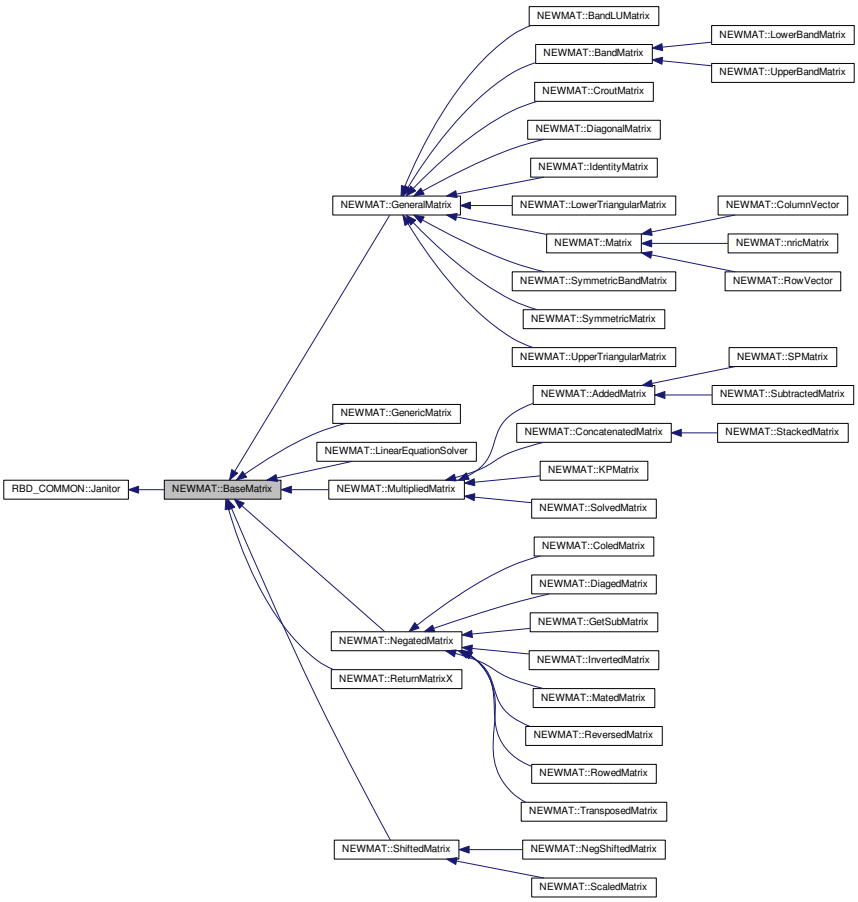
The documentation for this class was generated from the following files:

- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

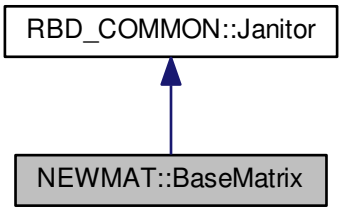
29.20 NEWMAT::BaseMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::BaseMatrix:



Collaboration diagram for NEWMAT::BaseMatrix:



Public Member Functions

- virtual GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)=0
- AddedMatrix operator+ (const BaseMatrix &) const
- MultipliedMatrix operator* (const BaseMatrix &) const
- SubtractedMatrix operator- (const BaseMatrix &) const
- ConcatenatedMatrix operator| (const BaseMatrix &) const
- StackedMatrix operator& (const BaseMatrix &) const
- ShiftedMatrix operator+ (Real) const
- ScaledMatrix operator* (Real) const
- ScaledMatrix operator/ (Real) const
- ShiftedMatrix operator- (Real) const
- TransposedMatrix t () const
- NegatedMatrix operator- () const
- ReversedMatrix Reverse () const
- InvertedMatrix i () const
- RowedMatrix AsRow () const
- ColedMatrix AsColumn () const
- DiagedMatrix AsDiagonal () const
- MatedMatrix AsMatrix (int, int) const
- GetSubMatrix SubMatrix (int, int, int, int) const
- GetSubMatrix SymSubMatrix (int, int) const
- GetSubMatrix Row (int) const
- GetSubMatrix Rows (int, int) const
- GetSubMatrix Column (int) const
- GetSubMatrix Columns (int, int) const
- Real AsScalar () const
- virtual LogAndSign LogDeterminant () const
- Real Determinant () const
- virtual Real SumSquare () const
- Real NormFrobenius () const
- virtual Real SumAbsoluteValue () const
- virtual Real Sum () const
- virtual Real MaximumAbsoluteValue () const
- virtual Real MaximumAbsoluteValue1 (int &i) const
- virtual Real MaximumAbsoluteValue2 (int &i, int &j) const
- virtual Real MinimumAbsoluteValue () const

- virtual Real MinimumAbsoluteValue1 (int &i) const
- virtual Real MinimumAbsoluteValue2 (int &i, int &j) const
- virtual Real Maximum () const
- virtual Real Maximum1 (int &i) const
- virtual Real Maximum2 (int &i, int &j) const
- virtual Real Minimum () const
- virtual Real Minimum1 (int &i) const
- virtual Real Minimum2 (int &i, int &j) const
- virtual Real Trace () const
- Real Norm1 () const
- Real NormInfinity () const
- virtual MatrixBandWidth BandWidth () const
- virtual void CleanUp ()
- void IEQND () const

Protected Member Functions

- virtual int search (const BaseMatrix *) const =0

Friends

- class GeneralMatrix
- class Matrix
- class nricMatrix
- class RowVector
- class ColumnVector
- class SymmetricMatrix
- class UpperTriangularMatrix
- class LowerTriangularMatrix
- class DiagonalMatrix
- class CroutMatrix
- class BandMatrix
- class LowerBandMatrix
- class UpperBandMatrix
- class SymmetricBandMatrix
- class AddedMatrix
- class MultipliedMatrix
- class SubtractedMatrix
- class SPMatrix
- class KPMatrix
- class ConcatenatedMatrix
- class StackedMatrix
- class SolvedMatrix
- class ShiftedMatrix
- class NegShiftedMatrix
- class ScaledMatrix
- class TransposedMatrix
- class ReversedMatrix
- class NegatedMatrix
- class InvertedMatrix
- class RowedMatrix
- class ColedMatrix
- class DiagedMatrix
- class MatedMatrix
- class GetSubMatrix
- class ReturnMatrixX
- class LinearEquationSolver
- class GenericMatrix

29.20.1 Detailed Description

Definition at line 275 of file newmat.h.

29.20.2 Member Function Documentation

29.20.2.1 ColedMatrix BaseMatrix::AsColumn ( ) const

Definition at line 500 of file newmat6.cpp.

29.20.2.2 DiagedMatrix BaseMatrix::AsDiagonal ( ) const

Definition at line 503 of file newmat6.cpp.

29.20.2.3 MatedMatrix BaseMatrix::AsMatrix (int *nrx,* int *ncx*) const

Definition at line 506 of file newmat6.cpp.

29.20.2.4 RowedMatrix BaseMatrix::AsRow ( ) const

Definition at line 497 of file newmat6.cpp.

29.20.2.5 Real BaseMatrix::AsScalar ( ) const

Definition at line 254 of file newmat6.cpp.

29.20.2.6 MatrixBandWidth BaseMatrix::BandWidth ( ) const [virtual]

Reimplemented in NEWMAT::GetSubMatrix, NEWMAT::ReturnMatrixX, NEWMAT::MatedMatrix, NEWMAT::DiagedMatrix, NEWMAT::ColedMatrix, NEWMAT::RowedMatrix, NEWMAT::InvertedMatrix, NEWMAT::TransposedMatrix, NEWMAT::NegatedMatrix, NEWMAT::ScaledMatrix, NEWMAT::SolvedMatrix, NEWMAT::ConcatenatedMatrix, NEWMAT::KPMatrix, NEWMAT::SPMatrix, NEWMAT::AddedMatrix, NEWMAT::MultipliedMatrix, NEWMAT::GenericMatrix, NEWMAT::IdentityMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, and NEWMAT::UpperTriangularMatrix.

Definition at line 402 of file newmat4.cpp.

29.20.2.7 virtual void NEWMAT::BaseMatrix::CleanUp ( ) [inline], [virtual]

Reimplemented from RBD_COMMON::Janitor.

Reimplemented in NEWMAT::LinearEquationSolver, NEWMAT::GenericMatrix, NEWMAT::BandLUMatrix, NEWMAT::CroutMatrix, NEWMAT::ColumnVector, NEWMAT::RowVector, NEWMAT::nricMatrix, and NEWMAT::GeneralMatrix.

Definition at line 364 of file newmat.h.

29.20.2.8 GetSubMatrix BaseMatrix::Column (int *first_col*) const

Definition at line 108 of file submat.cpp.

29.20.2.9 GetSubMatrix BaseMatrix::Columns (int *first_col*, int *last_col*) const

Definition at line 127 of file submat.cpp.

29.20.2.10 Real BaseMatrix::Determinant ( ) const

Definition at line 709 of file newmat8.cpp.

29.20.2.11 virtual GeneralMatrix* NEWMAT::BaseMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [pure virtual]

Implemented in NEWMAT::LinearEquationSolver, NEWMAT::GetSubMatrix, NEWMAT::ReturnMatrixX, NEWMAT::MatedMatrix, NEWMAT::DiagedMatrix, NEWMAT::ColedMatrix, NEWMAT::RowedMatrix, NEWMAT::InvertedMatrix, NEWMAT::ReversedMatrix, NEWMAT::TransposedMatrix, NEWMAT::NegatedMatrix, NEWMAT::ScaledMatrix, NEWMAT::NegShiftedMatrix, NEWMAT::ShiftedMatrix, NEWMAT::SubtractedMatrix, NEWMAT::SolvedMatrix, NEWMAT::StackedMatrix, NEWMAT::ConcatenatedMatrix, NEWMAT::KPMatrix, NEWMAT::SPMatrix, NEWMAT::AddedMatrix, NEWMAT::MultipliedMatrix, NEWMAT::GenericMatrix, and NEWMAT::GeneralMatrix.

29.20.2.12 InvertedMatrix BaseMatrix::i ( ) const

Definition at line 493 of file newmat6.cpp.

29.20.2.13 void BaseMatrix::IEQND ( ) const

Definition at line 296 of file newmatex.cpp.

29.20.2.14 LogAndSign BaseMatrix::LogDeterminant ( ) const [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::BandLUMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::LowerBandMatrix, NEWMAT::UpperBandMatrix, NEWMAT::BandMatrix, NEWMAT::CroutMatrix, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, and NEWMAT::GeneralMatrix.

Definition at line 680 of file newmat8.cpp.

29.20.2.15 Real BaseMatrix::Maximum ( ) const [virtual]

Reimplemented in NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, and NEWMAT::GeneralMatrix.

Definition at line 488 of file newmat8.cpp.

29.20.2.16 Real BaseMatrix::Maximum1 (int & *i*) const [virtual]

Reimplemented in NEWMAT::GeneralMatrix.

Definition at line 494 of file newmat8.cpp.

29.20.2.17 Real BaseMatrix::Maximum2 (int & *i*, int & *j*) const [virtual]

Reimplemented in NEWMAT::Matrix, and NEWMAT::GeneralMatrix.

Definition at line 500 of file newmat8.cpp.

29.20.2.18 Real BaseMatrix::MaximumAbsoluteValue ( ) const [virtual]

Reimplemented in NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, and NEWMAT::GeneralMatrix.

Definition at line 452 of file newmat8.cpp.

29.20.2.19 Real BaseMatrix::MaximumAbsoluteValue1 (int & *i*) const [virtual]

Reimplemented in NEWMAT::GeneralMatrix.

Definition at line 458 of file newmat8.cpp.

29.20.2.20 Real BaseMatrix::MaximumAbsoluteValue2 (int & *i*, int & *j*) const [virtual]

Reimplemented in NEWMAT::Matrix, and NEWMAT::GeneralMatrix.

Definition at line 464 of file newmat8.cpp.

29.20.2.21 Real BaseMatrix::Minimum ( ) const [virtual]

Reimplemented in NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, and NEWMAT::GeneralMatrix.

Definition at line 506 of file newmat8.cpp.

29.20.2.22 Real BaseMatrix::Minimum1 (int & *i*) const [virtual]

Reimplemented in NEWMAT::GeneralMatrix.

Definition at line 512 of file newmat8.cpp.

29.20.2.23 Real BaseMatrix::Minimum2 (int & *i*, int & *j*) const [virtual]

Reimplemented in NEWMAT::Matrix, and NEWMAT::GeneralMatrix.

Definition at line 518 of file newmat8.cpp.

29.20.2.24 Real BaseMatrix::MinimumAbsoluteValue ( ) const [virtual]

Reimplemented in NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, and NEWMAT::GeneralMatrix.

Definition at line 470 of file newmat8.cpp.

29.20.2.25 Real BaseMatrix::MinimumAbsoluteValue1 (int & *i*) const [virtual]

Reimplemented in NEWMAT::GeneralMatrix.

Definition at line 476 of file newmat8.cpp.

29.20.2.26 Real BaseMatrix::MinimumAbsoluteValue2 (int & *i*, int & *j*) const [virtual]

Reimplemented in NEWMAT::Matrix, and NEWMAT::GeneralMatrix.

Definition at line 482 of file newmat8.cpp.

29.20.2.27 Real BaseMatrix::Norm1 ( ) const

Definition at line 770 of file newmat7.cpp.

29.20.2.28 Real BaseMatrix::NormFrobenius ( ) const

Definition at line 437 of file newmat8.cpp.

29.20.2.29 Real BaseMatrix::NormInfinity ( ) const

Definition at line 782 of file newmat7.cpp.

29.20.2.30 StackedMatrix BaseMatrix::operator& (const BaseMatrix & *bm*) const

Definition at line 460 of file newmat6.cpp.

29.20.2.31 MultipliedMatrix NEWMAT::BaseMatrix::operator∗ (const BaseMatrix &) const

29.20.2.32 ScaledMatrix NEWMAT::BaseMatrix::operator∗ (Real) const

29.20.2.33 AddedMatrix NEWMAT::BaseMatrix::operator+ (const BaseMatrix &) const

29.20.2.34 ShiftedMatrix NEWMAT::BaseMatrix::operator+ (Real) const

29.20.2.35 SubtractedMatrix NEWMAT::BaseMatrix::operator- (const BaseMatrix &) const

29.20.2.36 ShiftedMatrix NEWMAT::BaseMatrix::operator- (Real) const

29.20.2.37 NegatedMatrix NEWMAT::BaseMatrix::operator- ( ) const

29.20.2.38 ScaledMatrix BaseMatrix::operator/ (Real *f*) const

Definition at line 478 of file newmat6.cpp.

29.20.2.39 ConcatenatedMatrix BaseMatrix::operator| (const BaseMatrix & *bm*) const

Definition at line 457 of file newmat6.cpp.

29.20.2.40 ReversedMatrix BaseMatrix::Reverse ( ) const

Definition at line 490 of file newmat6.cpp.

29.20.2.41 GetSubMatrix BaseMatrix::Row (int *first_row*) const

Definition at line 69 of file submat.cpp.

29.20.2.42 GetSubMatrix BaseMatrix::Rows (int *first_row,* int *last_row*) const

Definition at line 88 of file submat.cpp.

29.20.2.43 virtual int NEWMAT::BaseMatrix::search (const BaseMatrix *) const [protected], [pure virtual]

Implemented in NEWMAT::NegatedMatrix, NEWMAT::ShiftedMatrix, NEWMAT::MultipliedMatrix, and NEWMAT::GeneralMatrix.

29.20.2.44 GetSubMatrix BaseMatrix::SubMatrix (int *first_row,* int *last_row,* int *first_col,* int *last_col*) const

Definition at line 27 of file submat.cpp.

29.20.2.45 Real BaseMatrix::Sum ( ) const [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, NEWMAT::SymmetricMatrix, and NEWMAT::GeneralMatrix.

Definition at line 446 of file newmat8.cpp.

29.20.2.46 Real BaseMatrix::SumAbsoluteValue ( ) const [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, NEWMAT::SymmetricMatrix, and NEWMAT::GeneralMatrix.

Definition at line 440 of file newmat8.cpp.

29.20.2.47 Real BaseMatrix::SumSquare ( ) const [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, NEWMAT::SymmetricMatrix, and NEWMAT::GeneralMatrix.

Definition at line 431 of file newmat8.cpp.

29.20.2.48 GetSubMatrix BaseMatrix::SymSubMatrix (int *first_row,* int *last_row*) const

Definition at line 49 of file submat.cpp.

29.20.2.49 TransposedMatrix BaseMatrix::t ( ) const

Definition at line 484 of file newmat6.cpp.

29.20.2.50 Real BaseMatrix::Trace ( ) const [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, NEWMAT::SymmetricMatrix, and NEWMAT::Matrix.

Definition at line 607 of file newmat8.cpp.

29.20.3 Friends And Related Function Documentation

29.20.3.1 friend class AddedMatrix [friend]

Definition at line 386 of file newmat.h.

29.20.3.2 friend class BandMatrix [friend]

Definition at line 382 of file newmat.h.

29.20.3.3 friend class ColedMatrix [friend]

Definition at line 402 of file newmat.h.

29.20.3.4 friend class ColumnVector [friend]

Definition at line 376 of file newmat.h.

29.20.3.5 friend class ConcatenatedMatrix [friend]

Definition at line 391 of file newmat.h.

29.20.3.6 friend class CroutMatrix [friend]

Definition at line 381 of file newmat.h.

29.20.3.7 friend class DiagedMatrix [friend]

Definition at line 403 of file newmat.h.

29.20.3.8 friend class DiagonalMatrix [friend]

Definition at line 380 of file newmat.h.

29.20.3.9 friend class GeneralMatrix [friend]

Definition at line 372 of file newmat.h.

29.20.3.10 friend class GenericMatrix [friend]

Definition at line 408 of file newmat.h.

29.20.3.11 friend class GetSubMatrix [friend]

Definition at line 405 of file newmat.h.

29.20.3.12 friend class InvertedMatrix [friend]

Definition at line 400 of file newmat.h.

29.20.3.13 friend class KPMatrix [friend]

Definition at line 390 of file newmat.h.

29.20.3.14 friend class LinearEquationSolver [friend]

Definition at line 407 of file newmat.h.

29.20.3.15 friend class LowerBandMatrix [friend]

Definition at line 383 of file newmat.h.

29.20.3.16 friend class LowerTriangularMatrix [friend]

Definition at line 379 of file newmat.h.

29.20.3.17 friend class MatedMatrix [friend]

Definition at line 404 of file newmat.h.

29.20.3.18 friend class Matrix [friend]

Definition at line 373 of file newmat.h.

29.20.3.19 friend class MultipliedMatrix [friend]

Definition at line 387 of file newmat.h.

29.20.3.20 friend class NegatedMatrix [friend]

Definition at line 399 of file newmat.h.

29.20.3.21 friend class NegShiftedMatrix [friend]

Definition at line 395 of file newmat.h.

29.20.3.22 friend class nricMatrix [friend]

Definition at line 374 of file newmat.h.

29.20.3.23 friend class ReturnMatrixX [friend]

Definition at line 406 of file newmat.h.

29.20.3.24 friend class ReversedMatrix [friend]

Definition at line 398 of file newmat.h.

29.20.3.25 friend class RowedMatrix [friend]

Definition at line 401 of file newmat.h.

29.20.3.26 friend class RowVector [friend]

Definition at line 375 of file newmat.h.

29.20.3.27 friend class ScaledMatrix [friend]

Definition at line 396 of file newmat.h.

29.20.3.28 friend class ShiftedMatrix [friend]

Definition at line 394 of file newmat.h.

29.20.3.29 friend class SolvedMatrix [friend]

Definition at line 393 of file newmat.h.

29.20.3.30 friend class SPMatrix [friend]

Definition at line 389 of file newmat.h.

29.20.3.31 friend class StackedMatrix [friend]

Definition at line 392 of file newmat.h.

29.20.3.32 friend class SubtractedMatrix [friend]

Definition at line 388 of file newmat.h.

29.20.3.33 friend class SymmetricBandMatrix [friend]

Definition at line 385 of file newmat.h.

29.20.3.34 friend class SymmetricMatrix [friend]

Definition at line 377 of file newmat.h.

29.20.3.35 friend class TransposedMatrix [friend]

Definition at line 397 of file newmat.h.

29.20.3.36 friend class UpperBandMatrix [friend]

Definition at line 384 of file newmat.h.

29.20.3.37 friend class UpperTriangularMatrix [friend]

Definition at line 378 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat6.cpp
- newmat/src/newmat7.cpp
- newmat/src/newmat8.cpp
- newmat/src/newmatex.cpp
- newmat/src/submat.cpp

29.21 Go::BaseSurface Class Reference

`#include <EvalOffsetSurface.h>`

29.21.1 Detailed Description

Definition at line 54 of file EvalOffsetSurface.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/EvalOffsetSurface.h

29.22 Go::BasisDerivs Struct Reference

`#include <SplineVolume.h>`

Public Member Functions

- void prepareDerivs (double u, double v, double w, int idx_u, int idx_v, int idx_w, int size)
  Constructor.

Public Attributes

- double param [3]
  Parameter tripple in which the basis functions are evaluated.
- int left_idx [3]
- std::vector< double > basisValues
  The value of all basis functions, size equal to (degree_u+1)∗(degree_v+1)∗(degree_w+1)
- std::vector< double > basisDerivs_u
  the derivative of all basis functions in u direction, same size as previous
- std::vector< double > basisDerivs_v
  the derivative of all basis functions in v direction, same size as previous
- std::vector< double > basisDerivs_w
  the derivative of all basis functions in w direction, same size as previous

29.22.1 Detailed Description

Structure for storage of results of grid evaluation of the basis function of s spline volume. Evaluation of position and first derivatives in one parameter value

Definition at line 87 of file SplineVolume.h.

29.22.2 Member Function Documentation

29.22.2.1 void Go::BasisDerivs::prepareDerivs (double *u,* double *v,* double *w,* int *idx_u,* int *idx_v,* int *idx_w,* int *size*) [inline]

Constructor.

Definition at line 105 of file SplineVolume.h.

29.22.3 Member Data Documentation

29.22.3.1 std::vector< double > Go::BasisDerivs::basisDerivs_u

the derivative of all basis functions in u direction, same size as previous

Definition at line 98 of file SplineVolume.h.

29.22.3.2 std::vector< double > Go::BasisDerivs::basisDerivs_v

the derivative of all basis functions in v direction, same size as previous

Definition at line 100 of file SplineVolume.h.

29.22.3.3 std::vector< double > Go::BasisDerivs::basisDerivs_w

the derivative of all basis functions in w direction, same size as previous

Definition at line 102 of file SplineVolume.h.

29.22.3.4 std::vector< double > Go::BasisDerivs::basisValues

The value of all basis functions, size equal to (degree_u+1)∗(degree_v+1)∗(degree_w+1)

Definition at line 96 of file SplineVolume.h.

29.22.3.5 int Go::BasisDerivs::left_idx[3]

Index of the knot interval where the parameter value is situated for all parameter directions. The indices of the non-zero basis functions are left_idx[i]-order[i]+1, ..., left_idx[i] for i=0,1,2

Definition at line 94 of file SplineVolume.h.

29.22.3.6 double Go::BasisDerivs::param[3]

Parameter tripple in which the basis functions are evaluated.

Definition at line 90 of file SplineVolume.h.

The documentation for this struct was generated from the following file:

- trivariate/include/GoTools/trivariate/SplineVolume.h

29.23 Go::BasisDerivs2 Struct Reference

`#include <SplineVolume.h>`

Public Member Functions

- void prepareDerivs (double u, double v, double w, int idx_u, int idx_v, int idx_w, int size)

  Constructor.

Public Attributes

- double param [3]

  Parameter tripple in which the basis functions are evaluated.
- int left_idx [3]
- std::vector< double > basisValues

  The value of all basis functions, size equal to (degree_u+1)∗(degree_v+1)∗(degree_w+1)
- std::vector< double > basisDerivs_u

  the derivative of all basis functions in u direction, same size as previous
- std::vector< double > basisDerivs_v

  the derivative of all basis functions in v direction, same size as previous
- std::vector< double > basisDerivs_w

  the derivative of all basis functions in w direction, same size as previous
- std::vector< double > basisDerivs_uu

  the second derivative of all basis functions twice in u direction, same size as previous
- std::vector< double > basisDerivs_uv

  the second derivative of all basis functions in u and v direction, same size as previous
- std::vector< double > basisDerivs_uw

  the second derivative of all basis functions in u and w direction, same size as previous
- std::vector< double > basisDerivs_vv

  the second derivative of all basis functions twice in v direction, same size as previous
- std::vector< double > basisDerivs_vw

  the second derivative of all basis functions in v and w direction, same size as previous
- std::vector< double > basisDerivs_ww

  the second derivative of all basis functions twice in w direction, same size as previous

29.23.1 Detailed Description

Structure for storage of results of grid evaluation of the basis function of a spline volume. Evaluation of position, first and second derivatives in one parameter value

Definition at line 124 of file SplineVolume.h.

29.23.2 Member Function Documentation

29.23.2.1 void Go::BasisDerivs2::prepareDerivs (double *u,* double *v,* double *w,* int *idx_u,* int *idx_v,* int *idx_w,* int *size*) [inline]

Constructor.

Definition at line 156 of file SplineVolume.h.

29.23.3 Member Data Documentation

29.23.3.1 std::vector< double > Go::BasisDerivs2::basisDerivs_u

the derivative of all basis functions in u direction, same size as previous

Definition at line 136 of file SplineVolume.h.

29.23.3.2 std::vector< double > Go::BasisDerivs2::basisDerivs_uu

the second derivative of all basis functions twice in u direction, same size as previous

Definition at line 143 of file SplineVolume.h.

29.23.3.3 std::vector< double > Go::BasisDerivs2::basisDerivs_uv

the second derivative of all basis functions in u and v direction, same size as previous

Definition at line 145 of file SplineVolume.h.

29.23.3.4 std::vector< double > Go::BasisDerivs2::basisDerivs_uw

the second derivative of all basis functions in u and w direction, same size as previous

Definition at line 147 of file SplineVolume.h.

29.23.3.5 std::vector< double > Go::BasisDerivs2::basisDerivs_v

the derivative of all basis functions in v direction, same size as previous

Definition at line 138 of file SplineVolume.h.

29.23.3.6 std::vector< double > Go::BasisDerivs2::basisDerivs_vv

the second derivative of all basis functions twice in v direction, same size as previous

Definition at line 149 of file SplineVolume.h.

29.23.3.7 std::vector< double > Go::BasisDerivs2::basisDerivs_vw

the second derivative of all basis functions in v and w direction, same size as previous

Definition at line 151 of file SplineVolume.h.

29.23.3.8 std::vector< double > Go::BasisDerivs2::basisDerivs_w

the derivative of all basis functions in w direction, same size as previous

Definition at line 140 of file SplineVolume.h.

29.23.3.9 std::vector< double > Go::BasisDerivs2::basisDerivs_ww

the second derivative of all basis functions twice in w direction, same size as previous

Definition at line 153 of file SplineVolume.h.

29.23.3.10 std::vector< double > Go::BasisDerivs2::basisValues

The value of all basis functions, size equal to (degree_u+1)∗(degree_v+1)∗(degree_w+1)

Definition at line 133 of file SplineVolume.h.

29.23.3.11 int Go::BasisDerivs2::left_idx[3]

Index of the knot interval where the parameter value is situated for all parameter directions. The indices of the non-zero basis functions are left_idx[i]-order[i]+1, ..., left_idx[i] for i=0,1,2

Definition at line 131 of file SplineVolume.h.

29.23.3.12 double Go::BasisDerivs2::param[3]

Parameter tripple in which the basis functions are evaluated.

Definition at line 127 of file SplineVolume.h.

The documentation for this struct was generated from the following file:

- trivariate/include/GoTools/trivariate/SplineVolume.h

29.24 Go::BasisDerivsSf Struct Reference

`#include <SplineSurface.h>`

Public Member Functions

- void prepareDerivs (double u, double v, int idx_u, int idx_v, int size)

Public Attributes

- double param [2]

  Parameter double in which the basis functions are evaluated.
- int left_idx [2]
- std::vector< double > basisValues

  The value of all basis functions, size equal to (degree_u+1)∗(degree_v+1)
- std::vector< double > basisDerivs_u

  the derivative of all basis functions in u direction, same size as previous
- std::vector< double > basisDerivs_v

  the derivative of all basis functions in v direction, same size as previous

29.24.1 Detailed Description

Structure for storage of results of grid evaluation of the basis function of a spline surface. Position and first derivatives

Definition at line 83 of file SplineSurface.h.

29.24.2 Member Function Documentation

29.24.2.1 void Go::BasisDerivsSf::prepareDerivs (double *u*, double *v*, int *idx_u*, int *idx_v*, int *size*) [inline]

Definition at line 98 of file SplineSurface.h.

29.24.3 Member Data Documentation

29.24.3.1 std::vector< double > Go::BasisDerivsSf::basisDerivs_u

the derivative of all basis functions in u direction, same size as previous

Definition at line 94 of file SplineSurface.h.

29.24.3.2 std::vector< double > Go::BasisDerivsSf::basisDerivs_v

the derivative of all basis functions in v direction, same size as previous

Definition at line 96 of file SplineSurface.h.

29.24.3.3 std::vector< double > Go::BasisDerivsSf::basisValues

The value of all basis functions, size equal to (degree_u+1)*(degree_v+1)

Definition at line 92 of file SplineSurface.h.

29.24.3.4 int Go::BasisDerivsSf::left_idx[2]

Index of the knot interval where the parameter value is situated for all parameter directions. The indices of the non-zero basis functions are left_idx[i]-order[i]+1, ..., left_idx[i] for i=0,1

Definition at line 90 of file SplineSurface.h.

29.24.3.5 double Go::BasisDerivsSf::param[2]

Parameter double in which the basis functions are evaluated.

Definition at line 86 of file SplineSurface.h.

The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/geometry/SplineSurface.h

29.25 Go::BasisDerivsSf2 Struct Reference

`#include <SplineSurface.h>`

Public Member Functions

- void prepareDerivs (double u, double v, int idx_u, int idx_v, int size)

Public Attributes

- double param [2]
  Parameter double in which the basis functions are evaluated.
- int left_idx [2]
- std::vector< double > basisValues
  The value of all basis functions, size equal to (degree_u+1)(degree_v+1)*
- std::vector< double > basisDerivs_u
  the derivative of all basis functions in u direction, same size as previous
- std::vector< double > basisDerivs_v
  the derivative of all basis functions in v direction, same size as previous
- std::vector< double > basisDerivs_uu
  the second derivative of all basis functions twice in u direction, same size as previous
- std::vector< double > basisDerivs_uv
  the second derivative of all basis functions in u and v direction, same size as previous
- std::vector< double > basisDerivs_vv
  the second derivative of all basis functions twice in v direction, same size as previous

29.25.1 Detailed Description

Structure for storage of results of grid evaluation of the basis function of a spline surface. Position, first and second derivatives

Definition at line 112 of file SplineSurface.h.

29.25.2 Member Function Documentation

29.25.2.1 void Go::BasisDerivsSf2::prepareDerivs (double *u,* double *v,* int *idx_u,* int *idx_v,* int *size*) [inline]

Definition at line 135 of file SplineSurface.h.

29.25.3 Member Data Documentation

29.25.3.1 std::vector< double > Go::BasisDerivsSf2::basisDerivs_u

the derivative of all basis functions in u direction, same size as previous

Definition at line 124 of file SplineSurface.h.

29.25.3.2 std::vector< double > Go::BasisDerivsSf2::basisDerivs_uu

the second derivative of all basis functions twice in u direction, same size as previous

Definition at line 129 of file SplineSurface.h.

29.25.3.3 std::vector< double > Go::BasisDerivsSf2::basisDerivs_uv

the second derivative of all basis functions in u and v direction, same size as previous

Definition at line 131 of file SplineSurface.h.

29.25.3.4 std::vector< double > Go::BasisDerivsSf2::basisDerivs_v

the derivative of all basis functions in v direction, same size as previous

Definition at line 126 of file SplineSurface.h.

29.25.3.5 std::vector< double > Go::BasisDerivsSf2::basisDerivs_vv

the second derivative of all basis functions twice in v direction, same size as previous

Definition at line 133 of file SplineSurface.h.

29.25.3.6 std::vector< double > Go::BasisDerivsSf2::basisValues

The value of all basis functions, size equal to (degree_u+1)*(degree_v+1)

Definition at line 121 of file SplineSurface.h.

29.25.3.7 int Go::BasisDerivsSf2::left_idx[2]

Index of the knot interval where the parameter value is situated for all parameter directions. The indices of the non-zero basis functions are left_idx[i]-order[i]+1, ..., left_idx[i] for i=0,1

Definition at line 119 of file SplineSurface.h.

29.25.3.8 double Go::BasisDerivsSf2::param[2]

Parameter double in which the basis functions are evaluated.

Definition at line 115 of file SplineSurface.h.

The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/geometry/SplineSurface.h

29.26 Go::BasisPts Struct Reference

`#include <SplineVolume.h>`

Public Member Functions

- void preparePts (double u, double v, double w, int idx_u, int idx_v, int idx_w, int size)
  Constructor.

Public Attributes

- double param [3]
  Parameter tripple in which the basis functions are evaluated.
- int left_idx [3]
- std::vector< double > basisValues
  The value of all basis functions, size equal to (degree_u+1)(degree_v+1)*(degree_w+1)*

29.26.1 Detailed Description

Structure for storage of results of grid evaluation of the basis function of a spline volume. Positional evaluation information in one parameter value

Definition at line 60 of file SplineVolume.h.

29.26.2 Member Function Documentation

29.26.2.1 void Go::BasisPts::preparePts (double *u*, double *v*, double *w*, int *idx_u*, int *idx_v*, int *idx_w*, int *size*) [inline]

Constructor.

Definition at line 72 of file SplineVolume.h.

29.26.3 Member Data Documentation

29.26.3.1 std::vector< double > Go::BasisPts::basisValues

The value of all basis functions, size equal to (degree_u+1)∗(degree_v+1)∗(degree_w+1)

Definition at line 69 of file SplineVolume.h.

29.26.3.2 int Go::BasisPts::left_idx[3]

Index of the knot interval where the parameter value is situated for all parameter directions. The indices of the non-zero basis functions are left_idx[i]-order[i]+1, ..., left_idx[i] for i=0,1,2

Definition at line 67 of file SplineVolume.h.

29.26.3.3 double Go::BasisPts::param[3]

Parameter tripple in which the basis functions are evaluated.

Definition at line 63 of file SplineVolume.h.

The documentation for this struct was generated from the following file:

- trivariate/include/GoTools/trivariate/SplineVolume.h

29.27 Go::BasisPtsSf Struct Reference

`#include <SplineSurface.h>`

Public Member Functions

- void preparePts (double u, double v, int idx_u, int idx_v, int size)

Public Attributes

- double param [2]

  Parameter tripple in which the basis functions are evaluated.
- int left_idx [2]
- std::vector< double > basisValues

  The value of all basis functions, size equal to (degree_u+1)(degree_v+1)*(degree_w+1)*

29.27.1 Detailed Description

Structure for storage of results of grid evaluation of the basis function of a spline surface. Positional evaluation information in one parameter value

Definition at line 60 of file SplineSurface.h.

29.27.2 Member Function Documentation

29.27.2.1 void Go::BasisPtsSf::preparePts (double *u*, double *v*, int *idx_u*, int *idx_v*, int *size*) [inline]

Definition at line 71 of file SplineSurface.h.

29.27.3 Member Data Documentation

29.27.3.1 std::vector< double > Go::BasisPtsSf::basisValues

The value of all basis functions, size equal to (degree_u+1)*(degree_v+1)*(degree_w+1)

Definition at line 69 of file SplineSurface.h.

29.27.3.2 int Go::BasisPtsSf::left_idx[2]

Index of the knot interval where the parameter value is situated for all parameter directions. The indices of the non-zero basis functions are left_idx[i]-order[i]+1, ..., left_idx[i] for i=0,1

Definition at line 67 of file SplineSurface.h.

29.27.3.3 double Go::BasisPtsSf::param[2]

Parameter tripple in which the basis functions are evaluated.

Definition at line 63 of file SplineSurface.h.

The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/geometry/SplineSurface.h

29.28 Go::BdCondFunctor Class Reference

`#include <BdCondFunctor.h>`

Public Member Functions

- BdCondFunctor ()
- virtual ~BdCondFunctor ()
- virtual Point evaluate (const Point &geom_pos)=0

  Functor evaluation in point.

29.28.1 Detailed Description

Definition at line 50 of file BdCondFunctor.h.

29.28.2 Constructor & Destructor Documentation

29.28.2.1 Go::BdCondFunctor::BdCondFunctor ( )

29.28.2.2 virtual Go::BdCondFunctor::~BdCondFunctor ( ) [virtual]

29.28.3 Member Function Documentation

29.28.3.1 virtual Point Go::BdCondFunctor::evaluate (const Point & *geom_pos*) [pure virtual]

Functor evaluation in point.

The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/BdCondFunctor.h

29.29 Go::BernsteinMulti Class Reference

`#include <BernsteinMulti.h>`

Public Member Functions

- BernsteinMulti ()

  Default constructor.
- BernsteinMulti (int m, int n, const std::vector< double > &coefs)
- template<typename ForwardIterator >
  BernsteinMulti (int m, int n, ForwardIterator begin, ForwardIterator end)
- BernsteinMulti (double coef)
- int degreeU () const
- int degreeV () const
- const double & operator[ ] (int num) const

  Access function for coefficients.
- double & operator[ ] (int num)

  Access function for coefficients.
- std::vector< double >::iterator coefsBegin ()

  Access function for coefficients.
- std::vector< double >::const_iterator coefsBegin () const

  Access function for coefficients.
- std::vector< double >::iterator coefsEnd ()

  Access function for coefficients.
- std::vector< double >::const_iterator coefsEnd () const

  Access function for coefficients.
- double operator() (double u, double v) const
- double operator() (const Vector2D &pt) const
- double operator() (const std::vector< double > &pt) const
- bool isZero (const double eps=0.0) const
- bool isStrictlyPositive (const double eps=0.0) const
- bool isStrictlyNegative (const double eps=0.0) const
- bool isNonNegative (const double eps=0.0) const
- double norm () const
- void normalize ()
- double mean () const

  Calculates the mean value of the coefficients.
- BernsteinMulti deriv (int der1, int der2) const
- BernsteinMulti detHess () const
- BernsteinMulti traceHess () const
- double blossom (const std::vector< double > &uvec, const std::vector< double > &vvec) const
- BernsteinMulti pickDomain (double u0, double u1, double v0, double v1) const
- BernsteinPoly pickLine (Array< double, 2 > a, Array< double, 2 > b) const
- void degreeElevate (int du, int dv)
- BernsteinMulti & operator*= (const BernsteinMulti &multi)

  Multiplication with another polynomial.
- BernsteinMulti & operator*= (double c)

  Multiplication with a scalar.
- BernsteinMulti & operator+= (const BernsteinMulti &multi)

  Addition with another polynomial.
- BernsteinMulti & operator+= (double c)

  Addition with a scalar.
- BernsteinMulti & operator-= (const BernsteinMulti &multi)

  Subtraction with another polynomial.
- BernsteinMulti & operator-= (double c)

  Subtraction with a scalar.
- BernsteinMulti & operator/= (double c)

Division with a scalar.

- BernsteinPoly bindU (double u) const
- BernsteinPoly bindV (double v) const
- void read (std::istream &is)

  Read from an input stream.
- void write (std::ostream &os) const

  Write to an output stream.

29.29.1 Detailed Description

Class that implements bivariate tensor product Bernstein polynomials on the domain [0,1]x[0,1].

The formula for a degree (m,n) polynomial is

$$p(u,v) = \sum_{i=0}^{m} \sum_{j=0}^{n} B_i(u) B_j(v) c_{ij}$$

where the basis functions in the first parameter direction are defined by

$$B_i(u) = \binom{m}{i} u^i (1-u)^{n-i}$$

The coefficients c_{ij} are stored in the following order: $c_{00}, c_{10}, c_{20}, \ldots c_{mn}$.

Definition at line 71 of file BernsteinMulti.h.

29.29.2 Constructor & Destructor Documentation

29.29.2.1 Go::BernsteinMulti::BernsteinMulti ( ) [inline]

Default constructor.

Definition at line 74 of file BernsteinMulti.h.

29.29.2.2 Go::BernsteinMulti::BernsteinMulti (int *m*, int *n*, const std::vector< double > & *coefs*) [inline]

Constructor.

Parameters

m	degree in the first parameter direction
n	degree in the second parameter direction
coefs	vector of Bernstein coefficients

Definition at line 79 of file BernsteinMulti.h.

29.29.2.3 template<typename ForwardIterator > Go::BernsteinMulti::BernsteinMulti (int *m*, int *n*, ForwardIterator *begin*, ForwardIterator *end*) [inline]

Constructor

Parameters

m	degree in the first parameter direction
n	degree in the second parameter direction
begin	iterator to start of container with Bernstein coefficients
end	iterator to end of container

Definition at line 93 of file BernsteinMulti.h.

29.29.2.4 Go::BernsteinMulti::BernsteinMulti (double *coef*) [inline], [explicit]

Constructs a constant polynomial.

Parameters

coef	the constant value of the polynomial

Definition at line 98 of file BernsteinMulti.h.

29.29.3 Member Function Documentation

29.29.3.1 BernsteinPoly Go::BernsteinMulti::bindU (double *u*) const

Function that "binds" the u-parameter.

Returns

a BernsteinPoly in the v-direction for a constant value of u.

29.29.3.2 BernsteinPoly Go::BernsteinMulti::bindV (double *v*) const

Function that "binds" the v-parameter.

Returns

a BernsteinPoly in the u-direction for a constant value of v.

29.29.3.3 double Go::BernsteinMulti::blossom (const std::vector< double > & *uvec*, const std::vector< double > & *vvec*) const

Evaluates the blossom of the polynomial. The blossom of the polynomial p of degree (m,n) is a multi-affine (m+n)-variate function B_p that satisfies

$$B_p(\underbrace{u,\ldots,u}_{m},\underbrace{v,\ldots,v}_{n}) = p(u,v)$$

and is symmetric in the first m and last n arguments separately.

Parameters

uvec	the vector of values at which the blossom is evaluated in the first parameter direction
vvec	the vector of values at which the blossom is evaluated in the second parameter direction

Returns

the value of the blossom at (uvec,vvec)

29.29.3.4 std::vector<double>::iterator Go::BernsteinMulti::coefsBegin ( ) [inline]

Access function for coefficients.

Definition at line 117 of file BernsteinMulti.h.

29.29.3.5 std::vector<double>::const_iterator Go::BernsteinMulti::coefsBegin ( ) const [inline]

Access function for coefficients.

Definition at line 120 of file BernsteinMulti.h.

29.29.3.6 std::vector<double>::iterator Go::BernsteinMulti::coefsEnd ( ) [inline]

Access function for coefficients.

Definition at line 123 of file BernsteinMulti.h.

29.29.3.7 std::vector<double>::const_iterator Go::BernsteinMulti::coefsEnd ( ) const [inline]

Access function for coefficients.

Definition at line 126 of file BernsteinMulti.h.

29.29.3.8 void Go::BernsteinMulti::degreeElevate (int *du*, int *dv*)

Degree elevation.

Parameters

du	the polynomial degree in which you want to represent this polynomial in the first parameter direction
dv	the polynomial degree in which you want to represent this polynomial in the second parameter direction

29.29.3.9 int Go::BernsteinMulti::degreeU ( ) const [inline]

Get the degree in the first parameter direction.

Returns

the degree in the first parameter direction

Definition at line 103 of file BernsteinMulti.h.

29.29.3.10 int Go::BernsteinMulti::degreeV ( ) const [inline]

Get the degree in the second parameter direction.

Returns

the degree in the second parameter direction

Definition at line 107 of file BernsteinMulti.h.

29.29.3.11 BernsteinMulti Go::BernsteinMulti::deriv (int *der1*, int *der2*) const

Finds the derivative of the polynomial in terms of a new BernsteinMulti.

Parameters

der1	the order of derivatives requested in the first parameter direction
der2	the order of derivatives requested in the second parameter direction

Returns

a new polynomial q given by

$$q(u,v) = D^{(der1,der2)}p(u,v).$$

29.29.3.12 BernsteinMulti Go::BernsteinMulti::detHess ( ) const

Calculates the determinant of the Hessian as a BernsteinMulti Describes Gaussian curvature of the graph of the polynomial

29.29.3.13 bool Go::BernsteinMulti::isNonNegative (const double *eps* = 0.0) const

Check if polynomial is non-negative

Parameters

eps	the threshold value with which every coefficient is compared

Returns

true if for every coefficient c, $c >= -eps$, false otherwise

29.29.3.14 bool Go::BernsteinMulti::isStrictlyNegative (const double *eps* = 0.0) const

Check if polynomial is strictly negative

Parameters

eps	the threshold value with which every coefficient is compared

Returns

true if for every coefficient c, $c < -eps$, false otherwise

29.29.3.15 bool Go::BernsteinMulti::isStrictlyPositive (const double *eps* = 0.0) const

Check if polynomial is strictly positive

Parameters

eps	the threshold value with which every coefficient is compared

Returns

true if for every coefficient c, $c > eps$, false otherwise

29.29.3.16 bool Go::BernsteinMulti::isZero (const double *eps* = 0.0) const

Check if the polynomial is the zero function

Parameters

eps	the threshold value with which every coefficient is compared

Returns

true if for every coefficient c, $|c| <= eps$, false otherwise

29.29.3.17 double Go::BernsteinMulti::mean ( ) const

Calculates the mean value of the coefficients.

29.29.3.18 double Go::BernsteinMulti::norm ( ) const

Calculates the norm of the polynomial, defined as the sum of absolute values of the coefficients divided by the number of coefficients. This norm is not the same as the L1 norm of the polynomial on the domain [0,1]x[0,1], unless the polynomial does not change sign. In any case this norm is greater than or equal to the L1 norm of the polynomial.

29.29.3.19 void Go::BernsteinMulti::normalize ( )

Normalizes the polynomial by dividing all coefficients with norm(), which is close to (but not identical to) the L1 norm of the polynomial.

See also

norm()

29.29.3.20 double Go::BernsteinMulti::operator() (double *u*, double *v*) const

Evaluation operator, based on the de Casteljau algorithm.

Parameters

u	first parameter
v	second parameter

Returns

the value of the polynomial at (u,v)

29.29.3.21 double Go::BernsteinMulti::operator() (const Vector2D & *pt*) const [inline]

Evaluation operator - as above, but taking the arguments in a Vector2D.

Parameters

pt	parameter point

Returns

the value of the polynomial at pt

Definition at line 138 of file BernsteinMulti.h.

29.29.3.22 double Go::BernsteinMulti::operator() (const std::vector< double > & *pt*) const [inline]

Evaluation operator - as above, but taking the arguments in a std::vector.

Parameters

pt	parameter point

Returns

the value of the polynomial at pt

Definition at line 144 of file BernsteinMulti.h.

29.29.3.23 BernsteinMulti& Go::BernsteinMulti::operator*= (const BernsteinMulti & *multi*)

Multiplication with another polynomial.

29.29.3.24 BernsteinMulti& Go::BernsteinMulti::operator*= (double *c*)

Multiplication with a scalar.

29.29.3.25 BernsteinMulti& Go::BernsteinMulti::operator+= (const BernsteinMulti & *multi*)

Addition with another polynomial.

29.29.3.26 BernsteinMulti& Go::BernsteinMulti::operator+= (double *c*)

Addition with a scalar.

29.29.3.27 BernsteinMulti& Go::BernsteinMulti::operator-= (const BernsteinMulti & *multi*)

Subtraction with another polynomial.

29.29.3.28 BernsteinMulti& Go::BernsteinMulti::operator-= (double *c*)

Subtraction with a scalar.

29.29.3.29 BernsteinMulti& Go::BernsteinMulti::operator/= (double *c*)

Division with a scalar.

29.29.3.30 const double& Go::BernsteinMulti::operator[ ] (int *num*) const [inline]

Access function for coefficients.

Definition at line 111 of file BernsteinMulti.h.

29.29.3.31 double& Go::BernsteinMulti::operator[ ] (int *num*) [inline]

Access function for coefficients.

Definition at line 114 of file BernsteinMulti.h.

29.29.3.32 BernsteinMulti Go::BernsteinMulti::pickDomain (double *u0,* double *u1,* double *v0,* double *v1*) const

Finds a new BernsteinMulti representing the original on some rectangular domain. The new polynomial is defined on [0,1]x[0,1]. If p is the old polynomial and q is the new one, q is defined by

$$q(u, v) = p((1 - u) \cdot u_0 + u \cdot u_1, (1 - v) \cdot v_0 + v \cdot v_1).$$

The function is implemented by blossoming.

Parameters

u0	the start of the interval in the first parameter direction
u1	the end of the interval in the first parameter direction
v0	the start of the interval in the second parameter direction
v1	the end of the interval in the second parameter direction

Returns

a polynomial q as specified above

29.29.3.33 BernsteinPoly Go::BernsteinMulti::pickLine (Array< double, 2 > *a,* Array< double, 2 > *b*) const

Routine that picks out the line with endpoints a and b as a new BernsteinPoly. The new polynomial is defined on [0,1]. If p is the old bivariate polynomial and q is the new one, q is defined by

$$q(t) = p((1 - t)a_0 + tb_0, (1 - t)a_1 + tv_1).$$

The function is implemented by blossoming.

29.29.3.34 void Go::BernsteinMulti::read (std::istream & *is*)

Read from an input stream.

29.29.3.35 BernsteinMulti Go::BernsteinMulti::traceHess ( ) const

Calculates the trace of the Hessian as a BernsteinMUlti Describes mean curvature (modulo a factor 2) of the graph of the polynomial

29.29.3.36 void Go::BernsteinMulti::write (std::ostream & *os*) const

Write to an output stream.

The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/BernsteinMulti.h

29.30 Go::BernsteinPoly Class Reference

`#include <BernsteinPoly.h>`

Public Member Functions

- BernsteinPoly ()
  Default constructor.
- BernsteinPoly (const std::vector< double > &coefs)
- template<typename ForwardIterator >
  BernsteinPoly (ForwardIterator begin, ForwardIterator end)
- BernsteinPoly (double coef)
- int degree () const
- const double & operator[ ] (int num) const
  Access function for coefficients.
- double & operator[ ] (int num)
  Access function for coefficients.
- std::vector< double >::iterator coefsBegin ()
  Access function for coefficients.
- std::vector< double >::const_iterator coefsBegin () const
  Access function for coefficients.
- std::vector< double >::iterator coefsEnd ()
  Access function for coefficients.
- std::vector< double >::const_iterator coefsEnd () const
  Access function for coefficients.
- double operator() (double t) const
- bool isZero (const double eps=0.0) const
- bool isStrictlyPositive (const double eps=0.0) const
- double norm () const
- void normalize ()
- BernsteinPoly deriv (int der) const
- double integral (double a=0.0, double b=1.0) const
- double blossom (const std::vector< double > &tvec) const
- BernsteinPoly pickInterval (double a, double b) const
- void degreeElevate (int d)
- BernsteinPoly & operator*= (const BernsteinPoly &poly)
  Multiplication with another polynomial.
- BernsteinPoly & operator*= (double c)
  Multiplication with a scalar.
- BernsteinPoly & operator+= (const BernsteinPoly &poly)
  Addition with another polynomial.
- BernsteinPoly & operator+= (double c)
  Addition with a scalar.
- BernsteinPoly & operator-= (const BernsteinPoly &poly)
  Subtraction with another polynomial.
- BernsteinPoly & operator-= (double c)
  Subtraction with a scalar.
- BernsteinPoly & operator/= (double c)
  Division with a scalar.
- void read (std::istream &is)
  Read from input stream.
- void write (std::ostream &os) const
  Write to output stream.

29.30.1 Detailed Description

Class that implements Bernstein polynomials on the interval [0,1]. The formula for Bernstein polynomials is

$$p(t) = \sum_{i=0}^{n} \binom{n}{i} t^i (1-t)^{n-i} c_i.$$

The coefficients c_i are stored in a vector of doubles.

Definition at line 58 of file BernsteinPoly.h.

29.30.2 Constructor & Destructor Documentation

29.30.2.1 Go::BernsteinPoly::BernsteinPoly ( ) [inline]

Default constructor.

Definition at line 61 of file BernsteinPoly.h.

29.30.2.2 Go::BernsteinPoly::BernsteinPoly (const std::vector< double > & *coefs*) [inline], [explicit]

Constructor

Parameters

coefs	a vector of doubles containing the Bernstein coefficients

Definition at line 65 of file BernsteinPoly.h.

29.30.2.3 template<typename ForwardIterator > Go::BernsteinPoly::BernsteinPoly (ForwardIterator *begin*, ForwardIterator *end*) [inline]

Constructor

Parameters

begin	iterator to start of container containing the Bernstein coefficients
end	iterator to end of same container

Definition at line 72 of file BernsteinPoly.h.

29.30.2.4 Go::BernsteinPoly::BernsteinPoly (double *coef*) [inline], [explicit]

Constructor for a constant polynomial

Parameters

coef	the constant value of the polynomial

Definition at line 76 of file BernsteinPoly.h.

29.30.3 Member Function Documentation

29.30.3.1 double Go::BernsteinPoly::blossom (const std::vector< double > & *tvec*) const

Evaluates the blossom of the polynomial. The blossom of the polynomial p of degree n is a multi-affine n-variate symmetric function B_p that satisfies $B_p(t, \ldots, t) = p(t)$.

Parameters

tvec	the vector of values at which the blossom is evaluated.

Returns

the value of the blossom at tvec

29.30.3.2 std::vector<double>::iterator Go::BernsteinPoly::coefsBegin ( ) [inline]

Access function for coefficients.

Definition at line 91 of file BernsteinPoly.h.

29.30.3.3 std::vector<double>::const_iterator Go::BernsteinPoly::coefsBegin ( ) const [inline]

Access function for coefficients.

Definition at line 94 of file BernsteinPoly.h.

29.30.3.4 std::vector<double>::iterator Go::BernsteinPoly::coefsEnd ( ) [inline]

Access function for coefficients.

Definition at line 97 of file BernsteinPoly.h.

29.30.3.5 std::vector<double>::const_iterator Go::BernsteinPoly::coefsEnd ( ) const [inline]

Access function for coefficients.

Definition at line 100 of file BernsteinPoly.h.

29.30.3.6 int Go::BernsteinPoly::degree ( ) const [inline]

Get the degree of the polynomial

Returns

the degree of the polynomial

Definition at line 81 of file BernsteinPoly.h.

29.30.3.7 void Go::BernsteinPoly::degreeElevate (int *d*)

Degree elevation.

Parameters

d	the polynomial degree in which you want to represent this polynomial.

29.30.3.8 BernsteinPoly Go::BernsteinPoly::deriv (int *der*) const

Calculates the derivative in terms of a new BernsteinPoly.

Parameters

der	the order of derivatives requested

Returns

a new polynomial q given by

$$q(t) = p^{(der)}(t).$$

29.30.3.9 double Go::BernsteinPoly::integral (double *a* = 0.0, double *b* = 1.0) const

Calculates the integral of the polynomial over an interval. The default interval is [0,1].

29.30.3.10 bool Go::BernsteinPoly::isStrictlyPositive (const double *eps* = 0.0) const

Check if the polynomial is strictly positive. NOTE: If the return value is 'true', then the polynomial is guaranteed to be strictly positive. If the return value is 'false', the situation is undetermined and the polynomial may still be strictly positive.

Parameters

eps	the threshold value with which every coefficient is compared

Returns

true if for every coefficient c, $c > eps$, false otherwise

29.30.3.11 bool Go::BernsteinPoly::isZero (const double *eps* = 0.0) const

Check if the polynomial is the zero function

Parameters

eps	the threshold value with which every coefficient is compared

Returns

true if for every coefficient c, $|c| <= eps$, false otherwise

29.30.3.12 double Go::BernsteinPoly::norm ( ) const

Calculates a norm, defined as the sum of the absolute values of the coefficients divided by the number of coefficients. This norm is not the same as the L1 norm of the polynomial (on the interval [0,1]), unless the polynomial does not change sign. In any case this norm is greater than or equal to the L1 norm of the polynomial.

29.30.3.13 void Go::BernsteinPoly::normalize ( )

Normalizes the polynomial by dividing all coefficients with norm(), which is close to (but not identical to) the L1 norm of the polynomial.

See also

norm()

29.30.3.14 double Go::BernsteinPoly::operator() (double *t*) const

Evaluation operator, based on the de Casteljau algorithm.

Parameters

t	the parameter value at which the polynomial is evaluated

Returns

the value of the polynomial at t

29.30.3.15 BernsteinPoly& Go::BernsteinPoly::operator*= (const BernsteinPoly & *poly*)

Multiplication with another polynomial.

29.30.3.16 BernsteinPoly& Go::BernsteinPoly::operator*= (double *c*)

Multiplication with a scalar.

29.30.3.17 BernsteinPoly& Go::BernsteinPoly::operator+= (const BernsteinPoly & *poly*)

Addition with another polynomial.

29.30.3.18 BernsteinPoly& Go::BernsteinPoly::operator+= (double *c*)

Addition with a scalar.

29.30.3.19 BernsteinPoly& Go::BernsteinPoly::operator-= (const BernsteinPoly & *poly*)

Subtraction with another polynomial.

29.30.3.20 BernsteinPoly& Go::BernsteinPoly::operator-= (double *c*)

Subtraction with a scalar.

29.30.3.21 BernsteinPoly& Go::BernsteinPoly::operator/= (double *c*)

Division with a scalar.

29.30.3.22 const double& Go::BernsteinPoly::operator[ ] (int *num*) const [inline]

Access function for coefficients.

Definition at line 85 of file BernsteinPoly.h.

29.30.3.23 double& Go::BernsteinPoly::operator[ ] (int *num*) [inline]

Access function for coefficients.

Definition at line 88 of file BernsteinPoly.h.

29.30.3.24 BernsteinPoly Go::BernsteinPoly::pickInterval (double *a*, double *b*) const

Finds a new BernsteinPoly representing the original on some interval. The new polynomial is defined on [0,1]. If p is the old polynomial and q is the new one, q is defined by

$$q(t) = p(a(1-t) + tb).$$

Parameters

a	the start of the interval
b	the end of the interval

Returns

a polynomial q as specified above

29.30.3.25 void Go::BernsteinPoly::read (std::istream & *is*)

Read from input stream.

29.30.3.26 void Go::BernsteinPoly::write (std::ostream & *os*) const

Write to output stream.

The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/BernsteinPoly.h

29.31 Go::BernsteinTetrahedralPoly Class Reference

`#include <BernsteinTetrahedralPoly.h>`

Public Member Functions

- BernsteinTetrahedralPoly ()
  Default constructor.
- BernsteinTetrahedralPoly (int deg, const std::vector< double > &coefs)
- template<typename ForwardIterator >
  BernsteinTetrahedralPoly (int deg, ForwardIterator begin, ForwardIterator end)
- BernsteinTetrahedralPoly (double coef)
- int degree () const
- const double & operator[ ] (int num) const
  Access function for coefficients.
- double & operator[ ] (int num)
  Access function for coefficients.
- template<typename T >
  T operator() (const Array< T, 4 > &u) const
- double norm () const
- void normalize ()
- void deriv (int der, const Vector4D &d, BernsteinTetrahedralPoly &btp) const
- template<typename T >
  T blossom (const std::vector< Array< T, 4 > > &uvec) const
- BernsteinPoly pickLine (const Array< double, 4 > &a, const Array< double, 4 > &b) const
- BernsteinTetrahedralPoly & operator*= (const BernsteinTetrahedralPoly &poly)

Multiplication with another polynomial.

- BernsteinTetrahedralPoly & operator*= (double c)

  Multiplication with a scalar.
- BernsteinTetrahedralPoly & operator+= (const BernsteinTetrahedralPoly &poly)

  Addition with another polynomial.
- BernsteinTetrahedralPoly & operator+= (double c)

  Addition with a scalar.
- BernsteinTetrahedralPoly & operator-= (const BernsteinTetrahedralPoly &poly)

  Subtraction with another polynomial.
- BernsteinTetrahedralPoly & operator-= (double c)

  Subtraction with a scalar.
- BernsteinTetrahedralPoly & operator/= (double c)

  Division with a scalar.
- void read (std::istream &is)

  Read from an input stream.
- void write (std::ostream &os) const

  Write to an output stream.

29.31.1 Detailed Description

Class that implements Bernstein polynomials on a tetrahedron. The formula for a tetrahedral Bernstein polynomial of degree n is

$$p(\beta_0,\beta_1,\beta_2,\beta_3) = \sum_{i+j+k+l=n} \frac{n!}{i!j!k!l!}\beta_0^i\beta_1^j\beta_2^k\beta_3^l c_{(i,j,k)}.$$

The coefficients c_{ijk} are stored in the following order: $c_{(n,0,0,0)}, c_{(n-1,1,0,0)}, c_{(n-2,2,0,0)}, \ldots, c_{(0,n,0,0)}, c_{(n-1,0,1,0)}, c_{(n-2,1,1,0)}, \ldots, c$
That is, a reverse lexicographical ordering with the most significant index being the last one.

Definition at line 71 of file BernsteinTetrahedralPoly.h.

29.31.2 Constructor & Destructor Documentation

29.31.2.1 Go::BernsteinTetrahedralPoly::BernsteinTetrahedralPoly ( ) [inline]

Default constructor.

Definition at line 74 of file BernsteinTetrahedralPoly.h.

29.31.2.2 Go::BernsteinTetrahedralPoly::BernsteinTetrahedralPoly (int *deg*, const std::vector< double > & *coefs*) [inline]

Constructor.

Parameters

deg	degree of the polynomial
coefs	vector of Bernstein coefficients

Definition at line 78 of file BernsteinTetrahedralPoly.h.

29.31.2.3 template<typename ForwardIterator > Go::BernsteinTetrahedralPoly::BernsteinTetrahedralPoly (int *deg,* ForwardIterator *begin,* ForwardIterator *end*) [inline]

Constructor.

Parameters

deg	degree of the polynomial
begin	iterator to start of vector of Bernstein coefficients
end	iterator to end of vector of Bernstein coefficients

Definition at line 86 of file BernsteinTetrahedralPoly.h.

29.31.2.4 Go::BernsteinTetrahedralPoly::BernsteinTetrahedralPoly (double *coef*) [inline], [explicit]

Constructor for a constant polynomial.

Parameters

coef	the constant value of the polynomial

Definition at line 91 of file BernsteinTetrahedralPoly.h.

29.31.3 Member Function Documentation

29.31.3.1 template<typename T > T Go::BernsteinTetrahedralPoly::blossom (const std::vector< Array< T, 4 > > & *uvec*) const [inline]

Evaluates the blossom of the polynomial. The blossom of the polynomial p of degree n is a multi-affine, symmetric n-variate function B_p that satisfies

$$B_p(b, \ldots, b) = p(b).$$

Parameters

uvec	the vector of values at which the blossom is evaluated, each value is a domain point given in barycentric coordinates.

Definition at line 172 of file BernsteinTetrahedralPoly.h.

29.31.3.2 int Go::BernsteinTetrahedralPoly::degree ( ) const [inline]

Get the degree

Returns

the degree of the polynomial

Definition at line 96 of file BernsteinTetrahedralPoly.h.

29.31.3.3 void Go::BernsteinTetrahedralPoly::deriv (int *der,* const Vector4D & *d,* BernsteinTetrahedralPoly & *btp*) const

Calculates the der'th derivative in the d-direction in terms of a new BernsteinTetrahedralPoly. The direction is given in barycentric coordinates, so it is a vector whose elements sum to zero.

Parameters

der	order of derivative requested
d	direction of derivative

Return values

btp	the derivative polynomial

29.31.3.4 double Go::BernsteinTetrahedralPoly::norm ( ) const

Calculates the norm of the polynomial, defined as the sum of absolute values of the coefficients divided by the number of coefficients. This norm is not the same as the L1 norm of the polynomial over the tetrahedron, but is an upper bound for it.

29.31.3.5 void Go::BernsteinTetrahedralPoly::normalize ( )

Normalizes the polynomial by dividing all coefficients with norm(), which is related to (but not identical to) the L1 norm of the polynomial.

See also

norm()

29.31.3.6 template<typename T > T Go::BernsteinTetrahedralPoly::operator() (const Array< T, 4 > & *u*) const [inline]

Evaluation operator, based on the tetrahedral de Casteljau algorithm. Generalized from 'tri_decas' in Farin: "Curves and Surfaces for CAGD".

Parameters

u	parameter point given in barycentric coordinates

Returns

the value of the polynomial at u

Definition at line 112 of file BernsteinTetrahedralPoly.h.

29.31.3.7 BernsteinTetrahedralPoly& Go::BernsteinTetrahedralPoly::operator*= (const BernsteinTetrahedralPoly & *poly*)

Multiplication with another polynomial.

29.31.3.8 BernsteinTetrahedralPoly& Go::BernsteinTetrahedralPoly::operator*= (double *c*)

Multiplication with a scalar.

29.31.3.9 BernsteinTetrahedralPoly& Go::BernsteinTetrahedralPoly::operator+= (const BernsteinTetrahedralPoly & *poly*)

Addition with another polynomial.

29.31.3.10 BernsteinTetrahedralPoly& Go::BernsteinTetrahedralPoly::operator+= (double *c*)

Addition with a scalar.

29.31.3.11 BernsteinTetrahedralPoly& Go::BernsteinTetrahedralPoly::operator-= (const BernsteinTetrahedralPoly & *poly*)

Subtraction with another polynomial.

29.31.3.12 BernsteinTetrahedralPoly& Go::BernsteinTetrahedralPoly::operator-= (double *c*)

Subtraction with a scalar.

29.31.3.13 BernsteinTetrahedralPoly& Go::BernsteinTetrahedralPoly::operator/= (double *c*)

Division with a scalar.

29.31.3.14 const double& Go::BernsteinTetrahedralPoly::operator[ ] (int *num*) const [inline]

Access function for coefficients.

Definition at line 100 of file BernsteinTetrahedralPoly.h.

29.31.3.15 double& Go::BernsteinTetrahedralPoly::operator[ ] (int *num*) [inline]

Access function for coefficients.

Definition at line 103 of file BernsteinTetrahedralPoly.h.

29.31.3.16 BernsteinPoly Go::BernsteinTetrahedralPoly::pickLine (const Array< double, 4 > & *a*, const Array< double, 4 > & *b*) const

Routine that picks out the line with endpoints a and b as a new BernsteinPoly. The new polynomial is defined on [0,1]. If p is the old bivariate polynomial and q is the new one, q is defined by

$$q(t) = p((1-t)a_0 + tb_0, (1-t)a_1 + tv_1).$$

The function is implemented by blossoming.

Parameters

a	the starting point of the line in barycentric coordinates
b	the endpoint of the line in barycentric coordinates

29.31.3.17 void Go::BernsteinTetrahedralPoly::read (std::istream & *is*)

Read from an input stream.

29.31.3.18 void Go::BernsteinTetrahedralPoly::write (std::ostream & *os*) const

Write to an output stream.

The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/BernsteinTetrahedralPoly.h

29.32 Go::BernsteinTriangularPoly Class Reference

`#include <BernsteinTriangularPoly.h>`

Public Member Functions

- BernsteinTriangularPoly ()
  Default constructor.
- BernsteinTriangularPoly (int deg, const std::vector< double > &coefs)
- template<typename ForwardIterator >
  BernsteinTriangularPoly (int deg, ForwardIterator begin, ForwardIterator end)
- BernsteinTriangularPoly (double coef)
- int degree () const

- const double operator[ ] (int num) const

  Access function for coefficients.
- double & operator[ ] (int num)

  Access function for coefficients.
- template<typename T >
  T operator() (const Array< T, 3 > &u) const
- double norm () const
- void normalize ()
- void deriv (int der, const Vector3D &d, BernsteinTriangularPoly &btp) const
- template<typename T >
  T blossom (const std::vector< Array< T, 3 > > &uvec) const
- BernsteinTriangularPoly & operator*= (const BernsteinTriangularPoly &poly)

  Multiplication with another polynomial.
- BernsteinTriangularPoly & operator*= (double c)

  Multiplication with a scalar.
- BernsteinTriangularPoly & operator+= (const BernsteinTriangularPoly &poly)

  Addition with another polynomial.
- BernsteinTriangularPoly & operator+= (double c)

  Addition with a scalar.
- BernsteinTriangularPoly & operator-= (const BernsteinTriangularPoly &poly)

  Subtraction with another polynomial.
- BernsteinTriangularPoly & operator-= (double c)

  Subtraction with a scalar.
- BernsteinTriangularPoly & operator/= (double c)

  Division with a scalar.
- void read (std::istream &is)

  Read from an input stream.
- void write (std::ostream &os) const

  Write to an output stream.

29.32.1 Detailed Description

Class that implements Bernstein polynomials on a triangle. The formula for a triangular Bernstein polynomial of degree n is

$$p(\beta_0, \beta_1, \beta_2) = \sum_{i+j+k=n} \frac{n!}{i!j!k!} \beta_0^i \beta_1^j \beta_2^k c_{(i,j,k)}.$$

The coefficients c_{ijk} are stored in the following order: $c_{(n,0,0)}, c_{(n-1,1,0)}, c_{(n-2,2,0)}, \ldots, c_{(0,n,0)}, c_{(n-1,0,1)}, c_{(n-2,1,1)}, \ldots, c_{(0,0,n)}$.

Definition at line 66 of file BernsteinTriangularPoly.h.

29.32.2 Constructor & Destructor Documentation

29.32.2.1 Go::BernsteinTriangularPoly::BernsteinTriangularPoly ( ) [inline]

Default constructor.

Definition at line 69 of file BernsteinTriangularPoly.h.

29.32.2.2 Go::BernsteinTriangularPoly::BernsteinTriangularPoly (int *deg*, const std::vector< double > & *coefs*) [inline]

Constructor.

Parameters

deg	degree of the polynomial
coefs	vector of Bernstein coefficients

Definition at line 73 of file BernsteinTriangularPoly.h.

29.32.2.3 template<typename ForwardIterator > Go::BernsteinTriangularPoly::BernsteinTriangularPoly (int *deg,* ForwardIterator *begin,* ForwardIterator *end*) [inline]

Constructor.

Parameters

deg	degree of the polynomial
begin	iterator to start of vector of Bernstein coefficients
end	iterator to end of vector of Bernstein coefficients

Definition at line 81 of file BernsteinTriangularPoly.h.

29.32.2.4 Go::BernsteinTriangularPoly::BernsteinTriangularPoly (double *coef*) [inline], [explicit]

Constructor for a constant polynomial.

Parameters

coef	the constant value of the polynomial

Definition at line 86 of file BernsteinTriangularPoly.h.

29.32.3 Member Function Documentation

29.32.3.1 template<typename T > T Go::BernsteinTriangularPoly::blossom (const std::vector< Array< T, 3 > > & *uvec*) const [inline]

Evaluates the blossom of the polynomial. The blossom of the polynomial p of degree n is a multi-affine, symmetric n-variate function B_p that satisfies

$$B_p(b, \ldots, b) = p(b).$$

Parameters

uvec	the vector of values at which the blossom is evaluated, each value is a domain point given in barycentric coordinates.

Definition at line 164 of file BernsteinTriangularPoly.h.

29.32.3.2 int Go::BernsteinTriangularPoly::degree ( ) const [inline]

Get the degree

Returns

the degree of the polynomial

Definition at line 91 of file BernsteinTriangularPoly.h.

29.32.3.3 void Go::BernsteinTriangularPoly::deriv (int *der,* const Vector3D & *d,* BernsteinTriangularPoly & *btp*) const

Calculates the der'th derivative in the d-direction in terms of a new BernsteinTriangularPoly. The direction is given in barycentric coordinates, so it is a vector whose elements sum to zero.

Parameters

der	order of derivative requested
d	direction of derivative

Return values

btp	the derivative polynomial

29.32.3.4 double Go::BernsteinTriangularPoly::norm ( ) const

Calculates the norm of the polynomial, defined as the sum of absolute values of the coefficients divided by the number of coefficients. This norm is not the same as the L1 norm of the polynomial over the triangle, but is an upper bound for it.

29.32.3.5 void Go::BernsteinTriangularPoly::normalize ( )

Normalizes the polynomial by dividing all coefficients with norm(), which is related to (but not identical to) the L1 norm of the polynomial.

See also

norm()

29.32.3.6 template<typename T > T Go::BernsteinTriangularPoly::operator() (const Array< T, 3 > & *u*) const [inline]

Evaluation operator, based on the triangular de Casteljau algorithm. Adapted from 'tri_decas' in Farin: "Curves and Surfaces for CAGD".

Parameters

u	parameter point given in barycentric coordinates

Returns

the value of the polynomial at u

Definition at line 107 of file BernsteinTriangularPoly.h.

29.32.3.7 BernsteinTriangularPoly& Go::BernsteinTriangularPoly::operator*= (const BernsteinTriangularPoly & *poly*)

Multiplication with another polynomial.

29.32.3.8 BernsteinTriangularPoly& Go::BernsteinTriangularPoly::operator*= (double *c*)

Multiplication with a scalar.

29.32.3.9 BernsteinTriangularPoly& Go::BernsteinTriangularPoly::operator+= (const BernsteinTriangularPoly & *poly*)

Addition with another polynomial.

29.32.3.10 BernsteinTriangularPoly& Go::BernsteinTriangularPoly::operator+= (double *c*)

Addition with a scalar.

29.32.3.11 BernsteinTriangularPoly& Go::BernsteinTriangularPoly::operator-= (const BernsteinTriangularPoly & *poly*)

Subtraction with another polynomial.

29.32.3.12 BernsteinTriangularPoly& Go::BernsteinTriangularPoly::operator-= (double *c*)

Subtraction with a scalar.

29.32.3.13 BernsteinTriangularPoly& Go::BernsteinTriangularPoly::operator/= (double *c*)

Division with a scalar.

29.32.3.14 const double Go::BernsteinTriangularPoly::operator[ ] (int *num*) const [inline]

Access function for coefficients.

Definition at line 95 of file BernsteinTriangularPoly.h.

29.32.3.15 double& Go::BernsteinTriangularPoly::operator[ ] (int *num*) [inline]

Access function for coefficients.

Definition at line 98 of file BernsteinTriangularPoly.h.

29.32.3.16 void Go::BernsteinTriangularPoly::read (std::istream & *is*)

Read from an input stream.

29.32.3.17 void Go::BernsteinTriangularPoly::write (std::ostream & *os*) const

Write to an output stream.

The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/BernsteinTriangularPoly.h

29.33 Go::BezierTriangle< N > Class Template Reference

Not documented.

`#include <BezierTriangle.h>`

Public Member Functions

- BezierTriangle ()
  Default constructor.
- BezierTriangle (int deg, const Array< double, N > *cp)
  Constructor.
- Array< double, N > eval (Vector3D beta)
  Not documented.
- Array< double, N > evalderiv (Vector3D beta, Vector3D dir)
  Not documented.
- void interpolate (int deg, const Vector3D *nodes, const Array< double, N > *values)
  Not documented.

29.33.1 Detailed Description

template<int N>
class Go::BezierTriangle< N >

Not documented.

Definition at line 124 of file BezierTriangle.h.

29.33.2 Constructor & Destructor Documentation

29.33.2.1 template<int N> Go::BezierTriangle< N >::BezierTriangle ( ) [inline]

Default constructor.

Definition at line 128 of file BezierTriangle.h.

29.33.2.2 template<int N> Go::BezierTriangle< N >::BezierTriangle (int *deg*, const Array< double, N > * *cp*) [inline]

Constructor.

Definition at line 131 of file BezierTriangle.h.

29.33.3 Member Function Documentation

29.33.3.1 template<int N> Array<double, N> Go::BezierTriangle< N >::eval (Vector3D *beta*) [inline]

Not documented.

Definition at line 145 of file BezierTriangle.h.

29.33.3.2 template<int N> Array<double, N> Go::BezierTriangle< N >::evalderiv (Vector3D *beta*, Vector3D *dir*) [inline]

Not documented.

Definition at line 155 of file BezierTriangle.h.

29.33.3.3 template<int N> void Go::BezierTriangle< N >::interpolate (int *deg*, const Vector3D * *nodes*, const Array< double, N > * *values*) [inline]

Not documented.

Definition at line 171 of file BezierTriangle.h.

The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/BezierTriangle.h

29.34 Go::Binomial Class Reference

`#include <Binomial.h>`

Public Types

- typedef std::vector< double >::iterator iter
  Useful iterator.

Public Member Functions

- Binomial ()
  Default constructor.
- Binomial (int n)
- double operator() (int n, int i)
- iter operator[ ] (int n)
- double trinomial (int n, int i, int j)
- double quadrinomial (int n, int i, int j, int k)

29.34.1 Detailed Description

Class that computes the binomial coefficients.

Definition at line 54 of file Binomial.h.

29.34.2 Member Typedef Documentation

29.34.2.1 typedef std::vector<double>::iterator Go::Binomial::iter

Useful iterator.

Definition at line 57 of file Binomial.h.

29.34.3 Constructor & Destructor Documentation

29.34.3.1 Go::Binomial::Binomial ( ) [inline]

Default constructor.

Definition at line 60 of file Binomial.h.

29.34.3.2 Go::Binomial::Binomial (int *n*) [inline]

Constructor that creates an initial Pascal's triangle to some specified level.

Parameters

n	the level up to which you want to make the triangle

Definition at line 71 of file Binomial.h.

29.34.4 Member Function Documentation

29.34.4.1 double Go::Binomial::operator() (int *n*, int *i*) [inline]

Evaluates a binomial coefficient. If the current table is too small, the table will be expanded accordingly.

Parameters

n	an integer
i	an integer

Returns

$$\binom{n}{i}$$

Definition at line 82 of file Binomial.h.

29.34.4.2 iter Go::Binomial::operator[ ] (int *n*) [inline]

Gives an iterator to the first element of the vector containing the n'th line of Pascal's triangle. Expands the table if necessary.

Parameters

n	an integer

Returns

an iterator iter such that iter[i] = operator()(n,i).

Definition at line 96 of file Binomial.h.

29.34.4.3 double Go::Binomial::quadrinomial (int *n*, int *i*, int *j*, int *k*) [inline]

Evaluates a quadrinomial coefficient. This function should be considered a temporary solution.

Parameters

n	an integer
i	an integer
j	an integer
k	an integer

Returns

$$\frac{n!}{i!j!k!(n-i-j-k)!.}$$

Definition at line 127 of file Binomial.h.

29.34.4.4 double Go::Binomial::trinomial (int *n*, int *i*, int *j*) [inline]

Evaluates a trinomial coefficient. This function should be considered a temporary solution.

Parameters

n	an integer
i	an integer
j	an integer

Returns

$$\frac{n!}{i!j!(n-i-j)!}.$$

Definition at line 110 of file Binomial.h.

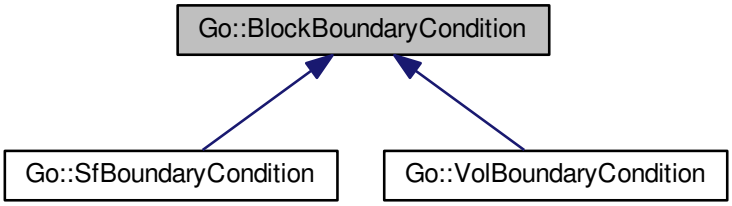
The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/Binomial.h

29.35 Go::BlockBoundaryCondition Class Reference

```
#include <BlockBoundaryCondition.h>
```

Inheritance diagram for Go::BlockBoundaryCondition:



Public Member Functions

- BlockBoundaryCondition (BdConditionType type)
- virtual ~BlockBoundaryCondition ()
- virtual void getCoefficientsEnumeration (std::vector< int > &local_enumeration)=0
- virtual void getCoefficientsEnumeration (std::vector< int > &local_enumeration_bd, std::vector< int > &local_enumeration_bd2)=0
- BdConditionType getBdConditionType () const
- bool isDirichlet () const
- int getSolutionSpaceIdx () const
- virtual void getBdCoefficients (std::vector< std::pair< int, Point > > &coefs)=0
- virtual void getBdCoefficients (std::vector< std::pair< int, Point > > &coefs_bd, std::vector< std::pair< int, Point > > &coefs_inner)=0
- virtual void update ()=0
- virtual void updateBoundaryValue (BdCondFunctor *fbd)=0
- virtual tpTolerances getTolerances () const =0

Protected Attributes

- BdConditionType type_

29.35.1 Detailed Description

Definition at line 58 of file BlockBoundaryCondition.h.

29.35.2 Constructor & Destructor Documentation

29.35.2.1 Go::BlockBoundaryCondition::BlockBoundaryCondition (BdConditionType *type*)

29.35.2.2 virtual Go::BlockBoundaryCondition::~BlockBoundaryCondition ( ) [virtual]

29.35.3 Member Function Documentation

29.35.3.1 virtual void Go::BlockBoundaryCondition::getBdCoefficients (std::vector< std::pair< int, Point > > & *coefs*) [pure virtual]

Implemented in Go::SfBoundaryCondition, and Go::VolBoundaryCondition.

29.35.3.2 virtual void Go::BlockBoundaryCondition::getBdCoefficients (std::vector< std::pair< int, Point > > & *coefs_bd*, std::vector< std::pair< int, Point > > & *coefs_inner*) [pure virtual]

Implemented in Go::SfBoundaryCondition, and Go::VolBoundaryCondition.

29.35.3.3 BdConditionType Go::BlockBoundaryCondition::getBdConditionType ( ) const

29.35.3.4 virtual void Go::BlockBoundaryCondition::getCoefficientsEnumeration (std::vector< int > & *local_enumeration*) [pure virtual]

Implemented in Go::SfBoundaryCondition, and Go::VolBoundaryCondition.

29.35.3.5 virtual void Go::BlockBoundaryCondition::getCoefficientsEnumeration (std::vector< int > & *local_enumeration_bd*, std::vector< int > & *local_enumeration_bd2*) [pure virtual]

Implemented in Go::SfBoundaryCondition, and Go::VolBoundaryCondition.

29.35.3.6 int Go::BlockBoundaryCondition::getSolutionSpaceIdx ( ) const

29.35.3.7 virtual tpTolerances Go::BlockBoundaryCondition::getTolerances ( ) const [pure virtual]

Implemented in Go::SfBoundaryCondition, and Go::VolBoundaryCondition.

29.35.3.8 bool Go::BlockBoundaryCondition::isDirichlet ( ) const

29.35.3.9 virtual void Go::BlockBoundaryCondition::update ( ) [pure virtual]

Implemented in Go::VolBoundaryCondition, and Go::SfBoundaryCondition.

29.35.3.10 virtual void Go::BlockBoundaryCondition::updateBoundaryValue (BdCondFunctor * *fbd*) [pure virtual]

Implemented in Go::SfBoundaryCondition, and Go::VolBoundaryCondition.

29.35.4 Member Data Documentation

29.35.4.1 BdConditionType Go::BlockBoundaryCondition::type_ [protected]

Definition at line 109 of file BlockBoundaryCondition.h.

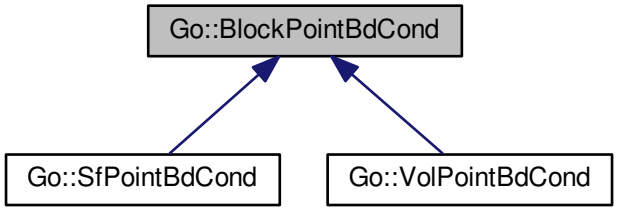
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/BlockBoundaryCondition.h

29.36 Go::BlockPointBdCond Class Reference

`#include <BlockPointBdCond.h>`

Inheritance diagram for Go::BlockPointBdCond:



Public Member Functions

- BlockPointBdCond ()
- virtual ~BlockPointBdCond ()
- virtual int getSolutionSpaceIdx () const
- virtual void getCoefficientsEnumeration (std::vector< int > &local_enumeration) const =0
- virtual Point getConditionValue () const =0
- virtual void getInterpolationFactors (std::vector< std::pair< int, double > > &factors) const =0

29.36.1 Detailed Description

Definition at line 51 of file BlockPointBdCond.h.

29.36.2 Constructor & Destructor Documentation

29.36.2.1 Go::BlockPointBdCond::BlockPointBdCond ( )

29.36.2.2 virtual Go::BlockPointBdCond::~BlockPointBdCond ( ) [virtual]

29.36.3 Member Function Documentation

29.36.3.1 virtual void Go::BlockPointBdCond::getCoefficientsEnumeration (std::vector< int > & *local_enumeration*) const [pure virtual]

Implemented in Go::SfPointBdCond, and Go::VolPointBdCond.

29.36.3.2 virtual Point Go::BlockPointBdCond::getConditionValue ( ) const [pure virtual]

Implemented in Go::SfPointBdCond, and Go::VolPointBdCond.

29.36.3.3 virtual void Go::BlockPointBdCond::getInterpolationFactors (std::vector< std::pair< int, double > > & *factors*) const [pure virtual]

Implemented in Go::SfPointBdCond, and Go::VolPointBdCond.

29.36.3.4 virtual int Go::BlockPointBdCond::getSolutionSpaceIdx ( ) const [virtual]

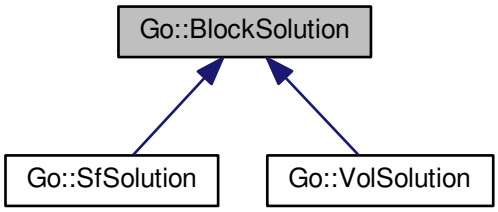
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/BlockPointBdCond.h

29.37 Go::BlockSolution Class Reference

`#include <BlockSolution.h>`

Inheritance diagram for Go::BlockSolution:



Public Member Functions

- virtual ~BlockSolution ()
- virtual SfSolution * asSfSolution ()
- virtual VolSolution * asVolSolution ()
- virtual int getNmbOfPointBdConditions () const =0
- virtual bool matchingSplineSpace (BlockSolution *other) const =0
- virtual void getMatchingCoefficients (BlockSolution *other, std::vector< std::pair< int, int > > &enumeration, int match_pos=0) const =0
- virtual void getBoundaryCoefficients (int boundary, std::vector< int > &enumeration) const =0
- virtual void getBoundaryCoefficients (int boundary, std::vector< int > &enumeration_bd, std::vector< int > &enumeration_b2) const =0
- virtual void makeMatchingSplineSpace (BlockSolution *other)=0

- virtual void increaseDegree (int new_degree, int pardir)=0
- virtual void insertKnots (const std::vector< int > &knot_intervals, int pardir)=0
- virtual void insertKnots (const std::vector< double > &knots, int pardir)=0
- virtual void erasePreEvaluatedBasisFunctions ()=0
- virtual void performPreEvaluation (std::vector< std::vector< double > > &Gauss_par)=0
- virtual double getJacobian (std::vector< int > &index_of_Gauss_point) const =0
- virtual void valuesInGaussPoint (const std::vector< int > &index_of_Gauss_point, std::vector< Point > &derivs) const =0
- virtual void setSolutionCoefficients (const std::vector< double > &coefs)=0
- virtual int nmbCoefs () const =0
- virtual int nmbCoefs (int pardir) const =0
- virtual int degree (int pardir) const =0
- virtual std::vector< double > knots (int pardir) const =0
- virtual std::vector< double > distinctKnots (int pardir) const =0
- virtual BsplineBasis basis (int pardir) const =0
- virtual int dimension () const =0
- virtual void updateConditions ()=0
- virtual tpTolerances getTolerances () const =0

29.37.1 Detailed Description

Definition at line 60 of file BlockSolution.h.

29.37.2 Constructor & Destructor Documentation

29.37.2.1 virtual Go::BlockSolution::~BlockSolution ( ) [virtual]

29.37.3 Member Function Documentation

29.37.3.1 virtual SfSolution* Go::BlockSolution::asSfSolution ( ) [virtual]

Reimplemented in Go::SfSolution.

29.37.3.2 virtual VolSolution* Go::BlockSolution::asVolSolution ( ) [virtual]

Reimplemented in Go::VolSolution.

29.37.3.3 virtual BsplineBasis Go::BlockSolution::basis (int *pardir*) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.4 virtual int Go::BlockSolution::degree (int *pardir*) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.5 virtual int Go::BlockSolution::dimension ( ) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.6 virtual std::vector<double> Go::BlockSolution::distinctKnots (int *pardir*) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.7 virtual void Go::BlockSolution::erasePreEvaluatedBasisFunctions ( ) [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.8 virtual void Go::BlockSolution::getBoundaryCoefficients (int *boundary,* std::vector< int > & *enumeration*) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.9 virtual void Go::BlockSolution::getBoundaryCoefficients (int *boundary,* std::vector< int > & *enumeration_bd,* std::vector< int > & *enumeration_b2*) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.10 virtual double Go::BlockSolution::getJacobian (std::vector< int > & *index_of_Gauss_point*) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.11 virtual void Go::BlockSolution::getMatchingCoefficients (BlockSolution * *other,* std::vector< std::pair< int, int > > & *enumeration,* int *match_pos* = 0) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.12 virtual int Go::BlockSolution::getNmbOfPointBdConditions ( ) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.13 virtual tpTolerances Go::BlockSolution::getTolerances ( ) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.14 virtual void Go::BlockSolution::increaseDegree (int *new_degree,* int *pardir*) [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.15 virtual void Go::BlockSolution::insertKnots (const std::vector< int > & *knot_intervals*, int *pardir*) [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.16 virtual void Go::BlockSolution::insertKnots (const std::vector< double > & *knots*, int *pardir*) [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.17 virtual std::vector<double> Go::BlockSolution::knots (int *pardir*) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.18 virtual void Go::BlockSolution::makeMatchingSplineSpace (BlockSolution * *other*) [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.19 virtual bool Go::BlockSolution::matchingSplineSpace (BlockSolution * *other*) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.20 virtual int Go::BlockSolution::nmbCoefs ( ) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.21 virtual int Go::BlockSolution::nmbCoefs (int *pardir*) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.22 virtual void Go::BlockSolution::performPreEvaluation (std::vector< std::vector< double > > & *Gauss_par*) [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.23 virtual void Go::BlockSolution::setSolutionCoefficients (const std::vector< double > & *coefs*) [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.24 virtual void Go::BlockSolution::updateConditions ( ) [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

29.37.3.25 virtual void Go::BlockSolution::valuesInGaussPoint (const std::vector< int > & *index_of_Gauss_point*, std::vector< **Point** > & *derivs*) const [pure virtual]

Implemented in Go::VolSolution, and Go::SfSolution.

The documentation for this class was generated from the following file:

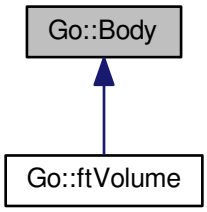
- isogeometric_model/include/GoTools/isogeometric_model/BlockSolution.h

29.38 Go::Body Class Reference

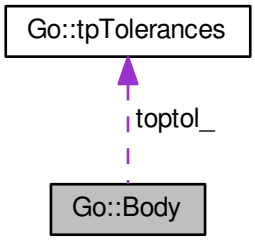
A boundary represented solid.

`#include <Body.h>`

Inheritance diagram for Go::Body:



Collaboration diagram for Go::Body:



Public Member Functions

- Body ()

  Default constructor.
- Body (std::vector< shared_ptr< SurfaceModel > > &shells, int material_id=-1)

  Constructor with multiple shells.
- Body (shared_ptr< SurfaceModel > shell, int material_id=-1)

  Constructor with one outer shell.
- ~Body ()

  Destructor.
- void addshell (shared_ptr< SurfaceModel > shell)
- shared_ptr< SurfaceModel > getOuterShell () const

  Fetch the outer shell belonging to this solid.
- std::vector< shared_ptr< SurfaceModel > > getAllShells () const
- int nmbOfShells () const

  The number of shells belonging to this solid.
- shared_ptr< SurfaceModel > getShell (int idx) const
- void setMaterial (int material_id)

  Material information.
- bool hasMaterialInfo () const
- int getMaterial () const
- int nmbOfFaces () const

  Total number of faces.
- std::vector< shared_ptr< Vertex > > vertices () const

  Fetch all vertices.
- virtual BoundingBox boundingBox () const

  The bounding box corresponding to this solid.
- virtual bool areNeighbours (Body *other, shared_ptr< ftSurface > &bd_face1, shared_ptr< ftSurface > &bd_face2, int adj_idx=0) const

  Check if two bodies are neighbours.
- void getAdjacentBodies (std::vector< Body * > &neighbours)
- void eraseBodyAdjacency ()

  Remove adjacency information to other bodies.
- bool isInside (const Point &pnt) const

  Check if a point lies inside this body.
- shared_ptr< SurfaceModel > getShell (ftSurface *face) const

  Find the shell containing a given face (if any)
- tpTolerances getTolerances ()

  Return topology tolerances.

Protected Member Functions

- void addBodyPointers ()

Protected Attributes

- std::vector< shared_ptr< SurfaceModel > > shells_

  Outer and possibly inner void shells.
- int material_id_

  Possibility to store material information (-1 = not set)
- tpTolerances toptol_

  Tolerances used in topology analysis.

29.38.1 Detailed Description

A boundary represented solid.

Definition at line 53 of file Body.h.

29.38.2 Constructor & Destructor Documentation

29.38.2.1 Go::Body::Body ( )

Default constructor.

29.38.2.2 Go::Body::Body (std::vector< shared_ptr< SurfaceModel > > & *shells*, int *material_id* = -1)

Constructor with multiple shells.

29.38.2.3 Go::Body::Body (shared_ptr< SurfaceModel > *shell*, int *material_id* = -1)

Constructor with one outer shell.

29.38.2.4 Go::Body::~Body ( )

Destructor.

29.38.3 Member Function Documentation

29.38.3.1 void Go::Body::addBodyPointers ( ) [protected]

29.38.3.2 void Go::Body::addshell (shared_ptr< SurfaceModel > *shell*)

Add another shell to the solid description. Used in connection with building the solid

29.38.3.3 virtual bool Go::Body::areNeighbours (Body * *other*, shared_ptr< ftSurface > & *bd_face1*, shared_ptr< ftSurface > & *bd_face2*, int *adj_idx* = 0) const [virtual]

Check if two bodies are neighbours.

29.38.3.4 virtual BoundingBox Go::Body::boundingBox ( ) const [virtual]

The bounding box corresponding to this solid.

Reimplemented in Go::ftVolume.

29.38.3.5 void Go::Body::eraseBodyAdjacency ( )

Remove adjacency information to other bodies.

29.38.3.6 void Go::Body::getAdjacentBodies (std::vector< Body * > & *neighbours*)

Fetch all bodies adjacent to this one. This function is relevant in an assembly system or in an isogeometric setting

29.38.3.7 std::vector<shared_ptr<SurfaceModel> > Go::Body::getAllShells ( ) const [inline]

Fetch all shells belonging to this solid. The first shell corresponds to the outer boundary of the solid, any subsequent shells are void

Definition at line 96 of file Body.h.

29.38.3.8 int Go::Body::getMaterial ( ) const [inline]

Definition at line 129 of file Body.h.

29.38.3.9 shared_ptr<SurfaceModel> Go::Body::getOuterShell ( ) const [inline]

Fetch the outer shell belonging to this solid.

Definition at line 84 of file Body.h.

29.38.3.10 shared_ptr<SurfaceModel> Go::Body::getShell (int *idx*) const [inline]

Fetch a specified shell. Index zero corresponds to the outer shell

Definition at line 109 of file Body.h.

29.38.3.11 shared_ptr<SurfaceModel> Go::Body::getShell (ftSurface * *face*) const

Find the shell containing a given face (if any)

29.38.3.12 tpTolerances Go::Body::getTolerances ( ) [inline]

Return topology tolerances.

Definition at line 161 of file Body.h.

29.38.3.13 bool Go::Body::hasMaterialInfo ( ) const [inline]

Definition at line 124 of file Body.h.

29.38.3.14 bool Go::Body::isInside (const Point & *pnt*) const

Check if a point lies inside this body.

29.38.3.15 int Go::Body::nmbOfFaces ( ) const

Total number of faces.

29.38.3.16 int Go::Body::nmbOfShells ( ) const [inline]

The number of shells belonging to this solid.

Definition at line 102 of file Body.h.

29.38.3.17 void Go::Body::setMaterial (int *material_id*) [inline]

Material information.

Definition at line 119 of file Body.h.

29.38.3.18 std::vector<shared_ptr<Vertex> > Go::Body::vertices ( ) const

Fetch all vertices.

29.38.4 Member Data Documentation

29.38.4.1 int Go::Body::material_id_ [protected]

Possibility to store material information (-1 = not set)

Definition at line 175 of file Body.h.

29.38.4.2 std::vector<shared_ptr<SurfaceModel> > Go::Body::shells_ [protected]

Outer and possibly inner void shells.

Definition at line 172 of file Body.h.

29.38.4.3 tpTolerances Go::Body::toptol_ [protected]

Tolerances used in topology analysis.

Definition at line 181 of file Body.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/Body.h

29.39 bool Class Reference

`#include <boolean.h>`

Public Member Functions

- bool (const int b)
- bool (const void *b)
- bool ()
- operator int () const
- int operator! () const

29.39.1 Detailed Description

Definition at line 13 of file boolean.h.

29.39.2 Constructor & Destructor Documentation

29.39.2.1 bool::bool (const int *b*) [inline]

Definition at line 17 of file boolean.h.

29.39.2.2 bool::bool (const void * *b*) [inline]

Definition at line 18 of file boolean.h.

29.39.2.3 bool::bool ( ) [inline]

Definition at line 19 of file boolean.h.

29.39.3 Member Function Documentation

29.39.3.1 bool::operator int ( ) const [inline]

Definition at line 20 of file boolean.h.

29.39.3.2 int bool::operator! ( ) const [inline]

Definition at line 21 of file boolean.h.

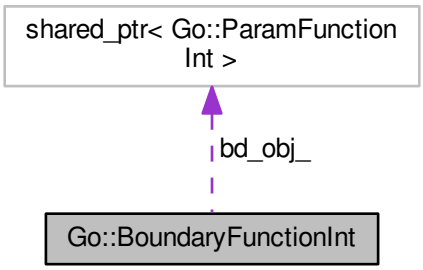
The documentation for this class was generated from the following file:

- newmat/include/boolean.h

29.40 Go::BoundaryFunctionInt Struct Reference

`#include <BoundaryFunctionInt.h>`

Collaboration diagram for Go::BoundaryFunctionInt:



Public Member Functions

- BoundaryFunctionInt (shared_ptr< ParamFunctionInt > bd_obj, int dir, double par)
- int getDir ()
- double getPar ()
- shared_ptr< ParamFunctionInt > getObject ()

Public Attributes

- shared_ptr< ParamFunctionInt > bd_obj_
- int pardir_
- double par_

29.40.1 Detailed Description

This struct is a helper struct that bundles boundary information for an object of type ParamFunctionInt.

Definition at line 57 of file BoundaryFunctionInt.h.

29.40.2 Constructor & Destructor Documentation

29.40.2.1 Go::BoundaryFunctionInt::BoundaryFunctionInt (shared_ptr< ParamFunctionInt > *bd_obj*, int *dir*, double *par*) [inline]

Constructor

Parameters

bd_obj	shared pointer to the object of interest
dir	parameter direction that specifies the boundary
par	the value of the relevant parameter at the boundary

Definition at line 68 of file BoundaryFunctionInt.h.

29.40.3 Member Function Documentation

29.40.3.1 int Go::BoundaryFunctionInt::getDir ( ) [inline]

Get the parameter direction that specifies the boundary

Returns

the parameter direction

Definition at line 78 of file BoundaryFunctionInt.h.

29.40.3.2 shared_ptr<ParamFunctionInt> Go::BoundaryFunctionInt::getObject ( ) [inline]

Get the object which the boundary belongs to

Returns

shared pointer to the object

Definition at line 88 of file BoundaryFunctionInt.h.

29.40.3.3 double Go::BoundaryFunctionInt::getPar ( ) [inline]

Get the value of the relevant parameter at the boundary

Returns

the parameter value

Definition at line 83 of file BoundaryFunctionInt.h.

29.40.4 Member Data Documentation

29.40.4.1 shared_ptr<ParamFunctionInt> Go::BoundaryFunctionInt::bd_obj_

Definition at line 59 of file BoundaryFunctionInt.h.

29.40.4.2 double Go::BoundaryFunctionInt::par_

Definition at line 62 of file BoundaryFunctionInt.h.

29.40.4.3 int Go::BoundaryFunctionInt::pardir_

Definition at line 60 of file BoundaryFunctionInt.h.

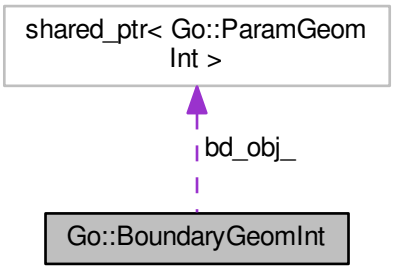
The documentation for this struct was generated from the following file:

- intersections/include/GoTools/intersections/BoundaryFunctionInt.h

29.41 Go::BoundaryGeomInt Struct Reference

`#include <BoundaryGeomInt.h>`

Collaboration diagram for Go::BoundaryGeomInt:



Public Member Functions

- BoundaryGeomInt (shared_ptr< ParamGeomInt > bd_obj, int dir, double par)
- ~BoundaryGeomInt ()

  Destructor.
- int getDir ()
- double getPar ()
- shared_ptr< ParamGeomInt > getObject ()

Public Attributes

- shared_ptr< ParamGeomInt > bd_obj_
- int pardir_
- double par_

29.41.1 Detailed Description

This struct is a helper struct that bundles boundary information for an object of type ParamGeomInt.

Definition at line 56 of file BoundaryGeomInt.h.

29.41.2 Constructor & Destructor Documentation

29.41.2.1 Go::BoundaryGeomInt::BoundaryGeomInt (shared_ptr< ParamGeomInt > *bd_obj*, int *dir*, double *par*) [inline]

Constructor

Parameters

bd_obj	shared pointer to the object of interest
dir	parameter direction that specifies the boundary
par	the value of the relevant parameter at the boundary

Definition at line 67 of file BoundaryGeomInt.h.

29.41.2.2 Go::BoundaryGeomInt::~BoundaryGeomInt ( ) [inline]

Destructor.

Definition at line 76 of file BoundaryGeomInt.h.

29.41.3 Member Function Documentation

29.41.3.1 int Go::BoundaryGeomInt::getDir ( ) [inline]

Get the parameter direction that specifies the boundary

Returns

the parameter direction

Definition at line 80 of file BoundaryGeomInt.h.

29.41.3.2 shared_ptr<ParamGeomInt> Go::BoundaryGeomInt::getObject ( ) [inline]

Get the object which the boundary belongs to

Returns

shared pointer to the object

Definition at line 90 of file BoundaryGeomInt.h.

29.41.3.3 double Go::BoundaryGeomInt::getPar ( ) [inline]

Get the value of the relevant parameter at the boundary

Returns

the parameter value

Definition at line 85 of file BoundaryGeomInt.h.

29.41.4 Member Data Documentation

29.41.4.1 shared_ptr<ParamGeomInt> Go::BoundaryGeomInt::bd_obj_

Definition at line 58 of file BoundaryGeomInt.h.

29.41.4.2 double Go::BoundaryGeomInt::par_

Definition at line 61 of file BoundaryGeomInt.h.

29.41.4.3 int Go::BoundaryGeomInt::pardir_

Definition at line 59 of file BoundaryGeomInt.h.

The documentation for this struct was generated from the following file:

- intersections/include/GoTools/intersections/BoundaryGeomInt.h

29.42 Go::BoundaryIntersectionData Struct Reference

`#include <IntersectionPool.h>`

Public Attributes

- int dir [2]

  Running parameter direction in object 1 and 2.
- double par [2]

  Parameter value for the fixed parameter in object 1 and 2 (-1 if the object does not have a fixed parameter, i.e. when the object is a curve).
- std::vector< shared_ptr< IntersectionPoint > > pts

  Chain of IntersectionPoints making up the intersection.

29.42.1 Detailed Description

Helper struct to be used with IntersectionPool::intersectAlongCommonBoundary()

Definition at line 968 of file IntersectionPool.h.

29.42.2 Member Data Documentation

29.42.2.1 int Go::BoundaryIntersectionData::dir[2]

Running parameter direction in object 1 and 2.

Definition at line 972 of file IntersectionPool.h.

29.42.2.2 double Go::BoundaryIntersectionData::par[2]

Parameter value for the fixed parameter in object 1 and 2 (-1 if the object does not have a fixed parameter, i.e. when the object is a curve).

Definition at line 977 of file IntersectionPool.h.

29.42.2.3 std::vector<shared_ptr<IntersectionPoint> > Go::BoundaryIntersectionData::pts

Chain of IntersectionPoints making up the intersection.

Definition at line 980 of file IntersectionPool.h.

The documentation for this struct was generated from the following file:

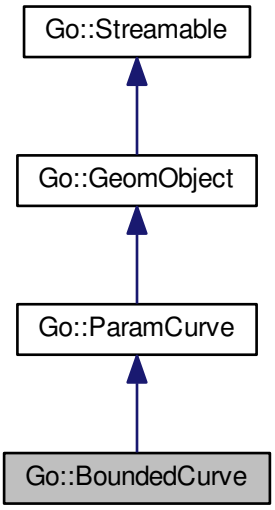
- intersections/include/GoTools/intersections/IntersectionPool.h

29.43 Go::BoundedCurve Class Reference

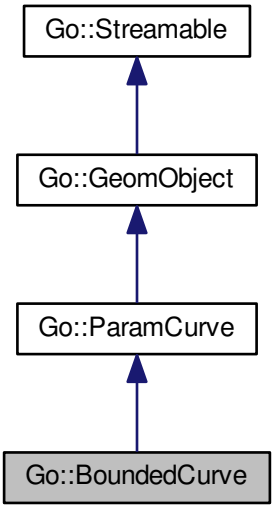
A bounded curve. Both parameter values and end points may be given to define the boundaries. Assuming that both points prefer parameter, or both points prefer points. Typically used to bound infinite curves, for instance lines.

`#include <BoundedCurve.h>`

Inheritance diagram for Go::BoundedCurve:



Collaboration diagram for Go::BoundedCurve:



Public Member Functions

- BoundedCurve ()

- BoundedCurve (shared_ptr< ParamCurve > curve, bool prefer_bd_par, double start_par, double end_par, Point start_pt, Point end_pt)
- BoundedCurve (shared_ptr< ParamCurve > curve, Point start_pt, Point end_pt)
- BoundedCurve (shared_ptr< ParamCurve > curve, double start_par, double end_par)
- virtual ~BoundedCurve ()

  virtual destructor - ensures safe inheritance
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundedCurve * clone () const
- virtual void point (Point &pt, double tpar) const
- virtual void point (std::vector< Point > &pts, double tpar, int derivs, bool from_right=true) const
- virtual double startparam () const
- virtual double endparam () const
- virtual void reverseParameterDirection (bool switchparam=false)
- virtual void setParameterInterval (double t1, double t2)
- virtual SplineCurve * geometryCurve ()
- virtual bool isDegenerate (double degenerate_epsilon)
- virtual BoundedCurve * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual DirectionCone directionCone () const
- virtual void appendCurve (ParamCurve *cv, bool reparam=true)
- virtual void appendCurve (ParamCurve *cv, int continuity, double &dist, bool reparam=true)
- virtual void closestPoint (const Point &pt, double tmin, double tmax, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const
- virtual double length (double tol)
- void setParamBounds (double startpar, double endpar)
- shared_ptr< ParamCurve > underlyingCurve () const
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)
- virtual bool isLinear (Point &dir, double tol)

  Check if the curve is linear.
- virtual bool isInPlane (const Point &loc, const Point &axis, double eps, Point &normal) const

  Check if the curve lies in a plane passing through a given axis.

Static Public Member Functions

- static ClassType classType ()

Additional Inherited Members

29.43.1 Detailed Description

A bounded curve. Both parameter values and end points may be given to define the boundaries. Assuming that both points prefer parameter, or both points prefer points. Typically used to bound infinite curves, for instance lines.

Definition at line 56 of file BoundedCurve.h.

29.43.2 Constructor & Destructor Documentation

29.43.2.1 Go::BoundedCurve::BoundedCurve ( ) [inline]

Default constructor. Constructs an uninitialized Line which can only be assigned to or read into.

Definition at line 62 of file BoundedCurve.h.

29.43.2.2 Go::BoundedCurve::BoundedCurve (shared_ptr< ParamCurve > *curve*, bool *prefer_bd_par*, double *start_par*, double *end_par*, Point *start_pt*, Point *end_pt*)

Constructor. Input is start point and end point. Assumed to lie on curve (or at least close to it).

29.43.2.3 Go::BoundedCurve::BoundedCurve (shared_ptr< ParamCurve > *curve*, Point *start_pt*, Point *end_pt*)

Constructor. Input is start point and end point. Assumed to lie on curve (or at least close to it). Only position given.

29.43.2.4 Go::BoundedCurve::BoundedCurve (shared_ptr< ParamCurve > *curve*, double *start_par*, double *end_par*)

Constructor. Input is start point and end point. Assumed to lie on curve (or at least close to it). Only parameter value of curve given.

29.43.2.5 virtual Go::BoundedCurve::~BoundedCurve ( ) [virtual]

virtual destructor - ensures safe inheritance

29.43.3 Member Function Documentation

29.43.3.1 virtual void Go::BoundedCurve::appendCurve (ParamCurve * *cv*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparametrization NB: This virtual member function currently only works for SplineCurves and CurveOnSurfaces. Moreover, 'this' curve and the 'cv' curve must be of the same type.

Parameters

cv	the curve to append to 'this' curve.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.43.3.2 virtual void Go::BoundedCurve::appendCurve (ParamCurve * *cv*, int *continuity*, double & *dist*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparmetrization

Parameters

cv	the curve to append to 'this' curve.
continuity	the required continuity at the transition. Can be G^(-1) and upwards.
dist	a measure of the local distorsion around the transition in order to achieve the specified continuity.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.43.3.3 virtual BoundingBox Go::BoundedCurve::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.43.3.4 static ClassType Go::BoundedCurve::classType ( ) [static]

29.43.3.5 virtual BoundedCurve* Go::BoundedCurve::clone ( ) const [virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::ParamCurve.

29.43.3.6 virtual void Go::BoundedCurve::closestPoint (const Point & *pt*, double *tmin*, double *tmax*, double & *clo_t*, Point & *clo_pt*, double & *clo_dist*, double const * *seed* = 0) const [virtual]

Compute the closest point from an interval of this curve to a specified point.

Parameters

pt	point we want to find the closest point to
tmin	start parameter of search interval
tmax	end parameter of search interval
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.
seed	pointer to initial guess value, provided by the user (can be 0, for which the algorithm will determine a (hopefully) reasonable choice).

Implements Go::ParamCurve.

29.43.3.7 virtual int Go::BoundedCurve::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.43.3.8 virtual DirectionCone Go::BoundedCurve::directionCone ( ) const [virtual]

Creates a DirectionCone which covers all tangent directions of this curve.

Returns

the smallest DirectionCone containing all tangent directions of this curve.

Implements Go::ParamCurve.

29.43.3.9 virtual double Go::BoundedCurve::endparam ( ) const [virtual]

Query the end parameter of the curve

Returns

the curve's end parameter

Implements Go::ParamCurve.

29.43.3.10 virtual SplineCurve* Go::BoundedCurve::geometryCurve ( ) [virtual]

If the definition of this ParamCurve contains a SplineCurve describing its spatial shape, then this function will return a pointer to this SplineCurve. Otherwise it will return a null pointer. The returned curve is NEWed, so the user is responsible for deleting it. This function may have side-effects.

Returns

a pointer to a SplineCurve representation of the ParamCurve, if it exists. Null pointer otherwise.

Implements Go::ParamCurve.

29.43.3.11 virtual ClassType Go::BoundedCurve::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.43.3.12 virtual bool Go::BoundedCurve::isAxisRotational (Point & *centre*, Point & *axis*, Point & *vec*, double & *angle*) [virtual]

Check if the curve is axis rotational. Only true if a connection to an axis rotational elementary curve exist The axis and rotational angle is only specified if the curve is actually rotational

Reimplemented from Go::ParamCurve.

29.43.3.13 virtual bool Go::BoundedCurve::isDegenerate (double *degenerate_epsilon*) [virtual]

Query whether the curve is degenerate (collapsed into a single point).

Parameters

degenerate_epsilon	the tolerance used in determine whether the curve is degenerate. A curve is considered degenerate if its total length is shorter than this value.

Returns

`true` if the curve is degenerate, `false` otherwise.

Implements Go::ParamCurve.

29.43.3.14 virtual bool Go::BoundedCurve::isInPlane (const Point & *loc,* const Point & *axis,* double *eps,* Point & *normal*) const [virtual]

Check if the curve lies in a plane passing through a given axis.

Reimplemented from Go::ParamCurve.

29.43.3.15 virtual bool Go::BoundedCurve::isLinear (Point & *dir,* double *tol*) [virtual]

Check if the curve is linear.

Reimplemented from Go::ParamCurve.

29.43.3.16 virtual double Go::BoundedCurve::length (double *tol*) [virtual]

Compute the total length of this curve up to some tolerance

Parameters

tol	the relative tolerance when approximating the length, i.e. stop iteration when error becomes smaller than tol/(curve length)

Returns

the length calculated

Implements Go::ParamCurve.

29.43.3.17 virtual void Go::BoundedCurve::point (Point & *pt,* double *tpar*) const [virtual]

Evaluate the curve's position at a given parameter

Parameters

pt	the evaluated position will be written to this Point
tpar	the parameter for which we wish to evaluate the curve

Implements Go::ParamCurve.

29.43.3.18 virtual void Go::BoundedCurve::point (std::vector< Point > & *pts,* double *tpar,* int *derivs,* bool *from_right* = true) const [virtual]

Evaluate the curve's position and a certain number of derivatives at a given parameter.

Parameters

pts	the evaluated position and derivatives (tangent, curvature vector, etc.) will be written to this vector. The first entry will be the position, the second entry will be the first derivative, etc. The size of this vector must be set to 'derivs'+ 1 prior to calling this function.
tpar	the parameter for which we want to evaluate the curve
derivs	the number of derivatives we want to have calculated
from_right	specify whether we should calculate derivatives 'from the right' or 'from the left' (default is from the right). This matters only when the curve presents discontinuities in its derivatives.

Implements Go::ParamCurve.

29.43.3.19 virtual void Go::BoundedCurve::read (std::istream & *is*) [virtual]

Read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.43.3.20 virtual void Go::BoundedCurve::reverseParameterDirection (bool *switchparam* = false) [virtual]

Set the parameter direction of the curve. The curve's parameter interval will always remain constant, but by flipping the parameter direction, the curve will be traced the opposite way when moving a parameter over the parameter interval.

Parameters

switchparam	if true, and the curve is 2D, the x and y coordinates should be swapped. This is used when turning the orientation of bounded (trimmed) surfaces.

Implements Go::ParamCurve.

29.43.3.21 void Go::BoundedCurve::setParamBounds (double *startpar,* double *endpar*)

Set bounds for the parametrization of the Line.

Parameters

startpar	start parameter
endpar	end parameter

29.43.3.22 virtual void Go::BoundedCurve::setParameterInterval (double *t1*, double *t2*) [virtual]

Set bounds for the parametrization of the curve

Parameters

startpar	start parameter
endpar	end parameter

Implements Go::ParamCurve.

29.43.3.23 virtual double Go::BoundedCurve::startparam ( ) const [virtual]

Query the start parameter of the curve

Returns

the curve's start parameter

Implements Go::ParamCurve.

29.43.3.24 virtual BoundedCurve* Go::BoundedCurve::subCurve (double *from_par*, double *to_par*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implements Go::ParamCurve.

29.43.3.25 shared_ptr<ParamCurve> Go::BoundedCurve::underlyingCurve ( ) const [inline]

Get a pointer to the underlying curve

Returns

shared pointer to the underlying curve

Definition at line 156 of file BoundedCurve.h.

29.43.3.26 virtual void Go::BoundedCurve::write (std::ostream & *os*) const [virtual]

Write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

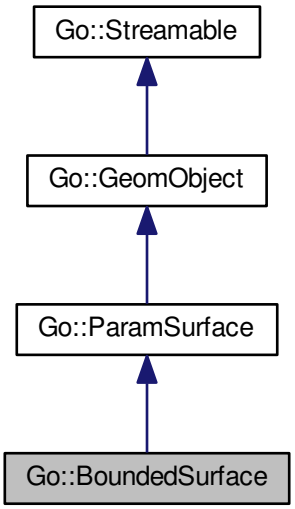
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/BoundedCurve.h

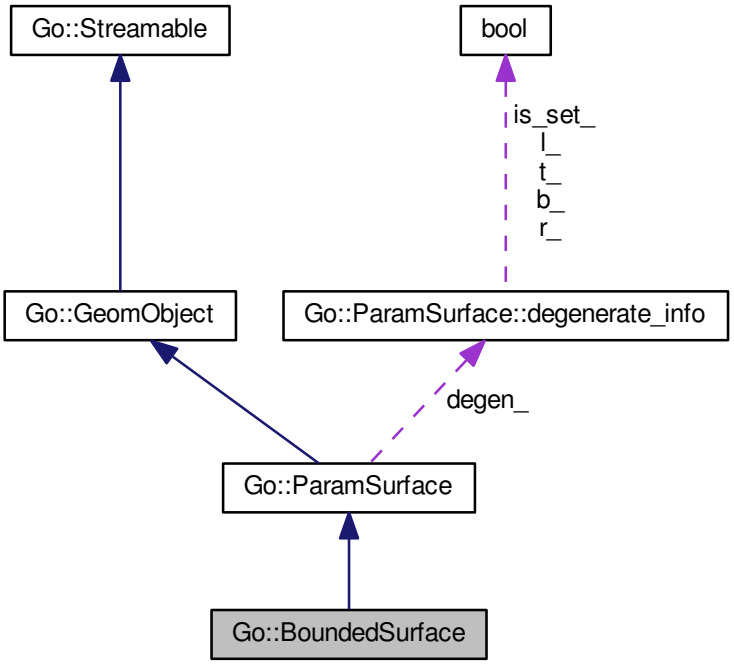
29.44 Go::BoundedSurface Class Reference

`#include <BoundedSurface.h>`

Inheritance diagram for Go::BoundedSurface:



Collaboration diagram for Go::BoundedSurface:



Public Member Functions

- BoundedSurface ()

  Create an empty BoundedSurface that can be assigned or read() into.
- BoundedSurface (shared_ptr< ParamSurface > surf, std::vector< shared_ptr< CurveOnSurface > > loop, double space_epsilon, bool fix_trim_cvs=true)
- BoundedSurface (shared_ptr< ParamSurface > surf, std::vector< std::vector< shared_ptr< CurveOnSurface > > > loops, double space_epsilon, bool fix_trim_cvs=true)
- BoundedSurface (shared_ptr< ParamSurface > surf, std::vector< std::vector< shared_ptr< CurveOnSurface > > > loops, std::vector< double > space_epsilons, bool fix_trim_cvs=true)
- BoundedSurface (shared_ptr< ParamSurface > surf, double space_epsilon)

  Create a bounded surface from a non-trimmed one.
- BoundedSurface (shared_ptr< ParamSurface > surf, std::vector< CurveLoop > &loops)

  Create a bounded surface from a non-trimmed one.
- BoundedSurface (shared_ptr< ParamSurface > surf, std::vector< shared_ptr< CurveLoop > > &loops)

  Create a bounded surface from a non-trimmed one.
- virtual ~BoundedSurface ()

  Virtual destructor ensures safe inheritance.
- virtual void read (std::istream &is)

  read this BoundedSurface from a stream
- void read (std::istream &is, bool fix_trim_cvs)
- virtual void write (std::ostream &os) const

  write this BoundedSurface to a stream

- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of type BoundedSurface.
- virtual BoundedSurface * clone () const

  clone this BoundedSurface and return a pointer to the clone
- virtual SplineSurface * asSplineSurface ()

  Return the spline surface represented by this surface, if any.
- virtual DirectionCone normalCone () const
- virtual DirectionCone tangentCone (bool pardir_is_u) const
- virtual const CurveBoundedDomain & parameterDomain () const
- virtual RectDomain containingDomain () const
- virtual bool inDomain (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies inside the domain of this surface.
- virtual int inDomain2 (double u, double v, double eps=1.0e-4) const
- virtual bool onBoundary (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies at the boundary of this surface.
- virtual Point closestInDomain (double u, double v) const
- virtual CurveLoop outerBoundaryLoop (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- virtual std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EP↩SILON) const
- std::vector< CurveLoop > absolutelyAllBoundaryLoops () const
- virtual void point (Point &pt, double upar, double vpar) const
- virtual void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_from_right=true, double resolution=1.0e-12) const
- virtual void normal (Point &n, double upar, double vpar) const
- virtual void evalGrid (int num_u, int num_v, double umin, double umax, double vmin, double vmax, std↩::vector< double > &points, double nodata_val=-9999) const
- virtual Point getInternalPoint (double &u, double &v) const
- virtual std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- virtual std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual double nextSegmentVal (int dir, double par, bool forward, double tol) const
- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- virtual void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- virtual void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- void getBoundaryInfo (Point &pt1, Point &pt2, std::vector< shared_ptr< CurveOnSurface > > &bd_cvs) const
- virtual void turnOrientation ()

  Turns the direction of the normal of the surface.
- virtual void reverseParameterDirection (bool direction_is_u)
- void makeBoundaryCurvesG1 (double kink)
- void removeSmallBoundaryCurves (double gap, double neighbour, double kink)
- virtual void swapParameterDirection ()

  Swaps the two parameter directions.
- virtual double area (double tol) const
- virtual void setParameterDomain (double u1, double u2, double v1, double v2)
- void splitSingleLoops ()

- shared_ptr< ParamSurface > underlyingSurface ()
- shared_ptr< const ParamSurface > underlyingSurface () const
- bool hasUnderlyingSpline (shared_ptr< SplineSurface > &srf)
- int numberOfLoops () const

  Get the number of boundary loops that describe the trimmed surface.
- shared_ptr< CurveLoop > loop (int idx)

  Get a shared pointer to a specific boundary loop.
- SplineCurve * constParamCurve (double parameter, bool direction_is_u) const
- virtual bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for paralell and anti paralell partial derivatives in surface corners.
- virtual void getCornerPoints (std::vector< std::pair< Point, Point > > &corners) const
- virtual void setIterator (IteratorType type)
- virtual bool isIsoTrimmed (double tol) const

  Check if the current surface is trimmed along constant parameter curves.
- shared_ptr< ParamSurface > getIsoTrimSurface (double tol) const

  Fetch.
- bool orientationIsSet ()

  Check if the loop orientation is tested and corrected.
- bool orientationOK ()
- void setOrientationOK ()

  Remove history of loop orientation fixes.
- void turnLoopOrientation (int idx)

  Turn orientation of specified loop, and remember turning it.
- bool isValid (int &valid_state) const
- bool fixInvalidSurface (double &max_loop_gap, double max_tol_mult=1.0)
- void analyzeLoops ()
- void removeMismatchCurves (double max_tol_mult)
- double maxLoopSfDist (int loop_ind, int nmb_seg_samples=100)
- double maxLoopGap ()

  We measure the largest distance between loop segments.
- Point getSurfaceParameter (int loop_idx, int cv_idx, double bd_par) const
- bool simplifyBdLoops (double tol, double ang_tol, double &max_dist)

  Simplify boundary loops by reducing the number of curves if possible.
- bool makeUnderlyingSpline ()
- bool allIsSpline () const
- BoundedSurface * allSplineCopy () const
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)
- virtual bool isPlanar (Point &normal, double tol)

  This surface is planar if the underlying surface is.
- virtual bool isLinear (Point &dir1, Point &dir2, double tol)

  Check if the surface is linear in one or both parameter directions.
- double getEpsGeo () const

  Run through the boundary loops, returning the smallest epsgeo.
- bool closeToUnderlyingBoundary (double upar, double vpar, double domain_fraction=0.01) const
- virtual int ElementOnBoundary (int elem_ix, double eps)
- virtual int ElementBoundaryStatus (int elem_ix, double eps)

Static Public Member Functions

- static ClassType classType ()

  Return the class type identifier of type BoundedSurface.

Friends

- void GeometryTools::setParameterDomain (std::vector< shared_ptr< BoundedSurface > > &sfs, double u1, double u2, double v1, double v2)

Additional Inherited Members

29.44.1 Detailed Description

The class representing trimmed surfaces in Go. Surface should be connected.

Definition at line 59 of file BoundedSurface.h.

29.44.2 Constructor & Destructor Documentation

29.44.2.1 Go::BoundedSurface::BoundedSurface ( )

Create an empty BoundedSurface that can be assigned or read() into.

29.44.2.2 Go::BoundedSurface::BoundedSurface (shared_ptr< ParamSurface > *surf*, std::vector< shared_ptr< CurveOnSurface > > *loop*, double *space_epsilon*, bool *fix_trim_cvs* = true)

Create a BoundedSurface by specifying the underlying surface and a loop of curves that specifies the trimming of the surface.

Parameters

surf	the created BoundedSurface will represent a trimmed version of this surface
loop	a vector of CurveOnSurface s that together describe the boundary that defines the trimming of the surface. The curves in this vector should all lie on the surface in question, and when placed head-to-tail they should form a closed loop with counterclockwise orientation.
space_epsilon	geometrical tolerance used when treating the loops.
fix_trim_cvs	the constructor may alter loop curves if they are not consistent.

29.44.2.3 Go::BoundedSurface::BoundedSurface (shared_ptr< ParamSurface > *surf*, std::vector< std::vector< shared_ptr< CurveOnSurface > > > *loops*, double *space_epsilon*, bool *fix_trim_cvs* = true)

Create a BoundedSurface by specifying the underlying surface and a number of loops of curves that specify the trimming of the surface.

Parameters

surf	the created BoundedSurface will represent a trimmed version of this surface
loops	each entry in 'loop is a vector of CurveOnSurface s that describe a closed loop forming a part of the trimmed surface's boundary. (Since the surface may have internal holes, more than one loop might be required to describe its boundary). The curve loops should all lie on the surface in question. The first entry in this vector describes the outermost boundary, which should be oriented counterclockwise. The other entries represent holes, and should be oriented
	clockwise.

Parameters

space_epsilon	geometrical tolerance used when treating the loops.
fix_trim_cvs	the constructor may alter loop curves if they are not consistent.

29.44.2.4 Go::BoundedSurface::BoundedSurface (shared_ptr< ParamSurface > *surf*, std::vector< std::vector< shared_ptr< CurveOnSurface > > > *loops*, std::vector< double > *space_epsilons*, bool *fix_trim_cvs* = true)

Create a BoundedSurface by specifying the underlying surface and a number of loops of curves that specify the trimming of the surface.

Parameters

surf	the created BoundedSurface will represent a trimmed version of this surface
loops	each entry in 'loops' is a vector of CurveOnSurface s that describe a closed loop forming a part of the trimmed surface's boundary. (Since the surface may have internal holes, more than one loop might be required to describe its boundary). The curve loops should all lie on the surface in question. The first entry in this vector describes the outermost boundary, which should be oriented counterclockwise. The other entries represent holes, and should be oriented clockwise.
space_epsilons	geometrical tolerances used when treating the loops.
fix_trim_cvs	the constructor may alter loop curves if they are not consistent.

29.44.2.5 Go::BoundedSurface::BoundedSurface (shared_ptr< ParamSurface > *surf*, double *space_epsilon*)

Create a bounded surface from a non-trimmed one.

29.44.2.6 Go::BoundedSurface::BoundedSurface (shared_ptr< ParamSurface > *surf*, std::vector< CurveLoop > & *loops*)

Create a bounded surface from a non-trimmed one.

29.44.2.7 Go::BoundedSurface::BoundedSurface (shared_ptr< ParamSurface > *surf*, std::vector< shared_ptr< CurveLoop > > & *loops*)

Create a bounded surface from a non-trimmed one.

29.44.2.8 virtual Go::BoundedSurface::~BoundedSurface ( ) [virtual]

Virtual destructor ensures safe inheritance.

29.44.3 Member Function Documentation

29.44.3.1 std::vector<CurveLoop> Go::BoundedSurface::absolutelyAllBoundaryLoops ( ) const

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops. This function works like allBoundaryLoops(), except that it includes degenerate edges.

Returns

vector containing CurveLoops. The first of these describe the outer boundary of the surface (counterclockwise) whereas the others describe boundaries of interior holes (clockwise).

29.44.3.2 virtual std::vector<CurveLoop> Go::BoundedSurface::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (counterclockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.44.3.3 bool Go::BoundedSurface::allIsSpline ( ) const

Test if underlying surface and all loop curves are CurveOnSurface where the space curves are SplineCurve.

29.44.3.4 BoundedSurface* Go::BoundedSurface::allSplineCopy ( ) const

Return copy where underlying surface and all loop curves are CurveOnSurface where the space curves are SplineCurve.

29.44.3.5 void Go::BoundedSurface::analyzeLoops ( )

Checking all boundary_loops_ to see it they fulfill requirements. Routine sets valid_state_. Must be called after surface is altered.

29.44.3.6 virtual double Go::BoundedSurface::area (double *tol*) const [virtual]

Compute the total area of this surface up to some tolerance

Parameters

tol	the relative tolerance when approximating the area, i.e. stop iteration when error becomes smaller than tol/(surface area)

Returns

the area calculated NB! Intermediate solution with lower accuracy

Implements Go::ParamSurface.

29.44.3.7 virtual SplineSurface* Go::BoundedSurface::asSplineSurface ( ) [inline], [virtual]

Return the spline surface represented by this surface, if any.

Reimplemented from Go::ParamSurface.

Definition at line 175 of file BoundedSurface.h.

29.44.3.8 virtual BoundingBox Go::BoundedSurface::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.44.3.9 static ClassType Go::BoundedSurface::classType ( ) [inline], [static]

Return the class type identifier of type BoundedSurface.

Definition at line 168 of file BoundedSurface.h.

29.44.3.10 virtual BoundedSurface* Go::BoundedSurface::clone ( ) const [virtual]

clone this BoundedSurface and return a pointer to the clone

Implements Go::ParamSurface.

29.44.3.11 virtual void Go::BoundedSurface::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.44.3.12 virtual Point Go::BoundedSurface::closestInDomain (double *u*, double *v*) const [virtual]

Fetch the parameter value in the parameter domain of the surface closest to the parameter pair (u,v)

Implements Go::ParamSurface.

29.44.3.13 virtual void Go::BoundedSurface::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.44.3.14 bool Go::BoundedSurface::closeToUnderlyingBoundary (double *upar*, double *vpar*, double *domain_fraction* = 0.01) const

29.44.3.15 SplineCurve* Go::BoundedSurface::constParamCurve (double *parameter*, bool *direction_is_u*) const

Get the space-curve resulting from fixing one of the surface's parameters and moving the other along its allowed range (inside the trimmed domain). If this results in several disjoint curves, an exception is thrown.

Parameters

parameter	the parameter value of the fixed parameter
direction_is_u	if 'true' then the "free" parameter will be the first one, and the second parameter will be fixed. If 'false', it is the other way around.

Returns

a newly created SplineCurve representing the requested space-curve. The ownership is assumed by the user.

29.44.3.16 virtual std::vector<shared_ptr<ParamCurve> > Go::BoundedSurface::constParamCurves (double *parameter*, bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.44.3.17 virtual RectDomain Go::BoundedSurface::containingDomain ( ) const [virtual]

Get a rectangular parameter domain that is guaranteed to contain the surface's parameterDomain(). It may be the same. There is no guarantee that this is the smallest domain containing the actual domain.

Returns

a RectDomain that is guaranteed to include the surface's total parameter domain.

Implements Go::ParamSurface.

29.44.3.18 virtual int Go::BoundedSurface::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.44.3.19 virtual int Go::BoundedSurface::ElementBoundaryStatus (int *elem_ix*, double *eps*) [virtual]

Check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries of this ftSurface, is inside or outside

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y
eps	Intersection tolerance

Returns

-1: Not a spline surface or element index out of range 0: Outside trimmed volume 1: On boundary (intersection with boundary found) 2: Internal to trimmed surfaces Note that a touch with the boundaries of the underlying surface is not consdered a boundary intersection while touching a trimming curve is seen as an intersection

Reimplemented from Go::ParamSurface.

29.44.3.20 virtual int Go::BoundedSurface::ElementOnBoundary (int *elem_ix*, double *eps*) [virtual]

Check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries of this surface

Parameters

elem↩ _ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y
eps	Intersection tolerance

Returns

-1: Not a spline surface or element index out of range 0: Not on boundary or touching a boundary curve 1: On boundary (intersection with boundary found) Note that a touch with the boundaries of the underlying surfaces is not consdered a boundary intersection while touching a trimming curve is seen as an intersection

Reimplemented from Go::ParamSurface.

29.44.3.21 virtual void Go::BoundedSurface::evalGrid (int *num_u*, int *num_v*, double *umin*, double *umax*, double *vmin*, double *vmax*, std::vector< double > & *points*, double *nodata_val* = -9999) const [virtual]

Evaluate points in a grid The nodata value is applicable for bounded surfaces and grid points outside the trimming loop(s) will get this value

Reimplemented from Go::ParamSurface.

29.44.3.22 bool Go::BoundedSurface::fixInvalidSurface (double & *max_loop_gap*, double *max_tol_mult* = 1.0)

We try to fix the invalid loops. Return value: true if the loops are valid. Returned max_gap is the largest gap between end segments in the loops. Assuming that max_tol_mult >= 1.0. The routine is allowed to alter the eps to eps∗max_tol_mult.

29.44.3.23 virtual void Go::BoundedSurface::getBoundaryInfo (Point & *pt1*, Point & *pt2*, double *epsilon*, SplineCurve ∗& *cv*, SplineCurve ∗& *crosscv*, double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created. **NB:** This function has not yet been implemented!

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.44.3.24 void Go::BoundedSurface::getBoundaryInfo (Point & *pt1*, Point & *pt2*, std::vector< shared_ptr< CurveOnSurface > > & *bd_cvs*) const

Get the boundary curve segment between two points on the same boundary loop. If the given points are not positioned on the same boundary loop (within a certain tolerance), no curves will be retuned.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user

Return values

bd_cvs	upon return, this will contain shared pointers to curves that, taken consecutively, describe the requested boundary segment in its entirety.

29.44.3.25 virtual void Go::BoundedSurface::getCornerPoints (std::vector< std::pair< Point, Point > > & *corners*) const [virtual]

Return surface corners, i.e joints betwee trimming curves, geometric and parametric points in that sequence

Implements Go::ParamSurface.

29.44.3.26 virtual void Go::BoundedSurface::getDegenerateCorners (std::vector< Point > & *deg_corners*, double *tol*) const [virtual]

Check for paralell and anti paralell partial derivatives in surface corners.

Implements Go::ParamSurface.

29.44.3.27 double Go::BoundedSurface::getEpsGeo ( ) const

Run through the boundary loops, returning the smallest epsgeo.

29.44.3.28 virtual Point Go::BoundedSurface::getInternalPoint (double & *u*, double & *v*) const [virtual]

Fetch an arbitrary internal point in the surface Used for localization purposes

Reimplemented from Go::ParamSurface.

29.44.3.29 shared_ptr<ParamSurface> Go::BoundedSurface::getIsoTrimSurface (double *tol*) const

Fetch.

29.44.3.30 Point Go::BoundedSurface::getSurfaceParameter (int *loop_idx,* int *cv_idx,* double *bd_par*) const

Given a parameter value corresponding to on specified curve in a specified boundary loop, return the corresponding surface parameter

29.44.3.31 bool Go::BoundedSurface::hasUnderlyingSpline (shared_ptr< SplineSurface > & *srf*)

Check if the final underlying surface is a spline surface and in that case return this surface

29.44.3.32 virtual bool Go::BoundedSurface::inDomain (double *u,* double *v,* double *eps* = `1.0e-4`) const [virtual]

Check if a parameter pair lies inside the domain of this surface.

Implements Go::ParamSurface.

29.44.3.33 virtual int Go::BoundedSurface::inDomain2 (double *u,* double *v,* double *eps* = `1.0e-4`) const [virtual]

Check if a parameter pair lies inside the domain of this surface return value = 0: outside = 1: internal = 2: at the boundary

Implements Go::ParamSurface.

29.44.3.34 virtual ClassType Go::BoundedSurface::instanceType ( ) const [virtual]

Return the class type identifier of type BoundedSurface.

Implements Go::GeomObject.

29.44.3.35 virtual bool Go::BoundedSurface::isAxisRotational (Point & *centre,* Point & *axis,* Point & *vec,* double & *angle*) [virtual]

Check if the surface is axis rotational. Only true if a connection to an axis rotational elementary surface exist The axis and rotational angle is only specified if the surface is actually rotational

Reimplemented from Go::ParamSurface.

29.44.3.36 virtual bool Go::BoundedSurface::isDegenerate (bool & *b,* bool & *r,* bool & *t,* bool & *l,* double *tolerance*) const [virtual]

Query whether any of the four boundaries of the *underlying surface* are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

29.44.3.37 virtual bool Go::BoundedSurface::isIsoTrimmed (double *tol*) const [virtual]

Check if the current surface is trimmed along constant parameter curves.

Reimplemented from Go::ParamSurface.

29.44.3.38 virtual bool Go::BoundedSurface::isLinear (Point & *dir1,* Point & *dir2,* double *tol*) [virtual]

Check if the surface is linear in one or both parameter directions.

Reimplemented from Go::ParamSurface.

29.44.3.39 virtual bool Go::BoundedSurface::isPlanar (Point & *normal,* double *tol*) [virtual]

This surface is planar if the underlying surface is.

Reimplemented from Go::ParamSurface.

29.44.3.40 bool Go::BoundedSurface::isValid (int & *valid_state*) const

The boundary loops may be outside the loop tolerance, or the loops do not fullfill the loop requirements (1 outer loop which is ccw, cw loops inside, loops should be simple and disjoint).

29.44.3.41 shared_ptr<CurveLoop> Go::BoundedSurface::loop (int *idx*) [inline]

Get a shared pointer to a specific boundary loop.

Definition at line 532 of file BoundedSurface.h.

29.44.3.42 void Go::BoundedSurface::makeBoundaryCurvesG1 (double *kink*)

This function processes all the curves that participate in defining the surface's (trimmed) boundary. Those curves that are not G1 within a certain tolerance are split into severalcurves, so that all G1-discontinuities will end up *between* consecutive curve segments.

Parameters

kink	the tolerance to use for checking G1 continuity

29.44.3.43 bool Go::BoundedSurface::makeUnderlyingSpline ( )

Test if underlying surface is spline, if not try to convert it to spline /return wether underlying surface is spline afterwards

29.44.3.44 double Go::BoundedSurface::maxLoopGap ( )

We measure the largest distance between loop segments.

29.44.3.45 double Go::BoundedSurface::maxLoopSfDist (int *loop_ind,* int *nmb_seg_samples* = 100)

We measure the largest distance from loop to the surface. If the loops are defined by curves in the parameter domain, then it is trivially 0.0. Useful for testing whether the tolerance makes any sense.

29.44.3.46 virtual double Go::BoundedSurface::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.44.3.47 virtual void Go::BoundedSurface::normal (Point & *n,* double *upar,* double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.44.3.48 virtual DirectionCone Go::BoundedSurface::normalCone ( ) const [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.44.3.49 int Go::BoundedSurface::numberOfLoops ( ) const [inline]

Get the number of boundary loops that describe the trimmed surface.

Definition at line 528 of file BoundedSurface.h.

29.44.3.50 virtual bool Go::BoundedSurface::onBoundary (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies at the boundary of this surface.

Implements Go::ParamSurface.

29.44.3.51 bool Go::BoundedSurface::orientationIsSet ( ) [inline]

Check if the loop orientation is tested and corrected.

Definition at line 583 of file BoundedSurface.h.

29.44.3.52 bool Go::BoundedSurface::orientationOK ( ) [inline]

Check the status of the loop orientation. If a fix has been performed or the loop is not OK, the return value will be false

Definition at line 590 of file BoundedSurface.h.

29.44.3.53 virtual CurveLoop Go::BoundedSurface::outerBoundaryLoop (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise, outer boundary loop of the surface.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a CurveLoop describing the anticlockwise, outer boundary loop of the surface.

Implements Go::ParamSurface.

29.44.3.54 virtual const CurveBoundedDomain& Go::BoundedSurface::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as CurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.44.3.55 virtual void Go::BoundedSurface::point (Point & *pt*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.44.3.56 virtual void Go::BoundedSurface::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter

Parameters

vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.44.3.57 virtual void Go::BoundedSurface::read (std::istream & *is*) [virtual]

read this BoundedSurface from a stream

Implements Go::Streamable.

29.44.3.58 void Go::BoundedSurface::read (std::istream & *is,* bool *fix_trim_cvs*)

29.44.3.59 void Go::BoundedSurface::removeMismatchCurves (double *max_tol_mult*)

If both parameter and space curve are given for a segment, and they do not match, one of them is removed, unless we may alter the tolerance slightly (at most to epsgeo∗max_tol_mult).

29.44.3.60 void Go::BoundedSurface::removeSmallBoundaryCurves (double *gap,* double *neighbour,* double *kink*)

This function processes all the curves that participate in defining the surface's (trimmed) boundary. Those curves that are smaller than a given tolerance is merged with one of the adjacent curves if possible

Parameters

gap	positional tolerance used to check for possibility of merge
neighbour	tolerance used for checking if a curve is small
kink	angular tolerance used to check for possibility of merge

29.44.3.61 virtual void Go::BoundedSurface::reverseParameterDirection (bool *direction_is_u*) [virtual]

Reverses the direction of the basis in input direction. **NB:** This function has not yet been implemented!

Parameters

direction_is↩ _u	if 'true', the first parameter direction will be reversed, otherwise, the second parameter direction will be reversed

Implements Go::ParamSurface.

29.44.3.62 virtual void Go::BoundedSurface::setIterator (IteratorType *type*) [inline], [virtual]

Set type of closest point iterator type == Iterator_parametric - use conjugate gradient iteration type == Iterator_↩ geometric - sisl type geometric closest point iteration

Reimplemented from Go::ParamSurface.

Definition at line 570 of file BoundedSurface.h.

29.44.3.63 void Go::BoundedSurface::setOrientationOK ( ) [inline]

Remove history of loop orientation fixes.

Definition at line 601 of file BoundedSurface.h.

29.44.3.64 virtual void Go::BoundedSurface::setParameterDomain (double *u1*, double *u2*, double *v1*, double *v2*) [virtual]

Change the parameter domain of the underlying surface, and modify the boundary loops with respect to this change

Parameters

u1	new start value of first parameter
u2	new end value of first parameter
v1	new start value of second parameter
v2	new end value of second parameter

Reimplemented from Go::ParamSurface.

29.44.3.65 bool Go::BoundedSurface::simplifyBdLoops (double *tol*, double *ang_tol*, double & *max_dist*)

Simplify boundary loops by reducing the number of curves if possible.

29.44.3.66 void Go::BoundedSurface::splitSingleLoops ( )

Split all boundary loops defined by only *curve* into three parts. (This somewhat exotic member function is included due to its handiness with the GoTools topology analysator).

29.44.3.67 virtual std::vector<shared_ptr<ParamSurface> > Go::BoundedSurface::subSurfaces (double *from_upar*, double *from_vpar*, double *to_upar*, double *to_vpar*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.44.3.68 virtual void Go::BoundedSurface::swapParameterDirection ( ) [virtual]

Swaps the two parameter directions.

Implements Go::ParamSurface.

29.44.3.69 virtual DirectionCone Go::BoundedSurface::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.44.3.70 void Go::BoundedSurface::turnLoopOrientation (int *idx*)

Turn orientation of specified loop, and remember turning it.

29.44.3.71 virtual void Go::BoundedSurface::turnOrientation ( ) [virtual]

Turns the direction of the normal of the surface.

Implements Go::ParamSurface.

29.44.3.72 shared_ptr<ParamSurface> Go::BoundedSurface::underlyingSurface ( ) [inline]

Get a pointer to the underlying surface

Returns

shared pointer to the underlying surface

Definition at line 515 of file BoundedSurface.h.

29.44.3.73 shared_ptr<const ParamSurface> Go::BoundedSurface::underlyingSurface ( ) const [inline]

Get a pointer to the underlying surface

Returns

shared pointer to the underlying surface

Definition at line 520 of file BoundedSurface.h.

29.44.3.74 virtual void Go::BoundedSurface::write (std::ostream & *os*) const [virtual]

write this BoundedSurface to a stream

Implements Go::Streamable.

29.44.4 Friends And Related Function Documentation

29.44.4.1 void GeometryTools::setParameterDomain (std::vector< shared_ptr< BoundedSurface > > & *sfs*, double *u1*, double *u2*, double *v1*, double *v2*) [friend]

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/BoundedSurface.h

29.45 Go::BoundingBox Class Reference

`#include <BoundingBox.h>`

Public Member Functions

- BoundingBox ()
- BoundingBox (int dim)
- BoundingBox (const Point &low, const Point &high)
- ~BoundingBox ()

  Do not inherit from this class – nonvirtual destructor.
- void setFromPoints (const Point &low, const Point &high)
- template<typename FloatType >
  void setFromArray (const FloatType *start, const FloatType *end, int dim)
- template<typename ForwardIterator >
  void setFromArray (ForwardIterator start, ForwardIterator end, int dim)
- void setFromPoints (const std::vector< Point > &points)
- void read (std::istream &is)

  Read a bounding box from a standard istream.
- void write (std::ostream &os) const

  Write a bounding box to a standard ostream.
- int dimension () const

  The dimension of the bounding box.
- const Point & low () const

  The lower bound of the bounding box.
- const Point & high () const

  The upper bound of the bounding box.
- bool containsPoint (const Point &pt, double tol=0.0) const
- bool overlaps (const BoundingBox &box, double tol=0.0) const
- bool getOverlap (const BoundingBox &box, double &overlap, double tol=0.0) const
- bool containsBox (const BoundingBox &box, double tol=0.0) const
- void addUnionWith (const Point &pt)
- void addUnionWith (const BoundingBox &box)
- std::vector< Point > lineIntersect (const Point &p1, const Point &dir) const

  Compute the intersections with this box and a line.
- bool valid () const

  Is the bounding box initialized?
- void unset ()

  Unset bounding box.
- void check () const

29.45.1 Detailed Description

Axis-aligned bounding box. A BoundingBox object can be an axis-aligned box in any number of dimensions.

Definition at line 56 of file BoundingBox.h.

29.45.2 Constructor & Destructor Documentation

29.45.2.1 Go::BoundingBox::BoundingBox ( ) [inline]

The default constructor makes an uninitialized object, with dimension zero.

Definition at line 61 of file BoundingBox.h.

29.45.2.2 Go::BoundingBox::BoundingBox (int *dim*) [inline],[explicit]

Creates a BoundingBox of the specified dimension, but apart from that still uninitialized.

Definition at line 64 of file BoundingBox.h.

29.45.2.3 Go::BoundingBox::BoundingBox (const Point & *low,* const Point & *high*) [inline]

Creates a BoundingBox with the Point low specifying the lower bound in all dimensions and high specifying the upper bound.

Definition at line 69 of file BoundingBox.h.

29.45.2.4 Go::BoundingBox::~BoundingBox ( )

Do not inherit from this class – nonvirtual destructor.

29.45.3 Member Function Documentation

29.45.3.1 void Go::BoundingBox::addUnionWith (const Point & *pt*)

After the call, the bounding box will contain both this box and the given point.

29.45.3.2 void Go::BoundingBox::addUnionWith (const BoundingBox & *box*)

After the call, the bounding box will contain both initial boxes.

29.45.3.3 void Go::BoundingBox::check ( ) const

Check that box validity. Call valid() to find out if check succeeded.

29.45.3.4 bool Go::BoundingBox::containsBox (const BoundingBox & *box,* double *tol* = 0.0) const

Returns true if this box contain the box passed as a parameter, if enlarged by tol in all directions.

29.45.3.5 bool Go::BoundingBox::containsPoint (const Point & *pt,* double *tol* = 0.0) const

Returns true if the point pt is inside the box, or within tol of the boundary.

29.45.3.6 int Go::BoundingBox::dimension ( ) const [inline]

The dimension of the bounding box.

Definition at line 149 of file BoundingBox.h.

29.45.3.7 bool Go::BoundingBox::getOverlap (const BoundingBox & *box,* double & *overlap,* double *tol* = 0.0) const

29.45.3.8 const Point& Go::BoundingBox::high ( ) const [inline]

The upper bound of the bounding box.

Definition at line 154 of file BoundingBox.h.

29.45.3.9 std::vector<Point> Go::BoundingBox::lineIntersect (const Point & *p1,* const Point & *dir*) const

Compute the intersections with this box and a line.

29.45.3.10 const Point& Go::BoundingBox::low ( ) const [inline]

The lower bound of the bounding box.

Definition at line 152 of file BoundingBox.h.

29.45.3.11 bool Go::BoundingBox::overlaps (const BoundingBox & *box,* double *tol* = 0.0) const

Returns true if the two boxes overlap, or are a distance less than tol apart.

29.45.3.12 void Go::BoundingBox::read (std::istream & *is*)

Read a bounding box from a standard istream.

29.45.3.13 template<typename FloatType > void Go::BoundingBox::setFromArray (const FloatType * *start,* const FloatType * *end,* int *dim*) [inline]

Given an array of dim-dimensional points stored as doubles or floats, makes the smallest bounding box containing all points in the array.

Definition at line 82 of file BoundingBox.h.

29.45.3.14 template<typename ForwardIterator > void Go::BoundingBox::setFromArray (ForwardIterator *start,* ForwardIterator *end,* int *dim*) [inline]

Given an array of dim-dimensional points stored as doubles or floats, makes the smallest bounding box containing all points in the array.

Definition at line 104 of file BoundingBox.h.

29.45.3.15 void Go::BoundingBox::setFromPoints (const Point & *low,* const Point & *high*)

Makes the bounding box have lower bounds as specified in low and upper bounds as specified in high.

29.45.3.16 void Go::BoundingBox::setFromPoints (const std::vector< Point > & *points*) [inline]

Given a vector of dim-dimensional points, makes the smallest bounding box containing all points in the array.

Definition at line 125 of file BoundingBox.h.

29.45.3.17 void Go::BoundingBox::unset ( ) [inline]

Unset bounding box.

Definition at line 182 of file BoundingBox.h.

29.45.3.18 bool Go::BoundingBox::valid ( ) const [inline]

Is the bounding box initialized?

Definition at line 179 of file BoundingBox.h.

29.45.3.19 void Go::BoundingBox::write (std::ostream & *os*) const

Write a bounding box to a standard ostream.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/BoundingBox.h

29.46 Go::boxStructuring::BoundingBoxStructure Class Reference

`#include <ClosestPointUtils.h>`

Public Member Functions

- void addBox (shared_ptr< SubSurfaceBoundingBox > box)
  Add information of a specific parameter sub segment of a surface to the structure.
- void addSurface (shared_ptr< SurfaceData > surface)
  Add a surface from the surface model to the structure.
- int n_boxes () const
  Get the numbder of segments in the structure.
- int n_surfaces () const
  Get the numbder of surfaces in the structure.
- shared_ptr< SubSurfaceBoundingBox > getBox (int i) const
  Get a specific segment in the structure.
- shared_ptr< SurfaceData > getSurface (int i) const
  Get a specific surface in the structure.
- int n_voxels_x () const
  Get the number of voxels in first coordinate direction.

- int n_voxels_y () const

  Get the number of voxels in second coordinate direction.
- int n_voxels_z () const

  Get the number of voxels in third coordinate direction.
- Point big_vox_low () const

  Get the lower left corner of the entire voxel structure.
- double voxel_length () const

  Get the common length of all sides in the voxels.
- std::vector< int > boxes_in_voxel (int i, int j, int k) const
- void setSurfaceCopies (int nmb_copies)

  Set number of surface copies.
- void BuildVoxelStructure (BoundingBox bigbox, double volume_reduction)
- bool closestPoint (int box_idx, bool any_tested, double best_dist, bool isInside, const Point &pt, double &clo↩ _u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest, double *seed) const

29.46.1 Detailed Description

Class for the preprocessed information of a surface model The gemetry space is split into voxels, axis aligned boxes of the same cubic shape (equal side length in all directions) The union of the voxels is rectangular, and holds all the surfaces

Definition at line 358 of file ClosestPointUtils.h.

29.46.2 Member Function Documentation

29.46.2.1 void Go::boxStructuring::BoundingBoxStructure::addBox (shared_ptr< SubSurfaceBoundingBox > *box*) [inline]

Add information of a specific parameter sub segment of a surface to the structure.

Definition at line 364 of file ClosestPointUtils.h.

29.46.2.2 void Go::boxStructuring::BoundingBoxStructure::addSurface (shared_ptr< SurfaceData > *surface*) [inline]

Add a surface from the surface model to the structure.

Definition at line 370 of file ClosestPointUtils.h.

29.46.2.3 Point Go::boxStructuring::BoundingBoxStructure::big_vox_low ( ) const [inline]

Get the lower left corner of the entire voxel structure.

Definition at line 419 of file ClosestPointUtils.h.

29.46.2.4 std::vector<int> Go::boxStructuring::BoundingBoxStructure::boxes_in_voxel (int *i*, int *j*, int *k*) const [inline]

Get all the segments that might hit a given voxel (those where the bounding boxes hit the voxel)

Definition at line 432 of file ClosestPointUtils.h.

29.46.2.5 void Go::boxStructuring::BoundingBoxStructure::BuildVoxelStructure (BoundingBox *bigbox*, double *volume_reduction*) [inline]

Creates the voxel structure with information about the segment bounding boxes that hit each voxel bigbox is the entire bounding box of the surface structure, the voxel structure must include bigbox volume_reduction gives the ratio of the volume of the bigbox structure. It will be a lower limit on the number of voxels

Definition at line 450 of file ClosestPointUtils.h.

29.46.2.6 bool Go::boxStructuring::BoundingBoxStructure::closestPoint (int *box_idx*, bool *any_tested*, double *best_dist*, bool *isInside*, const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest*, double * *seed*) const [inline]

Test for closestPoint. Only used by the old code, closestVectorsOld() Will be removed if we know closestVectors() is safe

Definition at line 492 of file ClosestPointUtils.h.

29.46.2.7 shared_ptr<SubSurfaceBoundingBox> Go::boxStructuring::BoundingBoxStructure::getBox (int *i*) const [inline]

Get a specific segment in the structure.

Definition at line 389 of file ClosestPointUtils.h.

29.46.2.8 shared_ptr<SurfaceData> Go::boxStructuring::BoundingBoxStructure::getSurface (int *i*) const [inline]

Get a specific surface in the structure.

Definition at line 395 of file ClosestPointUtils.h.

29.46.2.9 int Go::boxStructuring::BoundingBoxStructure::n_boxes ( ) const [inline]

Get the numbder of segments in the structure.

Definition at line 377 of file ClosestPointUtils.h.

29.46.2.10 int Go::boxStructuring::BoundingBoxStructure::n_surfaces ( ) const [inline]

Get the numbder of surfaces in the structure.

Definition at line 383 of file ClosestPointUtils.h.

29.46.2.11 int Go::boxStructuring::BoundingBoxStructure::n_voxels_x ( ) const [inline]

Get the number of voxels in first coordinate direction.

Definition at line 401 of file ClosestPointUtils.h.

29.46.2.12 int Go::boxStructuring::BoundingBoxStructure::n_voxels_y ( ) const [inline]

Get the number of voxels in second coordinate direction.

Definition at line 407 of file ClosestPointUtils.h.

29.46.2.13 int Go::boxStructuring::BoundingBoxStructure::n_voxels_z ( ) const [inline]

Get the number of voxels in third coordinate direction.

Definition at line 413 of file ClosestPointUtils.h.

29.46.2.14 void Go::boxStructuring::BoundingBoxStructure::setSurfaceCopies (int *nmb_copies*) [inline]

Set number of surface copies.

Definition at line 438 of file ClosestPointUtils.h.

29.46.2.15 double Go::boxStructuring::BoundingBoxStructure::voxel_length ( ) const [inline]

Get the common length of all sides in the voxels.

Definition at line 425 of file ClosestPointUtils.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/ClosestPointUtils.h

29.47 Go::LRSplineSurface::BSKey Struct Reference

`#include <LRSplineSurface.h>`

Public Member Functions

- bool operator< (const BSKey &rhs) const

Public Attributes

- double u_min
- double v_min
- double u_max
- double v_max
- int u_mult1
- int v_mult1
- int u_mult2
- int v_mult2

29.47.1 Detailed Description

Definition at line 105 of file LRSplineSurface.h.

29.47.2 Member Function Documentation

29.47.2.1 bool Go::LRSplineSurface::BSKey::operator< (const BSKey & *rhs*) const [inline]

Definition at line 189 of file LRSplineSurface_impl.h.

29.47.3 Member Data Documentation

29.47.3.1 double Go::LRSplineSurface::BSKey::u_max

Definition at line 107 of file LRSplineSurface.h.

29.47.3.2 double Go::LRSplineSurface::BSKey::u_min

Definition at line 107 of file LRSplineSurface.h.

29.47.3.3 int Go::LRSplineSurface::BSKey::u_mult1

Definition at line 108 of file LRSplineSurface.h.

29.47.3.4 int Go::LRSplineSurface::BSKey::u_mult2

Definition at line 108 of file LRSplineSurface.h.

29.47.3.5 double Go::LRSplineSurface::BSKey::v_max

Definition at line 107 of file LRSplineSurface.h.

29.47.3.6 double Go::LRSplineSurface::BSKey::v_min

Definition at line 107 of file LRSplineSurface.h.

29.47.3.7 int Go::LRSplineSurface::BSKey::v_mult1

Definition at line 108 of file LRSplineSurface.h.

29.47.3.8 int Go::LRSplineSurface::BSKey::v_mult2

Definition at line 108 of file LRSplineSurface.h.

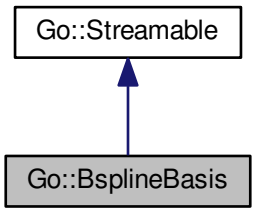
The documentation for this struct was generated from the following files:

- lrsplines2D/include/GoTools/lrsplines2D/LRSplineSurface.h
- lrsplines2D/include/GoTools/lrsplines2D/LRSplineSurface_impl.h

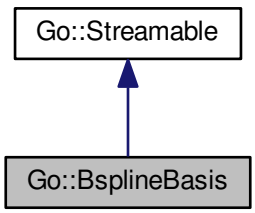
29.48 Go::BsplineBasis Class Reference

`#include <BsplineBasis.h>`

Inheritance diagram for Go::BsplineBasis:



Collaboration diagram for Go::BsplineBasis:



Public Member Functions

- BsplineBasis ()

  Default constructor, making an empty basis.
- template<typename RandomIterator >
  BsplineBasis (int number, int order, RandomIterator knotstart)
- template<typename RandomIterator >
  BsplineBasis (int order, RandomIterator knotstart, RandomIterator knotend)
- virtual ~BsplineBasis ()

  Virtual destructor, enables safe inheritance.
- template<typename RandomIterator >
  void setData (int number, int order, RandomIterator knotstart)
- void swap (BsplineBasis &other)
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual void read_bin (std::istream &is)
- virtual void write_bin (std::ostream &os) const
- int knotInterval (double t) const
- std::vector< double > computeBasisValues (double t, int derivs=0) const
- void computeBasisValues (double t, double *basisvals_start, int derivs=0, double resolution=1.0e-12) const
- void computeBasisValues (const double *parvals_start, const double *parvals_end, double *basisvals_start, int *knotinter_start, int derivs=0) const
- std::vector< double > computeBasisValuesLeft (double tval, int derivs) const
- void computeBasisValuesLeft (const double *parvals_start, const double *parvals_end, double *basisvals↩_start, int *knotinter_start, int derivs) const
- void reverseParameterDirection ()
- void rescale (double new_start, double new_end)
- void insertKnot (double apar)
- void increaseOrder (int order)
- int knotIntervalFuzzy (double &t, double tol=DEFAULT_PARAMETER_EPSILON) const
- void insertKnot (const std::vector< double > &new_knots)
- void removeKnot (double old_knot)
- int lastKnotInterval () const
- double grevilleParameter (int index) const
- int knotMultiplicity (const double parval) const
- void knotMultiplicities (std::vector< int > &muliplicities) const
- int endMultiplicity (bool atstart) const
- void knotsSimple (std::vector< double > &result) const
- int numElem () const
- void cNDiscontinuities (std::vector< double > &cNDisconts, int depth) const
- int getMinContinuity () const

  The minimum continuity at inner knots.
- bool isKreg () const
- void coefsAffectingParam (double tpar, int &first_coef, int &last_coef) const
- int numCoefs () const
- int order () const
- double startparam () const
- double endparam () const
- std::vector< double >::const_iterator begin () const
- std::vector< double >::const_iterator end () const
- std::vector< double >::iterator begin ()
- std::vector< double >::iterator end ()
- std::vector< double > getKnots ()
- void check () const

Checks the validity of the object. Throws at error.

- bool isOK () const

  Checks the validity of the object. Does not throw.

- bool indistinctKnots (double tol, std::vector< double > &first_knotval) const

  Look for indistinct knots.

- bool sameSplineSpace (const BsplineBasis &other, double tol=DEFAULT_PARAMETER_EPSILON) const

  Check equality of two spline spaces.

- std::vector< double > missingKnots (const BsplineBasis &other, double tol=DEFAULT_PARAMETER_EPSILON) const

  Return knots existing in the other spline space, but not in this one.

- BsplineBasis subBasis (double tmin, double tmax, double knot_diff_tol=1e-05) const

  Return the basis for the subspace limited by the interval [tmin,tmax].

- BsplineBasis extendedBasis (int order) const

Related Functions

(Note that these are not member functions.)

- void computeBasisValuesLeft (double tval, double *basisvals_start, int derivs, double resolution=1.0e-12) const

29.48.1 Detailed Description

Class representing a B-spline basis of a spline space. This basis is defined by its order, its dimension (number of basis functions) and its knotvector.

Definition at line 63 of file BsplineBasis.h.

29.48.2 Constructor & Destructor Documentation

29.48.2.1 Go::BsplineBasis::BsplineBasis ( ) [inline]

Default constructor, making an empty basis.

Definition at line 67 of file BsplineBasis.h.

29.48.2.2 template<typename RandomIterator > Go::BsplineBasis::BsplineBasis (int *number*, int *order*, RandomIterator *knotstart*) [inline]

Constructor

Parameters

number	Number of basis functions in space
order	order of the basis functions (polynomial degree + 1)
knotstart	iterator pointing to start of defining knotvector The length of the knotvector is deduced automatically, and should be equal to 'order' + 'number'.

Definition at line 79 of file BsplineBasis.h.

29.48.2.3 template<typename RandomIterator > Go::BsplineBasis::BsplineBasis (int *order,* RandomIterator *knotstart,* RandomIterator *knotend*) [inline]

Constructor

Parameters

order	order of the basis functions (polynomial degree + 1)
knotstart	iterator pointing to start of defining knotvector
knotend	iterator pointing to one-past-end of defining knotvector. The number of basis functions will be deduced automatically by subtracting the 'order' from the length of the knotvector.

Definition at line 96 of file BsplineBasis.h.

29.48.2.4 virtual Go::BsplineBasis::~BsplineBasis ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.48.3 Member Function Documentation

29.48.3.1 std::vector<double>::const_iterator Go::BsplineBasis::begin ( ) const [inline]

Get a const-iterator to the beginning of the knotvector

Returns

an iterator to the beginning of the knotvector

Definition at line 349 of file BsplineBasis.h.

29.48.3.2 std::vector<double>::iterator Go::BsplineBasis::begin ( ) [inline]

Get an iterator to the beginning of the knotvector

Returns

an iterator to the beginning of the knotvector

Definition at line 359 of file BsplineBasis.h.

29.48.3.3 void Go::BsplineBasis::check ( ) const

Checks the validity of the object. Throws at error.

29.48.3.4 void Go::BsplineBasis::cNDiscontinuities (std::vector< double > & *cNDiscont,* int *depth*) const

Find the first knot, the last knot, and all knots where not all B-splines have C^N-continuity, i.e. knots with multiplicity at least the order of the B-splines minus N

Parameters

cNdisconts	upon function return, this vector holds all the knots found
depth	the value of N, the degre of smoothness

29.48.3.5 void Go::BsplineBasis::coefsAffectingParam (double *tpar*, int & *first_coef*, int & *last_coef*) const

Get the range of basis functions that are involved when evaluating at a given parameter.

Parameters

tpar	the parameter where we want to determine the influential range
first_coef	on function completion, will point to start of relevant range
last_coef	on function completion, will point to end of relevant range

29.48.3.6 std::vector<double> Go::BsplineBasis::computeBasisValues (double *t*, int *derivs* = 0) const

Create a vector containing the basis values in a given parameter.

Parameters

t	the parameter at which to evaluate the basis functions
derivs	the number of function derivatives to calculate for each nonzero basis function at 't'.

Returns

a vector containing order() * ('derivs'+1) values, which are the function values and derivatives up to order 'derivs' of the nonzero basis functions at parameter value 't'. The order in which these values are stored is as follows: first all function values for the 'order' nonzero basis functions, then their first derivatives, then their second, etc..

29.48.3.7 void Go::BsplineBasis::computeBasisValues (double *t*, double * *basisvals_start*, int *derivs* = 0, double *resolution* = 1.0e-12) const

Space for the basis values is allocated outside and passed in. Needed space is equal to order()*('derivs'+1) doubles.

Parameters

t	the parameter at which to evaluate the basis function
basisvals_start	pointer to the memory area where the result will be written. This must be allocated by the user. The order in which the result values are written is similar to computeBasisValues(double, int)
derivs	number of derivatives that should be evaluated for each nonzero basis function (derivs = 0 => only function values will be computed).
resolution	accuracy for determining whether a given parametric value lies exactly 'on' a knot.

29.48.3.8 void Go::BsplineBasis::computeBasisValues (const double * *parvals_start*, const double * *parvals_end*, double * *basisvals_start*, int * *knotinter_start*, int *derivs* = 0) const

Compute basis values for many points simultaneously.

Parameters

parvals_start	pointer to the start of list of parameters where you want to evaluate the basis functions
parvals_end	pointer to one-past-end of list of parameters where you want to evaluate the basis functions
basisvals_start	pointer to range where the result of the evaluations will be written. The necessary memory is equal to 'derivs' multiplied by order() multiplied by length of parameter list, and should be allocated by user before calling the function. The order in which these values are stored is: first all values concerning the first parameter in the input range, then all values concerning the second parameter in the input range, etc. For each such parameter, the concerned values are stored in the order described in computeBasisValues(double, int)
knotinter_start	pointer to range where the indexes to the parameter intervals in which the evaluated parameter values are located. ie. the index at knotinter_start[i] refer to the parameter interval where the i'th parameter in the range [parvals_start, parvals_end] is located. The total size of this range is therefore equal to (parvals_end - parvals_start), and should be allocated by the user.
derivs	number of derivatives that should be evaluated for each nonzero basis function (derivs = 0 => only function values will be computed).

29.48.3.9 std::vector<double> Go::BsplineBasis::computeBasisValuesLeft (double *tval*, int *derivs*) const

This function is similar to computeBasisValues(double, int), except that the values are calculated from the left, as opposed to the default right-evaluation.

See also

computeBasisValues()

29.48.3.10 void Go::BsplineBasis::computeBasisValuesLeft (const double * *parvals_start*, const double * *parvals_end*, double * *basisvals_start*, int * *knotinter_start*, int *derivs*) const

This function is similar to computeBasisValues(const double*, const double*, double*, int*, int), except that the values are calculated from the left, as opposed to the default right-evaluation.

29.48.3.11 std::vector<double>::const_iterator Go::BsplineBasis::end ( ) const [inline]

Get a const-iterator to the end of the knotvector

Returns

an iterator to the end of the knotvector

Definition at line 354 of file BsplineBasis.h.

29.48.3.12 std::vector<double>::iterator Go::BsplineBasis::end ( ) [inline]

Get an iterator to the end of the knotvector

Returns

an iterator to the end of the knotvector

Definition at line 363 of file BsplineBasis.h.

29.48.3.13 int Go::BsplineBasis::endMultiplicity (bool *atstart*) const

return the multiplicity of the first or the last knot

Parameters

atstart	if this is 'true' then the multiplicity of the first knot will be returned. Otherwise, the multiplicity of the last knot will be returned.

Returns

the corresponding knot multiplicity

29.48.3.14 double Go::BsplineBasis::endparam ( ) const [inline]

Query the end value of the parameter range

Returns

the end value of the parameter range

Definition at line 344 of file BsplineBasis.h.

29.48.3.15 BsplineBasis Go::BsplineBasis::extendedBasis (int *order*) const

Make a basis function with the same inner knots, but with increased degree NB! The continuity of the space is increased If the basis is periodic, the new knots will be inserted at the start and end of the parameter interval, i.e. the continuity at the seam will be reduced Order is equal to polynomial degree + 1 The function throws if the specified order is less than the existing one

29.48.3.16 std::vector<double> Go::BsplineBasis::getKnots ( ) [inline]

Definition at line 366 of file BsplineBasis.h.

29.48.3.17 int Go::BsplineBasis::getMinContinuity ( ) const

The minimum continuity at inner knots.

29.48.3.18 double Go::BsplineBasis::grevilleParameter (int *index*) const [inline]

Get the greville parameter starting from a certain knot

Parameters

index	the index of the knot from which the greville parameter should be computed.

Returns

the corresponding greville parameter

Definition at line 417 of file BsplineBasis.h.

29.48.3.19 void Go::BsplineBasis::increaseOrder (int *order*)

Adapt the knot vector to an increased polynomial order The given order is the expected new polynomial order of the basis

29.48.3.20 bool Go::BsplineBasis::indistinctKnots (double *tol*, std::vector< double > & *first_knotval*) const

Look for indistinct knots.

29.48.3.21 void Go::BsplineBasis::insertKnot (double *apar*)

Insert a knot into the knotvector.

Parameters

apar	parameter value of the new knot.

29.48.3.22 void Go::BsplineBasis::insertKnot (const std::vector< double > & *new_knots*)

Insert several knots into the knotvector

Parameters

new_knots	a STL vector containing the new knots to insert into the vector

29.48.3.23 bool Go::BsplineBasis::isKreg ( ) const [inline]

query whether the basis has a k-regular knotvector (start and end knot has multiplicity equal to order().

Returns

whether this basis has a k-regular knotvector or not.

Definition at line 314 of file BsplineBasis.h.

29.48.3.24 bool Go::BsplineBasis::isOK ( ) const

Checks the validity of the object. Does not throw.

29.48.3.25 int Go::BsplineBasis::knotInterval (double *t*) const

Find the interval in which the parameter value 't' lies.

Parameters

t	the parameter value to test.

29.48.3.26 int Go::BsplineBasis::knotIntervalFuzzy (double & *t*, double *tol* = DEFAULT_PARAMETER_EPSILON) const

Find the interval in which a given parameter lies.

Parameters

t	the parameter we want to locate within an interval
tol	if 't' is within DEFAULT_PARAMETER_EPSILON of an existing knot, 't' will be changed to that knot. To some callers of this function, that may be the primary wanted effect of this function.

29.48.3.27 void Go::BsplineBasis::knotMultiplicities (std::vector< int > & *muliplicities*) const

Get the vector of knot multiplicities. To get the vector of corresponding knot values, use knotsSimple().

Parameters

multiplicities	the resulting vector of knot multiplicities

29.48.3.28 int Go::BsplineBasis::knotMultiplicity (const double *parval*) const

If there is a knot in the knotvector with the value 'parval', its multiplicity is returned. Otherwise, 0 i returned.

Parameters

parval	the parameter value for which we want to know the knot multiplicity

Returns

the multiplicity in case the knot exists, 0 otherwise.

29.48.3.29 void Go::BsplineBasis::knotsSimple (std::vector< double > & *result*) const

Store all knots without multiplicity int one array

Parameters

result	upon function return, this vector holds all the knots

29.48.3.30 int Go::BsplineBasis::lastKnotInterval ( ) const [inline]

Return the index of the left knot of the last knot interval accessed for some reason (evaluation, etc.) in this basis.

Definition at line 411 of file BsplineBasis.h.

29.48.3.31 std::vector<double> Go::BsplineBasis::missingKnots (const BsplineBasis & *other,* double *tol* = DEFAULT_PARAMETER_EPSILON) const

Return knots existing in the other spline space, but not in this one.

29.48.3.32 int Go::BsplineBasis::numCoefs ( ) const [inline]

Query the number of basis functions

Returns

the number of basis functions

Definition at line 329 of file BsplineBasis.h.

29.48.3.33 int Go::BsplineBasis::numElem ( ) const

Query the number of elements, number of non-degenerate knot intervals, in the knot vector

29.48.3.34 int Go::BsplineBasis::order ( ) const [inline]

Query the order of the basis functions

Returns

the order of the basis functions

Definition at line 334 of file BsplineBasis.h.

29.48.3.35 virtual void Go::BsplineBasis::read (std::istream & *is*) [virtual]

Read the BsplineBasis from a stream (ASCII mode).

Parameters

is	the stream from which the BsplineBasis is read.

Implements Go::Streamable.

29.48.3.36 virtual void Go::BsplineBasis::read_bin (std::istream & *is*) [virtual]

Read the BsplineBasis from a stream (binary mode).

Parameters

is	the stream from which the BsplineBasis is read.

29.48.3.37 void Go::BsplineBasis::removeKnot (double *old_knot*)

Remove a knot from the knotvector.

Parameters

old_knot	Parameter value indicating the knot to be removed. The corresponding knot is the largest one which is less than or equal to 'old_knot'.

29.48.3.38 void Go::BsplineBasis::rescale (double *new_start*, double *new_end*)

Rescales the knotvector so that parameter values lay in the specified interval.

Parameters

new_start	start of specified interval.
new_end	end of specified interval.

29.48.3.39 void Go::BsplineBasis::reverseParameterDirection ( )

We want the new knot vector to be a mirror image of the old one, translated so that is starts and ends in the same values as before.

29.48.3.40 bool Go::BsplineBasis::sameSplineSpace (const BsplineBasis & *other*, double *tol* = DEFAULT_PARAMETER_EPSILON) const

Check equality of two spline spaces.

29.48.3.41 template<typename RandomIterator > void Go::BsplineBasis::setData (int *number,* int *order,* RandomIterator *knotstart*) [inline]

Change the defining data of an already-existing BsplineBasis.

Parameters

number	Number of basis functions in space
order	of the basis functions (polynomial degree + 1)
knotstart	iterator pointing to start of defining knotvector.

Definition at line 115 of file BsplineBasis.h.

29.48.3.42 double Go::BsplineBasis::startparam ( ) const [inline]

Query the start value of the parameter range

Returns

the start value of the parameter range

Definition at line 339 of file BsplineBasis.h.

29.48.3.43 BsplineBasis Go::BsplineBasis::subBasis (double *tmin,* double *tmax,* double *knot_diff_tol* = 1e-05) const

Return the basis for the subspace limited by the interval [tmin,tmax].

29.48.3.44 void Go::BsplineBasis::swap (BsplineBasis & *other*)

Quick swap of two BsplineBasises.

Parameters

other	the BsplineBasis to swap with.

29.48.3.45 virtual void Go::BsplineBasis::write (std::ostream & *os*) const [virtual]

Write the BsplineBasis to a stream (ASCII mode).

Parameters

os	the stream to which the BsplineBasis is written

Implements Go::Streamable.

29.48.3.46 virtual void Go::BsplineBasis::write_bin (std::ostream & *os*) const [virtual]

Write the BsplineBasis to a stream (binary mode).

Parameters

os	the stream to which the BsplineBasis is written

29.48.4 Friends And Related Function Documentation

29.48.4.1 void computeBasisValuesLeft (double *tval*, double * *basisvals_start*, int *derivs*, double *resolution* = 1.0e-12) const [related]

This function is similar to computeBasisValues(double, double*, int), except that the values are calculated from the left, as opposed to the default right-evaluation.

Parameters

resolution	tolerance deciding whether a parameter value is situated "directly on" a knot. (In such situations, it might matter whether we evaluate from left or from left).

See also

computeBasisValues() ()

The documentation for this class was generated from the following file:

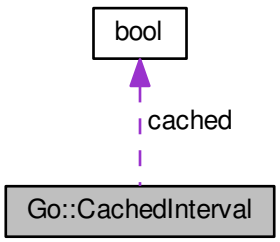
- gotools-core/include/GoTools/geometry/BsplineBasis.h

29.49 Go::CachedInterval Struct Reference

Helper struct for saving bracketed bounds of influence areas.

`#include <IntersectionPointUtils.h>`

Collaboration diagram for Go::CachedInterval:



Public Member Functions

- CachedInterval ()

Public Attributes

- double inside
- double outside
- bool cached

29.49.1 Detailed Description

Helper struct for saving bracketed bounds of influence areas.

Definition at line 95 of file IntersectionPointUtils.h.

29.49.2 Constructor & Destructor Documentation

29.49.2.1 Go::CachedInterval::CachedInterval ( ) [inline]

Definition at line 97 of file IntersectionPointUtils.h.

29.49.3 Member Data Documentation

29.49.3.1 bool Go::CachedInterval::cached

Definition at line 101 of file IntersectionPointUtils.h.

29.49.3.2 double Go::CachedInterval::inside

Definition at line 99 of file IntersectionPointUtils.h.

29.49.3.3 double Go::CachedInterval::outside

Definition at line 100 of file IntersectionPointUtils.h.

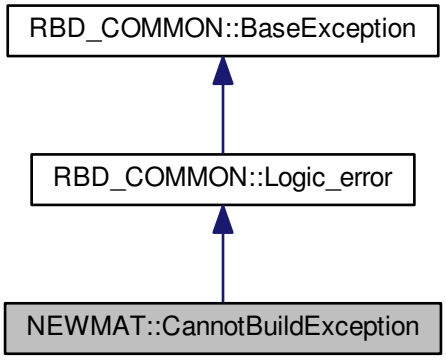
The documentation for this struct was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionPointUtils.h

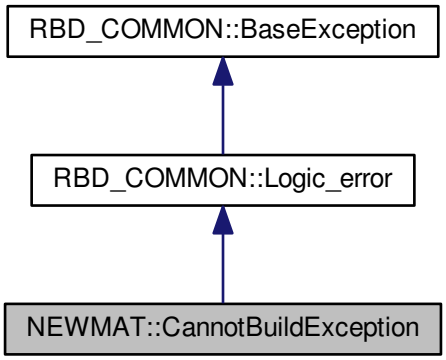
29.50 NEWMAT::CannotBuildException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::CannotBuildException:



Collaboration diagram for NEWMAT::CannotBuildException:



Public Member Functions

- CannotBuildException (const char *matrix)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.50.1 Detailed Description

Definition at line 1684 of file newmat.h.

29.50.2 Constructor & Destructor Documentation

29.50.2.1 CannotBuildException::CannotBuildException (const char * *matrix*)

Definition at line 190 of file newmatex.cpp.

29.50.3 Member Data Documentation

29.50.3.1 unsigned long CannotBuildException::Select [static]

Definition at line 1687 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

29.51 Go::CellDivision Class Reference

`#include <CellDivision.h>`

Public Member Functions

- CellDivision ()
- CellDivision (std::vector< ftSurface * > faces, int n1, int n2)
- CellDivision (std::vector< ftSurface * > faces, int n1, int n2, int n3)
- CellDivision (std::vector< ftSurface * > faces, std::vector< int > n)
- ~CellDivision ()
- int numCells () const
- const ftCell & getCell (int idx) const
- void addFace (ftSurface *face)
- void removeFace (ftSurface *face)
- void constructCells ()
- void constructCells (int n1, int n2)
- void constructCells (int n1, int n2, int n3)
- void constructCells (std::vector< int > n)
- BoundingBox big_box () const

29.51.1 Detailed Description

Used internally in SurfaceModel. CellDivision divides the space occupied by a surface model into a number of equal boxes. The division is intended to improve the performance in closest point and intersection computations by giving the means to perform an initial interception test before the actual computations are started

Definition at line 106 of file CellDivision.h.

29.51.2 Constructor & Destructor Documentation

29.51.2.1 Go::CellDivision::CellDivision ( ) [inline]

Definition at line 109 of file CellDivision.h.

29.51.2.2 Go::CellDivision::CellDivision (std::vector< ftSurface * > *faces*, int *n1*, int *n2*)

29.51.2.3 Go::CellDivision::CellDivision (std::vector< ftSurface * > *faces*, int *n1*, int *n2*, int *n3*)

29.51.2.4 Go::CellDivision::CellDivision (std::vector< ftSurface * > *faces*, std::vector< int > *n*)

29.51.2.5 Go::CellDivision::~CellDivision ( )

29.51.3 Member Function Documentation

29.51.3.1 void Go::CellDivision::addFace (ftSurface * *face*)

29.51.3.2 BoundingBox Go::CellDivision::big_box ( ) const [inline]

Definition at line 138 of file CellDivision.h.

29.51.3.3 void Go::CellDivision::constructCells ( )

29.51.3.4 void Go::CellDivision::constructCells (int *n1*, int *n2*)

29.51.3.5 void Go::CellDivision::constructCells (int *n1*, int *n2*, int *n3*)

29.51.3.6 void Go::CellDivision::constructCells (std::vector< int > *n*)

29.51.3.7 const ftCell& Go::CellDivision::getCell (int *idx*) const [inline]

Definition at line 126 of file CellDivision.h.

29.51.3.8 int Go::CellDivision::numCells ( ) const [inline]

Definition at line 121 of file CellDivision.h.

29.51.3.9 void Go::CellDivision::removeFace (ftSurface * face)

The documentation for this class was generated from the following file:

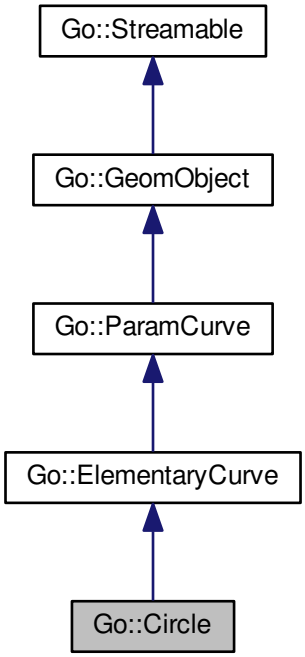
- compositemodel/include/GoTools/compositemodel/CellDivision.h

29.52 Go::Circle Class Reference

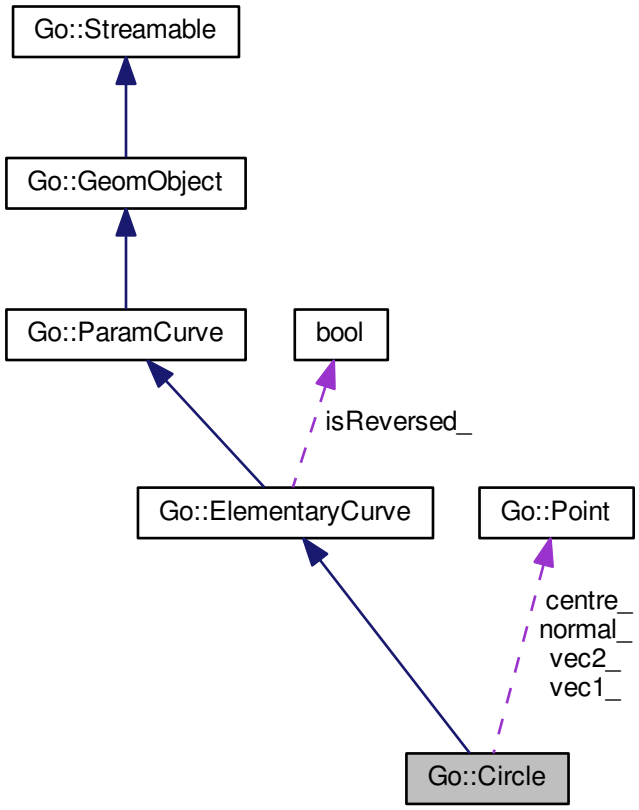
Class that represents a circle. It is a subclass of ElementaryCurve and thus has a parametrization.

```
#include <Circle.h>
```

Inheritance diagram for Go::Circle:



Collaboration diagram for Go::Circle:



Public Member Functions

- Circle ()
- Circle (double radius, Point centre, Point normal, Point x_axis, bool isReversed=false)
- virtual ~Circle ()

  virtual destructor - ensures safe inheritance
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual Circle * clone () const
- virtual void point (Point &pt, double tpar) const
- virtual void point (std::vector< Point > &pts, double tpar, int derivs, bool from_right=true) const
- virtual double startparam () const
- virtual double endparam () const

- virtual void setParameterInterval (double t1, double t2)
- virtual SplineCurve * geometryCurve ()
- virtual SplineCurve * createSplineCurve () const
- virtual bool isDegenerate (double degenerate_epsilon)
- virtual Circle * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual DirectionCone directionCone () const
- virtual void appendCurve (ParamCurve *cv, bool reparam=true)
- virtual void appendCurve (ParamCurve *cv, int continuity, double &dist, bool reparam=true)
- virtual void closestPoint (const Point &pt, double tmin, double tmax, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const
- virtual double length (double tol)
- Point getCentre () const
- Point getNormal () const
- Point getXAxis () const
- double getRadius () const
- virtual void setParamBounds (double startpar, double endpar)
- virtual void translateCurve (const Point &dir)
- bool isClosed () const
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)
- virtual void swapParameters2D ()
- virtual bool isInPlane (const Point &loc, const Point &axis, double eps, Point &normal) const

  Check if the line lies in a plane passing through a given axis.
- virtual bool isInPlane (const Point &norm, double eps, Point &pos) const

  Check if the circle lies in a plane with a given normal.

Static Public Member Functions

- static ClassType classType ()

Protected Member Functions

- void setSpanningVectors ()

Protected Attributes

- double radius_
- Point centre_
- Point normal_
- Point vec1_
- Point vec2_
- double startparam_
- double endparam_

29.52.1 Detailed Description

Class that represents a circle. It is a subclass of ElementaryCurve and thus has a parametrization.

A Circle has a natural parametrization in terms of the angle *t:* **p**(*t*) = **C** + **r**(cos(*t*) **x** + sin(*t*) **y**), where **C** is the centre, **r** is the radius, and **x** and **y** are the (local) axes. The parametrization is (in principle) bounded: $0 \leq t \leq 2\pi$. The dimension is either 2 or 3.

Definition at line 59 of file Circle.h.

29.52.2 Constructor & Destructor Documentation

29.52.2.1 Go::Circle::Circle ( ) [inline]

Default constructor. Constructs an uninitialized Circle which can only be assigned to or read into.

Definition at line 64 of file Circle.h.

29.52.2.2 Go::Circle::Circle (double *radius*, Point *centre*, Point *normal*, Point *x_axis*, bool *isReversed* = false)

Constructor. Input is the radius, the centre, the normal to the plane of the circle, and the (approximate) direction of the x-axis. The dimension must be either 2 or 3.

29.52.2.3 virtual Go::Circle::~Circle ( ) [virtual]

virtual destructor - ensures safe inheritance

29.52.3 Member Function Documentation

29.52.3.1 virtual void Go::Circle::appendCurve (ParamCurve * *cv*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparametrization NB: This virtual member function currently only works for SplineCurves and CurveOnSurfaces. Moreover, 'this' curve and the 'cv' curve must be of the same type.

Parameters

cv	the curve to append to 'this' curve.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.52.3.2 virtual void Go::Circle::appendCurve (ParamCurve * *cv*, int *continuity*, double & *dist*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparmetrization

Parameters

cv	the curve to append to 'this' curve.
continuity	the required continuity at the transition. Can be G^(-1) and upwards.
dist	a measure of the local distorsion around the transition in order to achieve the specified continuity.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.52.3.3 virtual BoundingBox Go::Circle::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.52.3.4 static ClassType Go::Circle::classType ( ) [static]

29.52.3.5 virtual Circle* Go::Circle::clone ( ) const [virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::ElementaryCurve.

29.52.3.6 virtual void Go::Circle::closestPoint (const Point & *pt*, double *tmin*, double *tmax*, double & *clo_t*, Point & *clo_pt*, double & *clo_dist*, double const * *seed* = 0) const [virtual]

Compute the closest point from an interval of this curve to a specified point.

Parameters

pt	point we want to find the closest point to
tmin	start parameter of search interval
tmax	end parameter of search interval
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.
seed	pointer to initial guess value, provided by the user (can be 0, for which the algorithm will determine a (hopefully) reasonable choice).

Implements Go::ParamCurve.

29.52.3.7 virtual SplineCurve* Go::Circle::createSplineCurve ( ) const [virtual]

Creates a SplineCurve representation of the circle. The spline representation is geometrically exact, but the parametrization is only an approximation. If setParameterBounds() have been used to set bounds on the parametrization, then the endpoints of the resulting spline curve *does* have correct parameter values.

Implements Go::ElementaryCurve.

29.52.3.8 virtual int Go::Circle::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.52.3.9 virtual DirectionCone Go::Circle::directionCone ( ) const [virtual]

Creates a DirectionCone which covers all tangent directions of this curve.

Returns

the smallest DirectionCone containing all tangent directions of this curve.

Implements Go::ParamCurve.

29.52.3.10 virtual double Go::Circle::endparam ( ) const [virtual]

Query the end parameter of the curve

Returns

the curve's end parameter

Implements Go::ParamCurve.

29.52.3.11 virtual SplineCurve* Go::Circle::geometryCurve ( ) [virtual]

If the definition of this ParamCurve contains a SplineCurve describing its spatial shape, then this function will return a pointer to this SplineCurve. Otherwise it will return a null pointer. The returned curve is NEWed, so the user is responsible for deleting it. This function may have side-effects.

Returns

a pointer to a SplineCurve representation of the ParamCurve, if it exists. Null pointer otherwise.

Implements Go::ParamCurve.

29.52.3.12 Point Go::Circle::getCentre ( ) const [inline]

Definition at line 151 of file Circle.h.

29.52.3.13 Point Go::Circle::getNormal ( ) const [inline]

Definition at line 156 of file Circle.h.

29.52.3.14 double Go::Circle::getRadius ( ) const [inline]

Definition at line 166 of file Circle.h.

29.52.3.15 Point Go::Circle::getXAxis ( ) const [inline]

Definition at line 161 of file Circle.h.

29.52.3.16 virtual ClassType Go::Circle::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.52.3.17 virtual bool Go::Circle::isAxisRotational (Point & *centre*, Point & *axis*, Point & *vec*, double & *angle*) [virtual]

Check if the curve is axis rotational. Only true if a connection to an axis rotational elementary curve exist The axis and rotational angle is only specified if the curve is actually rotational

Reimplemented from Go::ParamCurve.

29.52.3.18 bool Go::Circle::isClosed ( ) const

29.52.3.19 virtual bool Go::Circle::isDegenerate (double *degenerate_epsilon*) [virtual]

Query whether the curve is degenerate (collapsed into a single point).

Parameters

degenerate_epsilon	the tolerance used in determine whether the curve is degenerate. A curve is considered degenerate if its total length is shorter than this value.

Returns

`true` if the curve is degenerate, `false` otherwise.

Implements Go::ParamCurve.

29.52.3.20 virtual bool Go::Circle::isInPlane (const Point & *loc*, const Point & *axis*, double *eps*, Point & *normal*) const [virtual]

Check if the line lies in a plane passing through a given axis.

Reimplemented from Go::ParamCurve.

29.52.3.21 virtual bool Go::Circle::isInPlane (const Point & *norm*, double *eps*, Point & *pos*) const [virtual]

Check if the circle lies in a plane with a given normal.

Reimplemented from Go::ParamCurve.

29.52.3.22 virtual double Go::Circle::length (double *tol*) [virtual]

Compute the total length of this curve up to some tolerance

Parameters

tol	the relative tolerance when approximating the length, i.e. stop iteration when error becomes smaller than tol/(curve length)

Returns

the length calculated

Implements Go::ParamCurve.

29.52.3.23 virtual void Go::Circle::point (Point & *pt,* double *tpar*) const [virtual]

Evaluate the curve's position at a given parameter

Parameters

pt	the evaluated position will be written to this Point
tpar	the parameter for which we wish to evaluate the curve

Implements Go::ParamCurve.

29.52.3.24 virtual void Go::Circle::point (std::vector< Point > & *pts,* double *tpar,* int *derivs,* bool *from_right* = true) const [virtual]

Evaluate the curve's position and a certain number of derivatives at a given parameter.

Parameters

pts	the evaluated position and derivatives (tangent, curvature vector, etc.) will be written to this vector. The first entry will be the position, the second entry will be the first derivative, etc. The size of this vector must be set to 'derivs'+ 1 prior to calling this function.
tpar	the parameter for which we want to evaluate the curve
derivs	the number of derivatives we want to have calculated
from_right	specify whether we should calculate derivatives 'from the right' or 'from the left' (default is from the right). This matters only when the curve presents discontinuities in its derivatives.

Implements Go::ParamCurve.

29.52.3.25 virtual void Go::Circle::read (std::istream & *is*) [virtual]

Read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.52.3.26 virtual void Go::Circle::setParamBounds (double *startpar,* double *endpar*) [virtual]

Set bounds for the parametrization of the Circle other than the default $[0, 2\pi]$. Requirements for a valid parametrization are: 1) The first parameter must be strictly less than the second, 2) Parameter values must be in $[-2\pi, 2\pi]$, and 3) (*endpar* - *startpar*) must not exceed 2π.

Parameters

startpar	start parameter
endpar	end parameter

Implements Go::ElementaryCurve.

29.52.3.27 virtual void Go::Circle::setParameterInterval (double *t1,* double *t2*) [virtual]

Circle parametrized on [0, 2∗M_PI). Allowing class to be defined on a section of the circle.

Implements Go::ParamCurve.

29.52.3.28 void Go::Circle::setSpanningVectors ( ) [protected]

29.52.3.29 virtual double Go::Circle::startparam ( ) const [virtual]

Query the start parameter of the curve

Returns

the curve's start parameter

Implements Go::ParamCurve.

29.52.3.30 virtual Circle∗ Go::Circle::subCurve (double *from_par,* double *to_par,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implements Go::ElementaryCurve.

29.52.3.31 virtual void Go::Circle::swapParameters2D ( ) [virtual]

If the curve is 2 dimensional, x and y coordinates will be swapped. Used when curve is a parameter curve.

Implements Go::ElementaryCurve.

29.52.3.32 virtual void Go::Circle::translateCurve (const Point & *dir*) [virtual]

Implements Go::ElementaryCurve.

29.52.3.33 virtual void Go::Circle::write (std::ostream & *os*) const [virtual]

Write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.52.4 Member Data Documentation

29.52.4.1 Point Go::Circle::centre_ [protected]

Definition at line 205 of file Circle.h.

29.52.4.2 double Go::Circle::endparam_ [protected]

Definition at line 211 of file Circle.h.

29.52.4.3 Point Go::Circle::normal_ [protected]

Definition at line 206 of file Circle.h.

29.52.4.4 double Go::Circle::radius_ [protected]

Definition at line 204 of file Circle.h.

29.52.4.5 double Go::Circle::startparam_ [protected]

Definition at line 210 of file Circle.h.

29.52.4.6 Point Go::Circle::vec1_ [protected]

Definition at line 207 of file Circle.h.

29.52.4.7 Point Go::Circle::vec2_ [protected]

Definition at line 208 of file Circle.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Circle.h

29.53 Go::ClosestPointCalculator Class Reference

`#include <IntersectionPoolUtils.h>`

Public Member Functions

- ClosestPointCalculator (shared_ptr< ParamObjectInt > obj)
- double compute (const Point &pt, double *unknown_par, double eps)

29.53.1 Detailed Description

Definition at line 262 of file IntersectionPoolUtils.h.

29.53.2 Constructor & Destructor Documentation

29.53.2.1 Go::ClosestPointCalculator::ClosestPointCalculator (shared_ptr< ParamObjectInt > *obj*) [inline]

Definition at line 266 of file IntersectionPoolUtils.h.

29.53.3 Member Function Documentation

29.53.3.1 double Go::ClosestPointCalculator::compute (const Point & *pt*, double * *unknown_par*, double *eps*) [inline]

Definition at line 283 of file IntersectionPoolUtils.h.

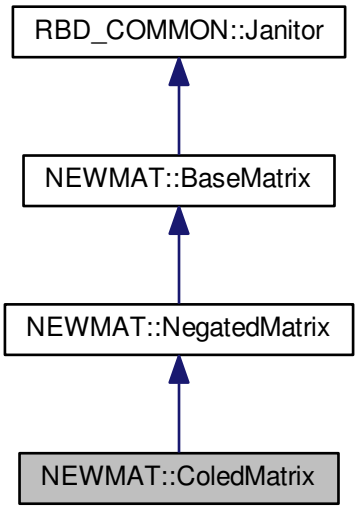
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionPoolUtils.h

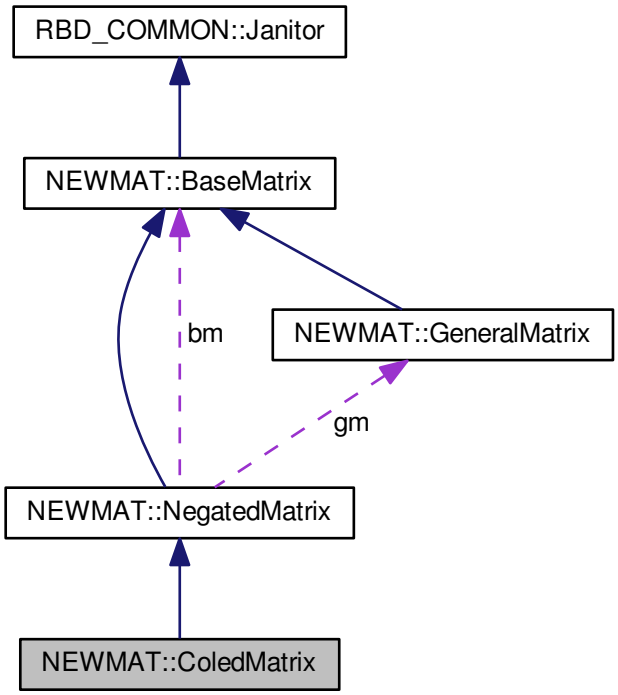
29.54 NEWMAT::ColedMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::ColedMatrix:



Collaboration diagram for NEWMAT::ColedMatrix:



Public Member Functions

- ~ColedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix

Additional Inherited Members

29.54.1 Detailed Description

Definition at line 1431 of file newmat.h.

29.54.2 Constructor & Destructor Documentation

29.54.2.1 NEWMAT::ColedMatrix::~ColedMatrix ( ) [inline]

Definition at line 1436 of file newmat.h.

29.54.3 Member Function Documentation

29.54.3.1 MatrixBandWidth ColedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 482 of file newmat4.cpp.

29.54.3.2 GeneralMatrix * ColedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 302 of file newmat5.cpp.

29.54.4 Friends And Related Function Documentation

29.54.4.1 friend class BaseMatrix [friend]

Definition at line 1434 of file newmat.h.

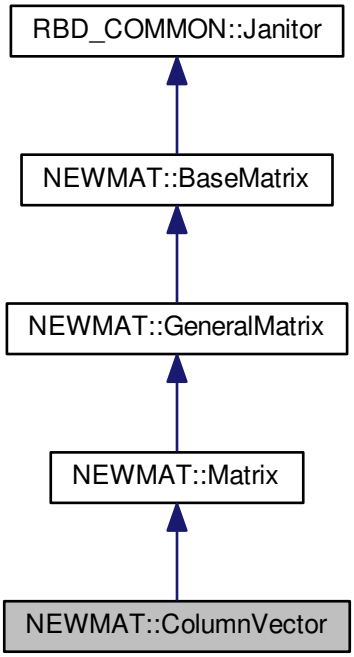
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

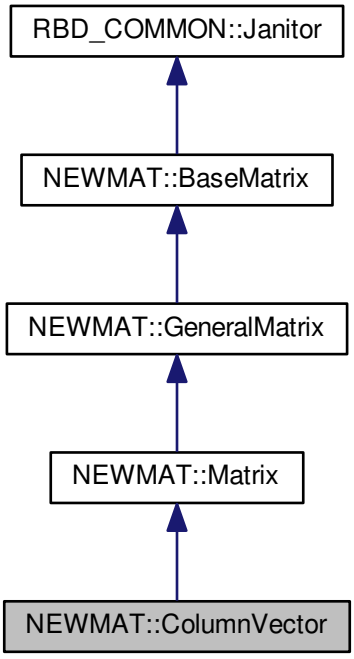
29.55 NEWMAT::ColumnVector Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::ColumnVector:



Collaboration diagram for NEWMAT::ColumnVector:



Public Member Functions

- ColumnVector ()
- ~ColumnVector ()
- ColumnVector (ArrayLengthSpecifier n)
- ColumnVector (const BaseMatrix &)
- ColumnVector (const ColumnVector &gm)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- void operator= (const ColumnVector &m)
- Real & operator() (int)
- Real & element (int)
- Real operator() (int) const
- Real element (int) const
- MatrixType Type () const
- GeneralMatrix * Transpose (TransposedMatrix *, MatrixType)
- void ReSize (int)
- void ReSize (int, int)
- void ReSize (const GeneralMatrix &A)
- Real * nric () const
- void CleanUp ()

Additional Inherited Members

29.55.1 Detailed Description

Definition at line 830 of file newmat.h.

29.55.2 Constructor & Destructor Documentation

29.55.2.1 NEWMAT::ColumnVector::ColumnVector ( ) [inline]

Definition at line 834 of file newmat.h.

29.55.2.2 NEWMAT::ColumnVector::∼ColumnVector ( ) [inline]

Definition at line 835 of file newmat.h.

29.55.2.3 NEWMAT::ColumnVector::ColumnVector (ArrayLengthSpecifier *n*) [inline]

Definition at line 836 of file newmat.h.

29.55.2.4 NEWMAT::ColumnVector::ColumnVector (const BaseMatrix &)

29.55.2.5 NEWMAT::ColumnVector::ColumnVector (const ColumnVector & *gm*) [inline]

Definition at line 838 of file newmat.h.

29.55.3 Member Function Documentation

29.55.3.1 void ColumnVector::CleanUp ( ) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 835 of file newmat4.cpp.

29.55.3.2 Real& NEWMAT::ColumnVector::element (int)

29.55.3.3 Real NEWMAT::ColumnVector::element (int) const

29.55.3.4 Real∗ NEWMAT::ColumnVector::nric ( ) const [inline]

Definition at line 855 of file newmat.h.

29.55.3.5 Real& NEWMAT::ColumnVector::operator() (int)

29.55.3.6 Real NEWMAT::ColumnVector::operator() (int) const

29.55.3.7 void NEWMAT::ColumnVector::operator= (const BaseMatrix &)

29.55.3.8 void NEWMAT::ColumnVector::operator= (Real *f*) [inline]

Definition at line 840 of file newmat.h.

29.55.3.9 void NEWMAT::ColumnVector::operator= (const ColumnVector & *m*) [inline]

Definition at line 841 of file newmat.h.

29.55.3.10 void NEWMAT::ColumnVector::ReSize (int)

29.55.3.11 void NEWMAT::ColumnVector::ReSize (int , int) [virtual]

Reimplemented from NEWMAT::Matrix.

29.55.3.12 void ColumnVector::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::Matrix.

Definition at line 273 of file newmat4.cpp.

29.55.3.13 GeneralMatrix * ColumnVector::Transpose (TransposedMatrix * , MatrixType *mt*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 60 of file newmat5.cpp.

29.55.3.14 MatrixType ColumnVector::Type ( ) const [virtual]

Reimplemented from NEWMAT::Matrix.

Definition at line 391 of file newmat4.cpp.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

29.56 Go::CompleteEdgeNet Class Reference

Complete the edge net of a SurfaceModel. Fetches the wire frame model corresponding to a surface model, and extends it such that the extended wire frame will become the wire frame model corresponding to a volume model have the given surface model as its outer boundary. The extension to the wireframe is represented as pairs of vertices where these vertices lie at the endpoints of the missing edges. NB! This solution is currently not expected to handle all configurations.

`#include <CompleteEdgeNet.h>`

Public Member Functions

- CompleteEdgeNet (shared_ptr< SurfaceModel > sfmodel, bool perform_step2, bool smooth_connections)
- ~CompleteEdgeNet ()

  Destructor.
- bool perform (std::vector< std::pair< Point, Point > > &corr_vx_pts)
- shared_ptr< SurfaceModel > getRegularizedModel ()
- std::vector< std::pair< shared_ptr< Vertex >, shared_ptr< Vertex > > > getMissingEdges ()

29.56.1 Detailed Description

Complete the edge net of a SurfaceModel. Fetches the wire frame model corresponding to a surface model, and extends it such that the extended wire frame will become the wire frame model corresponding to a volume model have the given surface model as its outer boundary. The extension to the wireframe is represented as pairs of vertices where these vertices lie at the endpoints of the missing edges. NB! This solution is currently not expected to handle all configurations.

Definition at line 55 of file CompleteEdgeNet.h.

29.56.2 Constructor & Destructor Documentation

29.56.2.1 Go::CompleteEdgeNet::CompleteEdgeNet (shared_ptr< SurfaceModel > *sfmodel*, bool *perform_step2*, bool *smooth_connections*)

Constructor. The method is applied on a SurfaceModel

Parameters

sfmodel	Pointer to a SurfaceModel

29.56.2.2 Go::CompleteEdgeNet::~CompleteEdgeNet ( )

Destructor.

29.56.3 Member Function Documentation

29.56.3.1 std::vector<std::pair<shared_ptr<Vertex>, shared_ptr<Vertex> > > Go::CompleteEdgeNet::getMissingEdges ( ) [inline]

Fetch new edges represented by their end vertices

Returns

Vector of pointers to end vertices of the edges

Definition at line 81 of file CompleteEdgeNet.h.

29.56.3.2 shared_ptr<SurfaceModel> Go::CompleteEdgeNet::getRegularizedModel ( ) [inline]

Fetch modified model (after regularization)

Returns

Pointer to the modified model

Definition at line 73 of file CompleteEdgeNet.h.

29.56.3.3 bool Go::CompleteEdgeNet::perform (std::vector< std::pair< Point, Point > > & *corr_vx_pts*)

Apply algorithm for completing the edge net and create a starting ground for a block structured model of solids

Returns

Whether the edge net was completed or not.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/CompleteEdgeNet.h

29.57 Go::ComplexityInfo Class Reference

`#include <ComplexityInfo.h>`

Public Member Functions

- ComplexityInfo ()
  Default constructor.
- ~ComplexityInfo ()
  Destructor.
- void setConeOverlap (double overlap)
- double getConeOverlap ()
- void setBoxOverlap (double overlap)
- double getBoxOverlap ()
- void setNmbIntpts (int nmbpts)
- int getNmbIntpts ()
- void setNmbSingpts (int nmbpts)
- int getNmbSingpts ()
- void setComplex ()
  Set flag for complex case.
- bool isComplex ()

29.57.1 Detailed Description

This class contains statistical information used to check whether an intersection problem is simplified during recursive subdivision

Definition at line 50 of file ComplexityInfo.h.

29.57.2 Constructor & Destructor Documentation

29.57.2.1 Go::ComplexityInfo::ComplexityInfo ( ) [inline]

Default constructor.

Definition at line 53 of file ComplexityInfo.h.

29.57.2.2 Go::ComplexityInfo::~ComplexityInfo ( ) [inline]

Destructor.

Definition at line 61 of file ComplexityInfo.h.

29.57.3 Member Function Documentation

29.57.3.1 double Go::ComplexityInfo::getBoxOverlap ( ) [inline]

Get the overlap between two boxes

Returns

the box overlap

Definition at line 80 of file ComplexityInfo.h.

29.57.3.2 double Go::ComplexityInfo::getConeOverlap ( ) [inline]

Get the overlapping angle between two cones

Returns

the overlapping angle

Definition at line 70 of file ComplexityInfo.h.

29.57.3.3 int Go::ComplexityInfo::getNmbIntpts ( ) [inline]

Get the number of intersection points between two objects

Returns

the number of intersection points

Definition at line 90 of file ComplexityInfo.h.

29.57.3.4 int Go::ComplexityInfo::getNmbSingpts ( ) [inline]

Get the number of singular points

Returns

the number of singular points

Definition at line 100 of file ComplexityInfo.h.

29.57.3.5 bool Go::ComplexityInfo::isComplex ( ) [inline]

Get flag for complex case

Returns

`true` if complex, `false` otherwise

Definition at line 109 of file ComplexityInfo.h.

29.57.3.6 void Go::ComplexityInfo::setBoxOverlap (double *overlap*) [inline]

Set the overlap between two boxes

Parameters

overlap	the box overlap

Definition at line 75 of file ComplexityInfo.h.

29.57.3.7 void Go::ComplexityInfo::setComplex ( ) [inline]

Set flag for complex case.

Definition at line 104 of file ComplexityInfo.h.

29.57.3.8 void Go::ComplexityInfo::setConeOverlap (double *overlap*) [inline]

Set the overlapping angle between two cones

Parameters

overlap	the overlapping angle

Definition at line 65 of file ComplexityInfo.h.

29.57.3.9 void Go::ComplexityInfo::setNmbIntpts (int *nmbpts*) [inline]

Set the number of intersection points between two objects

Parameters

nmbpts	the number of intersection points

Definition at line 85 of file ComplexityInfo.h.

29.57.3.10 void Go::ComplexityInfo::setNmbSingpts (int *nmbpts*) [inline]

Set the number of singular points

Parameters

nmbpts	the number of singular points

Definition at line 95 of file ComplexityInfo.h.

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/ComplexityInfo.h

29.58 Go::CompositeBox Class Reference

`#include <CompositeBox.h>`

Public Member Functions

- template<typename RandomAccessIterator >
  CompositeBox (RandomAccessIterator start, int dim, int num_u, int num_v)
  Constructor using setFromArray()
- CompositeBox (const Point &low, const Point &high)

- ~CompositeBox ()

  Do not inherit from this class – nonvirtual destructor.
- void setFromPoints (const Point &low, const Point &high)
- template<typename RandomAccessIterator >
  void setFromArray (RandomAccessIterator start, int dim, int num_u, int num_v)
- void read (std::istream &is)

  Read a composite box from a standard istream.
- void write (std::ostream &os) const

  Write a composite box to a standard ostream.
- int dimension () const

  The dimension of the composite box.
- Point low (double toli=0.0, double tole=0.0) const

  The lower bound of the composite box.
- Point high (double toli=0.0, double tole=0.0) const

  The upper bound of the composite box.
- const BoundingBox & inner () const

  The inner box.
- const BoundingBox & edge () const

  The edge box.
- bool containsPoint (const Point &pt, double toli=0.0, double tole=0.0) const
- bool overlaps (const CompositeBox &box, double toli=0.0, double tole=0.0) const
- bool getOverlap (const CompositeBox &box, double &overlap, double toli=0.0, double tole=0.0) const
- bool containsBox (const CompositeBox &box, double toli=0.0, double tole=0.0) const

29.58.1 Detailed Description

Composite of two bounding boxes. The inner box is supposed to be a bounding box for the interior of an object, while the edge box bounds the outer edges. When requests are made, the CompositeBox is treated as a single axis-aligned box, but tolerances can be given for both sub-boxes separately. A CompositeBox object can have any number of dimensions.

Definition at line 57 of file CompositeBox.h.

29.58.2 Constructor & Destructor Documentation

29.58.2.1 template<typename RandomAccessIterator > Go::CompositeBox::CompositeBox (RandomAccessIterator *start,* int *dim,* int *num_u,* int *num_v*) [inline]

Constructor using setFromArray()

Definition at line 62 of file CompositeBox.h.

29.58.2.2 Go::CompositeBox::CompositeBox (const Point & *low,* const Point & *high*) [inline]

Creates a CompositeBox with the Point low specifying the lower bound in all dimensions and high specifying the upper bound. The inner and edge boxes are equal.

Definition at line 73 of file CompositeBox.h.

29.58.2.3 Go::CompositeBox::~CompositeBox ( )

Do not inherit from this class – nonvirtual destructor.

29.58.3 Member Function Documentation

29.58.3.1 bool Go::CompositeBox::containsBox (const CompositeBox & *box,* double *toli* = 0.0, double *tole* = 0.0) const

Returns true if this box contain the box passed as a parameter,up to tolerances. Tolerances may be specified separately for inner and edge boxes.

29.58.3.2 bool Go::CompositeBox::containsPoint (const Point & *pt,* double *toli* = 0.0, double *tole* = 0.0) const

Returns true if the point pt is inside the box, up to tolerances. Tolerances may be specified separately for inner and edge boxes.

29.58.3.3 int Go::CompositeBox::dimension ( ) const [inline]

The dimension of the composite box.

Definition at line 180 of file CompositeBox.h.

29.58.3.4 const BoundingBox& Go::CompositeBox::edge ( ) const [inline]

The edge box.

Definition at line 201 of file CompositeBox.h.

29.58.3.5 bool Go::CompositeBox::getOverlap (const CompositeBox & *box,* double & *overlap,* double *toli* = 0.0, double *tole* = 0.0) const

Get the overlap between the two boxes. Tolerances may be specified separately for inner and edge boxes.

29.58.3.6 Point Go::CompositeBox::high (double *toli* = 0.0, double *tole* = 0.0) const

The upper bound of the composite box.

29.58.3.7 const BoundingBox& Go::CompositeBox::inner ( ) const [inline]

The inner box.

Definition at line 196 of file CompositeBox.h.

29.58.3.8 Point Go::CompositeBox::low (double *toli* = 0.0, double *tole* = 0.0) const

The lower bound of the composite box.

29.58.3.9 bool Go::CompositeBox::overlaps (const CompositeBox & *box*, double *toli* = 0.0, double *tole* = 0.0) const

Returns true if the two boxes overlap, up to tolerances. Tolerances may be specified separately for inner and edge boxes.

29.58.3.10 void Go::CompositeBox::read (std::istream & *is*)

Read a composite box from a standard istream.

29.58.3.11 template<typename RandomAccessIterator > void Go::CompositeBox::setFromArray (RandomAccessIterator *start*, int *dim*, int *num_u*, int *num_v*) [inline]

Given an array of dim-dimensional points stored as doubles or floats, makes the smallest composite box containing all points in the array. The array must be like a control point grid, with num_u points in the fastest running direction, and num_v points in the other direction. For curves, use num_v = 1.

Definition at line 96 of file CompositeBox.h.

29.58.3.12 void Go::CompositeBox::setFromPoints (const Point & *low*, const Point & *high*) [inline]

Makes the bounding box have lower bounds as specified in low and upper bounds as specified in high.

Definition at line 82 of file CompositeBox.h.

29.58.3.13 void Go::CompositeBox::write (std::ostream & *os*) const

Write a composite box to a standard ostream.

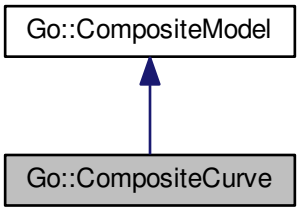
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/CompositeBox.h

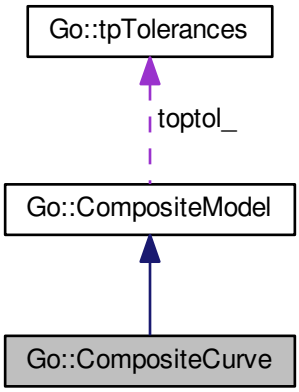
29.59 Go::CompositeCurve Class Reference

`#include <CompositeCurve.h>`

Inheritance diagram for Go::CompositeCurve:



Collaboration diagram for Go::CompositeCurve:



Public Member Functions

- CompositeCurve (double gap, double neighbour, double kink, double bend, std::vector< shared_ptr< ParamCurve > > &curves)
- ~CompositeCurve ()

  Destructor.
- virtual CompositeCurve * clone () const
- virtual int nmbEntities () const
- shared_ptr< ParamCurve > getCurve (int idx) const
- int getIndex (ParamCurve *curve) const
- void parameterRange (double &start, double &end) const

- double getGlobalPar (int idx, double par) const
- void getLocalPar (double global_par, int &idx, double &local_par) const
- virtual void evaluate (int idx, double par[], Point &pnt) const
- virtual void evaluate (int idx, double par[], int nder, std::vector< Point > &der) const
- void evaluateCurve (double par, Point &pnt) const
- void evaluateCurve (double par, int nder, std::vector< Point > &der) const
- virtual void closestPoint (Point &pnt, Point &clo_pnt, int &idx, double clo_par[], double &dist)
- PointOnCurve closestPoint (Point &pnt)
- virtual void extremalPoint (Point &dir, Point &ext_pnt, int &idx, double ext_par[])
- virtual BoundingBox boundingBox ()
- virtual BoundingBox boundingBox (int idx) const
- virtual bool isDegenerate (int idx) const
- virtual double curvature (int idx, double *par) const
- virtual void turn (int idx)
- virtual void turn ()
- virtual shared_ptr< IntResultsModel > intersect (const ftLine &line)
- virtual shared_ptr< IntResultsModel > intersect_plane (const ftPlane &plane)
- bool hit (const Point &point, const Point &dir, PointOnCurve &result)
- void append (shared_ptr< ParamCurve > curve)
- virtual void tesselate (std::vector< shared_ptr< GeneralMesh > > &meshes) const
- virtual void tesselate (int resolution[], std::vector< shared_ptr< GeneralMesh > > &meshes) const
- void tesselate (const std::vector< shared_ptr< ParamCurve > > &curves, int resolution[], std::vector< shared_ptr< GeneralMesh > > &meshes) const
- virtual void tesselate (double density, std::vector< shared_ptr< GeneralMesh > > &meshes) const
- void tesselate (const std::vector< shared_ptr< ParamCurve > > &curves, double density, std::vector< shared_ptr< GeneralMesh > > &meshes) const
- virtual void tesselatedCtrPolygon (std::vector< shared_ptr< LineCloud > > &ctr_pol) const
- void tesselatedCtrPolygon (const std::vector< shared_ptr< ParamCurve > > &curves, std::vector< shared_ptr< LineCloud > > &ctr_pol) const

Additional Inherited Members

29.59.1 Detailed Description

A composite curve including topological information

Definition at line 66 of file CompositeCurve.h.

29.59.2 Constructor & Destructor Documentation

29.59.2.1 Go::CompositeCurve::CompositeCurve (double *gap*, double *neighbour*, double *kink*, double *bend*, std::vector< shared_ptr< ParamCurve > > & *curves*)

Constructor. The sequence of the input curves will be kept, but a permutation array will sort the curves according to continuity

Parameters

gap	If the distance between two points is less than 'gap' they are viewed as identical.
neighbour	Maximum distance between curves viewed as adjacent.
kink	If two adjacent curves meet with an angle less than 'kink', they are seen as G1 continous. (angles in radians)
bend	If two curves meet with an angle larger than 'bend', there is an intentional corner.(angles in radians)
curves	A vector of curves.

29.59.2.2 Go::CompositeCurve::~CompositeCurve ( )

Destructor.

29.59.3 Member Function Documentation

29.59.3.1 void Go::CompositeCurve::append (shared_ptr< ParamCurve > *curve*)

Append a new curve to the composite curve. The curve is included in the topological structure.

Parameters

curve	The new curve.

29.59.3.2 virtual BoundingBox Go::CompositeCurve::boundingBox ( ) [virtual]

Bounding box of the entire composite curve

Returns

Bounding box

Implements Go::CompositeModel.

29.59.3.3 virtual BoundingBox Go::CompositeCurve::boundingBox (int *idx*) const [virtual]

Bounding box corresponding to one curve

Parameters

idx	Index of curve

Returns

Bounding box of curve with index idx.

Implements Go::CompositeModel.

29.59.3.4 virtual CompositeCurve* Go::CompositeCurve::clone ( ) const [virtual]

Make a copy of the current model

Returns

Pointer to the composite curve

Reimplemented from Go::CompositeModel.

29.59.3.5 virtual void Go::CompositeCurve::closestPoint (Point & *pnt*, Point & *clo_pnt*, int & *idx*, double *clo_par[ ]*, double & *dist*) [virtual]

Closest point between a given point and this composite curve Returns one point

Parameters

pnt	Input point

Return values

clo_pnt	Found closest point
idx	Index of curve where the closest point is found
clo_par[ ]	Parameter value corresponding to the closest point
dist	Distance between input point and found closest point

Implements Go::CompositeModel.

29.59.3.6 PointOnCurve Go::CompositeCurve::closestPoint (Point & *pnt*)

Closest point between a given point and this composite curve Returns one point

Parameters

pnt	Input point

Returns

Closest point

29.59.3.7 virtual double Go::CompositeCurve::curvature (int *idx*, double * *par*) const [virtual]

Curvature of a curve

Parameters

idx	Index of curve
par	Parameter value at which to compute curvature

Returns

The curvature.

Implements Go::CompositeModel.

29.59.3.8 virtual void Go::CompositeCurve::evaluate (int *idx,* double *par[ ],* Point & *pnt*) const [virtual]

Evaluate position

Parameters

idx	Index of curve
par[ ]	Parameter value

Return values

pnt	Result

Implements Go::CompositeModel.

29.59.3.9 virtual void Go::CompositeCurve::evaluate (int *idx,* double *par[ ],* int *nder,* std::vector< Point > & *der*) const [virtual]

Evaluate position and a number of derivatives The sequence is position, first derivative, second derivative, etc.

Parameters

idx	Index of curve
par	Parameter value
nder	Number of derivatives to compute, 0=only position

Return values

der	Result

Implements Go::CompositeModel.

29.59.3.10 void Go::CompositeCurve::evaluateCurve (double *par,* Point & *pnt*) const

Evaluate with respect to the composite curve. Evaluate position

Parameters

par	Parameter value

Return values

pnt	Result

29.59.3.11 void Go::CompositeCurve::evaluateCurve (double *par,* int *nder,* std::vector< Point > & *der*) const

Evaluate position and a number of derivatives The sequence is position, first derivative, second derivative, etc.

Parameters

par	Parameter value
nder	Number of derivatives to compute, 0=only position

Return values

der	Result

29.59.3.12 virtual void Go::CompositeCurve::extremalPoint (Point & *dir,* Point & *ext_pnt,* int & *idx,* double *ext_par[ ]*) [virtual]

Extremal point(s) in a given direction

Parameters

dir	Direction

Return values

ext_pnt	Found extremal point
idx	Index of curve where the extremal point is found
ext_par[ ]	Parameter value of extremal point

Implements Go::CompositeModel.

29.59.3.13 shared_ptr<ParamCurve> Go::CompositeCurve::getCurve (int *idx*) const

Return one curve. Note that the index corresponds to the sequence of which the curves are added to the CompositeCurve, not the position in the composite curve

Parameters

idx	Index of curve.

Returns

Pointer to the curve.

29.59.3.14 double Go::CompositeCurve::getGlobalPar (int *idx,* double *par*) const

Conversion between parameter settings

Parameters

idx	Index of sub curve
par	Parameter in sub curve

Returns

the global parameter corresponding to a sub curve parameter

29.59.3.15 int Go::CompositeCurve::getIndex (ParamCurve * *curve*) const

Given a curve in the composite curve, return the index of this curve

Parameters

curve	Pointer to curve

Returns

Index to curve

29.59.3.16 void Go::CompositeCurve::getLocalPar (double *global_par,* int & *idx,* double & *local_par*) const

Return the sub curve parameter corresponding to a global parameter. At joints, the first sub curve parameter will be returned.

Parameters

global_par	Parameter in composite curve
idx	Index of corresponding sub curve

Return values

local_par	Parameter in sub curve

29.59.3.17 bool Go::CompositeCurve::hit (const Point & *point,* const Point & *dir,* PointOnCurve & *result*)

Test if a line with direction 'dir' through the point 'point' hits this composite curve. If it hits, return 'true' and the intersection point closest to 'point'.

Parameters

point	Point on the line.
dir	Line direction.

Return values

result	Closest intersection point.

Returns

Whether the line hits or not.

29.59.3.18 virtual shared_ptr<IntResultsModel> Go::CompositeCurve::intersect (const ftLine & *line*) [virtual]

Intersection with a line. Expected output is points, probably one point. Curves can occur in special configurations. The function makes most sense in 2D, otherwise it is very dependent on the tolerance.

Parameters

line	The line.

Returns

Pointer to an IntResultsModel.

Implements Go::CompositeModel.

29.59.3.19 virtual shared_ptr<IntResultsModel> Go::CompositeCurve::intersect_plane (const ftPlane & *plane*) [virtual]

Intersection with a plane.

Parameters

plane	The plane.

Returns

Pointer to an IntResultsModel.

Implements Go::CompositeModel.

29.59.3.20 virtual bool Go::CompositeCurve::isDegenerate (int *idx*) const [virtual]

Whether one particular curve is degenerated

Parameters

idx	Index of curve

Returns

Whether the curve is degenerated

Implements Go::CompositeModel.

29.59.3.21 virtual int Go::CompositeCurve::nmbEntities ( ) const [virtual]

Number of simple entities

Returns

Number of simple entities

Implements Go::CompositeModel.

29.59.3.22 void Go::CompositeCurve::parameterRange (double & *start*, double & *end*) const

Get the parameter range.

Return values

start	Parameter start.
end	Parameter end.

29.59.3.23 virtual void Go::CompositeCurve::tesselate (std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate with respect to a default parameter

Return values

meshes	Tesselated model

Implements Go::CompositeModel.

29.59.3.24 virtual void Go::CompositeCurve::tesselate (int *resolution[]*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate with respect to a given resolution

Parameters

resolution[]	All curves are tesselated with resolution[0].

Return values

meshes	Tesselated model

Implements Go::CompositeModel.

29.59.3.25 void Go::CompositeCurve::tesselate (const std::vector< shared_ptr< ParamCurve > > & *curves*, int *resolution[ ]*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const

Tesselate specified curves with respect to a given resolution

Parameters

curves	Specified curves
resolution[ ]	Specified curves are tesselated with resolution[0].

Return values

meshes	Tesselated model

29.59.3.26 virtual void Go::CompositeCurve::tesselate (double *density*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate with respect to a given tesselation density

Parameters

density	Tesselation density

Return values

meshes	Tesselated model

Implements Go::CompositeModel.

29.59.3.27 void Go::CompositeCurve::tesselate (const std::vector< shared_ptr< ParamCurve > > & *curves*, double *density*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const

Tesselate specified curves with respect to a given tesselation density

Parameters

curves	Specified curves
density	Tesselation density

Return values

meshes	Tesselated model

29.59.3.28 virtual void Go::CompositeCurve::tesselatedCtrPolygon (std::vector< shared_ptr< LineCloud > > & *ctr_pol*) const [virtual]

Return a tesselation of the control polygon of this composite curve

Return values

ctr_pol	Tesselated control polygon of this composite curve

Implements Go::CompositeModel.

29.59.3.29 void Go::CompositeCurve::tesselatedCtrPolygon (const std::vector< shared_ptr< ParamCurve > > & *curves*, std::vector< shared_ptr< LineCloud > > & *ctr_pol*) const

Return a tesselation of the control polygon of specified curves

Parameters

curves	Specified curves

Return values

ctr_pol	Tesselated control polygon of specified curve

29.59.3.30 virtual void Go::CompositeCurve::turn (int *idx*) [virtual]

Turn parameter direction of one curve. An update in the topology structures is required.

Parameters

idx	Index of curve

Implements Go::CompositeModel.

29.59.3.31 virtual void Go::CompositeCurve::turn ( ) [virtual]

Turn parameter directions of all curves. An update in the topology structures is required.

Implements Go::CompositeModel.

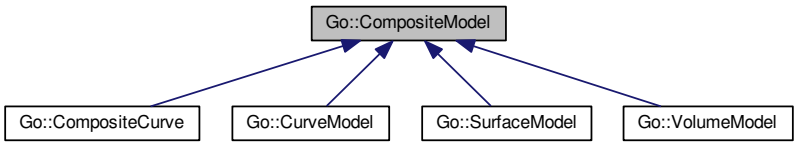
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/CompositeCurve.h

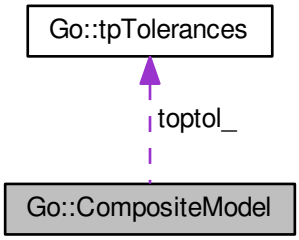
29.60 Go::CompositeModel Class Reference

`#include <CompositeModel.h>`

Inheritance diagram for Go::CompositeModel:



Collaboration diagram for Go::CompositeModel:



Public Member Functions

- CompositeModel (double gap, double neighbour, double kink, double bend)
- virtual ~CompositeModel ()

  Destructor.
- void setTolerances (double gap, double neighbour, double kink, double bend)
- tpTolerances getTolerances ()

  Return topology tolerances.
- virtual SurfaceModel * asSurfaceModel ()
- virtual CompositeModel * clone () const
- virtual int nmbEntities () const =0
- virtual void evaluate (int idx, double par[], Point &pnt) const =0
- virtual void evaluate (int idx, double par[], int nder, std::vector< Point > &der) const =0
- virtual void closestPoint (Point &pnt, Point &clo_pnt, int &idx, double clo_par[], double &dist)=0
- virtual shared_ptr< IntResultsModel > intersect (const ftLine &line)=0
- virtual shared_ptr< IntResultsModel > intersect_plane (const ftPlane &plane)=0
- virtual void extremalPoint (Point &dir, Point &ext_pnt, int &idx, double ext_par[])=0
- virtual BoundingBox boundingBox ()=0
- virtual BoundingBox boundingBox (int idx) const =0

- virtual bool isDegenerate (int idx) const =0
- virtual double curvature (int idx, double *par) const =0
- virtual void turn (int idx)=0
- virtual void turn ()=0

  Turn parameter directions of all entities.
- virtual void tesselate (std::vector< shared_ptr< GeneralMesh > > &meshes) const =0
- virtual void tesselate (int resolution[], std::vector< shared_ptr< GeneralMesh > > &meshes) const =0
- virtual void tesselate (double density, std::vector< shared_ptr< GeneralMesh > > &meshes) const =0
- virtual void tesselatedCtrPolygon (std::vector< shared_ptr< LineCloud > > &ctr_pol) const =0

Protected Member Functions

- double boxVecDist (const BoundingBox &b, const Point &v) const
- bool boxExtreme (const BoundingBox &box, const Point &dir, const Point &curr_pnt) const

Protected Attributes

- tpTolerances toptol_
- int closest_idx_

29.60.1 Detailed Description

Abstract base class for a surface model or a curve model.

Definition at line 72 of file CompositeModel.h.

29.60.2 Constructor & Destructor Documentation

29.60.2.1 Go::CompositeModel::CompositeModel (double *gap*, double *neighbour*, double *kink*, double *bend*)

Constructor with topology tolerances

Parameters

gap	If the distance between two points are less than 'gap' they are viewed as identical.
neighbour	Maximum distance between curves or surfaces viewed as adjacent.
kink	If two adjacent curves or surfaces meet with an angle less than 'kink', they are seen as G1 continous. (Angles in radians)
bend	If two surfaces meet along a common boundary and corresponding surface normals form an angle which is larger than 'bend', there is an intentional sharp edge between the surfaces. Similarily if two curves meet with an angle larger than 'bend', there is an intentional corner. (Angles in radians)

29.60.2.2 virtual Go::CompositeModel::~CompositeModel ( ) [virtual]

Destructor.

29.60.3 Member Function Documentation

29.60.3.1 virtual SurfaceModel* Go::CompositeModel::asSurfaceModel ( ) [inline], [virtual]

Return surface model pointer

Returns

Pointer to surface model

Reimplemented in Go::SurfaceModel.

Definition at line 112 of file CompositeModel.h.

29.60.3.2 virtual BoundingBox Go::CompositeModel::boundingBox ( ) [pure virtual]

Bounding box of the entire model

Returns

Bounding box

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.3 virtual BoundingBox Go::CompositeModel::boundingBox (int *idx*) const [pure virtual]

Bounding box corresponding to one entity

Parameters

idx	Index of entity

Returns

Bounding box

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.4 bool Go::CompositeModel::boxExtreme (const BoundingBox & *box,* const Point & *dir,* const Point & *curr_pnt*) const [protected]

29.60.3.5 double Go::CompositeModel::boxVecDist (const BoundingBox & *b,* const Point & *v*) const [protected]

29.60.3.6 virtual CompositeModel* Go::CompositeModel::clone ( ) const [inline], [virtual]

Make a copy of the current model

Returns

Pointer to new CompositeModel

Reimplemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

Definition at line 119 of file CompositeModel.h.

29.60.3.7 virtual void Go::CompositeModel::closestPoint (Point & *pnt*, Point & *clo_pnt*, int & *idx*, double *clo_par[ ]*, double & *dist*) [pure virtual]

Compute one closest point

Parameters

pnt	Input point

Return values

clo_pnt	Found closest point
idx	Index of curve or surface where the closest point is found
clo_par[ ]	Parameter value corresponding to the closest point
dist	Distance between input point and found closest point

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.8 virtual double Go::CompositeModel::curvature (int *idx*, double * *par*) const [pure virtual]

Curvature of an entity (Curve or Surface), Only Curve is implemented yet.

Parameters

idx	Index of entity
par	Parameter value at which to compute curvature

Returns

The curvature.

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.9 virtual void Go::CompositeModel::evaluate (int *idx*, double *par[ ]*, Point & *pnt*) const [pure virtual]

Evaluate position

Parameters

idx	Index of curve
par[]	Parameter value

Return values

pnt	Result

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.10 virtual void Go::CompositeModel::evaluate (int *idx*, double *par[]*, int *nder*, std::vector< Point > & *der*) const [pure virtual]

Evaluate position and a number of derivatives

Parameters

idx	Index
par[]	Parameter value
nder	Number of derivatives to compute, 0=only position

Return values

der	Result

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.11 virtual void Go::CompositeModel::extremalPoint (Point & *dir*, Point & *ext_pnt*, int & *idx*, double *ext_par[]*) [pure virtual]

Extremal point(s) in a given direction

Parameters

dir	Direction
ext_pnt	Found extremal point
idx	Index of curve or surface where the extremal point is found
ext_par[]	Parameter value of extremal point

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.12 tpTolerances Go::CompositeModel::getTolerances ( ) [inline]

Return topology tolerances.

Definition at line 105 of file CompositeModel.h.

29.60.3.13 virtual shared_ptr<IntResultsModel> Go::CompositeModel::intersect (const ftLine & *line*) [pure virtual]

Intersection with a line. Expected output is points, probably one point. Curves can occur in special configurations.

Parameters

line	The line.

Returns

Pointer to an IntResultsModel.

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.14 virtual shared_ptr<IntResultsModel> Go::CompositeModel::intersect_plane (const ftPlane & *plane*) [pure virtual]

Intersection with a plane.

Parameters

plane	The plane.

Returns

Pointer to an IntResultsModel.

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.15 virtual bool Go::CompositeModel::isDegenerate (int *idx*) const [pure virtual]

Whether one particular entity is degenerate

Parameters

idx	Index of entity

Returns

Whether the curve is degenerated

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.16 virtual int Go::CompositeModel::nmbEntities ( ) const [pure virtual]

Number of simple entities

Returns

Number of simple entities

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.17 void Go::CompositeModel::setTolerances (double *gap*, double *neighbour*, double *kink*, double *bend*)

Set or reset topology tolerances

Parameters

gap	If the distance between two points are less than 'gap' they are viewed as identical.
neighbour	Maximum distance between curves or surfaces viewed as adjacent.
kink	If two adjacent curves or surfaces meet with an angle less than 'kink', they are seen as G1 continous. (Angles in radians)
bend	If two surfaces meet along a common boundary and corresponding surface normals form an angle which is larger than 'bend', there is an intentional sharp edge between the surfaces. Similarily if two curves meet with an angle larger than 'bend', there is an intentional corner. (Angles in radians)

29.60.3.18 virtual void Go::CompositeModel::tesselate (std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [pure virtual]

Tesselate model with respect to a default parameter

Return values

meshes	Tesselated model

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.19 virtual void Go::CompositeModel::tesselate (int *resolution[]*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [pure virtual]

Tesselate model with respect to a given resolution

Parameters

resolution[]	Given resolution

Return values

meshes	Tesselated model

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.20 virtual void Go::CompositeModel::tesselate (double *density*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [pure virtual]

Tesselate model with respect to a given tesselation density

Parameters

density	Tesselation density

Return values

meshes	Tesselated model

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.21 virtual void Go::CompositeModel::tesselatedCtrPolygon (std::vector< shared_ptr< LineCloud > > & *ctr_pol*) const [pure virtual]

Return a tesselation of the control polygon of this entity

Return values

ctr_pol	Tesselated control polygon of this entity

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.22 virtual void Go::CompositeModel::turn (int *idx*) [pure virtual]

Turn parameter directions of one entity

Parameters

idx	Index of entity

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.3.23 virtual void Go::CompositeModel::turn ( ) [pure virtual]

Turn parameter directions of all entities.

Implemented in Go::SurfaceModel, Go::CompositeCurve, Go::CurveModel, and Go::VolumeModel.

29.60.4 Member Data Documentation

29.60.4.1 int Go::CompositeModel::closest_idx_ [mutable], [protected]

Definition at line 238 of file CompositeModel.h.

29.60.4.2 tpTolerances Go::CompositeModel::toptol_ [protected]

Definition at line 237 of file CompositeModel.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/CompositeModel.h

29.61 Go::CompositeModelFactory Class Reference

`#include <CompositeModelFactory.h>`

Public Member Functions

- CompositeModelFactory (double approxtol, double gap, double neighbour, double kink, double bend)
  Constructor.
- ~CompositeModelFactory ()
  Destructor.
- SurfaceModel * createEmpty ()
  Create an empty model.
- CompositeModel * createFromIges (std::istream &is, bool use_filetol=false, bool prefer_surfacemodel=true)
- std::vector< shared_ptr< CompositeModel > > getModelsFromIges (std::istream &is, bool use_filetol=false)
  Get all connected models in the IGES file.
- CompositeModel * createFromG2 (std::istream &is, bool prefer_surfacemodel=true)
- std::vector< shared_ptr< CompositeModel > > getModelsFromG2 (std::istream &is, bool use_filetol=false)
  Get all connected models in the g2 file.
- SurfaceModel * createFromSisl (std::vector< SISLSurf * > &surfaces)
  Read a vector of sisl surfaces.
- CompositeCurve * createFromSisl (std::vector< SISLCurve * > &curves)
  Read a vector of sisl curves.
- SurfaceModel * createFromBox (Point corner, Point side_vec, Point plane_vec, double side1_length, double side2_length, double side3_length)
- SurfaceModel * createFromSphere (Point centre, double radius)
- SurfaceModel * createFromSphere (Point centre, Point axis, Point equator, int latitude, int longitude)
- SurfaceModel * createFromCylinder (Point bottom_pos, Point cylinder_axis, Point major_axis, Point minor_axis)
- SurfaceModel * interpolateCurves (const std::vector< shared_ptr< SplineCurve > > &curves, std::vector< double > &parvals, int open, int degree=3)
- SurfaceModel * interpolateCurves2 (const std::vector< shared_ptr< SplineCurve > > &curves, std::vector< double > &param, int open, int degree=3)
- SurfaceModel * interpolateCurves (const std::vector< shared_ptr< SplineCurve > > &curves, std::vector< int > &crv_type, std::vector< double > &parvals, int open, int degree=3)
  Interpolate a set of positional curves where a tangent curve may be added.
- SurfaceModel * interpolateCurves2 (const std::vector< shared_ptr< SplineCurve > > &curves, std::vector< int > &crv_type, std::vector< double > &param, int open, int degree=3)
- CompositeCurve * createCircularArc (Point centre, Point start_pt, double angle, Point axis)
- CompositeCurve * createEllipticArc (Point centre, Point direction, double r1, double r2, double startpar, double angle, Point axis)
- CompositeCurve * createLineSegment (Point startpt, Point endpt)
  Create line segment bewteen the two points startpt and endpt.

29.61.1 Detailed Description

Factory class for creating children of CompositeModel

Definition at line 63 of file CompositeModelFactory.h.

29.61.2 Constructor & Destructor Documentation

29.61.2.1 Go::CompositeModelFactory::CompositeModelFactory (double *approxtol,* double *gap,* double *neighbour,* double *kink,* double *bend*)

Constructor.

29.61.2.2 Go::CompositeModelFactory::~CompositeModelFactory ( )

Destructor.

29.61.3 Member Function Documentation

29.61.3.1 CompositeCurve* Go::CompositeModelFactory::createCircularArc (Point *centre,* Point *start_pt,* double *angle,* Point *axis*)

Create a circular arc centre : Circle centre start_pt : Start point of arc angle : Angle of arc axis : Axis of the plane in which the circle lies

29.61.3.2 CompositeCurve* Go::CompositeModelFactory::createEllipticArc (Point *centre,* Point *direction,* double *r1,* double *r2,* double *startpar,* double *angle,* Point *axis*)

Create an elliptic arc centre : Ellipse centre direction : Direction of major ellips axis r1 : Major radius r2 : Minor radius startpar : Start parameter of segment angle : Angle of arc axis : Axis of the plane in which the ellipse lies

29.61.3.3 SurfaceModel* Go::CompositeModelFactory::createEmpty ( )

Create an empty model.

29.61.3.4 SurfaceModel* Go::CompositeModelFactory::createFromBox (Point *corner,* Point *side_vec,* Point *plane_vec,* double *side1_length,* double *side2_length,* double *side3_length*)

Make surface model from a box Input is one box corner, the vector from this corner towards another corner in the same box side, yet another vector in the plane defining this box side and the lengts of the box sides. The first length corresponds to the vector defining the box side, the second to the other side in the defined plane and the third defines the depth of the box. The lengths may be negative.

29.61.3.5 SurfaceModel* Go::CompositeModelFactory::createFromCylinder (Point *bottom_pos,* Point *cylinder_axis,* Point *major_axis,* Point *minor_axis*)

Make surface model from truncated cylinder bottom_pos : centre of cylinder at bottom cylinder_axis : Cylinder axis. The length of the vector defines the cylinder height major_axis : Major axis in ellipse at cylinder bottom. The vector length defines the major radius minor_axis : Minor axis in ellipse at cylinder bottom. The vector length defines the minor radius

29.61.3.6 CompositeModel* Go::CompositeModelFactory::createFromG2 (std::istream & *is,* bool *prefer_surfacemodel* = true)

Read G2 file One model is produced

29.61.3.7 CompositeModel* Go::CompositeModelFactory::createFromIges (std::istream & *is,* bool *use_filetol* = false, bool *prefer_surfacemodel* = true)

Read IGES file One model is produced

29.61.3.8 SurfaceModel* Go::CompositeModelFactory::createFromSisl (std::vector< SISLSurf * > & *surfaces*)

Read a vector of sisl surfaces.

29.61.3.9 CompositeCurve* Go::CompositeModelFactory::createFromSisl (std::vector< SISLCurve * > & *curves*)

Read a vector of sisl curves.

29.61.3.10 SurfaceModel* Go::CompositeModelFactory::createFromSphere (Point *centre,* double *radius*)

Make surface model from sphere Input is sphere center and radius

29.61.3.11 SurfaceModel* Go::CompositeModelFactory::createFromSphere (Point *centre,* Point *axis,* Point *equator,* int *latitude,* int *longitude*)

Make surface model from octants of a sphere Input is sphere center, axis toward norht pole, vector from centre to point on equator and the number of octants. The length on the equator vector gives the sphere radius latitude = 1 : Octants in northern hemisphere latitude = 2 : Octants in both hemispheres longitude = 1 : Octants in first quadrant longitude = 2 : Octants in first and second quadrant longitude = 3 : Octants in first, second and third quadrant longitude = 4 : Octants in all quadrants

29.61.3.12 CompositeCurve* Go::CompositeModelFactory::createLineSegment (Point *startpt,* Point *endpt*)

Create line segment bewteen the two points startpt and endpt.

29.61.3.13 std::vector<shared_ptr<CompositeModel> > Go::CompositeModelFactory::getModelsFromG2 (std::istream & *is*, bool *use_filetol* = false)

Get all connected models in the g2 file.

29.61.3.14 std::vector<shared_ptr<CompositeModel> > Go::CompositeModelFactory::getModelsFromIges (std::istream & *is*, bool *use_filetol* = false)

Get all connected models in the IGES file.

29.61.3.15 SurfaceModel* Go::CompositeModelFactory::interpolateCurves (const std::vector< shared_ptr< SplineCurve > > & *curves*, std::vector< double > & *parvals*, int *open*, int *degree* = 3)

Interpolate a set of positional curves. Automatic parameterization. The parameter values corresponding to the curves are given as output

29.61.3.16 SurfaceModel* Go::CompositeModelFactory::interpolateCurves (const std::vector< shared_ptr< SplineCurve > > & *curves*, std::vector< int > & *crv_type*, std::vector< double > & *parvals*, int *open*, int *degree* = 3)

Interpolate a set of positional curves where a tangent curve may be added.

positional curves are given as output NB! Rational input curves are not handled

29.61.3.17 SurfaceModel* Go::CompositeModelFactory::interpolateCurves2 (const std::vector< shared_ptr< SplineCurve > > & *curves*, std::vector< double > & *param*, int *open*, int *degree* = 3)

Interpolate a set of positional curves. Parameterization is given. If a closed surface is specified, one extra parameter value must be specified

29.61.3.18 SurfaceModel* Go::CompositeModelFactory::interpolateCurves2 (const std::vector< shared_ptr< SplineCurve > > & *curves*, std::vector< int > & *crv_type*, std::vector< double > & *param*, int *open*, int *degree* = 3)

Interpolate a set of positional curves where a tangent curve may be added. Parameterization is given and corresponds to the positional curves. NB! Rational input curves are not handled

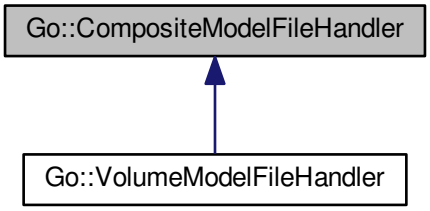
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/CompositeModelFactory.h

29.62 Go::CompositeModelFileHandler Class Reference

`#include <CompositeModelFileHandler.h>`

Inheritance diagram for Go::CompositeModelFileHandler:



Classes

- struct sfcvinfo

Public Member Functions

- CompositeModelFileHandler ()
- ~CompositeModelFileHandler ()
- void clear ()
- void writeStart (std::ostream &os)
- void writeEnd (std::ostream &os)
- void writeHeader (const std::string &file_content_info, std::ostream &os)
- void writeGeomObj (const std::vector< shared_ptr< GeomObject > > &geom_obj, const std::vector< int > &obj_id, std::ostream &os)
- void writeSurfModel (Go::SurfaceModel &surf_model, std::ostream &os, int surfmodel_id=-1, bool faces=true)
- void writeBody (shared_ptr< Body > &body, std::ostream &os, int body_id=-1)
- std::vector< shared_ptr< GeomObject > > readGeomObj (const char *filein)
- SurfaceModel readSurfModel (const char *filein, int id=-1)
- shared_ptr< SurfaceModel > readShell (const char *filein, int id=-1)
- shared_ptr< Body > readBody (const char *filein, int id=-1)

Protected Member Functions

- virtual shared_ptr< GeomObject > createGeomObject (const ObjectHeader &obj_header) const
- void writeFaces (std::ostream &os)
- void readFaces (const char *filein)

Protected Attributes

- const int MAJOR_VERSION_
- const int MINOR_VERSION_
- const std::string indent_
- std::map< shared_ptr< GeomObject >, int > geom_objects_
- std::map< shared_ptr< SurfaceModel >, int > shells_
- std::map< shared_ptr< ftFaceBase >, int > faces_
- std::map< shared_ptr< Loop >, int > loops_
- std::map< shared_ptr< ftEdgeBase >, int > edges_
- std::map< shared_ptr< Vertex >, int > vertices_
- std::map< int, shared_ptr< ftSurface > > faces2_
- std::map< int, shared_ptr< GeomObject > > geom_objects2_

29.62.1 Detailed Description

Definition at line 61 of file CompositeModelFileHandler.h.

29.62.2 Constructor & Destructor Documentation

29.62.2.1 Go::CompositeModelFileHandler::CompositeModelFileHandler ( ) [inline]

Definition at line 65 of file CompositeModelFileHandler.h.

29.62.2.2 Go::CompositeModelFileHandler::~CompositeModelFileHandler ( )

29.62.3 Member Function Documentation

29.62.3.1 void Go::CompositeModelFileHandler::clear ( )

29.62.3.2 virtual shared_ptr<GeomObject> Go::CompositeModelFileHandler::createGeomObject (const ObjectHeader & *obj_header*) const [protected], [virtual]

29.62.3.3 shared_ptr<Body> Go::CompositeModelFileHandler::readBody (const char * *filein*, int *id* = -1)

29.62.3.4 void Go::CompositeModelFileHandler::readFaces (const char * *filein*) [protected]

29.62.3.5 std::vector<shared_ptr<GeomObject> > Go::CompositeModelFileHandler::readGeomObj (const char * *filein*)

29.62.3.6 shared_ptr<SurfaceModel> Go::CompositeModelFileHandler::readShell (const char * *filein*, int *id* = -1)

29.62.3.7 SurfaceModel Go::CompositeModelFileHandler::readSurfModel (const char * *filein*, int *id* = -1)

29.62.3.8 void Go::CompositeModelFileHandler::writeBody (shared_ptr< Body > & *body*, std::ostream & *os*, int *body_id* = -1)

29.62.3.9 void Go::CompositeModelFileHandler::writeEnd (std::ostream & *os*)

29.62.3.10 void Go::CompositeModelFileHandler::writeFaces (std::ostream & *os*) [protected]

29.62.3.11 void Go::CompositeModelFileHandler::writeGeomObj (const std::vector< shared_ptr< GeomObject > > & *geom_obj,* const std::vector< int > & *obj_id,* std::ostream & *os*)

29.62.3.12 void Go::CompositeModelFileHandler::writeHeader (const std::string & *file_content_info,* std::ostream & *os*)

29.62.3.13 void Go::CompositeModelFileHandler::writeStart (std::ostream & *os*)

29.62.3.14 void Go::CompositeModelFileHandler::writeSurfModel (Go::SurfaceModel & *surf_model,* std::ostream & *os,* int *surfmodel_id* = −1, bool *faces* = true)

29.62.4 Member Data Documentation

29.62.4.1 std::map<shared_ptr<ftEdgeBase>, int> Go::CompositeModelFileHandler::edges_ [protected]

Definition at line 140 of file CompositeModelFileHandler.h.

29.62.4.2 std::map<int, shared_ptr<ftSurface> > Go::CompositeModelFileHandler::faces2_ [protected]

Definition at line 144 of file CompositeModelFileHandler.h.

29.62.4.3 std::map<shared_ptr<ftFaceBase>, int> Go::CompositeModelFileHandler::faces_ [protected]

Definition at line 138 of file CompositeModelFileHandler.h.

29.62.4.4 std::map<int, shared_ptr<GeomObject> > Go::CompositeModelFileHandler::geom_objects2_ [protected]

Definition at line 145 of file CompositeModelFileHandler.h.

29.62.4.5 std::map<shared_ptr<GeomObject>, int> Go::CompositeModelFileHandler::geom_objects_ [protected]

Definition at line 135 of file CompositeModelFileHandler.h.

29.62.4.6 const std::string Go::CompositeModelFileHandler::indent_ [protected]

Definition at line 125 of file CompositeModelFileHandler.h.

29.62.4.7 std::map<shared_ptr<Loop>, int> Go::CompositeModelFileHandler::loops_ [protected]

Definition at line 139 of file CompositeModelFileHandler.h.

29.62.4.8 const int Go::CompositeModelFileHandler::MAJOR_VERSION_ [protected]

Definition at line 123 of file CompositeModelFileHandler.h.

29.62.4.9 const int Go::CompositeModelFileHandler::MINOR_VERSION_ [protected]

Definition at line 124 of file CompositeModelFileHandler.h.

29.62.4.10 std::map<shared_ptr<SurfaceModel>, int> Go::CompositeModelFileHandler::shells_ [protected]

Definition at line 137 of file CompositeModelFileHandler.h.

29.62.4.11 std::map<shared_ptr<Vertex>, int> Go::CompositeModelFileHandler::vertices_ [protected]

Definition at line 141 of file CompositeModelFileHandler.h.

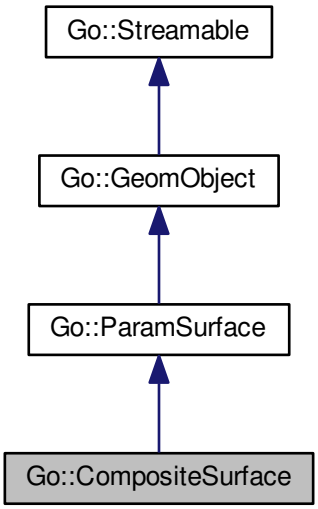
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/CompositeModelFileHandler.h

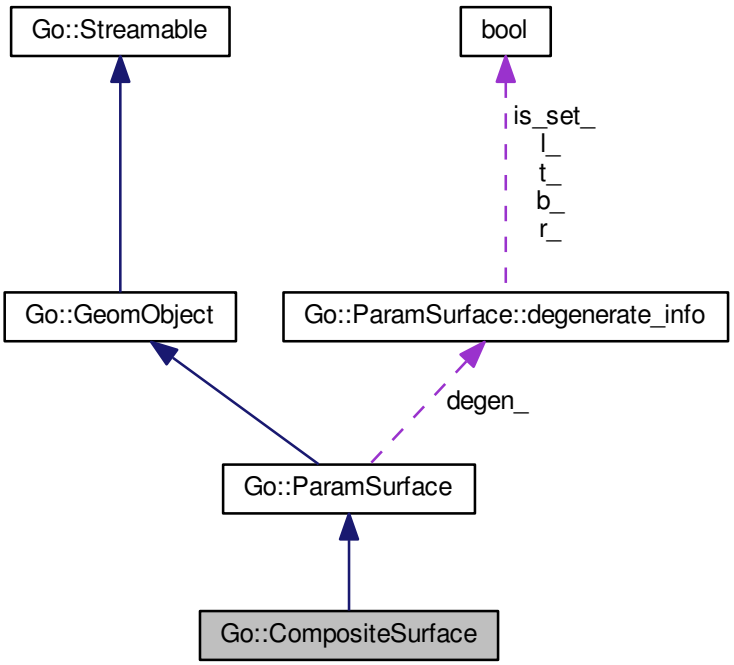
29.63 Go::CompositeSurface Class Reference

`#include <CompositeSurface.h>`

Inheritance diagram for Go::CompositeSurface:



Collaboration diagram for Go::CompositeSurface:



Public Member Functions

- CompositeSurface ()
- CompositeSurface (const std::vector< SplineSurface > &domain_maps, const SplineSurface &surf)
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual ~CompositeSurface ()

  Virtual destructor, enables safe inheritance.
- virtual CompositeSurface * clone () const
- virtual const RectDomain & parameterDomain () const
- virtual RectDomain containingDomain () const
- void setParameterDomain (double u1, double u2, double v1, double v2)
- virtual CurveLoop outerBoundaryLoop (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- virtual std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EP↩ SILON) const
- virtual DirectionCone normalCone () const
- virtual DirectionCone tangentCone (bool pardir_is_u) const
- virtual CompositeBox compositeBox () const

- virtual void point (Point &pt, double upar, double vpar) const
- virtual void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_from_right=true, double resolution=1.0e-12) const
- virtual void normal (Point &n, double upar, double vpar) const
- virtual std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- virtual std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual double nextSegmentVal (int dir, double par, bool forward, double tol) const
- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- virtual void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- virtual void getCornerPoints (std::vector< std::pair< Point, Point > > &corners) const
- virtual void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- virtual void turnOrientation ()

  Turns the direction of the normal of the surface.
- virtual void reverseParameterDirection (bool direction_is_u)
- virtual void swapParameterDirection ()

  Swaps the two parameter directions.
- virtual bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- virtual double area (double tol) const
- virtual bool inDomain (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies inside the domain of this surface.
- virtual int inDomain2 (double u, double v, double eps=1.0e-4) const
- virtual bool onBoundary (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies at the boundary of this surface.
- virtual Point closestInDomain (double u, double v) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for parallel and anti-parallel partial derivatives in surface corners.

Static Public Member Functions

- static ClassType classType ()

  Return the class type identifier of a given class derived from GeomObject.

Additional Inherited Members

29.63.1 Detailed Description

Brief description. Detailed description.

Definition at line 52 of file CompositeSurface.h.

29.63.2 Constructor & Destructor Documentation

29.63.2.1 Go::CompositeSurface::CompositeSurface ( ) [inline]

Definition at line 55 of file CompositeSurface.h.

29.63.2.2 Go::CompositeSurface::CompositeSurface (const std::vector< SplineSurface > & *domain_maps,* const SplineSurface & *surf*) [inline]

Definition at line 57 of file CompositeSurface.h.

29.63.2.3 virtual Go::CompositeSurface::~CompositeSurface ( ) [inline], [virtual]

Virtual destructor, enables safe inheritance.

Definition at line 109 of file CompositeSurface.h.

29.63.3 Member Function Documentation

29.63.3.1 virtual std::vector<CurveLoop> Go::CompositeSurface::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [inline], [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

Definition at line 159 of file CompositeSurface.h.

29.63.3.2 virtual double Go::CompositeSurface::area (double *tol*) const [inline], [virtual]

Compute the total area of this surface up to some tolerance

Parameters

tol	the relative tolerance when approximating the area, i.e. stop iteration when error becomes smaller than tol/(surface area)

Returns

the area calculated

Implements Go::ParamSurface.

Definition at line 418 of file CompositeSurface.h.

29.63.3.3 virtual BoundingBox Go::CompositeSurface::boundingBox ( ) const [inline], [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

Definition at line 92 of file CompositeSurface.h.

29.63.3.4 static ClassType Go::CompositeSurface::classType ( ) [inline], [static]

Return the class type identifier of a given class derived from GeomObject.

Definition at line 104 of file CompositeSurface.h.

29.63.3.5 virtual CompositeSurface* Go::CompositeSurface::clone ( ) const [inline], [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ParamSurface.

Definition at line 115 of file CompositeSurface.h.

29.63.3.6 virtual void Go::CompositeSurface::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [inline], [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

Definition at line 346 of file CompositeSurface.h.

29.63.3.7 virtual Point Go::CompositeSurface::closestInDomain (double *u*, double *v*) const [inline], [virtual]

Fetch the parameter value in the parameter domain of the surface closest to the parameter pair (u,v)

Implements Go::ParamSurface.

Definition at line 438 of file CompositeSurface.h.

29.63.3.8 virtual void Go::CompositeSurface::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [inline], [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

Definition at line 333 of file CompositeSurface.h.

29.63.3.9 virtual CompositeBox Go::CompositeSurface::compositeBox ( ) const [inline], [virtual]

Creates a composite box enclosing the surface. The composite box consists of an inner and an edge box. The inner box is supposed to be made from the interior of the surface, while the edge box is made from the boundary curves. The default implementation simply makes both boxes identical to the regular bounding box.

Returns

the CompositeBox of the surface, as specified above

Reimplemented from Go::ParamSurface.

Definition at line 186 of file CompositeSurface.h.

29.63.3.10 virtual std::vector<shared_ptr<ParamCurve> > Go::CompositeSurface::constParamCurves (double *parameter,* bool *pardir_is_u*) const [inline], [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

Definition at line 278 of file CompositeSurface.h.

29.63.3.11 virtual RectDomain Go::CompositeSurface::containingDomain ( ) const [inline], [virtual]

Get a rectangular parameter domain that is guaranteed to contain the surface's parameterDomain(). It may be the same. There is no guarantee that this is the smallest domain containing the actual domain.

Returns

a RectDomain that is guaranteed to include the surface's total parameter domain.

Implements Go::ParamSurface.

Definition at line 130 of file CompositeSurface.h.

29.63.3.12 virtual int Go::CompositeSurface::dimension ( ) const [inline], [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

Definition at line 96 of file CompositeSurface.h.

29.63.3.13 virtual void Go::CompositeSurface::getBoundaryInfo (Point & *pt1*, Point & *pt2*, double *epsilon*, SplineCurve *& *cv*, SplineCurve *& *crosscv*, double *knot_tol* = 1e-05) const [inline], [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

Definition at line 381 of file CompositeSurface.h.

29.63.3.14 virtual void Go::CompositeSurface::getCornerPoints (std::vector< std::pair< Point, Point > > & *corners*) const [inline], [virtual]

Return surface corners, geometric and parametric points in that sequence

Implements Go::ParamSurface.

Definition at line 357 of file CompositeSurface.h.

29.63.3.15 virtual void Go::CompositeSurface::getDegenerateCorners (std::vector< Point > & *deg_corners,* double *tol*) const [inline], [virtual]

Check for parallel and anti-parallel partial derivatives in surface corners.

Implements Go::ParamSurface.

Definition at line 443 of file CompositeSurface.h.

29.63.3.16 virtual bool Go::CompositeSurface::inDomain (double *u,* double *v,* double *eps* = 1.0e-4) const [inline], [virtual]

Check if a parameter pair lies inside the domain of this surface.

Implements Go::ParamSurface.

Definition at line 423 of file CompositeSurface.h.

29.63.3.17 virtual int Go::CompositeSurface::inDomain2 (double *u,* double *v,* double *eps* = 1.0e-4) const [inline], [virtual]

Check if a parameter pair lies inside the domain of this surface return value = 0: outside = 1: internal = 2: at the boundary

Implements Go::ParamSurface.

Definition at line 428 of file CompositeSurface.h.

29.63.3.18 virtual ClassType Go::CompositeSurface::instanceType ( ) const [inline], [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

Definition at line 100 of file CompositeSurface.h.

29.63.3.19 virtual bool Go::CompositeSurface::isDegenerate (bool & *b,* bool & *r,* bool & *t,* bool & *l,* double *tolerance*) const [inline], [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

Definition at line 414 of file CompositeSurface.h.

29.63.3.20 virtual double Go::CompositeSurface::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [inline], [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

Definition at line 318 of file CompositeSurface.h.

29.63.3.21 virtual void Go::CompositeSurface::normal (Point & *n,* double *upar,* double *vpar*) const [inline], [virtual]

Evaluate the surface's position and a certain number of derivatives at a given parameter.

Parameters

upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives

Returns

the vector containing the evaluated values. Its size will be equal to (derivs+1) $*$ (derivs+2) / 2. Its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives. Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

Definition at line 253 of file CompositeSurface.h.

29.63.3.22 virtual DirectionCone Go::CompositeSurface::normalCone ( ) const [inline], [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

Definition at line 166 of file CompositeSurface.h.

29.63.3.23 virtual bool Go::CompositeSurface::onBoundary (double *u*, double *v*, double *eps* = 1.0e-4) const [inline], [virtual]

Check if a parameter pair lies at the boundary of this surface.

Implements Go::ParamSurface.

Definition at line 433 of file CompositeSurface.h.

29.63.3.24 virtual CurveLoop Go::CompositeSurface::outerBoundaryLoop (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [inline], [virtual]

Returns the anticlockwise, outer boundary loop of the surface.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a CurveLoop describing the anticlockwise, outer boundary loop of the surface.

Implements Go::ParamSurface.

Definition at line 147 of file CompositeSurface.h.

29.63.3.25 virtual const RectDomain& Go::CompositeSurface::parameterDomain ( ) const [inline], [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

Definition at line 122 of file CompositeSurface.h.

29.63.3.26 virtual void Go::CompositeSurface::point (Point & *pt*, double *upar*, double *vpar*) const [inline], [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

Definition at line 193 of file CompositeSurface.h.

29.63.3.27 virtual void Go::CompositeSurface::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [inline], [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.

Parameters

upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

Definition at line 230 of file CompositeSurface.h.

29.63.3.28 virtual void Go::CompositeSurface::read (std::istream & *is*) [inline], [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

Definition at line 69 of file CompositeSurface.h.

29.63.3.29 virtual void Go::CompositeSurface::reverseParameterDirection (bool *direction_is_u*) [inline], [virtual]

Reverses the direction of the basis in input direction.

Parameters

direction_is_u	if 'true', the first parameter direction will be reversed, otherwise, the second parameter direction will be reversed

Implements Go::ParamSurface.

Definition at line 393 of file CompositeSurface.h.

29.63.3.30 void Go::CompositeSurface::setParameterDomain (double *u1*, double *u2*, double *v1*, double *v2*) [inline], [virtual]

set the parameter domain to a given rectangle

Parameters

u1	new min. value of first parameter span
u2	new max. value of first parameter span
v1	new min. value of second parameter span
v2	new max. value of second parameter span

Reimplemented from Go::ParamSurface.

Definition at line 138 of file CompositeSurface.h.

29.63.3.31 virtual std::vector<shared_ptr<ParamSurface> > Go::CompositeSurface::subSurfaces (double *from_upar*, double *from_vpar*, double *to_upar*, double *to_vpar*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [inline], [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

Definition at line 295 of file CompositeSurface.h.

29.63.3.32 virtual void Go::CompositeSurface::swapParameterDirection ( ) [inline], [virtual]

Swaps the two parameter directions.

Implements Go::ParamSurface.

Definition at line 397 of file CompositeSurface.h.

29.63.3.33 virtual DirectionCone Go::CompositeSurface::tangentCone (bool *pardir_is_u*) const [inline], [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

Definition at line 176 of file CompositeSurface.h.

29.63.3.34 virtual void Go::CompositeSurface::turnOrientation ( ) [inline], [virtual]

Turns the direction of the normal of the surface.

Implements Go::ParamSurface.

Definition at line 387 of file CompositeSurface.h.

29.63.3.35 virtual void Go::CompositeSurface::write (std::ostream & *os*) const [inline], [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

Definition at line 81 of file CompositeSurface.h.

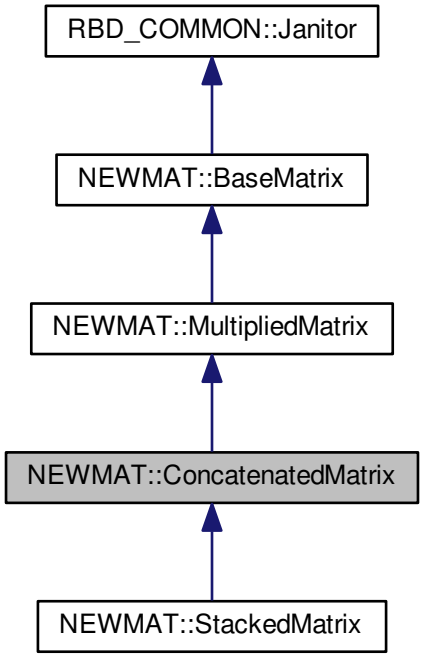
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/CompositeSurface.h

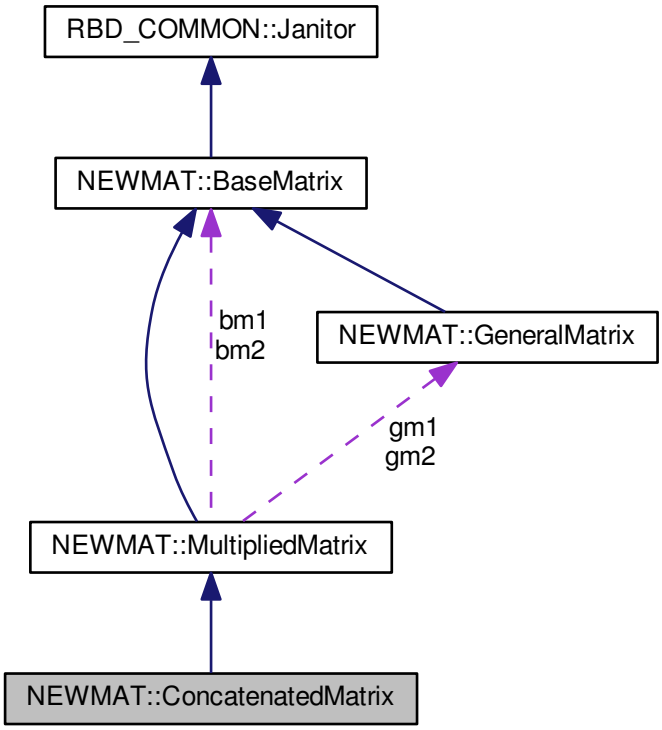
29.64 NEWMAT::ConcatenatedMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::ConcatenatedMatrix:



Collaboration diagram for NEWMAT::ConcatenatedMatrix:



Public Member Functions

- ~ConcatenatedMatrix ()
- MatrixBandWidth BandWidth () const
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)

Protected Member Functions

- ConcatenatedMatrix (const BaseMatrix *bm1x, const BaseMatrix *bm2x)

Friends

- class BaseMatrix
- class GeneralMatrix
- class GenericMatrix

Additional Inherited Members

29.64.1 Detailed Description

Definition at line 1254 of file newmat.h.

29.64.2 Constructor & Destructor Documentation

29.64.2.1 NEWMAT::ConcatenatedMatrix::ConcatenatedMatrix (const BaseMatrix * *bm1x,* const BaseMatrix * *bm2x*) [inline],[protected]

Definition at line 1257 of file newmat.h.

29.64.2.2 NEWMAT::ConcatenatedMatrix::~ConcatenatedMatrix ( ) [inline]

Definition at line 1264 of file newmat.h.

29.64.3 Member Function Documentation

29.64.3.1 MatrixBandWidth ConcatenatedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::MultipliedMatrix.

Definition at line 456 of file newmat4.cpp.

29.64.3.2 GeneralMatrix * ConcatenatedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::MultipliedMatrix.

Reimplemented in NEWMAT::StackedMatrix.

Definition at line 796 of file newmat7.cpp.

29.64.4 Friends And Related Function Documentation

29.64.4.1 friend class BaseMatrix [friend]

Definition at line 1260 of file newmat.h.

29.64.4.2 friend class GeneralMatrix [friend]

Definition at line 1261 of file newmat.h.

29.64.4.3 friend class GenericMatrix [friend]

Definition at line 1262 of file newmat.h.

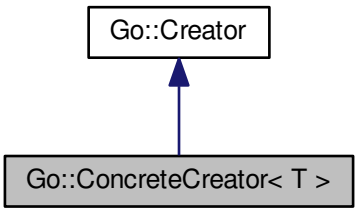
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp

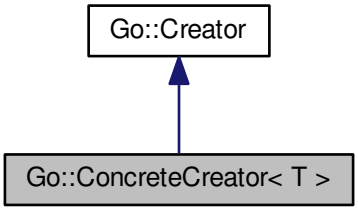
29.65 Go::ConcreteCreator< T > Class Template Reference

`#include <Factory.h>`

Inheritance diagram for Go::ConcreteCreator< T >:



Collaboration diagram for Go::ConcreteCreator< T >:



Public Member Functions

- ConcreteCreator ()
- GeomObject * create ()

29.65.1 Detailed Description

template<class T>
class Go::ConcreteCreator< T >

This is the concrete Creator class for generating GeomObject-derived classes. The class is only intended for internal use by the Factory class. The user should not have to worry about it.

Definition at line 64 of file Factory.h.

29.65.2 Constructor & Destructor Documentation

29.65.2.1 template<class T> Go::ConcreteCreator< T >::ConcreteCreator ( ) [inline]

Definition at line 67 of file Factory.h.

29.65.3 Member Function Documentation

29.65.3.1 template<class T> GeomObject* Go::ConcreteCreator< T >::create ( ) [inline], [virtual]

Implements Go::Creator.

Definition at line 68 of file Factory.h.

The documentation for this class was generated from the following file:

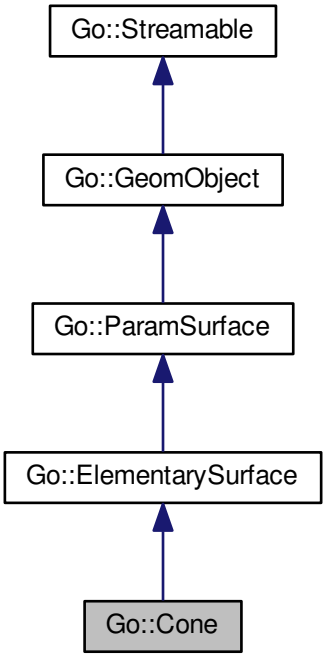
- gotools-core/include/GoTools/geometry/Factory.h

29.66 Go::Cone Class Reference

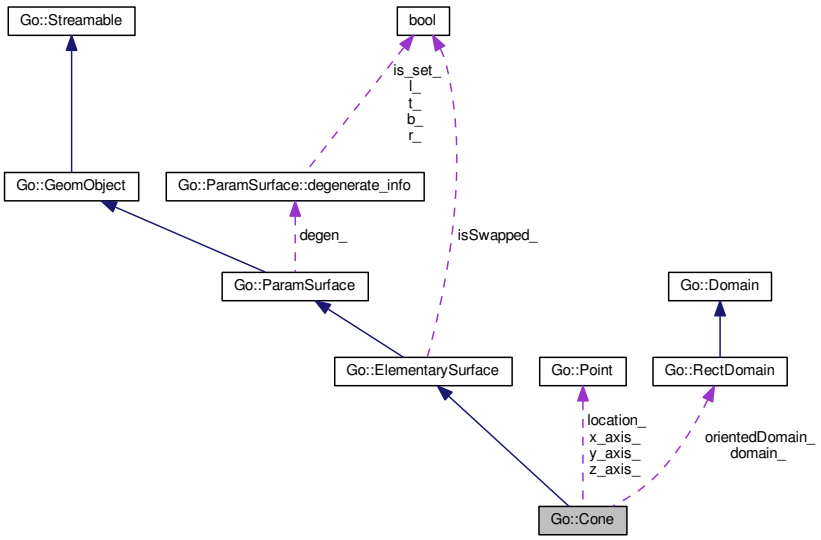
Class that represents a cone. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

`#include <Cone.h>`

Inheritance diagram for Go::Cone:



Collaboration diagram for Go::Cone:



Public Member Functions

- Cone ()
- Cone (double radius, Point location, Point z_axis, Point x_axis, double cone_angle, bool isSwapped=false)
- virtual ∼Cone ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return empty box if infinite cone.
- virtual Cone ∗ clone () const
- const RectDomain & parameterDomain () const
- std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- DirectionCone normalCone () const
- DirectionCone tangentCone (bool pardir_is_u) const
- void point (Point &pt, double upar, double vpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_↩ from_right=true, double resolution=1.0e-12) const
- void normal (Point &n, double upar, double vpar) const
- std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- shared_ptr< ParamCurve > constParamCurve (double parameter, bool pardir_is_u, double from, double to) const
- std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const

- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for paralell and anti paralell partial derivatives in surface corners.
- double getRadius () const

  Radius at the location.
- Point getLocation () const

  Point on cone axis.
- void getCoordinateAxes (Point &x_axis, Point &y_axis, Point &z_axis) const

  Local coordinate axes. The z_axis corresponds to the cone axis.
- double getConeAngle () const

  The opening angle of the cone.
- void setParameterBounds (double from_upar, double from_vpar, double to_upar, double to_vpar)

  Limit the cone surface by limiting the parameter domain.
- void setParamBoundsU (double from_upar, double to_upar)
- virtual void setParamBoundsV (double from_vpar, double to_vpar)
- bool isBounded () const
- shared_ptr< Circle > getCircle (double par) const
- bool isClosed (bool &closed_dir_u, bool &closed_dir_v) const

  Check if the surface is closed.
- Cone * subSurface (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const

  Return the part of the cone surface limited by the parameter bounds.
- virtual SplineSurface * geometrySurface () const

  Create a SplineSurface representation of the cone.
- virtual SplineSurface * createSplineSurface () const

  Create a SplineSurface representation of the cone.
- shared_ptr< Line > getLine (double upar) const
- shared_ptr< ElementaryCurve > getElementaryParamCurve (ElementaryCurve *space_crv, double tol, const Point *start_par_pt=NULL, const Point *end_par_pt=NULL) const
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)

Static Public Member Functions

- static ClassType classType ()

Protected Member Functions

- void setCoordinateAxes ()

Protected Attributes

- double radius_
- Point location_
- Point z_axis_
- Point x_axis_
- Point y_axis_
- double cone_angle_
- RectDomain domain_
- RectDomain orientedDomain_

29.66.1 Detailed Description

Class that represents a cone. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

A Cone has a natural parametrization in terms of the angle *u* and distance *v*: **p**(*u*, *v*) = **C** + (*R* + *v* tan α)((cos *u*) **x** + (sin *u*) **y**) + *v* **z**, where **C** is a position vector, *R* is the radius, **x**, **y** and **z** are the (local) axes, and α is the cone angle. The parametrization is bounded by: $0 \leq u \leq 2\pi$, $-\infty < v < \infty$. The dimension is 3.

Definition at line 69 of file Cone.h.

29.66.2 Constructor & Destructor Documentation

29.66.2.1 Go::Cone::Cone ( ) [inline]

Default constructor. Constructs an uninitialized Cone which can only be assigned to or read into.

Definition at line 74 of file Cone.h.

29.66.2.2 Go::Cone::Cone (double *radius*, Point *location*, Point *z_axis*, Point *x_axis*, double *cone_angle*, bool *isSwapped* = false)

Constructor. Input is the radius, the location, the direction of the z-axis and the (possibly approximate) x-axis. The local coordinate axes are normalized even if `z_axis` and/or `x_axis` are not unit vectors.

29.66.2.3 virtual Go::Cone::~Cone ( ) [virtual]

Virtual destructor - ensures safe inheritance.

29.66.3 Member Function Documentation

29.66.3.1 std::vector<CurveLoop> Go::Cone::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.66.3.2 virtual BoundingBox Go::Cone::boundingBox ( ) const [virtual]

Return empty box if infinite cone.

Implements Go::GeomObject.

29.66.3.3 static ClassType Go::Cone::classType ( ) [inline], [static]

Definition at line 101 of file Cone.h.

29.66.3.4 virtual Cone* Go::Cone::clone ( ) const [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementarySurface.

29.66.3.5 void Go::Cone::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.66.3.6 void Go::Cone::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is
Generated by Doxygen	used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.66.3.7 shared_ptr<ParamCurve> Go::Cone::constParamCurve (double *parameter,* bool *pardir_is_u,* double *from,* double *to*) const

29.66.3.8 std::vector<shared_ptr<ParamCurve> > Go::Cone::constParamCurves (double *parameter,* bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.66.3.9 virtual SplineSurface* Go::Cone::createSplineSurface ( ) const [virtual]

Create a SplineSurface representation of the cone.

Implements Go::ElementarySurface.

29.66.3.10 virtual int Go::Cone::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.66.3.11 virtual SplineSurface* Go::Cone::geometrySurface ( ) const [virtual]

Create a SplineSurface representation of the cone.

Implements Go::ElementarySurface.

29.66.3.12 void Go::Cone::getBoundaryInfo (Point & *pt1,* Point & *pt2,* double *epsilon,* SplineCurve *& *cv,* SplineCurve *& *crosscv,* double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.66.3.13 shared_ptr<Circle> Go::Cone::getCircle (double *par*) const

29.66.3.14 double Go::Cone::getConeAngle ( ) const [inline]

The opening angle of the cone.

Definition at line 192 of file Cone.h.

29.66.3.15 void Go::Cone::getCoordinateAxes (Point & *x_axis*, Point & *y_axis*, Point & *z_axis*) const [inline]

Local coordinate axes. The z_axis corresponds to the cone axis.

Definition at line 184 of file Cone.h.

29.66.3.16 virtual void Go::Cone::getDegenerateCorners (std::vector< Point > & *deg_corners*, double *tol*) const [virtual]

Check for paralell and anti paralell partial derivatives in surface corners.

Implements Go::ParamSurface.

29.66.3.17 shared_ptr<ElementaryCurve> Go::Cone::getElementaryParamCurve (ElementaryCurve * *space_crv*, double *tol*, const Point * *start_par_pt* = NULL, const Point * *end_par_pt* = NULL) const [virtual]

Fetch the parameter curve in the domain of the elementary surface corresponding to a given elementary curve in geometry space if this curve has a simpler elementary representation. Otherwise, nothing is returned

Reimplemented from Go::ElementarySurface.

29.66.3.18 shared_ptr<Line> Go::Cone::getLine (double *upar*) const

29.66.3.19 Point Go::Cone::getLocation ( ) const [inline]

Point on cone axis.

Definition at line 180 of file Cone.h.

29.66.3.20 double Go::Cone::getRadius ( ) const [inline]

Radius at the location.

Definition at line 176 of file Cone.h.

29.66.3.21 virtual ClassType Go::Cone::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.66.3.22 virtual bool Go::Cone::isAxisRotational (Point & *centre,* Point & *axis,* Point & *vec,* double & *angle*) [virtual]

Check if the surface is axis rotational. Only true if a connection to an axis rotational elementary surface exist The axis and rotational angle is only specified if the surface is actually rotational

Reimplemented from Go::ParamSurface.

29.66.3.23 bool Go::Cone::isBounded ( ) const [virtual]

Query if parametrization is bounded. Only the *v* parameter direction is queried. The *u* parameter is always bounded.

Returns

true if bounded, *false* otherwise

Reimplemented from Go::ElementarySurface.

29.66.3.24 bool Go::Cone::isClosed (bool & *closed_dir_u,* bool & *closed_dir_v*) const [virtual]

Check if the surface is closed.

Reimplemented from Go::ElementarySurface.

29.66.3.25 bool Go::Cone::isDegenerate (bool & *b,* bool & *r,* bool & *t,* bool & *l,* double *tolerance*) const [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

29.66.3.26 double Go::Cone::nextSegmentVal (int *dir*, double *par*, bool *forward*, double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.66.3.27 void Go::Cone::normal (Point & *n*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.66.3.28 DirectionCone Go::Cone::normalCone ( ) const [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.66.3.29 const RectDomain& Go::Cone::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.66.3.30 void Go::Cone::point (Point & *pt*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.66.3.31 void Go::Cone::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter

Parameters

derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.66.3.32 virtual void Go::Cone::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.66.3.33 void Go::Cone::setCoordinateAxes ( ) [protected]

29.66.3.34 void Go::Cone::setParamBoundsU (double *from_upar,* double *to_upar*)

Set parameter bounds in the *u* direction. *u* is the "angular" direction.

29.66.3.35 virtual void Go::Cone::setParamBoundsV (double *from_vpar,* double *to_vpar*) [virtual]

Set parameter bounds in the *v* direction. *v* is the "linear" direction.

29.66.3.36 void Go::Cone::setParameterBounds (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar*) [virtual]

Limit the cone surface by limiting the parameter domain.

Implements Go::ElementarySurface.

29.66.3.37 Cone* Go::Cone::subSurface (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

Return the part of the cone surface limited by the parameter bounds.

29.66.3.38 std::vector<shared_ptr<ParamSurface> > Go::Cone::subSurfaces (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.66.3.39 DirectionCone Go::Cone::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.66.3.40 virtual void Go::Cone::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.66.4 Member Data Documentation

29.66.4.1 double Go::Cone::cone_angle_ [protected]

Definition at line 245 of file Cone.h.

29.66.4.2 RectDomain Go::Cone::domain_ [protected]

Definition at line 247 of file Cone.h.

29.66.4.3 Point Go::Cone::location_ [protected]

Definition at line 241 of file Cone.h.

29.66.4.4 RectDomain Go::Cone::orientedDomain_ [mutable], [protected]

Definition at line 248 of file Cone.h.

29.66.4.5 double Go::Cone::radius_ [protected]

Definition at line 240 of file Cone.h.

29.66.4.6 Point Go::Cone::x_axis_ [protected]

Definition at line 243 of file Cone.h.

29.66.4.7 Point Go::Cone::y_axis_ [protected]

Definition at line 244 of file Cone.h.

29.66.4.8 Point Go::Cone::z_axis_ [protected]

Definition at line 242 of file Cone.h.

The documentation for this class was generated from the following file:

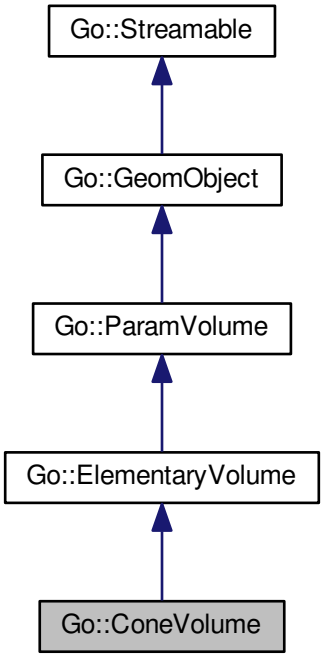
- gotools-core/include/GoTools/geometry/Cone.h

29.67 Go::ConeVolume Class Reference

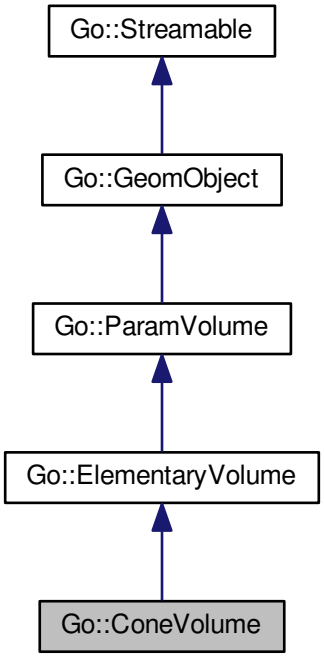
Class that represents a solid cone. It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius *u*, an angle *v*, and distance *w:* **p**(*u*, *v*, *w*) = **C** + u (*R* + *w* tan α)((cos *v*) **x** + (sin *v*) **y**) + *w* **z**, where **C** is the cone apex, *R* is the radius when *w* = 0, α is the cone angle, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $0 \leq u \leq 1, 0 \leq v \leq 2\pi$, $-\infty < w < \infty$. The dimension is 3.

```
#include <ConeVolume.h>
```

Inheritance diagram for Go::ConeVolume:



Collaboration diagram for Go::ConeVolume:



Public Member Functions

- ConeVolume ()
- ConeVolume (double radius, Point location, Point z_axis, Point x_axis, double cone_angle)
- virtual ~ConeVolume ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual ConeVolume * clone () const
- DirectionCone tangentCone (int pardir) const
- const Array< double, 6 > parameterSpan () const
- void point (Point &pt, double upar, double vpar, double wpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, double wpar, int derivs, bool u_from_right=true, bool v_from_right=true, bool w_from_right=true, double resolution=1.0e-12) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, double &clo_w, Point &clo_pt, double &clo_dist, double epsilon, double *seed=0) const
- void reverseParameterDirection (int pardir)

- void swapParameterDirection (int pardir1, int pardir2)
- std::vector< shared_ptr< ParamSurface > > getAllBoundarySurfaces () const

  Fetch all boundary surfaces corresponding to the volume.
- virtual void translate (const Point &vec)

  Translate.
- SplineVolume * geometryVolume () const

  Make a NURBS representation of the object.
- void setParameters (double from_par, double to_par, int pardir)

  Restrict the size of the torus in one parameter direction.
- void useCentreDegen ()

  swept linearily and shrinked or extended
- void useCornerDegen ()

  occur if the cone tip is included in the volume.

Static Public Member Functions

- static ClassType classType ()

29.67.1 Detailed Description

Class that represents a solid cone. It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius *u*, an angle *v*, and distance *w:* **p**(*u*, *v*, *w*) = **C** + u (*R* + *w* tan α)((cos *v*) **x** + (sin *v*) **y**) + *w* **z**, where **C** is the cone apex, *R* is the radius when *w* = 0, α is the cone angle, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $0 \leq u \leq 1, 0 \leq v \leq 2\pi, -\infty < w < \infty$. The dimension is 3.

Definition at line 65 of file ConeVolume.h.

29.67.2 Constructor & Destructor Documentation

29.67.2.1 Go::ConeVolume::ConeVolume ( ) [inline]

Default constructor. Constructs an uninitialized ConeVolume which can only be assigned to or read into.

Definition at line 70 of file ConeVolume.h.

29.67.2.2 Go::ConeVolume::ConeVolume (double *radius*, Point *location*, Point *z_axis*, Point *x_axis*, double *cone_angle*)

Constructor. Input is the radius, the location, the direction of the z-axis and the (possibly approximate) x-axis.

29.67.2.3 virtual Go::ConeVolume::~ConeVolume ( ) [virtual]

Virtual destructor - ensures safe inheritance.

29.67.3 Member Function Documentation

29.67.3.1 virtual BoundingBox Go::ConeVolume::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.67.3.2 static ClassType Go::ConeVolume::classType ( ) [inline], [static]

Definition at line 96 of file ConeVolume.h.

29.67.3.3 virtual ConeVolume* Go::ConeVolume::clone ( ) const [virtual]

make a clone of this volume and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementaryVolume.

29.67.3.4 void Go::ConeVolume::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, double & *clo_w*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the volume.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_w	w parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
seed	pointer to parameter values where iteration starts.

Implements Go::ParamVolume.

29.67.3.5 virtual int Go::ConeVolume::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.67.3.6 SplineVolume* Go::ConeVolume::geometryVolume ( ) const [virtual]

Make a NURBS representation of the object.

Implements Go::ElementaryVolume.

29.67.3.7 std::vector<shared_ptr<ParamSurface> > Go::ConeVolume::getAllBoundarySurfaces ( ) const [virtual]

Fetch all boundary surfaces corresponding to the volume.

Implements Go::ParamVolume.

29.67.3.8 virtual ClassType Go::ConeVolume::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.67.3.9 double Go::ConeVolume::nextSegmentVal (int *dir*, double *par*, bool *forward*, double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0, 1 or 2)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamVolume.

29.67.3.10 const Array<double,6> Go::ConeVolume::parameterSpan ( ) const [virtual]

Return the parameter domain of the volume. This is an array containing the start and end parameter values. The spline's parameter i has its start value at the array position (2i) and its end parameter value at the array position (2i+1)

Returns

An array describing the parametric domain of the volume

Implements Go::ParamVolume.

29.67.3.11 void Go::ConeVolume::point (Point & *pt,* double *upar,* double *vpar,* double *wpar*) const [virtual]

Evaluates the volume's position for a given parameter triple.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter
wpar	the third parameter

Implements Go::ParamVolume.

29.67.3.12 void Go::ConeVolume::point (std::vector< Point > & *pts,* double *upar,* double *vpar,* double *wpar,* int *derivs,* bool *u_from_right* = true, bool *v_from_right* = true, bool *w_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the volume's position and a certain number of derivatives for a given parameter triple.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function. Upon completion of the function, its first entry is the volume's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the volume tangents along the first, second and third parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dudw, dv2, dvdw, dw2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
wpar	the third parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
w_from_right	specify whether derivatives along the third parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamVolume.

29.67.3.13 virtual void Go::ConeVolume::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.67.3.14 void Go::ConeVolume::reverseParameterDirection (int *pardir*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

pardir	which parameter direction to reverse

Implements Go::ParamVolume.

29.67.3.15 void Go::ConeVolume::setParameters (double *from_par,* double *to_par,* int *pardir*)

Restrict the size of the torus in one parameter direction.

29.67.3.16 void Go::ConeVolume::swapParameterDirection (int *pardir1,* int *pardir2*) [virtual]

Swaps two parameter directions

Parameters

pardir1	One of the parameter directions (0, 1 or 2) to be swapped
pardir2	The other parameter direction (0, 1 or 2) to be swapped

Implements Go::ParamVolume.

29.67.3.17 DirectionCone Go::ConeVolume::tangentCone (int *pardir*) const [virtual]

Creates a DirectionCone covering all tangents to this volume along a given parameter direction.

Parameters

pardir	if 1, the DirectionCone will be defined on basis of the volume's tangents along the first parameter direction. If 2, the second parameter direction will be used. If 3, the third parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this volume along the specified parameter direction.

Implements Go::ParamVolume.

29.67.3.18 virtual void Go::ConeVolume::translate (const Point & *vec*) [virtual]

Translate.

Implements Go::ParamVolume.

29.67.3.19 void Go::ConeVolume::useCentreDegen ( ) [inline]

swept linearily and shrinked or extended

A NURBS representation will be a disc with degenereracy in the centre

Definition at line 154 of file ConeVolume.h.

29.67.3.20 void Go::ConeVolume::useCornerDegen ( ) [inline]

occur if the cone tip is included in the volume.

A NURBS representation will be a disc with degenerate corners swept linearily and shrinked or extended. Note that extra degeneracies

Definition at line 160 of file ConeVolume.h.

29.67.3.21 virtual void Go::ConeVolume::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/ConeVolume.h

29.68 Go::ConnectionFunctor Class Reference

`#include <IntersectionPoolUtils.h>`

Public Member Functions

- ConnectionFunctor (const std::vector< shared_ptr< IntersectionPoint > > &ipoints)
- bool operator() (int a, int b)

29.68.1 Detailed Description

Definition at line 407 of file IntersectionPoolUtils.h.

29.68.2 Constructor & Destructor Documentation

29.68.2.1 Go::ConnectionFunctor::ConnectionFunctor (const std::vector< shared_ptr< IntersectionPoint > > & *ipoints*) [inline]

Definition at line 411 of file IntersectionPoolUtils.h.

29.68.3 Member Function Documentation

29.68.3.1 bool Go::ConnectionFunctor::operator() (int *a*, int *b*) [inline]

Definition at line 414 of file IntersectionPoolUtils.h.

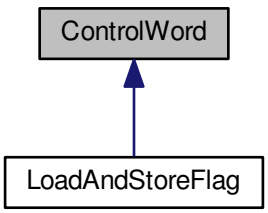
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionPoolUtils.h

29.69 ControlWord Class Reference

`#include <controlw.h>`

Inheritance diagram for ControlWord:



Public Member Functions

- ControlWord ()
- ControlWord (int i)
- ControlWord operator∗ (ControlWord i) const
- void operator∗= (ControlWord i)
- ControlWord operator+ (ControlWord i) const
- void operator+= (ControlWord i)
- ControlWord operator- (ControlWord i) const
- void operator-= (ControlWord i)
- bool operator>= (ControlWord i) const
- bool operator<= (ControlWord i) const
- ControlWord operator^ (ControlWord i) const
- ControlWord operator∼ () const
- int operator+ () const
- int operator! () const

Protected Attributes

- int cw

29.69.1 Detailed Description

Definition at line 9 of file controlw.h.

29.69.2 Constructor & Destructor Documentation

29.69.2.1 ControlWord::ControlWord ( ) [inline]

Definition at line 14 of file controlw.h.

29.69.2.2 ControlWord::ControlWord (int *i*) [inline]

Definition at line 15 of file controlw.h.

29.69.3 Member Function Documentation

29.69.3.1 int ControlWord::operator! ( ) const [inline]

Definition at line 43 of file controlw.h.

29.69.3.2 ControlWord ControlWord::operator∗ (ControlWord *i*) const [inline]

Definition at line 18 of file controlw.h.

29.69.3.3 void ControlWord::operator*= (ControlWord *i*) [inline]

Definition at line 20 of file controlw.h.

29.69.3.4 ControlWord ControlWord::operator+ (ControlWord *i*) const [inline]

Definition at line 23 of file controlw.h.

29.69.3.5 int ControlWord::operator+ ( ) const [inline]

Definition at line 42 of file controlw.h.

29.69.3.6 void ControlWord::operator+= (ControlWord *i*) [inline]

Definition at line 25 of file controlw.h.

29.69.3.7 ControlWord ControlWord::operator- (ControlWord *i*) const [inline]

Definition at line 28 of file controlw.h.

29.69.3.8 void ControlWord::operator-= (ControlWord *i*) [inline]

Definition at line 30 of file controlw.h.

29.69.3.9 bool ControlWord::operator<= (ControlWord *i*) const [inline]

Definition at line 34 of file controlw.h.

29.69.3.10 bool ControlWord::operator>= (ControlWord *i*) const [inline]

Definition at line 33 of file controlw.h.

29.69.3.11 ControlWord ControlWord::operator^ (ControlWord *i*) const [inline]

Definition at line 37 of file controlw.h.

29.69.3.12 ControlWord ControlWord::operator~ ( ) const [inline]

Definition at line 39 of file controlw.h.

29.69.4 Member Data Documentation

29.69.4.1 int ControlWord::cw [protected]

Definition at line 12 of file controlw.h.

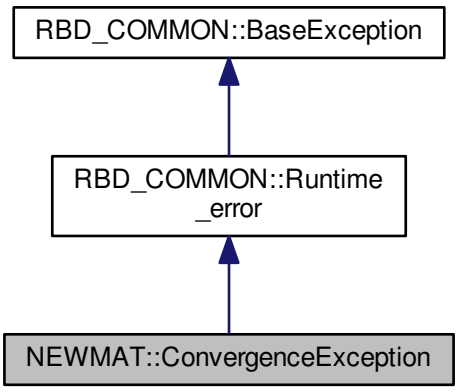
The documentation for this class was generated from the following file:

- newmat/include/controlw.h

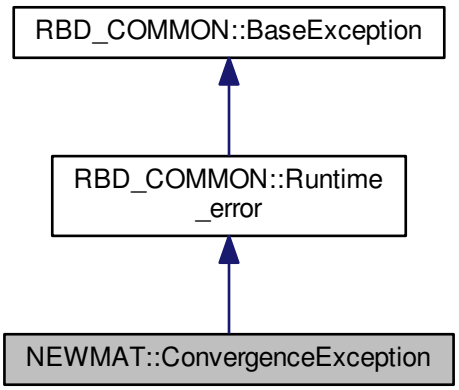
29.70 NEWMAT::ConvergenceException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::ConvergenceException:



Collaboration diagram for NEWMAT::ConvergenceException:



Public Member Functions

- ConvergenceException (const GeneralMatrix &A)
- ConvergenceException (const char *c)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.70.1 Detailed Description

Definition at line 1602 of file newmat.h.

29.70.2 Constructor & Destructor Documentation

29.70.2.1 ConvergenceException::ConvergenceException (const GeneralMatrix & *A*)

Definition at line 63 of file newmatex.cpp.

29.70.2.2 ConvergenceException::ConvergenceException (const char * *c*)

Definition at line 72 of file newmatex.cpp.

29.70.3 Member Data Documentation

29.70.3.1 unsigned long ConvergenceException::Select [static]

Definition at line 1605 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

29.71 Go::CoordinateSystem< Dim > Class Template Reference

Defines a Cartesian coordinate system.

`#include <CoordinateSystem.h>`

Public Types

- typedef MatrixXD< double, Dim > Matrix
- typedef Array< double, Dim > Vector

Public Member Functions

- CoordinateSystem ()
- CoordinateSystem (const Matrix &rot, const Vector &trans)
- Vector operator* (const Vector &v)
- CoordinateSystem operator* (const CoordinateSystem &c)
- Matrix & rot ()

  Get the rotation matrix.
- const Matrix & rot () const

  Get the rotation matrix. Const version.
- Vector & tr ()

  Get the translation vector.
- const Vector & tr () const

  Get the translation vector. Const version.

29.71.1 Detailed Description

template<int Dim>
class Go::CoordinateSystem< Dim >

Defines a Cartesian coordinate system.

Definition at line 52 of file CoordinateSystem.h.

29.71.2 Member Typedef Documentation

29.71.2.1 template<int Dim> typedef MatrixXD<double, Dim> Go::CoordinateSystem< Dim >::Matrix

Definition at line 55 of file CoordinateSystem.h.

29.71.2.2 template<int Dim> typedef Array<double, Dim> Go::CoordinateSystem< Dim >::Vector

Definition at line 56 of file CoordinateSystem.h.

29.71.3 Constructor & Destructor Documentation

29.71.3.1 template<int Dim> Go::CoordinateSystem< Dim >::CoordinateSystem ( ) [inline]

The default constructor creates an object with an identity rotation matrix and zero translation vector.

Definition at line 60 of file CoordinateSystem.h.

29.71.3.2 template<int Dim> Go::CoordinateSystem< Dim >::CoordinateSystem (const Matrix & *rot*, const Vector & *trans*) [inline]

Creates a CoordinateSystem with the specified rotation matrix and translation vector.

Definition at line 68 of file CoordinateSystem.h.

29.71.4 Member Function Documentation

29.71.4.1 template<int Dim> Vector Go::CoordinateSystem< Dim >::operator* (const Vector & *v*) [inline]

Get the 'global' coordinates of a vector 'v' expressed in the CoordinateSystem.

Definition at line 74 of file CoordinateSystem.h.

29.71.4.2 template<int Dim> CoordinateSystem Go::CoordinateSystem< Dim >::operator* (const CoordinateSystem< Dim > & *c*) [inline]

Create a CoordinateSystem that is a composition of 'this' CoordinateSystem and 'c'.

Definition at line 81 of file CoordinateSystem.h.

29.71.4.3 template<int Dim> Matrix& Go::CoordinateSystem< Dim >::rot ( ) [inline]

Get the rotation matrix.

Definition at line 89 of file CoordinateSystem.h.

29.71.4.4 template<int Dim> const Matrix& Go::CoordinateSystem< Dim >::rot ( ) const [inline]

Get the rotation matrix. Const version.

Definition at line 92 of file CoordinateSystem.h.

29.71.4.5 template<int Dim> Vector& Go::CoordinateSystem< Dim >::tr ( ) [inline]

Get the translation vector.

Definition at line 95 of file CoordinateSystem.h.

29.71.4.6 template<int Dim> const Vector& Go::CoordinateSystem< Dim >::tr ( ) const [inline]

Get the translation vector. Const version.

Definition at line 98 of file CoordinateSystem.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/CoordinateSystem.h

29.72 Go::CPUclock Class Reference

A class for measuring CPU time in programs.

`#include <CPUclock.h>`

Public Member Functions

- CPUclock ()
  The constructor initializes the time of last call.
- double getInterval ()
- void initTime ()
- double getTime ()
  Returns time in seconds since January 1, 1970.

29.72.1 Detailed Description

A class for measuring CPU time in programs.

Definition at line 49 of file CPUclock.h.

29.72.2 Constructor & Destructor Documentation

29.72.2.1 Go::CPUclock::CPUclock ( )

The constructor initializes the time of last call.

29.72.3 Member Function Documentation

29.72.3.1 double Go::CPUclock::getInterval ( )

The increase in time (seconds) since last call to getInterval() or to initTime ().

29.72.3.2 double Go::CPUclock::getTime ( )

Returns time in seconds since January 1, 1970.

29.72.3.3 void Go::CPUclock::initTime ( ) [inline]

Start measuring the length of an interval (typically called prior to the computational job to be measured).

Definition at line 69 of file CPUclock.h.

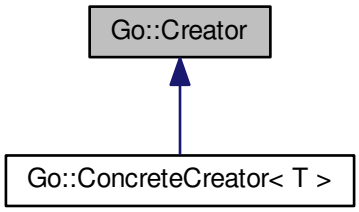
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/CPUclock.h

29.73 Go::Creator Class Reference

`#include <Factory.h>`

Inheritance diagram for Go::Creator:



Public Member Functions

- virtual GeomObject * create ()=0
- virtual ~Creator ()

29.73.1 Detailed Description

Abstract base class for Creators. These are policy classes for generating objects derived from GeomObject. This class is only intended for internal use by the Factory class. The user should not have to worry about it.

Definition at line 53 of file Factory.h.

29.73.2 Constructor & Destructor Documentation

29.73.2.1 virtual Go::Creator::~Creator ( ) [inline], [virtual]

Definition at line 57 of file Factory.h.

29.73.3 Member Function Documentation

29.73.3.1 virtual GeomObject* Go::Creator::create ( ) [pure virtual]

Implemented in Go::ConcreteCreator< T >.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Factory.h

29.74 Go::CrossesValue Class Reference

IntersectionPoolUtils. predicate for STL function.

`#include <IntersectionPoolUtils.h>`

Public Types

- typedef const shared_ptr< IntersectionLink > argument_type
- typedef bool result_type

Public Member Functions

- CrossesValue (int par_dir, double value, double eps)
- bool operator() (const shared_ptr< IntersectionLink > &I) const

29.74.1 Detailed Description

IntersectionPoolUtils. predicate for STL function.

Definition at line 128 of file IntersectionPoolUtils.h.

29.74.2 Member Typedef Documentation

29.74.2.1 typedef const shared_ptr<IntersectionLink> Go::CrossesValue::argument_type

Definition at line 157 of file IntersectionPoolUtils.h.

29.74.2.2 typedef bool Go::CrossesValue::result_type

Definition at line 158 of file IntersectionPoolUtils.h.

29.74.3 Constructor & Destructor Documentation

29.74.3.1 Go::CrossesValue::CrossesValue (int *par_dir*, double *value*, double *eps*) [inline]

Definition at line 132 of file IntersectionPoolUtils.h.

29.74.4 Member Function Documentation

29.74.4.1 bool Go::CrossesValue::operator() (const shared_ptr< IntersectionLink > & *I*) const [inline]

Definition at line 134 of file IntersectionPoolUtils.h.

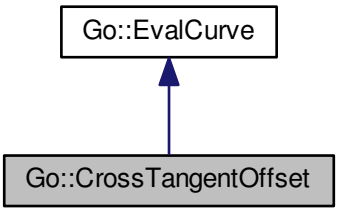
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionPoolUtils.h

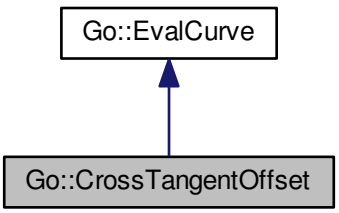
29.75 Go::CrossTangentOffset Class Reference

`#include <CrossTangentOffset.h>`

Inheritance diagram for Go::CrossTangentOffset:



Collaboration diagram for Go::CrossTangentOffset:



Public Member Functions

- CrossTangentOffset (shared_ptr< SplineCurve > &poscurve, shared_ptr< SplineCurve > &tangcv1, shared_ptr< SplineCurve > &tangcv2, shared_ptr< SplineCurve > &blend1, shared_ptr< SplineCurve > &blend2)
- virtual ~CrossTangentOffset ()

  virtual destructor enables safe inheritance
- virtual Point eval (double t) const
- virtual void eval (double t, int n, Point der[ ]) const
- virtual double start () const
- virtual double end () const
- virtual int dim () const
- virtual bool approximationOK (double par, Point approxpos, double tol1, double tol2) const

29.75.1 Detailed Description

This curve represent an offset curve from a given space curve, along a direction obtained by blending two 'cross-tangent curves', and with an offset distance which is a linear function interpolating the cross-tangent length at the start and end of the curve.

Definition at line 57 of file CrossTangentOffset.h.

29.75.2 Constructor & Destructor Documentation

29.75.2.1 Go::CrossTangentOffset::CrossTangentOffset (shared_ptr< SplineCurve > & *poscurve,* shared_ptr< SplineCurve > & *tangcv1,* shared_ptr< SplineCurve > & *tangcv2,* shared_ptr< SplineCurve > & *blend1,* shared_ptr< SplineCurve > & *blend2*)

Constructor, taking a curve from which we take the offset, and four other curves used to calculate the offset direction and magnitude. Two of these curves are the cross-tangent curves and the two other are blending functions (dimension 1). To find the offset direction at a given point, the two cross-tangent curves are evaluated at the specified parameter, multiplied by their respective blending functions and added together. The offset length is computed by linearly interpolating the length of this blended cross-tangent at the start and end parameter of the curve.

Parameters

poscurve	the curve from which we take the offset
tangcv1	the first cross-tangent curve
tangcv2	the second cross-tangent curve
blend1	the blending function for the first cross-tangent curve
blend2	the blending function for the second cross-tangent curve

29.75.2.2 virtual Go::CrossTangentOffset::~CrossTangentOffset ( ) [virtual]

virtual destructor enables safe inheritance

29.75.3 Member Function Documentation

29.75.3.1 virtual bool Go::CrossTangentOffset::approximationOK (double *par,* Point *approxpos,* double *tol1,* double *tol2*) const [virtual]

Inherited from EvalCurve::approximationOK(). For this class, both tolerances are used.

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	spatial approximation tolerance. If the evaluated position is outside this tolerance, 'false' is returned. If it inside this tolerance "by far", 'true' is returned. Otherwise, 'tol2' is taken into account.
tol2	This tolerance is taken into account when the evaluated point is within 'tol1' from 'approxpos', but not convincingly so. In that case this tolerance is used to check whether the evaluated cross tangent lies in the plane spanned by the tangent curves at this point. (It is thus an *angle* tolerance).

Returns

'true' if the curve approximates the point at the parameter, 'false' otherwise.

Implements Go::EvalCurve.

29.75.3.2 virtual int Go::CrossTangentOffset::dim ( ) const [virtual]

Get the dimension of the space in which the curve lies.

Returns

the space dimension of the curve.

Implements Go::EvalCurve.

29.75.3.3 virtual double Go::CrossTangentOffset::end ( ) const [virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implements Go::EvalCurve.

29.75.3.4 virtual Point Go::CrossTangentOffset::eval (double *t*) const [virtual]

Evaluate a point on the curve for a given parameter

Parameters

t	the parameter for which to evaluate the curve.

Returns

the evaluated point

Implements Go::EvalCurve.

29.75.3.5 virtual void Go::CrossTangentOffset::eval (double *t*, int *n*, Point *der[]*) const [virtual]

Evaluate a point and a certain number of derivatives on the curve for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalCurve', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implements Go::EvalCurve.

29.75.3.6 virtual double Go::CrossTangentOffset::start ( ) const [virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implements Go::EvalCurve.

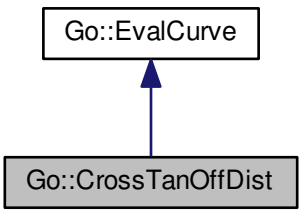
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/CrossTangentOffset.h

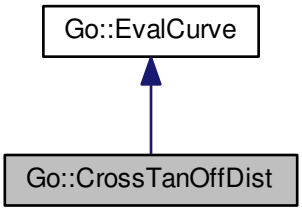
29.76 Go::CrossTanOffDist Class Reference

```
#include <CrossTanOffDist.h>
```

Inheritance diagram for Go::CrossTanOffDist:



Collaboration diagram for Go::CrossTanOffDist:



Public Member Functions

- CrossTanOffDist (shared_ptr< SplineCurve > &poscurve, shared_ptr< SplineCurve > &tangcv1, shared_ptr< SplineCurve > &tangcv2, shared_ptr< SplineCurve > &blend1, shared_ptr< SplineCurve > &blend2, shared_ptr< SplineCurve > &opposite1, shared_ptr< SplineCurve > &opposite2, double factor)
- virtual ~CrossTanOffDist ()

  Destructor.
- virtual Point eval (double t) const
- virtual void eval (double t, int n, Point der[ ]) const
- virtual double start () const
- virtual double end () const
- virtual int dim () const
- virtual bool approximationOK (double par, Point approxpos, double tol1, double tol2) const

29.76.1 Detailed Description

This class defines an evaluator-based offset-curve. We're blending between a set of curves seen as an evaluator based curve.

Definition at line 55 of file CrossTanOffDist.h.

29.76.2 Constructor & Destructor Documentation

29.76.2.1 Go::CrossTanOffDist::CrossTanOffDist (shared_ptr< SplineCurve > & *poscurve,* shared_ptr< SplineCurve > & *tangcv1,* shared_ptr< SplineCurve > & *tangcv2,* shared_ptr< SplineCurve > & *blend1,* shared_ptr< SplineCurve > & *blend2,* shared_ptr< SplineCurve > & *opposite1,* shared_ptr< SplineCurve > & *opposite2,* double *factor*)

Constructor

Parameters

poscurve	the curve to offset from.
tangcv1	tangent curve along poscurve.
tangcv2	cross tangent curve along poscurve.

Parameters

blend1	1-dimensional blending function for tangcv1.
blend2	1-dimensional blending function for tangcv2.
opposite1	space curve corresponding to poscurve, parametrized in the opposite direction.
opposite2	space curve corresponding to poscurve, parametrized in the opposite direction. May be equal to opposite1.
factor	if != 1.0 the poscurve, opposite1 & opposite2 will be used to define the opposite curve, so as to minimize differences in parametrization along the cv.

29.76.2.2 virtual Go::CrossTanOffDist::~CrossTanOffDist ( ) [virtual]

Destructor.

29.76.3 Member Function Documentation

29.76.3.1 virtual bool Go::CrossTanOffDist::approximationOK (double *par*, Point *approxpos*, double *tol1*, double *tol2*) const [virtual]

Check if the curve, evaluated at a given parameter, approximates a given position within a given tolerance.

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	approximation tolerance,
tol2	another approximation tolerance (its use is defined by some of the derived classes.

Returns

'true' if the curve approximates the point at the parameter, 'false' otherwise.

Implements Go::EvalCurve.

29.76.3.2 virtual int Go::CrossTanOffDist::dim ( ) const [virtual]

Get the dimension of the space in which the curve lies.

Returns

the space dimension of the curve.

Implements Go::EvalCurve.

29.76.3.3 virtual double Go::CrossTanOffDist::end ( ) const [virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implements Go::EvalCurve.

29.76.3.4 virtual Point Go::CrossTanOffDist::eval (double *t*) const [virtual]

Evaluate a point on the curve for a given parameter

Parameters

t	the parameter for which to evaluate the curve.

Returns

the evaluated point

Implements Go::EvalCurve.

29.76.3.5 virtual void Go::CrossTanOffDist::eval (double *t*, int *n*, Point *der[ ]*) const [virtual]

Evaluate a point and a certain number of derivatives on the curve for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalCurve', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implements Go::EvalCurve.

29.76.3.6 virtual double Go::CrossTanOffDist::start ( ) const [virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implements Go::EvalCurve.

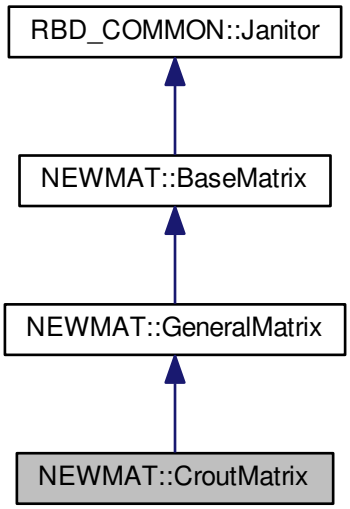
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/CrossTanOffDist.h

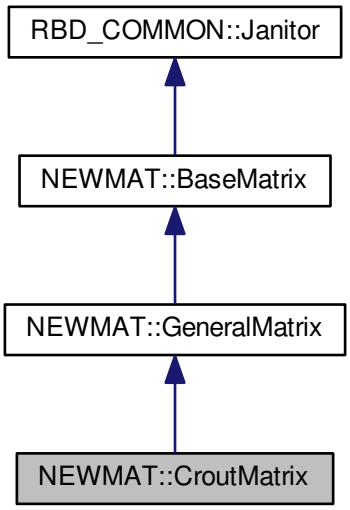
29.77 NEWMAT::CroutMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::CroutMatrix:



Collaboration diagram for NEWMAT::CroutMatrix:



Public Member Functions

- CroutMatrix (const BaseMatrix &)
- MatrixType Type () const
- void lubksb (Real *, int=0)
- ~CroutMatrix ()
- GeneralMatrix * MakeSolver ()
- LogAndSign LogDeterminant () const
- void Solver (MatrixColX &, const MatrixColX &)
- void GetRow (MatrixRowCol &)
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &c)
- void operator= (const BaseMatrix &)
- void operator= (const CroutMatrix &m)
- void CleanUp ()
- bool IsEqual (const GeneralMatrix &) const
- bool IsSingular () const

Additional Inherited Members

29.77.1 Detailed Description

Definition at line 862 of file newmat.h.

29.77.2 Constructor & Destructor Documentation

29.77.2.1 CroutMatrix::CroutMatrix (const BaseMatrix & *m*)

Definition at line 141 of file newmat4.cpp.

29.77.2.2 CroutMatrix::~CroutMatrix ( )

Definition at line 155 of file newmat4.cpp.

29.77.3 Member Function Documentation

29.77.3.1 void CroutMatrix::CleanUp ( ) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 838 of file newmat4.cpp.

29.77.3.2 void CroutMatrix::GetCol (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 286 of file newmatex.cpp.

29.77.3.3 void NEWMAT::CroutMatrix::GetCol (MatrixColX & *c*) [inline], [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 878 of file newmat.h.

29.77.3.4 void CroutMatrix::GetRow (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 284 of file newmatex.cpp.

29.77.3.5 bool CroutMatrix::IsEqual (const GeneralMatrix & *A*) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 1011 of file newmat7.cpp.

29.77.3.6 bool NEWMAT::CroutMatrix::IsSingular ( ) const [inline]

Definition at line 883 of file newmat.h.

29.77.3.7 LogAndSign CroutMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 694 of file newmat8.cpp.

29.77.3.8 void CroutMatrix::lubksb (Real * B, int mini = 0)

Definition at line 97 of file newmat8.cpp.

29.77.3.9 GeneralMatrix* NEWMAT::CroutMatrix::MakeSolver ( ) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 873 of file newmat.h.

29.77.3.10 void CroutMatrix::operator= (const BaseMatrix &)

Definition at line 288 of file newmatex.cpp.

29.77.3.11 void NEWMAT::CroutMatrix::operator= (const CroutMatrix & m) [inline]

Definition at line 880 of file newmat.h.

29.77.3.12 void CroutMatrix::Solver (MatrixColX & mcout, const MatrixColX & mcin) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 38 of file newmat7.cpp.

29.77.3.13 MatrixType CroutMatrix::Type ( ) const [virtual]

Implements NEWMAT::GeneralMatrix.

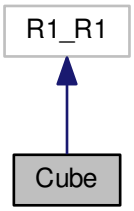
Definition at line 392 of file newmat4.cpp.

The documentation for this class was generated from the following files:

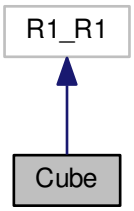
- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp
- newmat/src/newmat8.cpp
- newmat/src/newmatex.cpp

29.78 Cube Class Reference

Inheritance diagram for Cube:



Collaboration diagram for Cube:



29.78.1 Detailed Description

Definition at line 19 of file sl_ex.cpp.

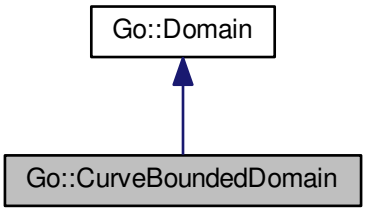
The documentation for this class was generated from the following file:

- newmat/app/sl_ex.cpp

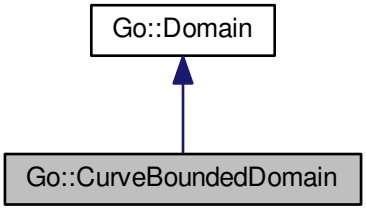
29.79 Go::CurveBoundedDomain Class Reference

```
#include <CurveBoundedDomain.h>
```

Inheritance diagram for Go::CurveBoundedDomain:



Collaboration diagram for Go::CurveBoundedDomain:



Public Member Functions

- CurveBoundedDomain ()

  Constructor generating an empty domain.
- CurveBoundedDomain (std::vector< shared_ptr< CurveLoop > > loops)
- CurveBoundedDomain (shared_ptr< CurveLoop > ccw_loop)
- virtual ~CurveBoundedDomain ()

  Virtual destructor, enables safe inheritance.
- virtual bool isInDomain (const Array< double, 2 > &point, double tolerance) const
- virtual int isInDomain2 (const Array< double, 2 > &point, double tolerance) const
- virtual bool isOnBoundary (const Array< double, 2 > &point, double tolerance) const
- bool isOnCorner (const Array< double, 2 > &point, double tolerance) const
- virtual void closestInDomain (const Array< double, 2 > &point, Array< double, 2 > &clo_pt, double tolerance) const
- virtual void closestOnBoundary (const Array< double, 2 > &point, Array< double, 2 > &clo_bd_pt, double tolerance) const
- void getInternalPoint (double &upar, double &vpar) const
- RectDomain containingDomain () const
- void clipWithDomain (int pardir, double parval, double tolerance, shared_ptr< ParamSurface > srf, std::vector< shared_ptr< CurveOnSurface > > &trim_pieces) const

- void findPcurveInsideSegments (const SplineCurve &curve, double tolerance, std::vector< double > &params_start_end_interval) const
- void findPcurveInsideSegments (const SplineCurve &curve, double tolerance, std::vector< double > &params_start_end_interval, std::vector< double > &boundary_params, std::vector< int > &boundary_↩ loops, std::vector< int > &boundary_curves) const
- void getInsideIntervals (int pardir, double parval1, double parval2, double tolerance, std::vector< std::pair< double, double > > &insideInts) const
- int positionPointInDomain (int pardir, double parval1, double parval2, double tolerance) const

29.79.1 Detailed Description

A 2D parameter domain represented by its boundaries. The domain is not necessarily connected.

Definition at line 56 of file CurveBoundedDomain.h.

29.79.2 Constructor & Destructor Documentation

29.79.2.1 Go::CurveBoundedDomain::CurveBoundedDomain ( ) [inline]

Constructor generating an empty domain.

Definition at line 60 of file CurveBoundedDomain.h.

29.79.2.2 Go::CurveBoundedDomain::CurveBoundedDomain (std::vector< shared_ptr< CurveLoop > > *loops*)

The curve loop must contain either 2D ParamCurve objects or ?D CurveOnSurface objects. One of the loops (the first, preferrably) should be ccw, the rest cw. Constructor generating a domain specified by one or more 2D CurveLoops.

Parameters

loops	The loops defining the domain to be created. The domain is defined as the union of the interior of these loops. The CurveLoop s must contain either 2D ParamCurve objects XD CurveOnSurface objects.

29.79.2.3 Go::CurveBoundedDomain::CurveBoundedDomain (shared_ptr< CurveLoop > *ccw_loop*)

Constructor generating a (connected) domain specified by a CurveLoop

Parameters

ccw_loop	the curve loop specifying the domain. The domain will represent the interior of this (supposedly counterclockwise loop).

29.79.2.4 virtual Go::CurveBoundedDomain::~CurveBoundedDomain ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.79.3 Member Function Documentation

29.79.3.1 void Go::CurveBoundedDomain::clipWithDomain (int *pardir,* double *parval,* double *tolerance,* shared_ptr< ParamSurface > *srf,* std::vector< shared_ptr< CurveOnSurface > > & *trim_pieces*) const

On the 2D parameter plane, consider the (iso)curve defined by fixing one of the parameters at a certain value. Now, pick those parts of this curve that are covered by 'this' CurveBoundedDomain. Then, lift these (parameter) curves into 3D space by means of a SplineSurface. This function will return the CurveOnSurface s defined by this procedure.

Parameters

pardir	this parameter specifies which of the two parameter directions that should be 'free' (the other will be fixed). 'pardir' should take the value of '1' or '2'. A value of '1' means that the *first* parameter direction will be free, while '2' means that the *second* parameter direction will be free.
parval	the parameter value of the fixed parameter
tolerance	the tolerance when determining which parts of the isoparameter curve are located inside 'this' CurveBoundedDomain.
srf	The surface used to 'lift' the resulting isoparameter curve intervals

Return values

trim_pieces	vector containing the resulting CurveOnSurface s.

29.79.3.2 virtual void Go::CurveBoundedDomain::closestInDomain (const Array< double, 2 > & *point,* Array< double, 2 > & *clo_pt,* double *tolerance*) const [virtual]

Find the parameter pair contained in the domain that is closest (using Euclidean distance in R^2) to a given parameter pair. If the given parameter pair is already in the domain, then the answer is obviously that parameter pair

Parameters

point	the (u,v) parameter pair that we want to find the closest parameter pair to *inside* the CurveBoundedDomain.

Return values

clo↩ _pt	the resulting closest parameter point.

Parameters

tolerance	the tolerance used in defining whether the given point is already inside the domain.

Implements Go::Domain.

29.79.3.3 virtual void Go::CurveBoundedDomain::closestOnBoundary (const Array< double, 2 > & *point*, Array< double, 2 > & *clo_bd_pt*, double *tolerance*) const [virtual]

Find the parameter pair on the boundary of the domain that is closest (using Euclidean distance in R^2) to a given parameter pair. If the point is already considered *on* the boundary, then the answer is obviously the same point.

Parameters

point	the (u,v) parameter pair that we want to find to closest parameter pair to *on* the CurveBoundedDomain border.

Return values

clo_bd_pt	the closest point on the border.

Parameters

tolerance	the tolerance used in defining whether the given point is

Implements Go::Domain.

29.79.3.4 RectDomain Go::CurveBoundedDomain::containingDomain ( ) const

Get a rectangular domain that is guaranteed to contain the CurveBoundedDomain.

Returns

a RectDomain that contains this CurveBoundedDomain. If the loops defining the CurveBoundedDomain are specified by 2D parameter curves, the RectDomain will be the smallest rectangular domain containing all the control points of the boundary curves. In the opposite case, the loops are assumed to be CurveOnSurface s, and the returned RectDomain will be that of the underlying surface.

29.79.3.5 void Go::CurveBoundedDomain::findPcurveInsideSegments (const SplineCurve & *curve*, double *tolerance*, std::vector< double > & *params_start_end_interval*) const

Given a curve in the 2D parameter plane, determine those parts of the curve that are contained inside 'this' CurveBoundedDomain.

Parameters

curve	this is the 2D curve that we want to examine
tolerance	this is the tolerance used when determining which parts of of 'curve' are inside 'this' CurveBoundedDomain.

Return values

params_start_end_interval	a vector containing the start- and end parameters of the curve segments that were found to be inside this domain. An even indexed entry marks the start parameter of a curve segment, while the following, odd indexed entry marks the end parameter of the same curve segment.

29.79.3.6 void Go::CurveBoundedDomain::findPcurveInsideSegments (const SplineCurve & *curve*, double *tolerance*, std::vector< double > & *params_start_end_interval*, std::vector< double > & *boundary_params*, std::vector< int > & *boundary_loops*, std::vector< int > & *boundary_curves*) const

Given a curve in the 2D parameter plane, determine those parts of the curve that are contained inside 'this' CurveBoundedDomain. Also store positional information about the intersections with the boundary curves

Parameters

curve	this is the 2D curve that we want to examine
tolerance	this is the tolerance used when determining which parts of of 'curve' are inside 'this' CurveBoundedDomain.

Return values

params_start_end_interval	a vector containing the start- and end parameters of the curve segments that were found to be inside this domain. An even indexed entry marks the start parameter of a curve segment, while the following, odd indexed entry marks the end parameter of the same curve segment.
boundary_params	a vector containing the parameters on the boundary curves in the same order as in params_start_end_interval
boundary_loops	a vector containing the loop index of the boundary curves in the same order as in params_start_end_interval
boundary_curves	a vector containing the boundary curve position among the curves in the same loop, in the same order as in params_start_end_interval

29.79.3.7 void Go::CurveBoundedDomain::getInsideIntervals (int *pardir*, double *parval1*, double *parval2*, double *tolerance*, std::vector< std::pair< double, double > > & *insideInts*) const

Fetch all intervals in one parameter direction going through a specific point lying inside the bounded domain.

29.79.3.8 void Go::CurveBoundedDomain::getInternalPoint (double & *upar*, double & *vpar*) const

Return an arbitrary internal parameter point in the domain (not on the boundary

29.79.3.9 virtual bool Go::CurveBoundedDomain::isInDomain (const Array< double, 2 > & *point*, double *tolerance*) const [virtual]

Query whether a given parameter pair is inside the domain or not.

Parameters

point	array containing the parameter pair
tolerance	the tolerance to be used. In order to be considered 'inside', the point must be located inside one of the defining CurveLoop s, as well as being at a distance more than 'tolerance' from any point on that CurveLoop.

Returns

'true' if the point is found to be inside the domain, 'false' otherwise.

Implements Go::Domain.

29.79.3.10 virtual int Go::CurveBoundedDomain::isInDomain2 (const Array< double, 2 > & *point*, double *tolerance*) const [virtual]

Query whether a given parameter pair is inside the domain or not.

Parameters

point	array containing the parameter pair
tolerance	the tolerance to be used. In order to be considered 'inside', the point must be located inside one of the defining CurveLoop s, as well as being at a distance more than 'tolerance' from any point on that CurveLoop.

Returns

'1' if the point is found to be inside the domain, '2' if it is found to be on the boundary '0' otherwise.

Implements Go::Domain.

29.79.3.11 virtual bool Go::CurveBoundedDomain::isOnBoundary (const Array< double, 2 > & *point*, double *tolerance*) const [virtual]

check whether a given parameter pair is located *on* the domain boundary

Parameters

point	array containing the parameter pair
tolerance	the tolerance used. (how 'far' from the boundary our parameter pair can be and still be considered 'on' the boundary.

Returns

'true' if the parameter pair is considered to be on the boundary, 'false' otherwise.

Implements Go::Domain.

29.79.3.12 bool Go::CurveBoundedDomain::isOnCorner (const Array< double, 2 > & *point*, double *tolerance*) const

Check if the given parameter pair is located on the endpoint of some curve in the curve loop

29.79.3.13 int Go::CurveBoundedDomain::positionPointInDomain (int *pardir*, double *parval1*, double *parval2*, double *tolerance*) const

Check the position of a parameter point in the domain. Return value: -1 : Outside of outer loop 0 : Inside domain j>0 : Inside hole number j, i.e. inside loop number j

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/CurveBoundedDomain.h

29.80 Go::CurveLoop Class Reference

`#include <CurveLoop.h>`

Public Member Functions

- CurveLoop ()
  Create an empty loop.
- CurveLoop (const std::vector< shared_ptr< ParamCurve > > &curves, double space_epsilon)
- virtual ~CurveLoop ()
  Virtual destructor allows safe inheritance.
- void swap (CurveLoop &other)
  Quick swap of one CurveLoop with another.
- void setCurves (const std::vector< shared_ptr< ParamCurve > > &curves)
- void turnOrientation ()
  Reverse the direction of all curves and their mutual order.
- void setSpaceEpsilon (const double space_epsilon)
- double getSpaceEpsilon () const
- int size () const
- std::vector< shared_ptr< ParamCurve > >::const_iterator begin () const
- std::vector< shared_ptr< ParamCurve > >::const_iterator end () const
- std::vector< shared_ptr< ParamCurve > >::iterator begin ()
- std::vector< shared_ptr< ParamCurve > >::iterator end ()
- shared_ptr< ParamCurve > operator[] (int index) const
- void closestPoint (const Point &pt, int &clo_ind, double &clo_par, Point &clo_pt, double &clo_dist) const
- void closestParPoint (const Point &pt, int &clo_ind, double &clo_par, Point &clo_pt, double &clo_dist) const
- std::vector< shared_ptr< ParamCurve > > getCurves ()
  Return the curves in the loop as a vector.
- std::vector< Point > getCorners () const
  Return joint points between curves.
- void getSmoothCurves (std::vector< std::vector< shared_ptr< ParamCurve > > > &curves, double angtol)
  Collect curves with smooth connections.
- bool isValid () const
- bool fixInvalidLoop (double &max_gap)
- bool simplify (double tol, double ang_tol, double &max_dist)
  Simplify this curve loop if possible by reducing the number of curves.
- double getMaxCurveDist () const
  Maximum distance between subsequent curves.

29.80.1 Detailed Description

CurveLoop represents a closed loop defined by the composition of a set of curves. The start point of curve (i+1) should coincide (within a certain tolerance) with the end point of curve (i), and the end point of the last curve should coincide with the start point of the first curve. CurveLoops are useful in, for example, describing the boundary of a surface.

Definition at line 107 of file CurveLoop.h.

29.80.2 Constructor & Destructor Documentation

29.80.2.1 Go::CurveLoop::CurveLoop ( )

Create an empty loop.

29.80.2.2 Go::CurveLoop::CurveLoop (const std::vector< shared_ptr< ParamCurve > > & *curves*, double *space_epsilon*)

Create a loop based on a given set of curves.

Parameters

curves	a vector with shared pointers to the curves defining the CurveLoop. The start point of each curve should match the end point of the previous curve within the given tolerance. The same is the same for the start point on the first curve and the end point on the last curve). Moreover, it is expected that all curves are of the same type, and that they all lie in the same space (ie. have the same dimension).
space_epsilon	the given tolerance for defining coincidence between start/end points on curves.

29.80.2.3 virtual Go::CurveLoop::~CurveLoop ( ) [virtual]

Virtual destructor allows safe inheritance.

29.80.3 Member Function Documentation

29.80.3.1 std::vector< shared_ptr<ParamCurve> >::const_iterator Go::CurveLoop::begin ( ) const [inline]

Get a const iterator to the first curve in the CurveLoop

Returns

a const iterator to the first curve in the CurveLoop

Definition at line 161 of file CurveLoop.h.

29.80.3.2 std::vector< shared_ptr<ParamCurve> >::iterator Go::CurveLoop::begin ( ) [inline]

Get a iterator to the first curve in the CurveLoop

Returns

a iterator to the first curve in the CurveLoop

Definition at line 171 of file CurveLoop.h.

29.80.3.3 void Go::CurveLoop::closestParPoint (const Point & *pt,* int & *clo_ind,* double & *clo_par,* Point & *clo_pt,* double & *clo_dist*) const

View the loop as a curve in the parameter space and compute the closest point in the loop. This function is only interesting if the curves constituting the CurveLoop are of type "CurveOnSurface". In that case, the curves have a 2D representation in the parametric domain of the surface, as well as a 3D representation in geometric space. This function will search for the closest point in *parametric* space to a *parametric* (2D) point specified by the user.

Parameters

pt	The point given by the user. It should be a 2D point refering to the parametric domain of a surface. We want to determine the closest point to this on the CurveLoop.
clo_ind	Upon return: the index of the curve segment on which the closest point was found.
clo_par	Upon return: the parameter of the detected closest point on the curve segment containing it (a scalar value)
clo_pt	Upon return: the curve segment's closest point represented as a 2D parameter pair in the domain of the underlying surface.
clo_dist	Upon return: the distance between the point given by the user and the found closest point, measured in the parametric domain of the underlying surface.

29.80.3.4 void Go::CurveLoop::closestPoint (const Point & *pt,* int & *clo_ind,* double & *clo_par,* Point & *clo_pt,* double & *clo_dist*) const

Find the closest point on the curve loop to a point specified by the user.

Parameters

pt	The point given by the user. We want to determine the closest point to this on the CurveLoop.
clo_ind	Upon return: the index of the curve segment on which the closest point was found.
clo_par	Upon return: the parameter of the detected closest point on the curve containing it.
clo_pt	Upon return: the geometric position of the detected closest point
clo_dist	Upon return: the distance to the detected closest point.

29.80.3.5 std::vector< shared_ptr<ParamCurve> >::const_iterator Go::CurveLoop::end ( ) const [inline]

Get a const iterator to one-past-the-last curve in the CurveLoop

Returns

a const iterator to the one-past-the-last curve in the CurveLoop

Definition at line 166 of file CurveLoop.h.

29.80.3.6 std::vector< shared_ptr<ParamCurve> >::iterator Go::CurveLoop::end ( ) [inline]

Get a iterator to one-past-the-last curve in the CurveLoop

Returns

a iterator to the one-past-the-last curve in the CurveLoop

Definition at line 176 of file CurveLoop.h.

29.80.3.7 bool Go::CurveLoop::fixInvalidLoop (double & *max_gap*)

If loop is invalid, we try to fix loop. If we fail we alter nothing. Return value is true if loop is valid. max_gap is set to the largest gap in the loop.

29.80.3.8 std::vector<Point> Go::CurveLoop::getCorners ( ) const

Return joint points between curves.

29.80.3.9 std::vector<shared_ptr<ParamCurve> > Go::CurveLoop::getCurves ( ) [inline]

Return the curves in the loop as a vector.

Definition at line 222 of file CurveLoop.h.

29.80.3.10 double Go::CurveLoop::getMaxCurveDist ( ) const [inline]

Maximum distance between subsequent curves.

Definition at line 249 of file CurveLoop.h.

29.80.3.11 void Go::CurveLoop::getSmoothCurves (std::vector< std::vector< shared_ptr< ParamCurve > > > & *curves,* double *angtol*)

Collect curves with smooth connections.

29.80.3.12 double Go::CurveLoop::getSpaceEpsilon ( ) const

Get the tolerance value (used to determine whether the start/end points on curves are coincident).

29.80.3.13 bool Go::CurveLoop::isValid ( ) const

If the curves do not form a simple loop within the input tolerance, the object is invalid.

29.80.3.14 shared_ptr<ParamCurve> Go::CurveLoop::operator[ ] (int *index*) const

Get a shared pointer to the i'th curve in the CurveLoop

Parameters

index	the index of the requested curve

Returns

a shared pointer to the requested curve.

29.80.3.15 void Go::CurveLoop::setCurves (const std::vector< shared_ptr< ParamCurve > > & *curves*)

Reset the CurveLoop based on a given vector of curves. (But keep the previously set tolerance value.

Parameters

curves	a vector with shared pointers to the curves defining the CurveLoop. The start point of each curve should match the end point of the previous curve within the given tolerance. The same is the same for the start point on the first curve and the end point on the last curve). Moreover, it is expected that all curves are of the same type, and that they all lie in the same space (ie. have the same dimension).

29.80.3.16 void Go::CurveLoop::setSpaceEpsilon (const double *space_epsilon*)

Set the tolerance (used to determine whether the start/end points on curves are coincident) to a given value

Parameters

space_epsilon	set the tolerance to this value

29.80.3.17 bool Go::CurveLoop::simplify (double *tol*, double *ang_tol*, double & *max_dist*)

Simplify this curve loop if possible by reducing the number of curves.

29.80.3.18 int Go::CurveLoop::size ( ) const [inline]

Query the number of curves constituting the CurveLoop

Returns

the number of curves constituting the CurveLoop

Definition at line 157 of file CurveLoop.h.

29.80.3.19 void Go::CurveLoop::swap (CurveLoop & *other*)

Quick swap of one CurveLoop with another.

29.80.3.20 void Go::CurveLoop::turnOrientation ( )

Reverse the direction of all curves and their mutual order.

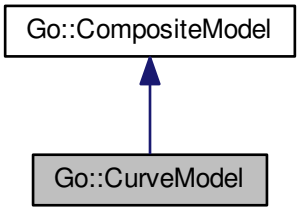
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/CurveLoop.h

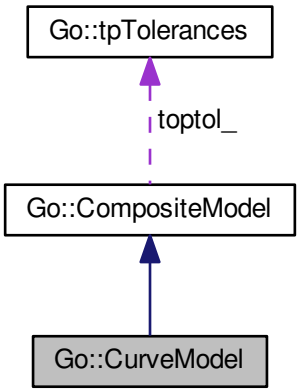
29.81 Go::CurveModel Class Reference

`#include <CurveModel.h>`

Inheritance diagram for Go::CurveModel:



Collaboration diagram for Go::CurveModel:



Public Member Functions

- CurveModel (double gap, double neighbour, double kink, double bend, std::vector< shared_ptr< ParamCurve > > &curves)
- ~CurveModel ()

  Destructor.
- virtual CurveModel * clone () const
- virtual int nmbEntities () const
- shared_ptr< ParamCurve > getCurve (int idx) const
- int getIndex (ParamCurve *curve) const
- virtual void evaluate (int idx, double par[], Point &pnt) const
- virtual void evaluate (int idx, double par[], int nder, std::vector< Point > &der) const
- virtual void closestPoint (Point &pnt, Point &clo_pnt, int &idx, double clo_par[], double &dist)
- virtual shared_ptr< IntResultsModel > intersect (const ftLine &line)
- virtual shared_ptr< IntResultsModel > intersect_plane (const ftPlane &plane)
- virtual void extremalPoint (Point &dir, Point &ext_pnt, int &idx, double ext_par[])

  Extremal point(s) in a given direction.
- virtual BoundingBox boundingBox ()
- virtual BoundingBox boundingBox (int idx) const
- virtual bool isDegenerate (int idx) const
- virtual double curvature (int idx, double *par) const
- virtual void turn (int idx)
- virtual void turn ()
- virtual void tesselate (std::vector< shared_ptr< GeneralMesh > > &meshes) const
- virtual void tesselate (int resolution[], std::vector< shared_ptr< GeneralMesh > > &meshes) const
- virtual void tesselate (double density, std::vector< shared_ptr< GeneralMesh > > &meshes) const
- virtual void tesselatedCtrPolygon (std::vector< shared_ptr< LineCloud > > &ctr_pol) const
- std::vector< shared_ptr< CompositeCurve > > fetchCompositeCurves () const

Additional Inherited Members

29.81.1 Detailed Description

A curve model including topological information

Definition at line 65 of file CurveModel.h.

29.81.2 Constructor & Destructor Documentation

29.81.2.1 Go::CurveModel::CurveModel (double *gap*, double *neighbour*, double *kink*, double *bend*, std::vector< shared_ptr< ParamCurve > > & *curves*)

Constructor The sequence of the input curves will be kept, but a permutation array will sort the curves according to continuity

Parameters

gap	If the distance between two points is less than 'gap' they are viewed as identical.
neighbour	Maximum distance between curves viewed as adjacent.
kink	If two adjacent curves meet with an angle less than 'kink', they are seen as G1 continous. (angles in radians)
bend	If two curves meet with an angle larger than 'bend', there is an intentional corner.(angles in radians)
curves	A vector of curves.

29.81.2.2 Go::CurveModel::~CurveModel ( )

Destructor.

29.81.3 Member Function Documentation

29.81.3.1 virtual BoundingBox Go::CurveModel::boundingBox ( ) [virtual]

Bounding box of the entire composite curve

Returns

Bounding box

Implements Go::CompositeModel.

29.81.3.2 virtual BoundingBox Go::CurveModel::boundingBox (int *idx*) const [virtual]

Bounding box corresponding to one curve

Parameters

idx	Index of curve

Returns

Bounding box

Implements Go::CompositeModel.

29.81.3.3 virtual CurveModel* Go::CurveModel::clone ( ) const [virtual]

Make a copy of the current model

Returns

Pointer to a copy of this CurveModel

Reimplemented from Go::CompositeModel.

29.81.3.4 virtual void Go::CurveModel::closestPoint (Point & *pnt*, Point & *clo_pnt*, int & *idx*, double *clo_par[ ]*, double & *dist*) [virtual]

Closest point between a given point and this composite curve Returns one point We could think of specifiying a function that returns all global closest points, only for global search. It is also possible to return closest points within a given range from the best closest point, but only one point for each curve in the model.

Parameters

pnt	Input point

Return values

clo_pnt	Found closest point
idx	Index of curve where the closest point is found
clo_par[]	Parameter value corresponding to the closest point
dist	Distance between input point and found closest point

Implements Go::CompositeModel.

29.81.3.5 virtual double Go::CurveModel::curvature (int *idx*, double * *par*) const [virtual]

Curvature of a curve

Parameters

idx	Index of curve
par	Parameter value at which to compute curvature

Returns

The curvature.

Implements Go::CompositeModel.

29.81.3.6 virtual void Go::CurveModel::evaluate (int *idx*, double *par[]*, Point & *pnt*) const [virtual]

Evaluate position

Parameters

idx	Index of curve
par[]	Parameter value

Return values

pnt	Result

Implements Go::CompositeModel.

29.81.3.7 virtual void Go::CurveModel::evaluate (int *idx*, double *par[]*, int *nder*, std::vector< Point > & *der*) const [virtual]

Evaluate position and a number of derivatives The sequence is position, first derivative, second derivative, etc.

Parameters

idx	Index
par[]	Parameter value
nder	Number of derivatives to compute, 0=only position

Return values

der	Result

Implements Go::CompositeModel.

29.81.3.8 virtual void Go::CurveModel::extremalPoint (Point & *dir*, Point & *ext_pnt*, int & *idx*, double *ext_par[]*) [virtual]

Extremal point(s) in a given direction.

Parameters

dir	Direction

Return values

ext_pnt	Found extremal point
idx	Index of curve where the extremal point is found
ext_par[]	Parameter value of extremal point

Implements Go::CompositeModel.

29.81.3.9 std::vector<shared_ptr<CompositeCurve> > Go::CurveModel::fetchCompositeCurves ( ) const

Fetch all uniquely connected composite curves

Returns

Vector of pointers to the composite curves

29.81.3.10 shared_ptr<ParamCurve> Go::CurveModel::getCurve (int *idx*) const

Return one curve Note that the index corresponds to the sequence of which the curves are added to the CurveModel, not the position in the composite curve

Parameters

idx	Index of curve

Returns

Pointer to curve

29.81.3.11 int Go::CurveModel::getIndex (ParamCurve * *curve*) const

Given a curve in the composite curve, return the index of this curve

Parameters

curve	Pointer to curve

Returns

Index to curve

29.81.3.12 virtual shared_ptr<IntResultsModel> Go::CurveModel::intersect (const ftLine & *line*) [virtual]

Intersection with a line. Expected output is points, probably one point. Curves can occur in special configurations.

Parameters

line	The line.

Returns

Pointer to an IntResultsModel.

Implements Go::CompositeModel.

29.81.3.13 virtual shared_ptr<IntResultsModel> Go::CurveModel::intersect_plane (const ftPlane & *plane*) [virtual]

Intersection with a plane.

Parameters

plane	The plane.

Returns

Pointer to an IntResultsModel.

Implements Go::CompositeModel.

29.81.3.14 virtual bool Go::CurveModel::isDegenerate (int *idx*) const [virtual]

Whether one particular curve is degenerated

Parameters

idx	Index of curve

Returns

Whether the curve is degenerated

Implements Go::CompositeModel.

29.81.3.15 virtual int Go::CurveModel::nmbEntities ( ) const [virtual]

Number of simple entities

Returns

Number of simple entities

Implements Go::CompositeModel.

29.81.3.16 virtual void Go::CurveModel::tesselate (std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate all curves with respect to a default resolution

Return values

meshes	Tesselated model

Implements Go::CompositeModel.

29.81.3.17 virtual void Go::CurveModel::tesselate (int *resolution[ ]*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate all curves with respect to a given resolution

Parameters

resolution[]	All curves are tesselated with resolution[0]

Return values

meshes	Tesselated model

Implements Go::CompositeModel.

29.81.3.18 virtual void Go::CurveModel::tesselate (double *density*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate all curves with respect to a given tesselation density

Parameters

density	Tesselation density

Return values

meshes	Tesselated model

Implements Go::CompositeModel.

29.81.3.19 virtual void Go::CurveModel::tesselatedCtrPolygon (std::vector< shared_ptr< LineCloud > > & *ctr_pol*) const [virtual]

Tesselate the control polygon of all curves.

Return values

ctr_pol	Tesselation of the control polygon of all curves.

Implements Go::CompositeModel.

29.81.3.20 virtual void Go::CurveModel::turn (int *idx*) [virtual]

Turn parameter direction of one curve. An update in the topology structures is required.

Parameters

idx	Index of curve

Implements Go::CompositeModel.

29.81.3.21 virtual void Go::CurveModel::turn ( ) [virtual]

Turn parameter directions of all curves. An update in the topology structures is required.

Implements Go::CompositeModel.

The documentation for this class was generated from the following file:

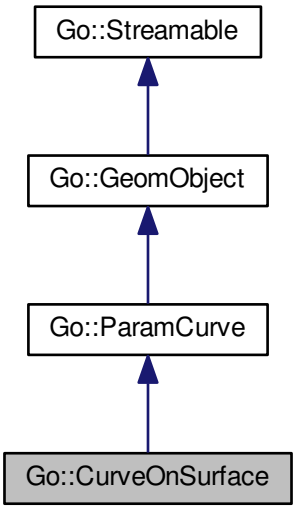
- compositemodel/include/GoTools/compositemodel/CurveModel.h

29.82 Go::CurveOnSurface Class Reference

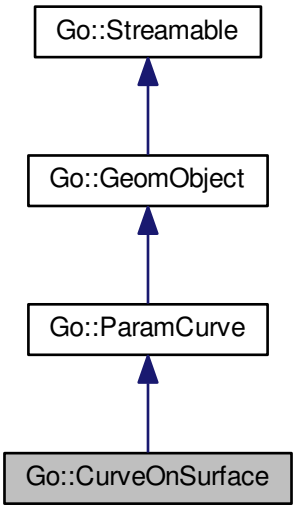
A curve living on a parametric surface. It either has got information about the curve in geometry space and in the parameter domain of the surface or the ability to compute the other representation given one. The curve may have information on whether it is a constant parameter or boundary curve on the surface.

```
#include <CurveOnSurface.h>
```

Inheritance diagram for Go::CurveOnSurface:



Collaboration diagram for Go::CurveOnSurface:



Public Member Functions

- CurveOnSurface ()
- CurveOnSurface (shared_ptr< ParamSurface > surf, shared_ptr< ParamCurve > curve, bool preferparameter)
- CurveOnSurface (shared_ptr< ParamSurface > surf, shared_ptr< ParamCurve > curve, int constdir, double constpar, int boundary)

  Constructor for constant parameter curves.
- CurveOnSurface (shared_ptr< ParamSurface > surf, int constdir, double constpar, double par1, double par2, int boundary)
- CurveOnSurface (shared_ptr< ParamSurface > surf, shared_ptr< ParamCurve > pcurve, shared_ptr< ParamCurve > spacecurve, bool preferparameter, int ccm, int constdir, double constpar, int boundary, bool same_orientation)

  Constructor with all information.
- CurveOnSurface (shared_ptr< ParamSurface > surf, shared_ptr< ParamCurve > pcurve, shared_ptr< ParamCurve > spacecurve, bool preferparameter, int ccm=0)
- CurveOnSurface (const CurveOnSurface &surface_curve)
- CurveOnSurface & operator= (const CurveOnSurface &other)
- virtual ~CurveOnSurface ()
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const
- virtual DirectionCone directionCone () const
- virtual int dimension () const

  Dimension of geometry space.
- virtual ClassType instanceType () const

  Type of current object.
- virtual CurveOnSurface * clone () const

- virtual void point (Point &pt, double tpar) const
- virtual void point (std::vector< Point > &pts, double tpar, int derivs, bool from_right=true) const
- virtual double startparam () const
- virtual double endparam () const
- virtual void reverseParameterDirection (bool switchparam=false)
- virtual void setParameterInterval (double t1, double t2)

  Linear reparametrization. The meaning is changed for elementary curves.
- virtual SplineCurve * geometryCurve ()
- virtual bool isDegenerate (double degenerate_epsilon)
- virtual CurveOnSurface * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMET↩ ER_EPSILON) const
- virtual std::vector< shared_ptr< ParamCurve > > split (double param, double fuzzy=DEFAULT_PARAM↩ ETER_EPSILON) const

  Split curve in a specified parameter value.
- virtual void closestPoint (const Point &pt, double tmin, double tmax, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const
- virtual double length (double tol)
- virtual void appendCurve (ParamCurve *cv, bool reparam=true)
- virtual void appendCurve (ParamCurve *cv, int continuity, double &dist, bool reparam=true)
- void setUnderlyingSurface (shared_ptr< ParamSurface > surface)
- void setCurves (shared_ptr< ParamCurve > spacecurve, shared_ptr< ParamCurve > parametercurve)
- void setSpaceCurve (shared_ptr< ParamCurve > spacecurve)
- void setParameterCurve (shared_ptr< ParamCurve > parametercurve)
- void unsetParameterCurve ()

  Remove parameter curve information.
- bool ensureParCrvExistence (double epsgeo, const RectDomain *domain_of_interest=NULL, const Point *start_par_pt=NULL, const Point *end_par_pt=NULL)
- bool makeParameterCurve (double tol, const Point &par1, const Point &par2)

  Make parameter curve between given end parameters.
- bool translateParameterCurve (const Point &dir)
- bool translateSwapParameterCurve (const Point &dir, double sgn, int pdir)
- bool setDomainParCrv (double umin, double umax, double vmin, double vmax, double uminprev, double umaxprev, double vminprev, double vmaxprev)
- void unsetSpaceCurve ()

  Remove space curve information.
- bool ensureSpaceCrvExistence (double tol)

  Generate space curve if it doesn't exist.
- void setCurveTypeInfo (int ccm)

  Set curve information.
- int getCurveTypeInfo ()
- bool updateIsoCurves ()

  Update constant parameter curves.
- bool updateIsoCurves (int constdir, double constpar, int boundary)
- bool updateCurves (double epsge)

  Update curves. Reapproximate the dependent curve within the tolerance epsge.
- bool updateCurves (Point vx1, Point vx2, double epsge)

  Update curves.
- void enableSameOrientation ()

  Make sure that the curves have the same orientation.
- virtual double nextSegmentVal (double par, bool forward, double tol) const
- shared_ptr< ParamSurface > underlyingSurface ()
- shared_ptr< ParamCurve > parameterCurve ()
- shared_ptr< ParamCurve > spaceCurve ()

- shared_ptr< const ParamSurface > underlyingSurface () const
- shared_ptr< const ParamCurve > parameterCurve () const
- shared_ptr< const ParamCurve > spaceCurve () const
- bool parPref () const
- void setParPref (bool prefer)
- RectDomain containingDomain () const
- Point faceParameter (double crv_par, const RectDomain *domain_of_interest=NULL) const

  Fetch the surface parameter corresponding to a curve parameter.
- int whichBoundary (double tol, bool &same_orientation) const
- bool isConstantCurve () const

  Check if the curve is a constant parameter curve and marked as such.
- bool isConstantCurve (double tol, int &pardir, double &parval) const
- void getConstantCurveInfo (int &constdir, double &constval, int &bd, bool &same_orientation) const

  Fetch recorded constant curve information.
- bool sameParameterDomain () const
- bool sameOrientation () const
- bool sameTrace (double tol, int nmb_sample=5) const
- bool sameCurve (double tol, int nmb_sample=5) const
- void makeCurvesConsistent (bool prefer_parameter)
- int curveCreationMethod () const
- double maxTraceDiff (int nmb_sample=5) const
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)
- virtual bool isLinear (Point &dir, double tol)

  Check if the curve is linear.
- virtual bool isInPlane (const Point &loc, const Point &axis, double eps, Point &normal) const

  Check if the curve lies in a plane passing through a given axis.
- virtual bool isInPlane (const Point &norm, double eps, Point &pos) const

  Check if the curve lies in a plane with a given normal.

Static Public Member Functions

- static ClassType classType ()

Additional Inherited Members

29.82.1 Detailed Description

A curve living on a parametric surface. It either has got information about the curve in geometry space and in the parameter domain of the surface or the ability to compute the other representation given one. The curve may have information on whether it is a constant parameter or boundary curve on the surface.

Definition at line 62 of file CurveOnSurface.h.

29.82.2 Constructor & Destructor Documentation

29.82.2.1 Go::CurveOnSurface::CurveOnSurface ( )

Define an empty CurveOnSurface that can be assigned or read() into

29.82.2.2 Go::CurveOnSurface::CurveOnSurface (shared_ptr< ParamSurface > *surf*, shared_ptr< ParamCurve > *curve*, bool *preferparameter*)

Construct a CurveOnSurface by specifying the surface and either a space curve or a curve in the parameter plane. Does not clone any of the input, just sets (smart) pointers.

Parameters

surf	pointer to the underlying surface
curve	pointer to the curve specifying the CurveOnSurface. This curve may either be in the parametric domain of the surface (2D curve), or a space curve that the user has assured to be coincident with the surface. 'preferparameter' specifies which kind of curve this is.
preferparameter	if this is set to 'true', then 'curve' is assumed to be a curve in the parametric domain of the surface. Otherwise, it is assumed to be a space (3D) curve.

29.82.2.3 Go::CurveOnSurface::CurveOnSurface (shared_ptr< ParamSurface > *surf*, shared_ptr< ParamCurve > *curve*, int *constdir*, double *constpar*, int *boundary*)

Constructor for constant parameter curves.

29.82.2.4 Go::CurveOnSurface::CurveOnSurface (shared_ptr< ParamSurface > *surf*, int *constdir*, double *constpar*, double *par1*, double *par2*, int *boundary*)

Constructor for constant parameter curves. The curve is to be restricted to the parameter interval [par1, par2].

29.82.2.5 Go::CurveOnSurface::CurveOnSurface (shared_ptr< ParamSurface > *surf*, shared_ptr< ParamCurve > *pcurve*, shared_ptr< ParamCurve > *spacecurve*, bool *preferparameter*, int *ccm*, int *constdir*, double *constpar*, int *boundary*, bool *same_orientation*)

Constructor with all information.

29.82.2.6 Go::CurveOnSurface::CurveOnSurface (shared_ptr< ParamSurface > *surf*, shared_ptr< ParamCurve > *pcurve*, shared_ptr< ParamCurve > *spacecurve*, bool *preferparameter*, int *ccm* = 0)

Construct a CurveOnSurface by specifying the surface, the space curve and the curve in the parameter plane. The arguments are checked for consistency, and if they appear incoherent, an exception will be thrown. Does not clone any of the input, just sets (smart) pointers.

Parameters

surf	pointer to the underlying surface
pcurve	pointer to the curve representing the CurveOnSurface in the parametric domain of the surface.
spacecurve	pointer to the curve that is the spatial (3D) representation of the CurveOnSurface.
preferparameter	specify whether the parametric curve or the space curve are preferred for internal computations.
ccm	curve creation method. Specify how curve was created. 0 = undefined, 1 = projection onto surface, 2 = intersection of two surfaces, 3 = isoparametric curve (i.e. either a u-curve or a v-curve).

29.82.2.7 Go::CurveOnSurface::CurveOnSurface (const CurveOnSurface & *surface_curve*)

Copy constructor. The copy constructor will not clone() the underlying surface, but it will clone() both the parametric and the spatial curve.

Parameters

surface_curve	the CurveOnSurface to copy into 'this' CurveOnSurface.

29.82.2.8 virtual Go::CurveOnSurface::~CurveOnSurface ( ) [virtual]

Destructor. Trivial because memory is managed by shared_ptr.

29.82.3 Member Function Documentation

29.82.3.1 virtual void Go::CurveOnSurface::appendCurve (ParamCurve * *cv*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparametrization NB: This virtual member function currently only works for SplineCurves and CurveOnSurfaces. Moreover, 'this' curve and the 'cv' curve must be of the same type.

Parameters

cv	the curve to append to 'this' curve.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.82.3.2 virtual void Go::CurveOnSurface::appendCurve (ParamCurve * *cv*, int *continuity*, double & *dist*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparmetrization

Parameters

cv	the curve to append to 'this' curve.
continuity	the required continuity at the transition. Can be G^(-1) and upwards.
dist	a measure of the local distorsion around the transition in order to achieve the specified continuity.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.82.3.3 virtual BoundingBox Go::CurveOnSurface::boundingBox ( ) const [virtual]

Axis align box surrounding this object Computed with respect to the space curve if this one exists, otherwise the underlying surface

Implements Go::GeomObject.

29.82.3.4 static ClassType Go::CurveOnSurface::classType ( ) [inline], [static]

Definition at line 159 of file CurveOnSurface.h.

29.82.3.5 virtual CurveOnSurface* Go::CurveOnSurface::clone ( ) const [inline], [virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::ParamCurve.

Definition at line 174 of file CurveOnSurface.h.

29.82.3.6 virtual void Go::CurveOnSurface::closestPoint (const Point & *pt*, double *tmin*, double *tmax*, double & *clo_t*, Point & *clo_pt*, double & *clo_dist*, double const * *seed* = 0) const [virtual]

Compute the closest point from an interval of this curve to a specified point.

Parameters

pt	point we want to find the closest point to
tmin	start parameter of search interval
tmax	end parameter of search interval
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.
seed	pointer to initial guess value, provided by the user (can be 0, for which the algorithm will determine a (hopefully) reasonable choice).

Implements Go::ParamCurve.

29.82.3.7 RectDomain Go::CurveOnSurface::containingDomain ( ) const

Get the rectangle enclosing the underlying surface's parametric domain.

Returns

the RectDomain for the underlying surface.

29.82.3.8 int Go::CurveOnSurface::curveCreationMethod ( ) const

Return curve creation method 0 = undefined, 1 = projection onto surface, 2 = intersection of two surfaces, 3 = isoparametric curve (i.e. either a u-curve or a v-curve).

29.82.3.9 virtual int Go::CurveOnSurface::dimension ( ) const [virtual]

Dimension of geometry space.

Implements Go::GeomObject.

29.82.3.10 virtual DirectionCone Go::CurveOnSurface::directionCone ( ) const [virtual]

Cone surrounding the set of tangent directions corresponding to the surface. Only computed if the space curve exists

Implements Go::ParamCurve.

29.82.3.11 void Go::CurveOnSurface::enableSameOrientation ( )

Make sure that the curves have the same orientation.

29.82.3.12 virtual double Go::CurveOnSurface::endparam ( ) const [virtual]

Query the end parameter of the curve

Returns

the curve's end parameter

Implements Go::ParamCurve.

29.82.3.13 bool Go::CurveOnSurface::ensureParCrvExistence (double *epsgeo*, const RectDomain * *domain_of_interest* = NULL, const Point * *start_par_pt* = NULL, const Point * *end_par_pt* = NULL)

Generate parameter curve if it doesn't exist Opptionally include start and/or end parameter point.

29.82.3.14 bool Go::CurveOnSurface::ensureSpaceCrvExistence (double *tol*)

Generate space curve if it doesn't exist.

29.82.3.15 Point Go::CurveOnSurface::faceParameter (double *crv_par*, const RectDomain * *domain_of_interest* = NULL) const

Fetch the surface parameter corresponding to a curve parameter.

29.82.3.16 virtual SplineCurve* Go::CurveOnSurface::geometryCurve ( ) [virtual]

If the definition of this ParamCurve contains a SplineCurve describing its spatial shape, then this function will return a pointer to this SplineCurve. Otherwise it will return a null pointer. The returned curve is NEWed, so the user is responsible for deleting it. This function may have side-effects.

Returns

a pointer to a SplineCurve representation of the ParamCurve, if it exists. Null pointer otherwise.

Implements Go::ParamCurve.

29.82.3.17 void Go::CurveOnSurface::getConstantCurveInfo (int & *constdir,* double & *constval,* int & *bd,* bool & *same_orientation*) const [inline]

Fetch recorded constant curve information.

Definition at line 417 of file CurveOnSurface.h.

29.82.3.18 int Go::CurveOnSurface::getCurveTypeInfo ( ) [inline]

Definition at line 323 of file CurveOnSurface.h.

29.82.3.19 virtual ClassType Go::CurveOnSurface::instanceType ( ) const [virtual]

Type of current object.

Implements Go::GeomObject.

29.82.3.20 virtual bool Go::CurveOnSurface::isAxisRotational (Point & *centre,* Point & *axis,* Point & *vec,* double & *angle*) [virtual]

Check if the curve is axis rotational. Only true if a connection to an axis rotational elementary curve exist The axis and rotational angle is only specified if the curve is actually rotational

Reimplemented from Go::ParamCurve.

29.82.3.21 bool Go::CurveOnSurface::isConstantCurve ( ) const [inline]

Check if the curve is a constant parameter curve and marked as such.

Definition at line 407 of file CurveOnSurface.h.

29.82.3.22 bool Go::CurveOnSurface::isConstantCurve (double *tol,* int & *pardir,* double & *parval*) const

Check if the curve is a constant parameter curve with regard to the parameter tol

29.82.3.23 virtual bool Go::CurveOnSurface::isDegenerate (double *degenerate_epsilon*) [virtual]

Query whether the curve is degenerate (collapsed into a single point).

Parameters

degenerate_epsilon	the tolerance used in determine whether the curve is degenerate. A curve is considered degenerate if its total length is shorter than this value.

Returns

`true` if the curve is degenerate, `false` otherwise.

Implements Go::ParamCurve.

29.82.3.24 virtual bool Go::CurveOnSurface::isInPlane (const Point & *loc,* const Point & *axis,* double *eps,* Point & *normal*) const [virtual]

Check if the curve lies in a plane passing through a given axis.

Reimplemented from Go::ParamCurve.

29.82.3.25 virtual bool Go::CurveOnSurface::isInPlane (const Point & *norm,* double *eps,* Point & *pos*) const [virtual]

Check if the curve lies in a plane with a given normal.

Reimplemented from Go::ParamCurve.

29.82.3.26 virtual bool Go::CurveOnSurface::isLinear (Point & *dir,* double *tol*) [virtual]

Check if the curve is linear.

Reimplemented from Go::ParamCurve.

29.82.3.27 virtual double Go::CurveOnSurface::length (double *tol*) [virtual]

Compute the total length of this curve up to some tolerance

Parameters

tol	the relative tolerance when approximating the length, i.e. stop iteration when error becomes smaller than tol/(curve length)

Returns

the length calculated

Implements Go::ParamCurve.

29.82.3.28 void Go::CurveOnSurface::makeCurvesConsistent (bool *prefer_parameter*)

29.82.3.29 bool Go::CurveOnSurface::makeParameterCurve (double *tol*, const Point & *par1*, const Point & *par2*)

Make parameter curve between given end parameters.

29.82.3.30 double Go::CurveOnSurface::maxTraceDiff (int *nmb_sample* = 5) const

Maximum distance between curve represented by parameter curve and space curve in a number of sampling points

29.82.3.31 virtual double Go::CurveOnSurface::nextSegmentVal (double *par*, bool *forward*, double *tol*) const [virtual]

Inherited from ParamCurve. If the parametric curve is set to be the 'prefered' one, this function will return the next segment value for the parametric curve; otherwise it will return the next segment value for the spatial 3D curve. See also ParamCurve::nextSegmentVal()

Reimplemented from Go::ParamCurve.

29.82.3.32 CurveOnSurface& Go::CurveOnSurface::operator= (const CurveOnSurface & *other*)

Assignment operator. Like the copy constructor, the assignment operator clone()s the curves, and not the surface.

Parameters

other	the CurveOnSurface to copy into 'this' CurveOnSurface.

29.82.3.33 shared_ptr<ParamCurve> Go::CurveOnSurface::parameterCurve ( ) [inline]

Get a shared pointer to the curve in the parameter domain.

Returns

a shared pointer to the curve in the parameter domain

Definition at line 360 of file CurveOnSurface.h.

29.82.3.34 shared_ptr<const ParamCurve> Go::CurveOnSurface::parameterCurve ( ) const [inline]

Get a constant, shared pointer to the curve in the parameter domain.

Returns

a const-pointer to the curve in the parameter domain.

Definition at line 375 of file CurveOnSurface.h.

29.82.3.35 bool Go::CurveOnSurface::parPref ( ) const [inline]

Query whether the parameter curve or the space curve is prefered for computation in this object.

Definition at line 385 of file CurveOnSurface.h.

29.82.3.36 virtual void Go::CurveOnSurface::point (Point & *pt,* double *tpar*) const [virtual]

Evaluate the curve's position at a given parameter

Parameters

pt	the evaluated position will be written to this Point
tpar	the parameter for which we wish to evaluate the curve

Implements Go::ParamCurve.

29.82.3.37 virtual void Go::CurveOnSurface::point (std::vector< Point > & *pts,* double *tpar,* int *derivs,* bool *from_right* = true) const [virtual]

Inherited from ParamCurve. Only works for 'derivs' = 0 or 1.

See also

ParamCurve::point()

Implements Go::ParamCurve.

29.82.3.38 virtual void Go::CurveOnSurface::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.82.3.39 virtual void Go::CurveOnSurface::reverseParameterDirection (bool *switchparam* = false) [virtual]

Set the parameter direction of the curve. The curve's parameter interval will always remain constant, but by flipping the parameter direction, the curve will be traced the opposite way when moving a parameter over the parameter interval.

Parameters

switchparam	if true, and the curve is 2D, the x and y coordinates should be swapped. This is used when turning the orientation of bounded (trimmed) surfaces.

Implements Go::ParamCurve.

29.82.3.40 bool Go::CurveOnSurface::sameCurve (double *tol,* int *nmb_sample* = 5) const

Legality test regarding the consistence of geometry and parameter curve. Check if the two curves represent identical curves with respect to the tolerance tol. Pointwise check.

29.82.3.41 bool Go::CurveOnSurface::sameOrientation ( ) const

Legality test regarding the consistence of geometry and parameter curve. Check if the two curves have the same orientation

29.82.3.42 bool Go::CurveOnSurface::sameParameterDomain ( ) const

Legality test regarding the consistence of geometry and parameter curve. Check if the curves have got the same parameter domain

29.82.3.43 bool Go::CurveOnSurface::sameTrace (double *tol,* int *nmb_sample* = 5) const

Legality test regarding the consistence of geometry and parameter curve. Check if the two curves describe the same trace with respect to the tolerance tol. Pointwise check.

29.82.3.44 void Go::CurveOnSurface::setCurves (shared_ptr< ParamCurve > *spacecurve,* shared_ptr< ParamCurve > *parametercurve*) [inline]

Replace the curves describing the curve on surface. The curve preference is not changed

Definition at line 253 of file CurveOnSurface.h.

29.82.3.45 void Go::CurveOnSurface::setCurveTypeInfo (int *ccm*) [inline]

Set curve information.

Definition at line 318 of file CurveOnSurface.h.

29.82.3.46 bool Go::CurveOnSurface::setDomainParCrv (double *umin,* double *umax,* double *vmin,* double *vmax,* double *uminprev,* double *umaxprev,* double *vminprev,* double *vmaxprev*)

Represent the parameter curve associated with this surface curve on a different domain

29.82.3.47 void Go::CurveOnSurface::setParameterCurve (shared_ptr< ParamCurve > *parametercurve*) [inline]

Replace the parameter curve corresponding to this curve on surface curve. Used for instance in relation to reparameterizations of the related surface. Use with care!

Definition at line 270 of file CurveOnSurface.h.

29.82.3.48 virtual void Go::CurveOnSurface::setParameterInterval (double *t1*, double *t2*) [virtual]

Linear reparametrization. The meaning is changed for elementary curves.

Implements Go::ParamCurve.

29.82.3.49 void Go::CurveOnSurface::setParPref (bool *prefer*) [inline]

Definition at line 388 of file CurveOnSurface.h.

29.82.3.50 void Go::CurveOnSurface::setSpaceCurve (shared_ptr< ParamCurve > *spacecurve*) [inline]

Replace the space curve corresponding to this curve on surface curve. Use with care!

Definition at line 262 of file CurveOnSurface.h.

29.82.3.51 void Go::CurveOnSurface::setUnderlyingSurface (shared_ptr< ParamSurface > *surface*) [inline]

Set the underlying surface to the one pointed to by the argument

Parameters

surface	the pointer to the surface we will set as underlying for this CurveOnSurface.

Definition at line 248 of file CurveOnSurface.h.

29.82.3.52 shared_ptr<ParamCurve> Go::CurveOnSurface::spaceCurve ( ) [inline]

Get a shared pointer to the space curve

Returns

a shared pointer to the space curve.

Definition at line 365 of file CurveOnSurface.h.

29.82.3.53 shared_ptr<const ParamCurve> Go::CurveOnSurface::spaceCurve ( ) const [inline]

Get a constant, shared pointer to the space curve

Returns

a const-shared pointer to the space curve.

Definition at line 380 of file CurveOnSurface.h.

29.82.3.54 virtual std::vector<shared_ptr<ParamCurve> > Go::CurveOnSurface::split (double *param*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Split curve in a specified parameter value.

Reimplemented from Go::ParamCurve.

29.82.3.55 virtual double Go::CurveOnSurface::startparam ( ) const [virtual]

Query the start parameter of the curve

Returns

the curve's start parameter

Implements Go::ParamCurve.

29.82.3.56 virtual CurveOnSurface* Go::CurveOnSurface::subCurve (double *from_par*, double *to_par*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implements Go::ParamCurve.

29.82.3.57 bool Go::CurveOnSurface::translateParameterCurve (const Point & *dir*)

Translate an existing parameter curve in a given direction Return value: Whether or not the tranlation was possible

29.82.3.58 bool Go::CurveOnSurface::translateSwapParameterCurve (const Point & *dir,* double *sgn,* int *pdir*)

Translate an existing parameter curve in a given direction and swap sign is specified Return value: Whether or not the tranlation was possible

29.82.3.59 shared_ptr<ParamSurface> Go::CurveOnSurface::underlyingSurface ( ) [inline]

Get a shared pointer to the underlying surface

Returns

a shared pointer to the underlying surface

Definition at line 355 of file CurveOnSurface.h.

29.82.3.60 shared_ptr<const ParamSurface> Go::CurveOnSurface::underlyingSurface ( ) const [inline]

Get a constant, shared pointer to the underlying surface

Returns

a const-pointer to the underlying surface

Definition at line 370 of file CurveOnSurface.h.

29.82.3.61 void Go::CurveOnSurface::unsetParameterCurve ( ) [inline]

Remove parameter curve information.

Definition at line 276 of file CurveOnSurface.h.

29.82.3.62 void Go::CurveOnSurface::unsetSpaceCurve ( ) [inline]

Remove space curve information.

Definition at line 308 of file CurveOnSurface.h.

29.82.3.63 bool Go::CurveOnSurface::updateCurves (double *epsge*)

Update curves. Reapproximate the dependent curve within the tolerance epsge.

29.82.3.64 bool Go::CurveOnSurface::updateCurves (Point *vx1,* Point *vx2,* double *epsge*)

Update curves.

29.82.3.65 bool Go::CurveOnSurface::updateIsoCurves ( )

Update constant parameter curves.

29.82.3.66 bool Go::CurveOnSurface::updateIsoCurves (int *constdir,* double *constpar,* int *boundary*)

Update constant parameter curves. New constant parameter curve information is provided. Used in for instance change of parameter directions in the associated surface

29.82.3.67 int Go::CurveOnSurface::whichBoundary (double *tol,* bool & *same_orientation*) const

Check if this curve lies at a surface boundary, in that case which one -1 = none, 0 = umin, 1 = umax, 2 = vmin, 3 = vmax NB! same_orientation is set only if the curve is defined to lie at constant parameter curve. Set to 'false' if direction is opposite that of the surface.

29.82.3.68 virtual void Go::CurveOnSurface::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

The documentation for this class was generated from the following file:

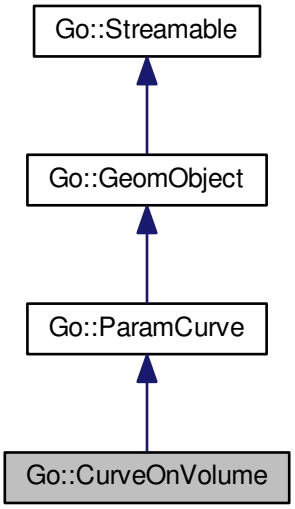
- gotools-core/include/GoTools/geometry/CurveOnSurface.h

29.83 Go::CurveOnVolume Class Reference

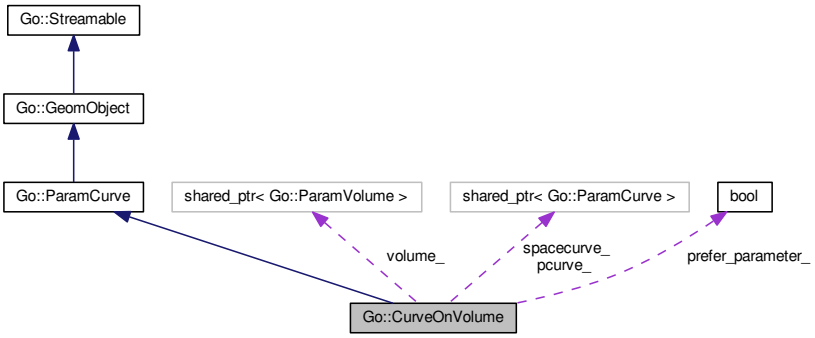
A curve living on a parametric volume. It either has got information about the curve in geometry space and in the parameter domain of the volume or the ability to compute the other representation given one.

`#include <CurveOnVolume.h>`

Inheritance diagram for Go::CurveOnVolume:



Collaboration diagram for Go::CurveOnVolume:



Public Member Functions

- CurveOnVolume ()
- CurveOnVolume (shared_ptr< ParamVolume > vol, shared_ptr< ParamCurve > curve, bool preferparameter)
- CurveOnVolume (shared_ptr< ParamVolume > vol, shared_ptr< ParamCurve > pcurve, shared_ptr< ParamCurve > spacecurve, bool preferparameter)
- CurveOnVolume (const CurveOnVolume &volume_curve)
- CurveOnVolume & operator= (const CurveOnVolume &other)
- virtual ~CurveOnVolume ()
- virtual void read (std::istream &is)

- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const
- virtual DirectionCone directionCone () const
- virtual int dimension () const

  Dimension of geometry space.
- virtual ClassType instanceType () const

  Type of current object.
- virtual CurveOnVolume * clone () const
- virtual void point (Point &pt, double tpar) const
- virtual void point (std::vector< Point > &pts, double tpar, int derivs, bool from_right=true) const
- virtual double startparam () const
- virtual double endparam () const
- virtual void reverseParameterDirection (bool switchparam=false)
- virtual void setParameterInterval (double t1, double t2)

  Linear reparametrization. The meaning is changed for elementary curves.
- virtual SplineCurve * geometryCurve ()
- virtual bool isDegenerate (double degenerate_epsilon)
- virtual CurveOnVolume * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMET↩ER_EPSILON) const
- virtual std::vector< shared_ptr< ParamCurve > > split (double param, double fuzzy=DEFAULT_PARAM↩ETER_EPSILON) const

  Split curve in a specified parameter value.
- virtual void closestPoint (const Point &pt, double tmin, double tmax, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const
- virtual double length (double tol)
- virtual void appendCurve (ParamCurve *cv, bool reparam=true)
- virtual void appendCurve (ParamCurve *cv, int continuity, double &dist, bool reparam=true)
- void setUnderlyingVolume (shared_ptr< ParamVolume > volume)
- void setCurves (shared_ptr< ParamCurve > spacecurve, shared_ptr< ParamCurve > parametercurve)
- void setSpaceCurve (shared_ptr< ParamCurve > spacecurve)
- void setParameterCurve (shared_ptr< ParamCurve > parametercurve)
- void unsetParameterCurve ()

  Remove parameter curve information.
- void unsetSpaceCurve ()

  Remove space curve information.
- virtual double nextSegmentVal (double par, bool forward, double tol) const
- shared_ptr< ParamVolume > underlyingVolume ()
- shared_ptr< ParamCurve > parameterCurve ()
- shared_ptr< ParamCurve > spaceCurve ()
- shared_ptr< const ParamVolume > underlyingVolume () const
- shared_ptr< const ParamCurve > parameterCurve () const
- shared_ptr< const ParamCurve > spaceCurve () const
- bool parPref () const
- void setParPref (bool prefer)
- RectDomain containingDomain () const
- Point volumeParameter (double crv_par, const RectDomain *domain_of_interest=NULL) const

  Fetch the volume parameter corresponding to a curve parameter.

Static Public Member Functions

- static ClassType classType ()

Protected Attributes

- shared_ptr< ParamVolume > volume_

  The underlying volume.
- shared_ptr< ParamCurve > pcurve_
- shared_ptr< ParamCurve > spacecurve_

  An instance of the curve in the volume. May point to null.
- bool prefer_parameter_

  Which representation to prefer if both exist.

Additional Inherited Members

29.83.1 Detailed Description

A curve living on a parametric volume. It either has got information about the curve in geometry space and in the parameter domain of the volume or the ability to compute the other representation given one.

Definition at line 60 of file CurveOnVolume.h.

29.83.2 Constructor & Destructor Documentation

29.83.2.1 Go::CurveOnVolume::CurveOnVolume ( )

Define an empty CurveOnVolume that can be assigned or read() into

29.83.2.2 Go::CurveOnVolume::CurveOnVolume (shared_ptr< **ParamVolume** > *vol*, shared_ptr< **ParamCurve** > *curve*, **bool** *preferparameter*)

Construct a CurveOnVolume by specifying the volume and either a space curve or a curve in the parameter plane. Does not clone any of the input, just sets (smart) pointers.

Parameters

vol	pointer to the underlying volume
curve	pointer to the curve specifying the CurveOnVolume. This curve may either be in the parametric domain of the volume (3D curve), or a space curve that the user has assured to be coincident with the volume. 'preferparameter' specifies which kind of curve this is.
preferparameter	if this is set to 'true', then 'curve' is assumed to be a curve in the parametric domain of the surface. Otherwise, it is assumed to be a space (3D) curve.

29.83.2.3 Go::CurveOnVolume::CurveOnVolume (shared_ptr< **ParamVolume** > *vol*, shared_ptr< **ParamCurve** > *pcurve*, shared_ptr< **ParamCurve** > *spacecurve*, **bool** *preferparameter*)

29.83.2.4 Go::CurveOnVolume::CurveOnVolume (**const CurveOnVolume** & *volume_curve*)

Copy constructor. The copy constructor will not clone() the underlying volume, but it will clone() both the parametric and the spatial curve.

Parameters

volume_curve	the CurveOnVolume to copy into 'this' CurveOnVolume.

29.83.2.5 virtual Go::CurveOnVolume::~CurveOnVolume ( ) [virtual]

Destructor. Trivial because memory is managed by shared_ptr.

29.83.3 Member Function Documentation

29.83.3.1 virtual void Go::CurveOnVolume::appendCurve (ParamCurve * *cv*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparametrization NB: This virtual member function currently only works for SplineCurves and CurveOnSurfaces. Moreover, 'this' curve and the 'cv' curve must be of the same type.

Parameters

cv	the curve to append to 'this' curve.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.83.3.2 virtual void Go::CurveOnVolume::appendCurve (ParamCurve * *cv*, int *continuity*, double & *dist*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparmetrization

Parameters

cv	the curve to append to 'this' curve.
continuity	the required continuity at the transition. Can be G^(-1) and upwards.
dist	a measure of the local distorsion around the transition in order to achieve the specified continuity.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.83.3.3 virtual BoundingBox Go::CurveOnVolume::boundingBox ( ) const [virtual]

Axis align box surrounding this object Computed with respect to the space curve if this one exists, otherwise the underlying surface

Implements Go::GeomObject.

29.83.3.4 static ClassType Go::CurveOnVolume::classType ( ) [inline], [static]

Definition at line 124 of file CurveOnVolume.h.

29.83.3.5 virtual CurveOnVolume* Go::CurveOnVolume::clone ( ) const [inline], [virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::ParamCurve.

Definition at line 130 of file CurveOnVolume.h.

29.83.3.6 virtual void Go::CurveOnVolume::closestPoint (const Point & *pt*, double *tmin*, double *tmax*, double & *clo_t*, Point & *clo_pt*, double & *clo_dist*, double const * *seed* = 0) const [virtual]

Compute the closest point from an interval of this curve to a specified point.

Parameters

pt	point we want to find the closest point to
tmin	start parameter of search interval
tmax	end parameter of search interval
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.
seed	pointer to initial guess value, provided by the user (can be 0, for which the algorithm will determine a (hopefully) reasonable choice).

Implements Go::ParamCurve.

29.83.3.7 RectDomain Go::CurveOnVolume::containingDomain ( ) const

Get the rectangle enclosing the underlying volume's parametric domain.

Returns

the RectDomain for the underlying volume.

29.83.3.8 virtual int Go::CurveOnVolume::dimension ( ) const [virtual]

Dimension of geometry space.

Implements Go::GeomObject.

29.83.3.9 virtual DirectionCone Go::CurveOnVolume::directionCone ( ) const [virtual]

Cone surrounding the set of tangent directions corresponding to the surface. Only computed if the space curve exists

Implements Go::ParamCurve.

29.83.3.10 virtual double Go::CurveOnVolume::endparam ( ) const [virtual]

Query the end parameter of the curve

Returns

the curve's end parameter

Implements Go::ParamCurve.

29.83.3.11 virtual SplineCurve* Go::CurveOnVolume::geometryCurve ( ) [virtual]

If the definition of this ParamCurve contains a SplineCurve describing its spatial shape, then this function will return a pointer to this SplineCurve. Otherwise it will return a null pointer. The returned curve is NEWed, so the user is responsible for deleting it. This function may have side-effects.

Returns

a pointer to a SplineCurve representation of the ParamCurve, if it exists. Null pointer otherwise.

Implements Go::ParamCurve.

29.83.3.12 virtual ClassType Go::CurveOnVolume::instanceType ( ) const [virtual]

Type of current object.

Implements Go::GeomObject.

29.83.3.13 virtual bool Go::CurveOnVolume::isDegenerate (double *degenerate_epsilon*) [virtual]

Query whether the curve is degenerate (collapsed into a single point).

Parameters

degenerate_epsilon	the tolerance used in determine whether the curve is degenerate. A curve is considered degenerate if its total length is shorter than this value.

Returns

`true` if the curve is degenerate, `false` otherwise.

Implements Go::ParamCurve.

29.83.3.14 virtual double Go::CurveOnVolume::length (double *tol*) [virtual]

Compute the total length of this curve up to some tolerance

Parameters

tol	the relative tolerance when approximating the length, i.e. stop iteration when error becomes smaller than tol/(curve length)

Returns

the length calculated

Implements Go::ParamCurve.

29.83.3.15 virtual double Go::CurveOnVolume::nextSegmentVal (double *par,* bool *forward,* double *tol*) const [virtual]

Inherited from ParamCurve. If the parametric curve is set to be the 'prefered' one, this function will return the next segment value for the parametric curve; otherwise it will return the next segment value for the spatial 3D curve. See also ParamCurve::nextSegmentVal()

Reimplemented from Go::ParamCurve.

29.83.3.16 CurveOnVolume& Go::CurveOnVolume::operator= (const CurveOnVolume & *other*)

Assignment operator. Like the copy constructor, the assignment operator clone()s the curves, and not the volume.

Parameters

other	the CurveOnVolume to copy into 'this' CurveOnVolume.

29.83.3.17 shared_ptr<ParamCurve> Go::CurveOnVolume::parameterCurve ( ) [inline]

Get a shared pointer to the curve in the parameter domain.

Returns

a shared pointer to the curve in the parameter domain

Definition at line 252 of file CurveOnVolume.h.

29.83.3.18 shared_ptr<const ParamCurve> Go::CurveOnVolume::parameterCurve ( ) const [inline]

Get a constant, shared pointer to the curve in the parameter domain.

Returns

a const-pointer to the curve in the parameter domain.

Definition at line 267 of file CurveOnVolume.h.

29.83.3.19 bool Go::CurveOnVolume::parPref ( ) const [inline]

Query whether the parameter curve or the space curve is prefered for computation in this object.

Definition at line 277 of file CurveOnVolume.h.

29.83.3.20 virtual void Go::CurveOnVolume::point (Point & *pt,* double *tpar*) const [virtual]

Evaluate the curve's position at a given parameter

Parameters

pt	the evaluated position will be written to this Point
tpar	the parameter for which we wish to evaluate the curve

Implements Go::ParamCurve.

29.83.3.21 virtual void Go::CurveOnVolume::point (std::vector< Point > & *pts,* double *tpar,* int *derivs,* bool *from_right* = true) const [virtual]

Inherited from ParamCurve. Only works for 'derivs' = 0 or 1.

See also

ParamCurve::point()

Implements Go::ParamCurve.

29.83.3.22 virtual void Go::CurveOnVolume::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.83.3.23 virtual void Go::CurveOnVolume::reverseParameterDirection (bool *switchparam* = false) [virtual]

Set the parameter direction of the curve. The curve's parameter interval will always remain constant, but by flipping the parameter direction, the curve will be traced the opposite way when moving a parameter over the parameter interval.

Parameters

switchparam	if true, and the curve is 2D, the x and y coordinates should be swapped. This is used when turning the orientation of bounded (trimmed) surfaces.

Implements Go::ParamCurve.

29.83.3.24 void Go::CurveOnVolume::setCurves (shared_ptr< ParamCurve > *spacecurve,* shared_ptr< ParamCurve > *parametercurve*) [inline]

Replace the curves describing the curve on volume. The curve preference is not changed

Definition at line 201 of file CurveOnVolume.h.

29.83.3.25 void Go::CurveOnVolume::setParameterCurve (shared_ptr< ParamCurve > *parametercurve*) [inline]

Replace the parameter curve corresponding to this curve on volume curve. Used for instance in relation to reparameterizations of the related volume. Use with care!

Definition at line 218 of file CurveOnVolume.h.

29.83.3.26 virtual void Go::CurveOnVolume::setParameterInterval (double *t1,* double *t2*) [virtual]

Linear reparametrization. The meaning is changed for elementary curves.

Implements Go::ParamCurve.

29.83.3.27 void Go::CurveOnVolume::setParPref (bool *prefer*) [inline]

Definition at line 280 of file CurveOnVolume.h.

29.83.3.28 void Go::CurveOnVolume::setSpaceCurve (shared_ptr< ParamCurve > *spacecurve*) [inline]

Replace the space curve corresponding to this curve on volume curve. Use with care!

Definition at line 210 of file CurveOnVolume.h.

29.83.3.29 void Go::CurveOnVolume::setUnderlyingVolume (shared_ptr< ParamVolume > *volume*) [inline]

Set the underlying surface to the one pointed to by the argument

Parameters

surface	the pointer to the surface we will set as underlying for this CurveOnVolume.

Definition at line 196 of file CurveOnVolume.h.

29.83.3.30 shared_ptr<ParamCurve> Go::CurveOnVolume::spaceCurve ( ) [inline]

Get a shared pointer to the space curve

Returns

a shared pointer to the space curve.

Definition at line 257 of file CurveOnVolume.h.

29.83.3.31 shared_ptr<const ParamCurve> Go::CurveOnVolume::spaceCurve ( ) const [inline]

Get a constant, shared pointer to the space curve

Returns

a const-shared pointer to the space curve.

Definition at line 272 of file CurveOnVolume.h.

29.83.3.32 virtual std::vector<shared_ptr<ParamCurve> > Go::CurveOnVolume::split (double *param*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Split curve in a specified parameter value.

Reimplemented from Go::ParamCurve.

29.83.3.33 virtual double Go::CurveOnVolume::startparam ( ) const [virtual]

Query the start parameter of the curve

Returns

the curve's start parameter

Implements Go::ParamCurve.

29.83.3.34 virtual CurveOnVolume* Go::CurveOnVolume::subCurve (double *from_par*, double *to_par*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implements Go::ParamCurve.

29.83.3.35 shared_ptr<ParamVolume> Go::CurveOnVolume::underlyingVolume ( ) [inline]

Get a shared pointer to the underlying volume

Returns

a shared pointer to the underlying volume

Definition at line 247 of file CurveOnVolume.h.

29.83.3.36 shared_ptr<const ParamVolume> Go::CurveOnVolume::underlyingVolume ( ) const [inline]

Get a constant, shared pointer to the underlying volume

Returns

a const-pointer to the underlying volume

Definition at line 262 of file CurveOnVolume.h.

29.83.3.37 void Go::CurveOnVolume::unsetParameterCurve ( ) [inline]

Remove parameter curve information.

Definition at line 224 of file CurveOnVolume.h.

29.83.3.38 void Go::CurveOnVolume::unsetSpaceCurve ( ) [inline]

Remove space curve information.

Definition at line 231 of file CurveOnVolume.h.

29.83.3.39 Point Go::CurveOnVolume::volumeParameter (double *crv_par,* const RectDomain * *domain_of_interest* = NULL) const

Fetch the volume parameter corresponding to a curve parameter.

29.83.3.40 virtual void Go::CurveOnVolume::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.83.4 Member Data Documentation

29.83.4.1 shared_ptr<ParamCurve> Go::CurveOnVolume::pcurve_ [protected]

The 2D curve in the parameter domain of the volume. May point to null.

Definition at line 297 of file CurveOnVolume.h.

29.83.4.2 bool Go::CurveOnVolume::prefer_parameter_ [protected]

Which representation to prefer if both exist.

Definition at line 301 of file CurveOnVolume.h.

29.83.4.3 shared_ptr<ParamCurve> Go::CurveOnVolume::spacecurve_ [protected]

An instance of the curve in the volume. May point to null.

Definition at line 299 of file CurveOnVolume.h.

29.83.4.4 shared_ptr<ParamVolume> Go::CurveOnVolume::volume_ [protected]

The underlying volume.

Definition at line 294 of file CurveOnVolume.h.

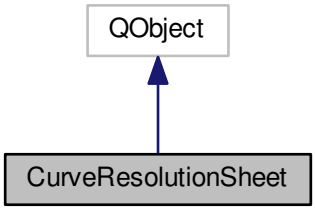
The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/CurveOnVolume.h

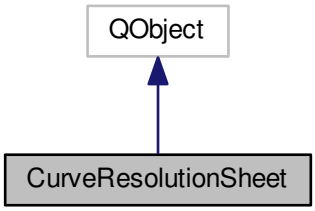
29.84 CurveResolutionSheet Class Reference

`#include <CurveResolutionSheet.h>`

Inheritance diagram for CurveResolutionSheet:



Collaboration diagram for CurveResolutionSheet:



Public Slots

- void ok ()

Signals

- void return_value (int)

Public Member Functions

- CurveResolutionSheet (int res=500)
- virtual void createSheet (QWidget *parent, gvObserver *obs)

29.84.1 Detailed Description

Ui_CurveResolutionSheet:

Definition at line 52 of file CurveResolutionSheet.h.

29.84.2 Constructor & Destructor Documentation

29.84.2.1 CurveResolutionSheet::CurveResolutionSheet (int *res* = 500) [inline]

Definition at line 58 of file CurveResolutionSheet.h.

29.84.3 Member Function Documentation

29.84.3.1 virtual void CurveResolutionSheet::createSheet (QWidget * *parent*, gvObserver * *obs*) [virtual]

29.84.3.2 void CurveResolutionSheet::ok ( ) [slot]

29.84.3.3 void CurveResolutionSheet::return_value (int) [signal]

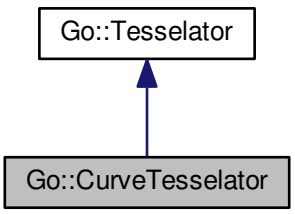
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/CurveResolutionSheet.h

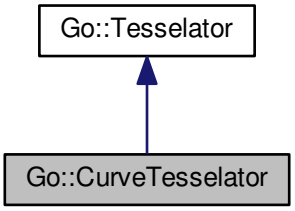
29.85 Go::CurveTesselator Class Reference

```
#include <CurveTesselator.h>
```

Inheritance diagram for Go::CurveTesselator:



Collaboration diagram for Go::CurveTesselator:



Public Member Functions

- CurveTesselator (const ParamCurve &curve)
  Constructor.
- virtual ~CurveTesselator ()
  Destructor.
- virtual void tesselate ()
  Perform tesselation. The density depends on the resolution.
- shared_ptr< LineStrip > getMesh ()
  Fetch the linear approximation represented as a LineStrip.
- void changeRes (int n)
  Set tesselation resolution (number of points to evaluate)
- void getRes (int &n)
  Fetch info about resolution.

29.85.1 Detailed Description

Tesselate curve to produce a linear approximation of the curve for visualization purposed

Definition at line 53 of file CurveTesselator.h.

29.85.2 Constructor & Destructor Documentation

29.85.2.1 Go::CurveTesselator::CurveTesselator (const ParamCurve & *curve*) [inline]

Constructor.

Definition at line 57 of file CurveTesselator.h.

29.85.2.2 virtual Go::CurveTesselator::~CurveTesselator ( ) [virtual]

Destructor.

29.85.3 Member Function Documentation

29.85.3.1 void Go::CurveTesselator::changeRes (int *n*) [inline]

Set tesselation resolution (number of points to evaluate)

Definition at line 84 of file CurveTesselator.h.

29.85.3.2 shared_ptr<LineStrip> Go::CurveTesselator::getMesh ( ) [inline]

Fetch the linear approximation represented as a LineStrip.

Definition at line 70 of file CurveTesselator.h.

29.85.3.3 void Go::CurveTesselator::getRes (int & *n*) [inline]

Fetch info about resolution.

Definition at line 90 of file CurveTesselator.h.

29.85.3.4 virtual void Go::CurveTesselator::tesselate ( ) [virtual]

Perform tesselation. The density depends on the resolution.

Implements Go::Tesselator.

The documentation for this class was generated from the following file:

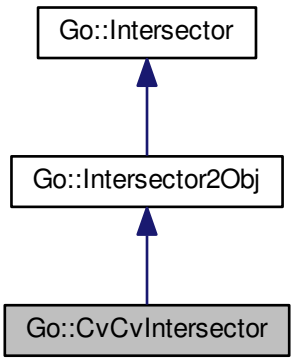
- gotools-core/include/GoTools/tesselator/CurveTesselator.h

29.86 Go::CvCvIntersector Class Reference

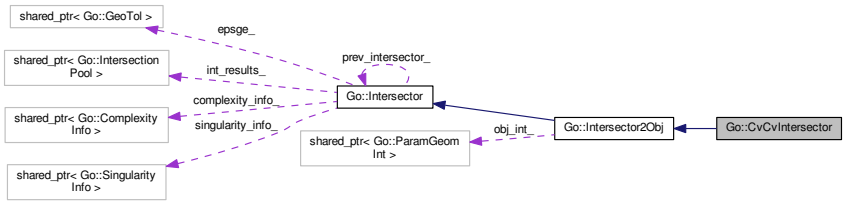
Class that performs intersection between two parametric curves.

`#include <CvCvIntersector.h>`

Inheritance diagram for Go::CvCvIntersector:



Collaboration diagram for Go::CvCvIntersector:



Public Member Functions

- CvCvIntersector (shared_ptr< ParamGeomInt > curve1, shared_ptr< ParamGeomInt > curve2, double epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- CvCvIntersector (shared_ptr< ParamGeomInt > curve1, shared_ptr< ParamGeomInt > curve2, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~CvCvIntersector ()

  Destructor.
- virtual int numParams () const

Protected Member Functions

- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual int performRotatedBoxTest (double eps1, double eps2)
- virtual bool foundIntersectionNearBoundary ()
- virtual int simpleCase2 (Point &axis1, Point &axis2)
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- virtual int linearCase ()
- virtual int doSubdivide ()
- virtual void writeOut ()

Additional Inherited Members

29.86.1 Detailed Description

Class that performs intersection between two parametric curves.

Definition at line 52 of file CvCvIntersector.h.

29.86.2 Constructor & Destructor Documentation

29.86.2.1 Go::CvCvIntersector::CvCvIntersector (shared_ptr< ParamGeomInt > *curve1*, shared_ptr< ParamGeomInt > *curve2*, double *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. The last two variables pertains only if the parent has one more parameter than the Intersector to be constructed.

Parameters

curve1	of type ParamCurveInt.
curve2	of type ParamCurveInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.86.2.2 Go::CvCvIntersector::CvCvIntersector (shared_ptr< ParamGeomInt > *curve1*, shared_ptr< ParamGeomInt > *curve2*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. The last two variables pertains only if the parent has one more parameter than the Intersector to be constructed.

Parameters

curve1	of type ParamCurveInt.
curve2	of type ParamCurveInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.86.2.3 virtual Go::CvCvIntersector::~CvCvIntersector ( ) [virtual]

Destructor.

29.86.3 Member Function Documentation

29.86.3.1 virtual int Go::CvCvIntersector::checkCoincidence ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.86.3.2 virtual int Go::CvCvIntersector::doSubdivide ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.86.3.3 virtual bool Go::CvCvIntersector::foundIntersectionNearBoundary ( ) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.86.3.4 virtual int Go::CvCvIntersector::linearCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.86.3.5 virtual shared_ptr<Intersector> Go::CvCvIntersector::lowerOrderIntersector (shared_ptr< ParamGeomInt > *obj1,* shared_ptr< ParamGeomInt > *obj2,* Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [virtual]

Implements Go::Intersector2Obj.

29.86.3.6 virtual void Go::CvCvIntersector::microCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.86.3.7 virtual int Go::CvCvIntersector::numParams ( ) const [inline], [virtual]

Return the number of parameter directions for the intersection.

Returns

The number of parameter directions for the intersection.

Implements Go::Intersector.

Definition at line 103 of file CvCvIntersector.h.

29.86.3.8 virtual int Go::CvCvIntersector::performRotatedBoxTest (double *eps1,* double *eps2*) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.86.3.9 virtual int Go::CvCvIntersector::repairIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 128 of file CvCvIntersector.h.

29.86.3.10 virtual int Go::CvCvIntersector::simpleCase2 (Point & *axis1,* Point & *axis2*) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.86.3.11 virtual int Go::CvCvIntersector::updateIntersections ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.86.3.12 virtual void Go::CvCvIntersector::writeOut ( ) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

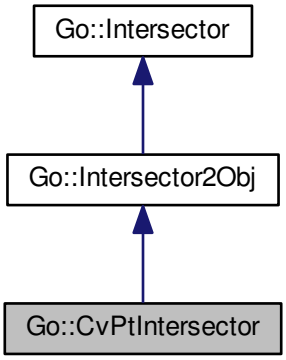
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/CvCvIntersector.h

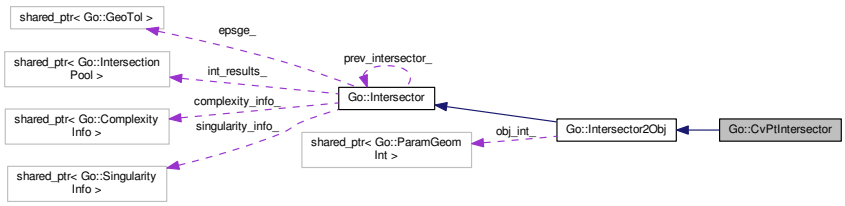
29.87 Go::CvPtIntersector Class Reference

`#include <CvPtIntersector.h>`

Inheritance diagram for Go::CvPtIntersector:



Collaboration diagram for Go::CvPtIntersector:



Public Member Functions

- CvPtIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- CvPtIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, double epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~CvPtIntersector ()

  Destructor.
- virtual int numParams () const

Protected Member Functions

- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- virtual int linearCase ()
- virtual int doSubdivide ()

Additional Inherited Members

29.87.1 Detailed Description

This class performs intersection between a parametric curve and a point.

Definition at line 53 of file CvPtIntersector.h.

29.87.2 Constructor & Destructor Documentation

29.87.2.1 Go::CvPtIntersector::CvPtIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. One of the objects should refer to a curve, the other a point (this is not checked compile-time, so we rely on the user to obey this rule). The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

obj1	either of type ParamCurveInt or ParamPointInt.
obj2	either of type ParamPointInt or ParamCurveInt (not the same type as *obj1*).
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index (0) of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.87.2.2 Go::CvPtIntersector::CvPtIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, double *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. One of the objects should refer a curve, the other a point (this is not checked compile-time, so we rely on the user to obey this rule). The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

obj1	either of type ParamCurveInt or ParamPointInt.

Parameters

obj2	either of type ParamPointInt or ParamCurveInt (not the same type as *obj1*).
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index (0) of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.87.2.3 virtual Go::CvPtIntersector::~CvPtIntersector ( ) [virtual]

Destructor.

29.87.3 Member Function Documentation

29.87.3.1 virtual int Go::CvPtIntersector::checkCoincidence ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.87.3.2 virtual int Go::CvPtIntersector::doSubdivide ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.87.3.3 virtual int Go::CvPtIntersector::linearCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.87.3.4 virtual shared_ptr<Intersector> Go::CvPtIntersector::lowerOrderIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [virtual]

Implements Go::Intersector2Obj.

29.87.3.5 virtual void Go::CvPtIntersector::microCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.87.3.6 virtual int Go::CvPtIntersector::numParams ( ) const [inline], [virtual]

Return the number of parameter directions for the object.

Returns

the number of parameter directions

Implements Go::Intersector.

Definition at line 110 of file CvPtIntersector.h.

29.87.3.7 virtual int Go::CvPtIntersector::repairIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 129 of file CvPtIntersector.h.

29.87.3.8 virtual int Go::CvPtIntersector::updateIntersections ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

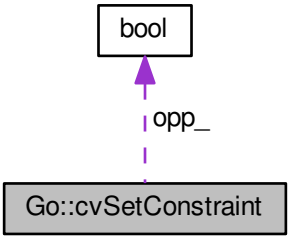
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/CvPtIntersector.h

29.88 Go::cvSetConstraint Struct Reference

`#include <SmoothCurveSet.h>`

Collaboration diagram for Go::cvSetConstraint:



Public Member Functions

- cvSetConstraint (int cv1_id, double cv1_par, int cv1_der, int cv2_id, double cv2_par, int cv2_der, bool opp)

Public Attributes

- int cv1_id_
  Index of first curve.
- double cv1_par_
  Parameter in first curve.
- int cv1_der_
  The derivative of first curve involved in the constraint.
- int cv2_id_
  Index of second curve.
- double cv2_par_
  Parameter in second curve.
- int cv2_der_
  The derivative of second curve involved in the constraint.
- bool opp_
  If true the evaluation of the second curve should be negated.

29.88.1 Detailed Description

Side constraint on modification of curve set. Defines a specific relations between two curves in given parameter values

Definition at line 51 of file SmoothCurveSet.h.

29.88.2 Constructor & Destructor Documentation

29.88.2.1 Go::cvSetConstraint::cvSetConstraint (int *cv1_id,* double *cv1_par,* int *cv1_der,* int *cv2_id,* double *cv2_par,* int *cv2_der,* bool *opp*) [inline]

Definition at line 58 of file SmoothCurveSet.h.

29.88.3 Member Data Documentation

29.88.3.1 int Go::cvSetConstraint::cv1_der_

The derivative of first curve involved in the constraint.

Definition at line 69 of file SmoothCurveSet.h.

29.88.3.2 int Go::cvSetConstraint::cv1_id_

Index of first curve.

Definition at line 65 of file SmoothCurveSet.h.

29.88.3.3 double Go::cvSetConstraint::cv1_par_

Parameter in first curve.

Definition at line 67 of file SmoothCurveSet.h.

29.88.3.4 int Go::cvSetConstraint::cv2_der_

The derivative of second curve involved in the constraint.

Definition at line 75 of file SmoothCurveSet.h.

29.88.3.5 int Go::cvSetConstraint::cv2_id_

Index of second curve.

Definition at line 71 of file SmoothCurveSet.h.

29.88.3.6 double Go::cvSetConstraint::cv2_par_

Parameter in second curve.

Definition at line 73 of file SmoothCurveSet.h.

29.88.3.7 bool Go::cvSetConstraint::opp_

If true the evaluation of the second curve should be negated.

Definition at line 77 of file SmoothCurveSet.h.

The documentation for this struct was generated from the following file:

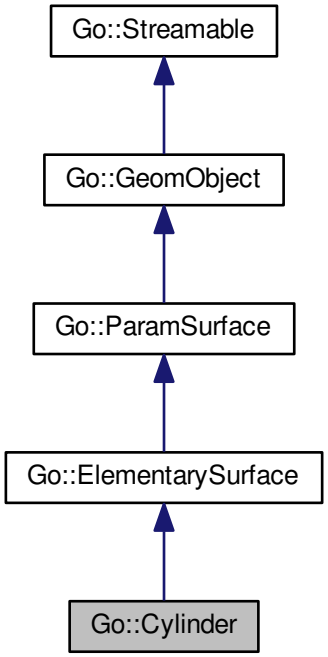
- gotools-core/include/GoTools/creators/SmoothCurveSet.h

29.89 Go::Cylinder Class Reference

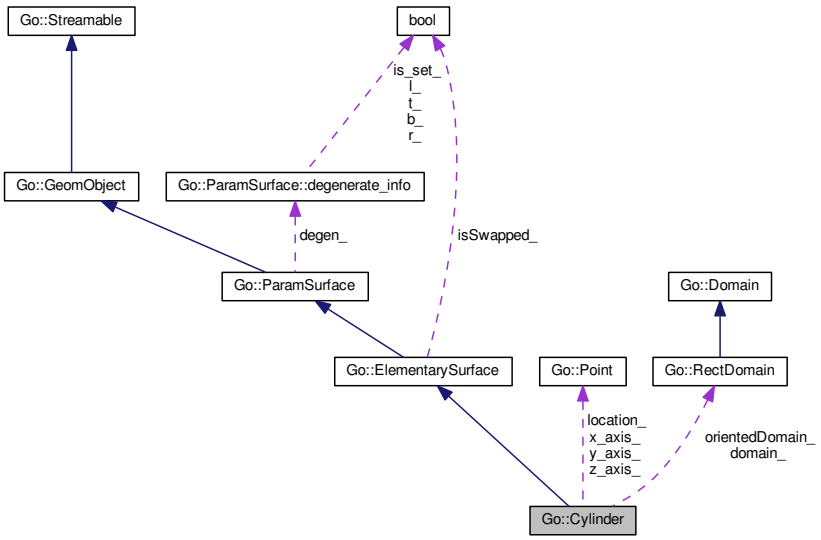
Class that represents a cylinder. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

`#include <Cylinder.h>`

Inheritance diagram for Go::Cylinder:



Collaboration diagram for Go::Cylinder:



Public Member Functions

- Cylinder ()
- Cylinder (double radius, Point location, Point z_axis, Point x_axis, bool isSwapped=false)
- virtual ~Cylinder ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return empty box if infinite cylinder.
- virtual Cylinder * clone () const
- const RectDomain & parameterDomain () const
- std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- DirectionCone normalCone () const
- DirectionCone tangentCone (bool pardir_is_u) const
- void point (Point &pt, double upar, double vpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_↩ from_right=true, double resolution=1.0e-12) const
- void normal (Point &n, double upar, double vpar) const
- std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- shared_ptr< ParamCurve > constParamCurve (double parameter, bool pardir_is_u, double from, double to) const
- std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const

- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for paralell and anti paralell partial derivatives in surface corners.
- virtual shared_ptr< ElementaryCurve > getElementaryParamCurve (ElementaryCurve *space_crv, double tol, const Point *start_par_pt=NULL, const Point *end_par_pt=NULL) const
- double getRadius () const

  Cylinder radius.
- Point getLocation () const

  Point on cylinder axis.
- void getCoordinateAxes (Point &x_axis, Point &y_axis, Point &z_axis) const

  Local coordinate axes. The z_axis corresponds to the cylinder axis.
- virtual void setParameterBounds (double from_upar, double from_vpar, double to_upar, double to_vpar)

  Limit the cylinder surface by limiting the parameter domain.
- void setParamBoundsU (double from_upar, double to_upar)
- void setParamBoundsV (double from_vpar, double to_vpar)
- bool isBounded () const
- bool isClosed (bool &closed_dir_u, bool &closed_dir_v) const

  Check if the surface is closed.
- Cylinder * subSurface (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual SplineSurface * geometrySurface () const

  Create a SplineSurface representation of the cylinder.
- virtual SplineSurface * createSplineSurface () const

  Create a SplineSurface representation of the cylinder.
- shared_ptr< Circle > getCircle (double par) const
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)

  Confirm that this surface is axis rotational.
- virtual bool isLinear (Point &dir1, Point &dir2, double tol)

  The surface is linear in one direction. Fetch it.
- void rotate (double rot_ang_rad)

  Rotate the cylinder (moving the seam given by the parametrization).

Static Public Member Functions

- static ClassType classType ()

Protected Member Functions

- void setCoordinateAxes ()

Protected Attributes

- double radius_
- Point location_
- Point z_axis_
- Point x_axis_
- Point y_axis_
- RectDomain domain_
- RectDomain orientedDomain_

29.89.1 Detailed Description

Class that represents a cylinder. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

A Cylinder has a natural parametrization in terms of the angle u and distance v: $\mathbf{p}(u, v) = \mathbf{C} + R(\cos(u)\,\mathbf{x} + \sin(u)\,\mathbf{y}) + v\,\mathbf{z}$, where **C** is a position vector, R is the radius, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $0 \leq u \leq 2\pi$, $-\infty < v < \infty$. The dimension is 3.

Definition at line 69 of file Cylinder.h.

29.89.2 Constructor & Destructor Documentation

29.89.2.1 Go::Cylinder::Cylinder ( ) [inline]

Default constructor. Constructs an uninitialized Cylinder which can only be assigned to or read into.

Definition at line 74 of file Cylinder.h.

29.89.2.2 Go::Cylinder::Cylinder (double *radius*, Point *location*, Point *z_axis*, Point *x_axis*, bool *isSwapped* = false)

Constructor. Input is the radius, the location, the direction of the z-axis and the (possibly approximate) x-axis. The local coordinate axes are normalized even if `z_axis` and/or `x_axis` are not unit vectors.

29.89.2.3 virtual Go::Cylinder::~Cylinder ( ) [virtual]

Virtual destructor - ensures safe inheritance.

29.89.3 Member Function Documentation

29.89.3.1 std::vector<CurveLoop> Go::Cylinder::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.89.3.2 virtual BoundingBox Go::Cylinder::boundingBox ( ) const [virtual]

Return empty box if infinite cylinder.

Implements Go::GeomObject.

29.89.3.3 static ClassType Go::Cylinder::classType ( ) [inline], [static]

Definition at line 101 of file Cylinder.h.

29.89.3.4 virtual Cylinder* Go::Cylinder::clone ( ) const [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementarySurface.

29.89.3.5 void Go::Cylinder::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.89.3.6 void Go::Cylinder::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.89.3.7 shared_ptr<ParamCurve> Go::Cylinder::constParamCurve (double *parameter,* bool *pardir_is_u,* double *from,* double *to*) const

29.89.3.8 std::vector<shared_ptr<ParamCurve> > Go::Cylinder::constParamCurves (double *parameter,* bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.89.3.9 virtual SplineSurface* Go::Cylinder::createSplineSurface ( ) const [virtual]

Create a SplineSurface representation of the cylinder.

Implements Go::ElementarySurface.

29.89.3.10 virtual int Go::Cylinder::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.89.3.11 virtual SplineSurface* Go::Cylinder::geometrySurface ( ) const [virtual]

Create a SplineSurface representation of the cylinder.

Implements Go::ElementarySurface.

29.89.3.12 void Go::Cylinder::getBoundaryInfo (Point & *pt1*, Point & *pt2*, double *epsilon*, SplineCurve *& *cv*, SplineCurve *& *crosscv*, double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.89.3.13 shared_ptr<Circle> Go::Cylinder::getCircle (double *par*) const

Get the circle that is given by fixing *v* (*u* if swapped) at the value *par*. Bounds in the u-direction (v-direction if swapped) will be preserved - thus the "circle" might be a circular arc.

Parameters

par	angular parameter where the circle is computed

Returns

Pointer to circle or circular arc

29.89.3.14 void Go::Cylinder::getCoordinateAxes (Point & *x_axis*, Point & *y_axis*, Point & *z_axis*) const [inline]

Local coordinate axes. The z_axis corresponds to the cylinder axis.

Definition at line 189 of file Cylinder.h.

29.89.3.15 virtual void Go::Cylinder::getDegenerateCorners (std::vector< Point > & *deg_corners,* double *tol*) const [virtual]

Check for paralell and anti paralell partial derivatives in surface corners.

Implements Go::ParamSurface.

29.89.3.16 virtual shared_ptr<ElementaryCurve> Go::Cylinder::getElementaryParamCurve (ElementaryCurve * *space_crv,* double *tol,* const Point * *start_par_pt* = NULL, const Point * *end_par_pt* = NULL) const [virtual]

Fetch the parameter curve in the domain of the elementary surface corresponding to a given elementary curve in geometry space if this curve has a simpler elementary representation. Otherwise, nothing is returned

Reimplemented from Go::ElementarySurface.

29.89.3.17 Point Go::Cylinder::getLocation ( ) const [inline]

Point on cylinder axis.

Definition at line 185 of file Cylinder.h.

29.89.3.18 double Go::Cylinder::getRadius ( ) const [inline]

Cylinder radius.

Definition at line 181 of file Cylinder.h.

29.89.3.19 virtual ClassType Go::Cylinder::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.89.3.20 virtual bool Go::Cylinder::isAxisRotational (Point & *centre,* Point & *axis,* Point & *vec,* double & *angle*) [virtual]

Confirm that this surface is axis rotational.

Reimplemented from Go::ParamSurface.

29.89.3.21 bool Go::Cylinder::isBounded ( ) const [virtual]

Query if parametrization is bounded. All four parameter bounds must be finite for this to be true.

Returns

true if bounded, *false* otherwise

Reimplemented from Go::ElementarySurface.

29.89.3.22 bool Go::Cylinder::isClosed (bool & *closed_dir_u,* bool & *closed_dir_v*) const [virtual]

Check if the surface is closed.

Reimplemented from Go::ElementarySurface.

29.89.3.23 bool Go::Cylinder::isDegenerate (bool & *b,* bool & *r,* bool & *t,* bool & *l,* double *tolerance*) const [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

29.89.3.24 virtual bool Go::Cylinder::isLinear (Point & *dir1,* Point & *dir2,* double *tol*) [virtual]

The surface is linear in one direction. Fetch it.

Reimplemented from Go::ParamSurface.

29.89.3.25 double Go::Cylinder::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.89.3.26 void Go::Cylinder::normal (Point & *n,* double *upar,* double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.89.3.27 DirectionCone Go::Cylinder::normalCone ( ) const [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.89.3.28 const RectDomain& Go::Cylinder::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.89.3.29 void Go::Cylinder::point (Point & *pt,* double *upar,* double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.89.3.30 void Go::Cylinder::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.89.3.31 virtual void Go::Cylinder::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.89.3.32 void Go::Cylinder::rotate (double *rot_ang_rad*)

Rotate the cylinder (moving the seam given by the parametrization).

29.89.3.33 void Go::Cylinder::setCoordinateAxes ( ) [protected]

29.89.3.34 void Go::Cylinder::setParamBoundsU (double *from_upar*, double *to_upar*)

Set parameter bounds in the *u* direction. *u* is the "angular" direction.

29.89.3.35 void Go::Cylinder::setParamBoundsV (double *from_vpar,* double *to_vpar*)

Set parameter bounds in the *v* direction. *v* is the "linear" direction.

29.89.3.36 virtual void Go::Cylinder::setParameterBounds (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar*) [virtual]

Limit the cylinder surface by limiting the parameter domain.

Implements Go::ElementarySurface.

29.89.3.37 Cylinder* Go::Cylinder::subSurface (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

29.89.3.38 std::vector<shared_ptr<ParamSurface> > Go::Cylinder::subSurfaces (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.89.3.39 DirectionCone Go::Cylinder::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.89.3.40 virtual void Go::Cylinder::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.89.4 Member Data Documentation

29.89.4.1 RectDomain Go::Cylinder::domain_ [protected]

Definition at line 252 of file Cylinder.h.

29.89.4.2 Point Go::Cylinder::location_ [protected]

Definition at line 247 of file Cylinder.h.

29.89.4.3 RectDomain Go::Cylinder::orientedDomain_ [mutable], [protected]

Definition at line 253 of file Cylinder.h.

29.89.4.4 double Go::Cylinder::radius_ [protected]

Definition at line 246 of file Cylinder.h.

29.89.4.5 Point Go::Cylinder::x_axis_ [protected]

Definition at line 249 of file Cylinder.h.

29.89.4.6 Point Go::Cylinder::y_axis_ [protected]

Definition at line 250 of file Cylinder.h.

29.89.4.7 Point Go::Cylinder::z_axis_ [protected]

Definition at line 248 of file Cylinder.h.

The documentation for this class was generated from the following file:

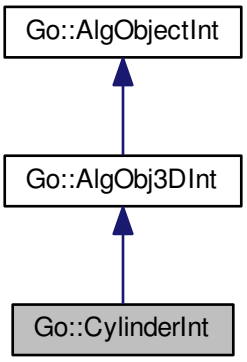
- gotools-core/include/GoTools/geometry/Cylinder.h

29.90 Go::CylinderInt Class Reference

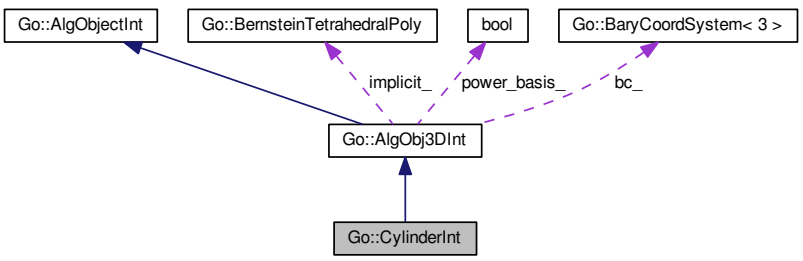
Class for cylindrical algebraic intersection objects.

`#include <CylinderInt.h>`

Inheritance diagram for Go::CylinderInt:



Collaboration diagram for Go::CylinderInt:



Public Member Functions

- CylinderInt ()
- CylinderInt (Point ax_pt, Point ax_dir, double radius)
- virtual ~CylinderInt ()

  Destructor.
- void read (std::istream &is)
- Point ax_pt () const
- Point ax_dir () const
- double radius () const
- SplineSurface * surface (Point bottom_pos, double height) const

Additional Inherited Members

29.90.1 Detailed Description

Class for cylindrical algebraic intersection objects.

Definition at line 56 of file CylinderInt.h.

29.90.2 Constructor & Destructor Documentation

29.90.2.1 Go::CylinderInt::CylinderInt ( )

Constructor. Used when reading from file.

29.90.2.2 Go::CylinderInt::CylinderInt (Point *ax_pt,* Point *ax_dir,* double *radius*)

Constructor.

Parameters

ax_pt	reference point on the center axis of the cylinder.
ax_dir	direction vector of the center axis of the cylinder.
radius	the radius of the cylinder.

29.90.2.3 virtual Go::CylinderInt::~CylinderInt ( ) [virtual]

Destructor.

29.90.3 Member Function Documentation

29.90.3.1 Point Go::CylinderInt::ax_dir ( ) const

Get the axis direction vector..

Returns

the axis direction vector.

29.90.3.2 Point Go::CylinderInt::ax_pt ( ) const

Get the axis reference point.

Returns

the axis reference point.

29.90.3.3 double Go::CylinderInt::radius ( ) const

Get the radius of the cylinder.

Returns

the radius of the cylinder.

29.90.3.4 void Go::CylinderInt::read (std::istream & *is*)

Read a cylinder description from file.

Parameters

is	the stream containing the cylinder description.

29.90.3.5 SplineSurface* Go::CylinderInt::surface (Point *bottom_pos*, double *height*) const

Get a SplineSurface representing the cylinder. This can be used to visualize the object. Since the object is to be tesselated we make sure it is bounded.

Parameters

bottom_pos	the lowest point on the direction axis.
height	the height of the cylinder.

Returns

The spline surface of the cylinder.

The documentation for this class was generated from the following file:

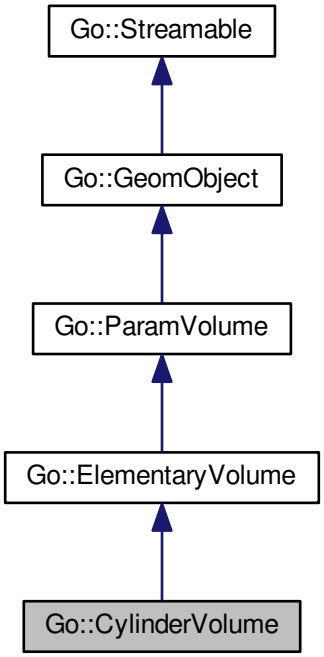
- intersections/include/GoTools/intersections/CylinderInt.h

29.91 Go::CylinderVolume Class Reference

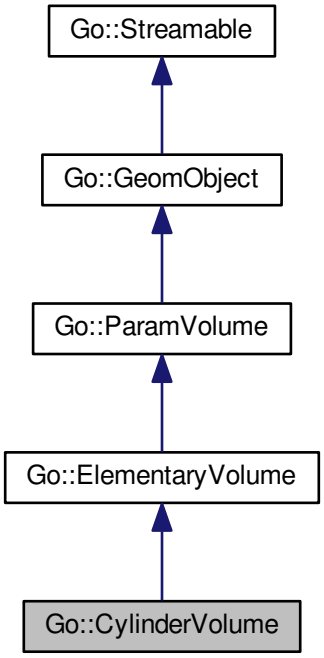
Class that represents a solid cylinder, maybe with empty interior like a straight tube. It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius *u*, an angle *v*, and distance *w:* **p**(*u*, *v*, *w*) = **C** + *u*(cos(*v*) **x** + sin(*v*) **y**) + *w* **z**, where **C** is a position vector, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $R \leq u \leq S$, $0 \leq v \leq 2\pi$, $-\infty < w < \infty$, where $Rand$ S are the inner and outer radius. The dimension is 3.

`#include <CylinderVolume.h>`

Inheritance diagram for Go::CylinderVolume:



Collaboration diagram for Go::CylinderVolume:



Public Member Functions

- CylinderVolume ()
- CylinderVolume (Point centre, double radius, Point normal, Point x_axis)
- virtual ~CylinderVolume ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual CylinderVolume * clone () const
- DirectionCone tangentCone (int pardir) const
- const Array< double, 6 > parameterSpan () const
- void point (Point &pt, double upar, double vpar, double wpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, double wpar, int derivs, bool u_from_right=true, bool v_from_right=true, bool w_from_right=true, double resolution=1.0e-12) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, double &clo_w, Point &clo_pt, double &clo_dist, double epsilon, double *seed=0) const
- void reverseParameterDirection (int pardir)

- void swapParameterDirection (int pardir1, int pardir2)
- virtual std::vector< shared_ptr< ParamSurface > > getAllBoundarySurfaces () const

  Fetch all boundary surfaces corresponding to the volume.
- virtual void translate (const Point &vec)

  Translate.
- SplineVolume * geometryVolume () const

  Make a NURBS representation of the object.
- void setParameters (double from_par, double to_par, int pardir)

  Restrict the size of the torus in one parameter direction.
- void useCentreDegen ()
- void useCornerDegen ()

Static Public Member Functions

- static ClassType classType ()

29.91.1 Detailed Description

Class that represents a solid cylinder, maybe with empty interior like a straight tube. It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius *u*, an angle *v*, and distance *w:* **p**(*u*, *v*, *w*) = **C** + *u*(cos(*v*) **x** + sin(*v*) **y**) + *w* **z**, where **C** is a position vector, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $R \leq u \leq S$, $0 \leq v \leq 2\pi$, $-\infty < w < \infty$, where $Rand$ S are the inner and outer radius. The dimension is 3.

Definition at line 66 of file CylinderVolume.h.

29.91.2 Constructor & Destructor Documentation

29.91.2.1 Go::CylinderVolume::CylinderVolume ( ) [inline]

Default constructor. Constructs an uninitialized CylinderVolume which can only be assigned to or read into.

Definition at line 71 of file CylinderVolume.h.

29.91.2.2 Go::CylinderVolume::CylinderVolume (Point *centre,* double *radius,* Point *normal,* Point *x_axis*)

Constructor. Input is the centre, outer radius, the normal and the x_axis (possibly approximate). The inner radius is set to 0, and the cylinder is set to have infinite length in both directions

29.91.2.3 virtual Go::CylinderVolume::~CylinderVolume ( ) [virtual]

Virtual destructor - ensures safe inheritance.

29.91.3 Member Function Documentation

29.91.3.1 virtual BoundingBox Go::CylinderVolume::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.91.3.2 static ClassType Go::CylinderVolume::classType ( ) [inline], [static]

Definition at line 96 of file CylinderVolume.h.

29.91.3.3 virtual CylinderVolume* Go::CylinderVolume::clone ( ) const [virtual]

make a clone of this volume and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementaryVolume.

29.91.3.4 virtual void Go::CylinderVolume::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, double & *clo_w*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the volume.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_w	w parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
seed	pointer to parameter values where iteration starts.

Implements Go::ParamVolume.

29.91.3.5 virtual int Go::CylinderVolume::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.91.3.6 SplineVolume* Go::CylinderVolume::geometryVolume ( ) const [virtual]

Make a NURBS representation of the object.

Implements Go::ElementaryVolume.

29.91.3.7 virtual std::vector<shared_ptr<ParamSurface> > Go::CylinderVolume::getAllBoundarySurfaces ( ) const [virtual]

Fetch all boundary surfaces corresponding to the volume.

Implements Go::ParamVolume.

29.91.3.8 virtual ClassType Go::CylinderVolume::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.91.3.9 double Go::CylinderVolume::nextSegmentVal (int *dir*, double *par*, bool *forward*, double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0, 1 or 2)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamVolume.

29.91.3.10 const Array<double,6> Go::CylinderVolume::parameterSpan ( ) const [virtual]

Return the parameter domain of the volume. This is an array containing the start and end parameter values. The spline's parameter i has its start value at the array position (2i) and its end parameter value at the array position (2i+1)

Returns

An array describing the parametric domain of the volume

Implements Go::ParamVolume.

29.91.3.11 void Go::CylinderVolume::point (Point & *pt*, double *upar*, double *vpar*, double *wpar*) const [virtual]

Evaluates the volume's position for a given parameter triple.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter
wpar	the third parameter

Implements Go::ParamVolume.

29.91.3.12 void Go::CylinderVolume::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, double *wpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, bool *w_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the volume's position and a certain number of derivatives for a given parameter triple.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function. Upon completion of the function, its first entry is the volume's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the volume tangents along the first, second and third parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dudw, dv2, dvdw, dw2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
wpar	the third parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
w_from_right	specify whether derivatives along the third parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamVolume.

29.91.3.13 virtual void Go::CylinderVolume::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.91.3.14 void Go::CylinderVolume::reverseParameterDirection (int *pardir*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

pardir	which parameter direction to reverse

Implements Go::ParamVolume.

29.91.3.15 void Go::CylinderVolume::setParameters (double *from_par,* double *to_par,* int *pardir*)

Restrict the size of the torus in one parameter direction.

29.91.3.16 void Go::CylinderVolume::swapParameterDirection (int *pardir1,* int *pardir2*) [virtual]

Swaps two parameter directions

Parameters

pardir1	One of the parameter directions (0, 1 or 2) to be swapped
pardir2	The other parameter direction (0, 1 or 2) to be swapped

Implements Go::ParamVolume.

29.91.3.17 DirectionCone Go::CylinderVolume::tangentCone (int *pardir*) const [virtual]

Creates a DirectionCone covering all tangents to this volume along a given parameter direction.

Parameters

pardir	if 1, the DirectionCone will be defined on basis of the volume's tangents along the first parameter direction. If 2, the second parameter direction will be used. If 3, the third parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this volume along the specified parameter direction.

Implements Go::ParamVolume.

29.91.3.18 virtual void Go::CylinderVolume::translate (const Point & *vec*) [virtual]

Translate.

Implements Go::ParamVolume.

29.91.3.19 void Go::CylinderVolume::useCentreDegen ( ) [inline]

A NURBS representation will be a disc with degenereracy in the centre swept linearily

Definition at line 154 of file CylinderVolume.h.

29.91.3.20 void Go::CylinderVolume::useCornerDegen ( ) [inline]

A NURBS representation will be a disc with degenerate corners swept linearily

Definition at line 159 of file CylinderVolume.h.

29.91.3.21 virtual void Go::CylinderVolume::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/CylinderVolume.h

29.92 hed::Dart Class Reference

Dart class for the half-edge data structure.

`#include <HeDart.h>`

Public Member Functions

- Dart ()
  Default constructor.
- Dart (Edge *edge, bool dir=true)
  Constructor.
- Dart (const Dart &dart)

Copy constructor.

- ~Dart ()

  Destructor.

- Dart & operator= (const Dart &dart)

  Assignment operator.

- bool operator== (const Dart &dart) const

  Comparing dart objects.

- bool operator!= (const Dart &dart) const

  Comparing dart objects.

- Dart & alpha0 ()

  Maps the dart to a different node.

- Dart & alpha1 ()

  Maps the dart to a different edge.

- Dart & alpha2 ()

  Maps the dart to a different triangle. ***Note:*** *the dart is not changed if it is at the boundary!*

Utilities not required by TTL

- void init (Edge *edge, bool dir=true)
- double x () const
- double y () const
- bool isCounterClockWise () const
- Node * getNode () const
- Node * getOppositeNode () const
- Edge * getEdge () const

29.92.1 Detailed Description

Dart class for the half-edge data structure.

See Application Programming Interface to TTL (API) for a detailed description of how the member functions should be implemented.

Definition at line 61 of file HeDart.h.

29.92.2 Constructor & Destructor Documentation

29.92.2.1 hed::Dart::Dart ( ) [inline]

Default constructor.

Definition at line 68 of file HeDart.h.

29.92.2.2 hed::Dart::Dart (Edge * *edge*, bool *dir* = true) [inline]

Constructor.

Definition at line 71 of file HeDart.h.

29.92.2.3 hed::Dart::Dart (const Dart & *dart*) [inline]

Copy constructor.

Definition at line 74 of file HeDart.h.

29.92.2.4 hed::Dart::~Dart ( ) [inline]

Destructor.

Definition at line 77 of file HeDart.h.

29.92.3 Member Function Documentation

29.92.3.1 Dart& hed::Dart::alpha0 ( ) [inline]

Maps the dart to a different node.

Definition at line 101 of file HeDart.h.

29.92.3.2 Dart& hed::Dart::alpha1 ( ) [inline]

Maps the dart to a different edge.

Definition at line 104 of file HeDart.h.

29.92.3.3 Dart& hed::Dart::alpha2 ( ) [inline]

Maps the dart to a different triangle. **Note:** the dart is not changed if it is at the boundary!

Definition at line 117 of file HeDart.h.

29.92.3.4 Edge* hed::Dart::getEdge ( ) const [inline]

Definition at line 142 of file HeDart.h.

29.92.3.5 Node* hed::Dart::getNode ( ) const [inline]

Definition at line 140 of file HeDart.h.

29.92.3.6 Node* hed::Dart::getOppositeNode ( ) const [inline]

Definition at line 141 of file HeDart.h.

29.92.3.7 void hed::Dart::init (Edge * *edge*, bool *dir* = true) [inline]

Definition at line 133 of file HeDart.h.

29.92.3.8 bool hed::Dart::isCounterClockWise ( ) const [inline]

Definition at line 138 of file HeDart.h.

29.92.3.9 bool hed::Dart::operator!= (const Dart & *dart*) const [inline]

Comparing dart objects.

Definition at line 96 of file HeDart.h.

29.92.3.10 Dart& hed::Dart::operator= (const Dart & *dart*) [inline]

Assignment operator.

Definition at line 80 of file HeDart.h.

29.92.3.11 bool hed::Dart::operator== (const Dart & *dart*) const [inline]

Comparing dart objects.

Definition at line 89 of file HeDart.h.

29.92.3.12 double hed::Dart::x (void) const [inline]

Definition at line 135 of file HeDart.h.

29.92.3.13 double hed::Dart::y (void) const [inline]

Definition at line 136 of file HeDart.h.

The documentation for this class was generated from the following file:

- ttl/include/ttl/halfedge/HeDart.h

29.93 hetriang::Dart Class Reference

Dart class for the half-edge data structure.

`#include <ttlDart.h>`

Public Member Functions

- Dart ()

  Default constructur.
- Dart (Edge ∗edge, bool dir=true)

  Constructur.
- Dart (const Dart &dart)

  Copy constructor.
- ∼Dart ()

  Destructor.
- Dart & operator= (const Dart &dart)

  Assignment operator.
- bool operator== (const Dart &dart) const

  Comparing dart objects.
- bool operator!= (const Dart &dart) const

  Comparing dart objects.
- Dart & alpha0 ()

  Maps the dart to a different node.
- Dart & alpha1 ()

  Maps the dart to a different edge.
- Dart & alpha2 ()

  Maps the dart to a different triangle. ***Note:*** *the dart is not changed if it is at the boundary!*

Utilities not required by TTL

- void init (Edge ∗edge, bool dir=true)
- double x () const
- double y () const
- bool isCounterClockWise () const
- shared_ptr< Node > getNode () const
- shared_ptr< Node > getOppositeNode () const
- Edge ∗ getEdge () const
- void controllConstDart (Dart &dart)
- Dart makeCopy ()
- void printDart ()

29.93.1 Detailed Description

Dart class for the half-edge data structure.

See Application Programming Interface to TTL (API) for a detailed description of how the member functions should be implemented.

This is how the dart class is implemented for the half-edge data structure:

Definition at line 58 of file ttlDart.h.

29.93.2 Constructor & Destructor Documentation

29.93.2.1 hetriang::Dart::Dart ( ) [inline]

Default constructur.

Definition at line 63 of file ttlDart.h.

29.93.2.2 hetriang::Dart::Dart (Edge * *edge*, bool *dir* = true) [inline]

Constructur.

Definition at line 65 of file ttlDart.h.

29.93.2.3 hetriang::Dart::Dart (const Dart & *dart*) [inline]

Copy constructor.

Definition at line 67 of file ttlDart.h.

29.93.2.4 hetriang::Dart::~Dart ( ) [inline]

Destructor.

Definition at line 69 of file ttlDart.h.

29.93.3 Member Function Documentation

29.93.3.1 Dart& hetriang::Dart::alpha0 ( ) [inline]

Maps the dart to a different node.

Definition at line 90 of file ttlDart.h.

29.93.3.2 Dart& hetriang::Dart::alpha1 ( ) [inline]

Maps the dart to a different edge.

Definition at line 92 of file ttlDart.h.

29.93.3.3 Dart& hetriang::Dart::alpha2 ( ) [inline]

Maps the dart to a different triangle. **Note:** the dart is not changed if it is at the boundary!

Definition at line 104 of file ttlDart.h.

29.93.3.4 void hetriang::Dart::controllConstDart (Dart & *dart*) [inline]

controllConstDart is a function who are suppost to check if the dart representing dstart or dend has been changed during a swap. It's implemented so that this is compared to a spesified copy *dart*. In Half-Edge datastrukture this is an ompossible situation, and the function is therefor empty

Definition at line 130 of file ttlDart.h.

29.93.3.5 Edge* hetriang::Dart::getEdge ( ) const [inline]

Definition at line 123 of file ttlDart.h.

29.93.3.6 shared_ptr<Node> hetriang::Dart::getNode ( ) const [inline]

Definition at line 121 of file ttlDart.h.

29.93.3.7 shared_ptr<Node> hetriang::Dart::getOppositeNode ( ) const [inline]

Definition at line 122 of file ttlDart.h.

29.93.3.8 void hetriang::Dart::init (Edge * *edge,* bool *dir* = true) [inline]

Definition at line 115 of file ttlDart.h.

29.93.3.9 bool hetriang::Dart::isCounterClockWise ( ) const [inline]

Definition at line 119 of file ttlDart.h.

29.93.3.10 Dart hetriang::Dart::makeCopy ( ) [inline]

Definition at line 132 of file ttlDart.h.

29.93.3.11 bool hetriang::Dart::operator!= (const Dart & *dart*) const [inline]

Comparing dart objects.

Definition at line 86 of file ttlDart.h.

29.93.3.12 Dart& hetriang::Dart::operator= (const Dart & *dart*) [inline]

Assignment operator.

Definition at line 72 of file ttlDart.h.

29.93.3.13 bool hetriang::Dart::operator== (const Dart & *dart*) const [inline]

Comparing dart objects.

Definition at line 80 of file ttlDart.h.

29.93.3.14 void hetriang::Dart::printDart ( ) [inline]

Definition at line 138 of file ttlDart.h.

29.93.3.15 double hetriang::Dart::x ( ) const [inline]

Definition at line 117 of file ttlDart.h.

29.93.3.16 double hetriang::Dart::y ( ) const [inline]

Definition at line 118 of file ttlDart.h.

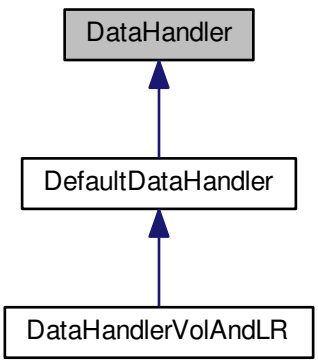
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ttlDart.h

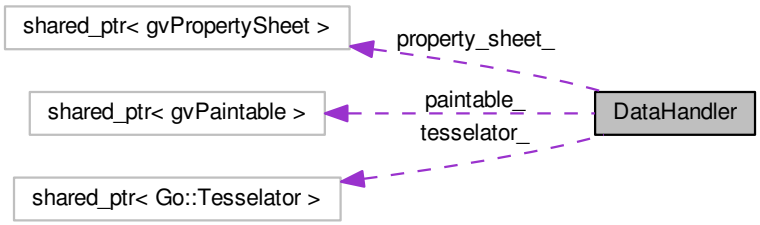
29.94 DataHandler Class Reference

`#include <DataHandler.h>`

Inheritance diagram for DataHandler:



Collaboration diagram for DataHandler:



Public Member Functions

- DataHandler ()
- virtual ~DataHandler ()
- virtual void create (shared_ptr< Go::GeomObject > obj, const gvColor &col, int id)=0
- shared_ptr< Go::Tesselator > tesselator ()
- shared_ptr< gvPaintable > paintable ()
- shared_ptr< gvPropertySheet > propertySheet ()
- void clear ()

Protected Attributes

- shared_ptr< Go::Tesselator > tesselator_
- shared_ptr< gvPaintable > paintable_
- shared_ptr< gvPropertySheet > property_sheet_

29.94.1 Detailed Description

This class connects the four inheritance trees descending from gvTesselator, gvPaintable, gvPropertySheet and GeomObject.

Definition at line 62 of file DataHandler.h.

29.94.2 Constructor & Destructor Documentation

29.94.2.1 DataHandler::DataHandler ( )

Default constructor. In inherited classes, it should Initialize factory (by registering classes).

29.94.2.2 virtual DataHandler::~DataHandler ( ) [virtual]

29.94.3 Member Function Documentation

29.94.3.1 void DataHandler::clear ( ) [inline]

Definition at line 87 of file DataHandler.h.

29.94.3.2 virtual void DataHandler::create (shared_ptr< Go::GeomObject > *obj,* const gvColor & *col,* int *id*) [pure virtual]

Implemented in DefaultDataHandler, and DataHandlerVolAndLR.

29.94.3.3 shared_ptr<gvPaintable> DataHandler::paintable ( ) [inline]

Definition at line 78 of file DataHandler.h.

29.94.3.4 shared_ptr<gvPropertySheet> DataHandler::propertySheet ( ) [inline]

Definition at line 82 of file DataHandler.h.

29.94.3.5 shared_ptr<Go::Tesselator> DataHandler::tesselator ( ) [inline]

Definition at line 74 of file DataHandler.h.

29.94.4 Member Data Documentation

29.94.4.1 shared_ptr<gvPaintable> DataHandler::paintable_ [protected]

Definition at line 96 of file DataHandler.h.

29.94.4.2 shared_ptr<gvPropertySheet> DataHandler::property_sheet_ [protected]

Definition at line 97 of file DataHandler.h.

29.94.4.3 shared_ptr<Go::Tesselator> DataHandler::tesselator_ [protected]

Definition at line 95 of file DataHandler.h.

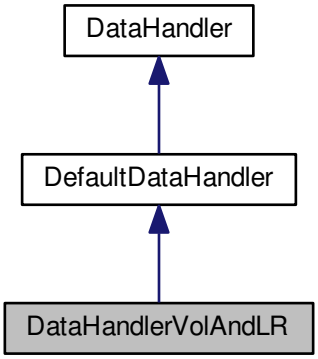
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/DataHandler.h

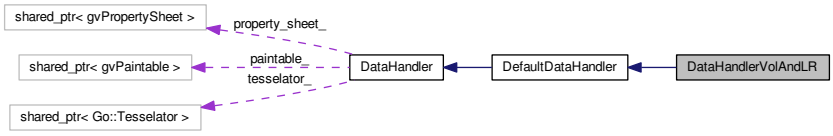
29.95 DataHandlerVolAndLR Class Reference

`#include <DataHandlerVolAndLR.h>`

Inheritance diagram for DataHandlerVolAndLR:



Collaboration diagram for DataHandlerVolAndLR:



Public Member Functions

- DataHandlerVolAndLR ()

  Default constructor. Initializes factory (by registering classes).
- virtual ~DataHandlerVolAndLR ()
- virtual void create (shared_ptr< Go::GeomObject > obj, const gvColor &col, int id)

Additional Inherited Members

29.95.1 Detailed Description

Definition at line 45 of file DataHandlerVolAndLR.h.

29.95.2 Constructor & Destructor Documentation

29.95.2.1 DataHandlerVolAndLR::DataHandlerVolAndLR ( )

Default constructor. Initializes factory (by registering classes).

29.95.2.2 virtual DataHandlerVolAndLR::~DataHandlerVolAndLR ( ) [virtual]

29.95.3 Member Function Documentation

29.95.3.1 virtual void DataHandlerVolAndLR::create (shared_ptr< Go::GeomObject > *obj*, const gvColor & *col*, int *id*) [virtual]

Reimplemented from DefaultDataHandler.

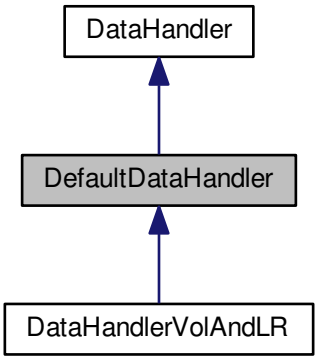
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/vol_and_lr/DataHandlerVolAndLR.h

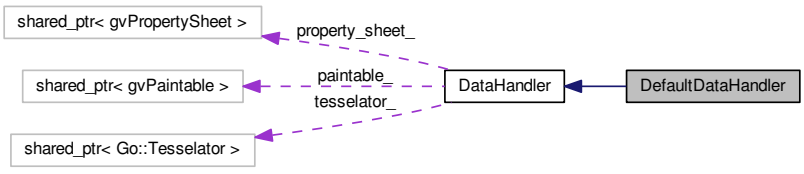
29.96 DefaultDataHandler Class Reference

`#include <DefaultDataHandler.h>`

Inheritance diagram for DefaultDataHandler:



Collaboration diagram for DefaultDataHandler:



Public Member Functions

- DefaultDataHandler ()

  Default constructor. Initializes factory (by registering classes).
- virtual ~DefaultDataHandler ()
- virtual void create (shared_ptr< Go::GeomObject > obj, const gvColor &col, int id)

Additional Inherited Members

29.96.1 Detailed Description

DefaultDataHandler: etc

Definition at line 49 of file DefaultDataHandler.h.

29.96.2 Constructor & Destructor Documentation

29.96.2.1 DefaultDataHandler::DefaultDataHandler ( )

Default constructor. Initializes factory (by registering classes).

29.96.2.2 virtual DefaultDataHandler::~DefaultDataHandler ( ) [virtual]

29.96.3 Member Function Documentation

29.96.3.1 virtual void DefaultDataHandler::create (shared_ptr< Go::GeomObject > *obj*, const gvColor & *col*, int *id*) [virtual]

Implements DataHandler.

Reimplemented in DataHandlerVolAndLR.

The documentation for this class was generated from the following file:

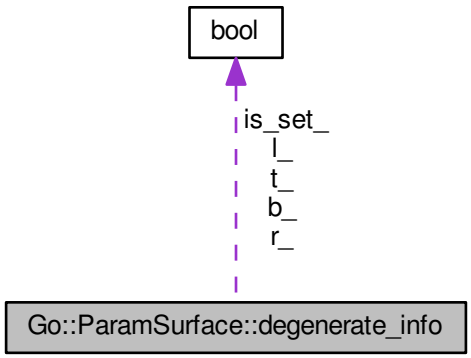
- viewlib/include/GoTools/viewlib/DefaultDataHandler.h

29.97 Go::ParamSurface::degenerate_info Struct Reference

Degeneracy information regarding one boundary surface of the current surface.

`#include <ParamSurface.h>`

Collaboration diagram for Go::ParamSurface::degenerate_info:



Public Member Functions

- degenerate_info ()

  Default constructor. The information is not computed.

Public Attributes

- bool is_set_

  Whether or not the degeneracy information is computed.
- double tol_

  Tolerance used in computations.
- bool b_
- bool r_
- bool t_
- bool l_

29.97.1 Detailed Description

Degeneracy information regarding one boundary surface of the current surface.

Definition at line 500 of file ParamSurface.h.

29.97.2 Constructor & Destructor Documentation

29.97.2.1 Go::ParamSurface::degenerate_info::degenerate_info ( ) [inline]

Default constructor. The information is not computed.

Definition at line 511 of file ParamSurface.h.

29.97.3 Member Data Documentation

29.97.3.1 bool Go::ParamSurface::degenerate_info::b_

Indicates if the surface has degenerate boundaries, b_ = bottom (vmin), r_ = right (umax), t_ = top (vmax), l_ = left (umin)

Definition at line 508 of file ParamSurface.h.

29.97.3.2 bool Go::ParamSurface::degenerate_info::is_set_

Whether or not the degeneracy information is computed.

Definition at line 503 of file ParamSurface.h.

29.97.3.3 bool Go::ParamSurface::degenerate_info::l_

Definition at line 508 of file ParamSurface.h.

29.97.3.4 bool Go::ParamSurface::degenerate_info::r_

Definition at line 508 of file ParamSurface.h.

29.97.3.5 bool Go::ParamSurface::degenerate_info::t_

Definition at line 508 of file ParamSurface.h.

29.97.3.6 double Go::ParamSurface::degenerate_info::tol_

Tolerance used in computations.

Definition at line 505 of file ParamSurface.h.

The documentation for this struct was generated from the following file:

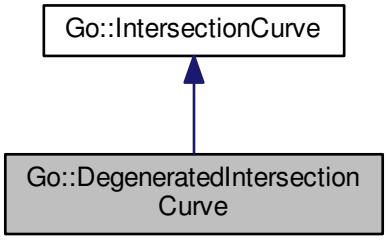
- gotools-core/include/GoTools/geometry/ParamSurface.h

29.98 Go::DegeneratedIntersectionCurve Class Reference

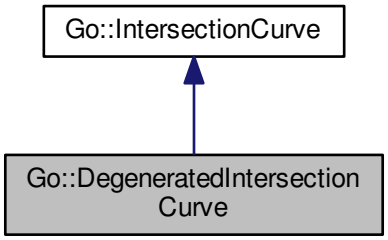
IntersectionCurve that is degenerated into a single point.

`#include <IntersectionCurve.h>`

Inheritance diagram for Go::DegeneratedIntersectionCurve:



Collaboration diagram for Go::DegeneratedIntersectionCurve:



Public Member Functions

- virtual ~DegeneratedIntersectionCurve ()
- virtual shared_ptr< ParamCurve > getCurve () const
- virtual shared_ptr< ParamCurve > getParamCurve (int obj_nmb) const
- virtual bool isIsocurve () const
- virtual bool isDegenerated () const
- virtual void getParamSpan (double &start, double &end) const
- virtual void refine (const double &pos_tol, const double &angle_tol)
- virtual void evaluateAt (double pval, Point &pos, Point &tan)

Friends

- template<class iterator >
  shared_ptr< IntersectionCurve > constructIntersectionCurve (const iterator begin, const iterator end)

Additional Inherited Members

29.98.1 Detailed Description

IntersectionCurve that is degenerated into a single point.

Definition at line 221 of file IntersectionCurve.h.

29.98.2 Constructor & Destructor Documentation

29.98.2.1 virtual Go::DegeneratedIntersectionCurve::~DegeneratedIntersectionCurve ( ) [virtual]

29.98.3 Member Function Documentation

29.98.3.1 virtual void Go::DegeneratedIntersectionCurve::evaluateAt (double *pval*, Point & *pos*, Point & *tan*) [inline], [virtual]

Evaluate the IntersectionCurve at parameter value *pval*. Its position at this parameter value will be returned in *pos* and its tangent direction will be returned in *tan*.

Parameters

pval	the parameter value for which to evaluate the IntersectionCurve. It should be within the parametric span (which can be obtained from GetParamSpan().

Return values

pos	the calculated position of the point on the curve at parameter *pval*.

Parameters

tan	the calculated tangent of the curve at parameter *pval*.

Implements Go::IntersectionCurve.

Definition at line 247 of file IntersectionCurve.h.

29.98.3.2 virtual shared_ptr<ParamCurve> Go::DegeneratedIntersectionCurve::getCurve ( ) const [virtual]

Get out a (shared) pointer to a parametric curve that approximates this IntersectionCurve.

Implements Go::IntersectionCurve.

29.98.3.3 virtual shared_ptr<ParamCurve> Go::DegeneratedIntersectionCurve::getParamCurve (int *obj_nmb*) const [virtual]

Get out a (shared) pointer to the curve in the parametric plane of the first or second object. Should only be called when the concerned object is 2-parametric.

Parameters

obj_nmb	should be either 1 or 2, depending on whether you want to get the parametric curve in object 1 or object 2.

Returns

a shared pointer to a curve that approximates the intersection curve in the parametric domain of the specified object.

Implements Go::IntersectionCurve.

29.98.3.4 virtual void Go::DegeneratedIntersectionCurve::getParamSpan (double & *start*, double & *end*) const [inline], [virtual]

Get the start and end value for the parametric span of the IntersectionCurve.

Return values

start	upon function return this variable will contain the start value of the parametric span.
end	upon function return this variable will contain the end value of the parametric span.

Implements Go::IntersectionCurve.

Definition at line 236 of file IntersectionCurve.h.

29.98.3.5 virtual bool Go::DegeneratedIntersectionCurve::isDegenerated ( ) const [inline], [virtual]

Determine if the IntersectionCurve is in fact a degenerated curve (a single point in space).

Returns

'true' if the IntersectionCurve is degenerated. 'false' otherwise.

Implements Go::IntersectionCurve.

Definition at line 233 of file IntersectionCurve.h.

29.98.3.6 virtual bool Go::DegeneratedIntersectionCurve::isIsocurve ( ) const [inline], [virtual]

Determine if the IntersectionCurve is in fact representing an isoparametric intersection.

Returns

'true' if the IntersectionCurve is part of an isocurve for one of the objects, 'false' otherwise.

Implements Go::IntersectionCurve.

Definition at line 230 of file IntersectionCurve.h.

29.98.3.7 virtual void Go::DegeneratedIntersectionCurve::refine (const double & *pos_tol,* const double & *angle_tol*) [inline], [virtual]

Refine the curve (which means to increase the number of IntersectionPoint s defining it), so that the curve matches a specific positional and angle tolerance.

Parameters

pos_tol	the positional tolerance that the curve should match after refinement.
angle_tol	the angular tolerance that the tangent of the curve should match after refinement.

Implements Go::IntersectionCurve.

Definition at line 242 of file IntersectionCurve.h.

29.98.4 Friends And Related Function Documentation

29.98.4.1 template<class iterator > shared_ptr<IntersectionCurve> constructIntersectionCurve (const iterator *begin,* const iterator *end*) [friend]

Definition at line 601 of file IntersectionCurve.h.

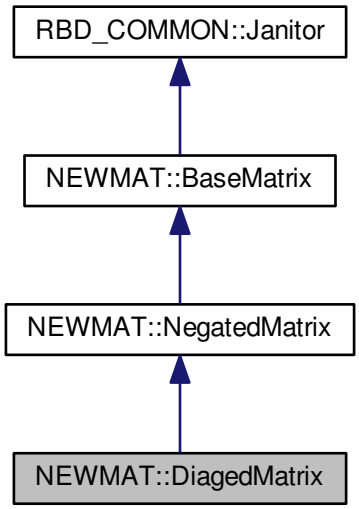
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionCurve.h

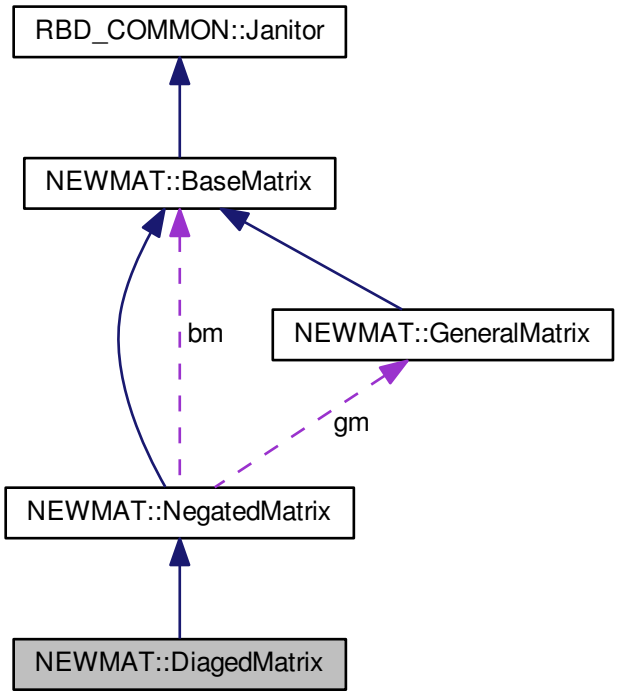
29.99 NEWMAT::DiagedMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::DiagedMatrix:



Collaboration diagram for NEWMAT::DiagedMatrix:



Public Member Functions

- ~DiagedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix

Additional Inherited Members

29.99.1 Detailed Description

Definition at line 1442 of file newmat.h.

29.99.2 Constructor & Destructor Documentation

29.99.2.1 NEWMAT::DiagedMatrix::~DiagedMatrix ( ) [inline]

Definition at line 1447 of file newmat.h.

29.99.3 Member Function Documentation

29.99.3.1 MatrixBandWidth DiagedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 483 of file newmat4.cpp.

29.99.3.2 GeneralMatrix * DiagedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 314 of file newmat5.cpp.

29.99.4 Friends And Related Function Documentation

29.99.4.1 friend class BaseMatrix [friend]

Definition at line 1445 of file newmat.h.

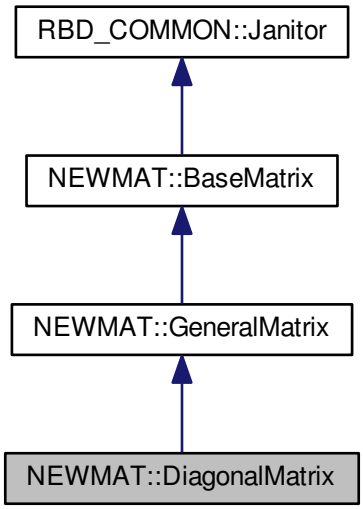
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

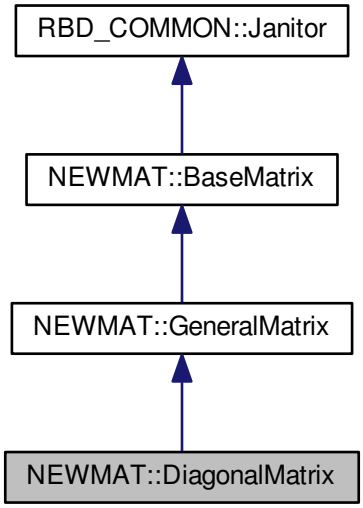
29.100 NEWMAT::DiagonalMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::DiagonalMatrix:



Collaboration diagram for NEWMAT::DiagonalMatrix:



Public Member Functions

- DiagonalMatrix ()
- ~DiagonalMatrix ()
- DiagonalMatrix (ArrayLengthSpecifier)
- DiagonalMatrix (const BaseMatrix &)
- DiagonalMatrix (const DiagonalMatrix &gm)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- void operator= (const DiagonalMatrix &m)
- Real & operator() (int, int)
- Real & operator() (int)
- Real operator() (int, int) const
- Real operator() (int) const
- Real & element (int, int)
- Real & element (int)
- Real element (int, int) const
- Real element (int) const
- MatrixType Type () const
- LogAndSign LogDeterminant () const
- Real Trace () const
- void GetRow (MatrixRowCol &)
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &)
- void NextRow (MatrixRowCol &)
- void NextCol (MatrixRowCol &)
- void NextCol (MatrixColX &)
- GeneralMatrix * MakeSolver ()
- void Solver (MatrixColX &, const MatrixColX &)

- GeneralMatrix * Transpose (TransposedMatrix *, MatrixType)
- void ReSize (int)
- void ReSize (const GeneralMatrix &A)
- Real * nric () const
- MatrixBandWidth BandWidth () const

Additional Inherited Members

29.100.1 Detailed Description

Definition at line 746 of file newmat.h.

29.100.2 Constructor & Destructor Documentation

29.100.2.1 NEWMAT::DiagonalMatrix::DiagonalMatrix ( ) [inline]

Definition at line 750 of file newmat.h.

29.100.2.2 NEWMAT::DiagonalMatrix::~DiagonalMatrix ( ) [inline]

Definition at line 751 of file newmat.h.

29.100.2.3 NEWMAT::DiagonalMatrix::DiagonalMatrix (ArrayLengthSpecifier)

29.100.2.4 NEWMAT::DiagonalMatrix::DiagonalMatrix (const BaseMatrix &)

29.100.2.5 NEWMAT::DiagonalMatrix::DiagonalMatrix (const DiagonalMatrix & *gm*) [inline]

Definition at line 754 of file newmat.h.

29.100.3 Member Function Documentation

29.100.3.1 MatrixBandWidth DiagonalMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 403 of file newmat4.cpp.

29.100.3.2 Real& NEWMAT::DiagonalMatrix::element (int , int)

29.100.3.3 Real& NEWMAT::DiagonalMatrix::element (int)

29.100.3.4 Real NEWMAT::DiagonalMatrix::element (int , int) const

29.100.3.5 Real NEWMAT::DiagonalMatrix::element (int) const

29.100.3.6 void NEWMAT::DiagonalMatrix::GetCol (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.100.3.7 void NEWMAT::DiagonalMatrix::GetCol (MatrixColX &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.100.3.8 void DiagonalMatrix::GetRow (MatrixRowCol & *mrc*) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 228 of file newmat3.cpp.

29.100.3.9 LogAndSign DiagonalMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 647 of file newmat8.cpp.

29.100.3.10 GeneralMatrix* NEWMAT::DiagonalMatrix::MakeSolver ( ) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 780 of file newmat.h.

29.100.3.11 void NEWMAT::DiagonalMatrix::NextCol (MatrixRowCol &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

29.100.3.12 void NEWMAT::DiagonalMatrix::NextCol (MatrixColX &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

29.100.3.13 void DiagonalMatrix::NextRow (MatrixRowCol & *mrc*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 253 of file newmat3.cpp.

29.100.3.14 Real* NEWMAT::DiagonalMatrix::nric ( ) const [inline]

Definition at line 785 of file newmat.h.

29.100.3.15 Real& NEWMAT::DiagonalMatrix::operator() (int , int)

29.100.3.16 Real& NEWMAT::DiagonalMatrix::operator() (int)

29.100.3.17 Real NEWMAT::DiagonalMatrix::operator() (int , int) const

29.100.3.18 Real NEWMAT::DiagonalMatrix::operator() (int) const

29.100.3.19 void NEWMAT::DiagonalMatrix::operator= (const BaseMatrix &)

29.100.3.20 void NEWMAT::DiagonalMatrix::operator= (Real *f*) [inline]

Definition at line 756 of file newmat.h.

29.100.3.21 void NEWMAT::DiagonalMatrix::operator= (const DiagonalMatrix & *m*) [inline]

Definition at line 757 of file newmat.h.

29.100.3.22 void NEWMAT::DiagonalMatrix::ReSize (int)

29.100.3.23 void DiagonalMatrix::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 291 of file newmat4.cpp.

29.100.3.24 void DiagonalMatrix::Solver (MatrixColX & *mrc,* const MatrixColX & *mrc1*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 495 of file newmat2.cpp.

29.100.3.25 Real DiagonalMatrix::Trace ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 546 of file newmat8.cpp.

29.100.3.26 GeneralMatrix * DiagonalMatrix::Transpose (TransposedMatrix *, MatrixType *mt*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 57 of file newmat5.cpp.

29.100.3.27 MatrixType DiagonalMatrix::Type ( ) const [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 389 of file newmat4.cpp.

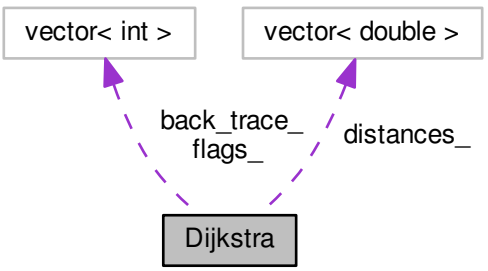
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat2.cpp
- newmat/src/newmat3.cpp
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp
- newmat/src/newmat8.cpp

29.101 Dijkstra Class Reference

`#include <PrDijkstra.h>`

Collaboration diagram for Dijkstra:



Public Member Functions

- Dijkstra ()

  Constructor.
- ∼Dijkstra ()

  Destructor.
- void setGraph (const GraphType ∗tri)

  Set the graph to run the algorithm on. Must be run before 'initialize()'.
- void initialize ()
- void setSource (int node_idx, double dist=0)
- void run ()
- void run (double radius)
- void run (int target)
- double getDistance (int node_idx)
- double getDistance (int node_idx, int neighbour)
- int closestNeighbour (int node_idx)

Protected Member Functions

- void setFinished (int node_idx)
- int isFinished (int node_idx)
- void insertInCandidates (int node_idx)

Protected Attributes

- const GraphType ∗ graph_
- HeapType ∗ queue_
- vector< double > ∗ distances_
- vector< int > ∗ back_trace_
- vector< int > ∗ flags_
- double large_distance_

29.101.1 Detailed Description

Dijkstra Class implementing the Dijkstra algorithm

Definition at line 76 of file PrDijkstra.h.

29.101.2 Constructor & Destructor Documentation

29.101.2.1 Dijkstra::Dijkstra ( )

Constructor.

29.101.2.2 Dijkstra::∼Dijkstra ( )

Destructor.

29.101.3 Member Function Documentation

29.101.3.1 int Dijkstra::closestNeighbour (int *node_idx*)

Get the index of the closest neighbour to the node 'node_idx'. Does not give a valid answer until the Dijkstra algorithm has been run().

29.101.3.2 double Dijkstra::getDistance (int *node_idx*) [inline]

Get the distance associated with the node 'node_ix'. Does not give a valid answer until the Dijkstra algorithm has been run().

Definition at line 120 of file PrDijkstra.h.

29.101.3.3 double Dijkstra::getDistance (int *node_idx,* int *neighbour*) [inline]

Compute the euclidean distance between two nodes, supposedly neighbours. If they are boundary nodes, their mutual distance will be set to a very large number.

Definition at line 156 of file PrDijkstra.h.

29.101.3.4 void Dijkstra::initialize ( )

Initialize internal data structures. Must be done after 'setGraph()' has been called.

29.101.3.5 void Dijkstra::insertInCandidates (int *node_idx*) [inline], [protected]

Definition at line 148 of file PrDijkstra.h.

29.101.3.6 int Dijkstra::isFinished (int *node_idx*) [inline], [protected]

Definition at line 140 of file PrDijkstra.h.

29.101.3.7 void Dijkstra::run ( )

Run the algorithm. Compute the associated distance for all nodes in the graph.

29.101.3.8 void Dijkstra::run (double *radius*)

Run the algorithm. Compute the associated distance for all nodes in the graph. Edges longer than 'radius' will be ignored.

29.101.3.9 void Dijkstra::run (int *target*)

Run the algorithm. Compute the associated distance for nodes in the graph until the distance for the 'target' node has been found. Then skip further computations.

29.101.3.10 void Dijkstra::setFinished (int *node_idx*) [inline],[protected]

Definition at line 133 of file PrDijkstra.h.

29.101.3.11 void Dijkstra::setGraph (const GraphType * *tri*) [inline]

Set the graph to run the algorithm on. Must be run before 'initialize()'.

Definition at line 98 of file PrDijkstra.h.

29.101.3.12 void Dijkstra::setSource (int *node_idx*, double *dist* = 0)

Set a 'source' for the algorithm. This is a node for which the associated minimum distance is known. At least one source must be set for the algorithm to work properly.

Parameters

node_idx	the index of the node to be designated as a source
dist	the distance at this node (typically 0).

29.101.4 Member Data Documentation

29.101.4.1 vector<int>* Dijkstra::back_trace_ [protected]

Definition at line 83 of file PrDijkstra.h.

29.101.4.2 vector<double>* Dijkstra::distances_ [protected]

Definition at line 82 of file PrDijkstra.h.

29.101.4.3 vector<int>* Dijkstra::flags_ [protected]

Definition at line 84 of file PrDijkstra.h.

29.101.4.4 const GraphType* Dijkstra::graph_ [protected]

Definition at line 80 of file PrDijkstra.h.

29.101.4.5 double Dijkstra::large_distance_ [protected]

Definition at line 85 of file PrDijkstra.h.

29.101.4.6 HeapType* Dijkstra::queue_ [protected]

Definition at line 81 of file PrDijkstra.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrDijkstra.h

29.102 Go::DirectionCone Class Reference

`#include <DirectionCone.h>`

Public Member Functions

- DirectionCone ()
  Constructor making an undefined direction cone.
- DirectionCone (const Point &pt)
- DirectionCone (const Point &centre, double angle)
- ~DirectionCone ()
  Do not inherit from this class – nonvirtual destructor.
- void setFromArray (const double *start, const double *end, int dim)
- int dimension () const
- const Point & centre () const
  Return the central direction of the DirectionCone.
- double angle () const
  Return the angle of the DirectionCone.
- int greaterThanPi () const
- bool overlaps (const DirectionCone &cone) const
- bool perpendicularOverlaps (const DirectionCone &cone) const
- bool containsDirection (const Point &pt, double tol=0.0) const
- void addUnionWith (const Point &pt)
- void addUnionWith (const DirectionCone &cone)
- void read (std::istream &is)
  Read DirectionCone from stream.
- void write (std::ostream &os) const
  Write DirectionCone to stream.

29.102.1 Detailed Description

Class representing a direction cone in Euclidian N-space The direction cone is characterised by a central direction and an angle 'alpha'. All directions whose angle with the central direction is less than 'alpha' is considered to be covered by the cone. If ever 'alpha' equals or exceeds 180 degrees, any possible direction will end up being covered by the cone.

Definition at line 57 of file DirectionCone.h.

29.102.2 Constructor & Destructor Documentation

29.102.2.1 Go::DirectionCone::DirectionCone ( ) [inline]

Constructor making an undefined direction cone.

Definition at line 60 of file DirectionCone.h.

29.102.2.2 Go::DirectionCone::DirectionCone (const Point & *pt*) [inline]

Constructor making a direction cone whose central direction is given by 'pt', and whose angle is zero. The length of 'pt' should be assured to be greater than zero, if not, then the DirectionCone will not be well defined.

Definition at line 66 of file DirectionCone.h.

29.102.2.3 Go::DirectionCone::DirectionCone (const Point & *centre,* double *angle*) [inline]

Constructor making a direction cone whose central direction is given by 'centre', and whose angle (in radians) is 'angle'. The length of 'centre' should be assured to be greater than zero; if not, then the DirectionCone will not be well defined.

Definition at line 77 of file DirectionCone.h.

29.102.2.4 Go::DirectionCone::~DirectionCone ( ) [inline]

Do not inherit from this class – nonvirtual destructor.

Definition at line 86 of file DirectionCone.h.

29.102.3 Member Function Documentation

29.102.3.1 void Go::DirectionCone::addUnionWith (const Point & *pt*)

If necessary, increase the angle of the DirectionCone so that it covers the direction represented by 'pt'.

29.102.3.2 void Go::DirectionCone::addUnionWith (const DirectionCone & *cone*)

If necessary, increase the angle of the DirectionCone so that it covers all directions covered by 'cone'.

29.102.3.3 double Go::DirectionCone::angle ( ) const [inline]

Return the angle of the DirectionCone.

Definition at line 105 of file DirectionCone.h.

29.102.3.4 const Point& Go::DirectionCone::centre ( ) const [inline]

Return the central direction of the DirectionCone.

Definition at line 102 of file DirectionCone.h.

29.102.3.5 bool Go::DirectionCone::containsDirection (const Point & *pt,* double *tol* = 0.0) const

Return 'true' if the direction specified by 'pt' is contained within the DirectionCone.

29.102.3.6 int Go::DirectionCone::dimension ( ) const [inline]

Return the dimension of the Euclidean space in which this DirectionCone is defined

Definition at line 99 of file DirectionCone.h.

29.102.3.7 int Go::DirectionCone::greaterThanPi ( ) const [inline]

Inform if the DirectionCone's angle is greater then PI. If this is the case, then naturally ANY spatial direction is included in the cone.

Definition at line 110 of file DirectionCone.h.

29.102.3.8 bool Go::DirectionCone::overlaps (const DirectionCone & *cone*) const

Return 'true' if there exists at least one direction that is covered by both 'this' and the 'cone' DirectionCones.

29.102.3.9 bool Go::DirectionCone::perpendicularOverlaps (const DirectionCone & *cone*) const

Return 'true' if there exist a direction in one cone that is perpendicular to a direction in the other cone.

29.102.3.10 void Go::DirectionCone::read (std::istream & *is*)

Read DirectionCone from stream.

29.102.3.11 void Go::DirectionCone::setFromArray (const double * *start,* const double * *end,* int *dim*)

Re-define an already-existing DirectionCone from an array of 'dim'-dimensional vectors stored in the memory area between 'start' and 'end'. The first vector in this range will define the central direction of the DirectionCone, and cone's angle will be set wide enough to contain all the other directions given. NB: the length of the range (end - start) must be an exact multiplum of 'dim'.

29.102.3.12 void Go::DirectionCone::write (std::ostream & *os*) const

Write DirectionCone to stream.

The documentation for this class was generated from the following file:

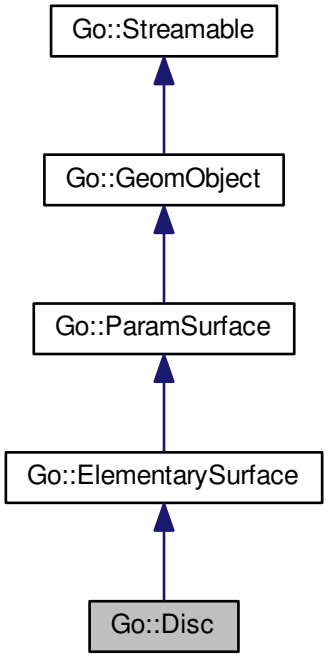
- gotools-core/include/GoTools/utils/DirectionCone.h

29.103 Go::Disc Class Reference

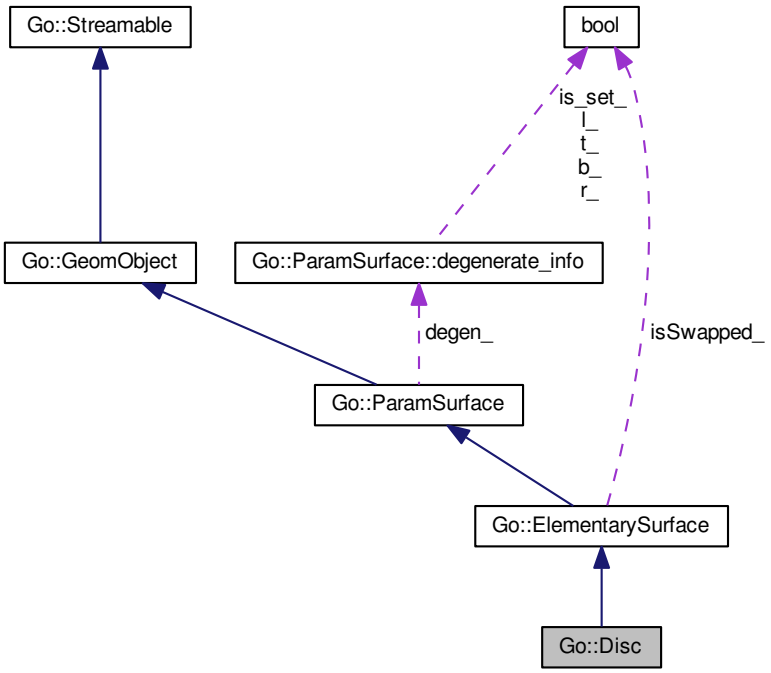
Class that represents a circular disc. It is a subclass of ElementarySurface, and has a natural parametrization by polar coordinates in terms of a radius *r* and angle *v*: **p**(*r*, *v*) = **C** + *r*((cos *v*) **x** + (sin *v*) **y**), where **C** is the centre position vector and **x** and **y** are the (local) axes. The parametrization is bounded by: $0 \leq r \leq R$ and $0 \leq v \leq 2\pi$, where *R* is the disc radius. The dimension is 2 or 3.

```
#include <Disc.h>
```

Inheritance diagram for Go::Disc:



Collaboration diagram for Go::Disc:



Public Member Functions

- Disc ()
- Disc (Point centre, double radius, Point x_axis, Point normal, bool isSwapped=false)
- virtual ~Disc ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual Disc * clone () const
- const RectDomain & parameterDomain () const
- std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- DirectionCone normalCone () const
- DirectionCone tangentCone (bool pardir_is_u) const
- void point (Point &pt, double upar, double vpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_↩ from_right=true, double resolution=1.0e-12) const
- void normal (Point &n, double upar, double vpar) const
- std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const

- std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for paralell and anti paralell partial derivatives in surface corners.
- bool isBounded () const
- bool isClosed (bool &closed_dir_u, bool &closed_dir_v) const

  Check if the surface is closed.
- Disc * subSurface (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const

  Return the part of the surface limited by the given parameter bounds.
- virtual SplineSurface * geometrySurface () const

  Create a SplineSurface representation of the Disc.
- virtual SplineSurface * createSplineSurface () const

  Create a SplineSurface representation of the Disc.
- virtual void setParameterBounds (double from_upar, double from_vpar, double to_upar, double to_vpar)

  Limit the surface by limiting the parameter domain.
- void useCentreDegen ()

  The NURBS representation of the disc will have degeneracy in the centre.
- void useCornerDegen ()

  The NURBS representation of the disc will have degenerate corners.

Static Public Member Functions

- static ClassType classType ()

Additional Inherited Members

29.103.1 Detailed Description

Class that represents a circular disc. It is a subclass of ElementarySurface, and has a natural parametrization by polar coordinates in terms of a radius *r* and angle *v*: **p**(*r*, *v*) = **C** + *r*((cos *v*) **x** + (sin *v*) **y**), where **C** is the centre position vector and **x** and **y** are the (local) axes. The parametrization is bounded by: $0 \leq r \leq R$ and $0 \leq v \leq 2\pi$, where *R* is the disc radius. The dimension is 2 or 3.

A disc also holds degeneracy information for representing it as a SplineSurface object. There are two ways to parametrize:

1. **Polar coordinates:** The parametrization of the SplineSurface object almost coincides with the one for the Disc object itself, i.e. this->point() gives almost the same as geometrySurface()->point(). The only degeneracy point then is the centre. Note that the corresponing SplineSurface representation is not an identity mapping of the Disc because of a reparametrization in the angular direction. This is the default SplineSurface representation.
2. **Rounded square:** Done by splitting the boundary into four curves that become the boundary curves of the spline surface. Then the four meeting points of the curves become degeneracy points.

Definition at line 83 of file Disc.h.

29.103.2 Constructor & Destructor Documentation

29.103.2.1 Go::Disc::Disc ( ) [inline]

Default constructor. Constructs an uninitialized Disc which can only be assigned to or read into.

Definition at line 90 of file Disc.h.

29.103.2.2 Go::Disc::Disc (Point *centre,* double *radius,* Point *x_axis,* Point *normal,* bool *isSwapped* = false)

Constructor. Input is the disc centre, disc radius, the x_axis and the normal (possibly approximate, only dummy in two-dimensional space). The local coordinate axes are normalized even if `x_axis` and/or `normal` are not unit vectors.

29.103.2.3 virtual Go::Disc::~Disc ( ) [inline], [virtual]

Virtual destructor - ensures safe inheritance.

Definition at line 101 of file Disc.h.

29.103.3 Member Function Documentation

29.103.3.1 std::vector<CurveLoop> Go::Disc::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.103.3.2 virtual BoundingBox Go::Disc::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.103.3.3 static ClassType Go::Disc::classType ( ) [inline],[static]

Definition at line 121 of file Disc.h.

29.103.3.4 virtual Disc* Go::Disc::clone ( ) const [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementarySurface.

29.103.3.5 void Go::Disc::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.103.3.6 void Go::Disc::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.103.3.7 std::vector<shared_ptr<ParamCurve> > Go::Disc::constParamCurves (double *parameter*, bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.103.3.8 virtual SplineSurface* Go::Disc::createSplineSurface ( ) const [virtual]

Create a SplineSurface representation of the Disc.

Implements Go::ElementarySurface.

29.103.3.9 virtual int Go::Disc::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.103.3.10 virtual SplineSurface* Go::Disc::geometrySurface ( ) const [virtual]

Create a SplineSurface representation of the Disc.

Implements Go::ElementarySurface.

Parameters

29.103.3.11 void Go::Disc::getBoundaryInfo (Point & *pt1*, Point & *pt2*, double *epsilon*, SplineCurve *& *cv*, SplineCurve *& *crosscv*, double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.103.3.12 virtual void Go::Disc::getDegenerateCorners (std::vector< Point > & *deg_corners*, double *tol*) const [virtual]

Check for paralell and anti paralell partial derivatives in surface corners.

Implements Go::ParamSurface.

29.103.3.13 virtual ClassType Go::Disc::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.103.3.14 bool Go::Disc::isBounded ( ) const [virtual]

Query if parametrization is bounded. All four parameter bounds must be finite for this to be true.

Returns

true if bounded, *false* otherwise

Reimplemented from Go::ElementarySurface.

29.103.3.15 bool Go::Disc::isClosed (bool & *closed_dir_u,* bool & *closed_dir_v*) const [virtual]

Check if the surface is closed.

Reimplemented from Go::ElementarySurface.

29.103.3.16 bool Go::Disc::isDegenerate (bool & *b,* bool & *r,* bool & *t,* bool & *l,* double *tolerance*) const [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

29.103.3.17 double Go::Disc::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.103.3.18 void Go::Disc::normal (Point & *n*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.103.3.19 DirectionCone Go::Disc::normalCone ( ) const [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.103.3.20 const RectDomain& Go::Disc::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.103.3.21 void Go::Disc::point (Point & *pt*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.103.3.22 void Go::Disc::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) * (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.103.3.23 virtual void Go::Disc::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.103.3.24 virtual void Go::Disc::setParameterBounds (double *from_upar*, double *from_vpar*, double *to_upar*, double *to_vpar*) [virtual]

Limit the surface by limiting the parameter domain.

Implements Go::ElementarySurface.

29.103.3.25 Disc* Go::Disc::subSurface (double *from_upar*, double *from_vpar*, double *to_upar*, double *to_vpar*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

Return the part of the surface limited by the given parameter bounds.

29.103.3.26 std::vector<shared_ptr<ParamSurface> > Go::Disc::subSurfaces (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.103.3.27 DirectionCone Go::Disc::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.103.3.28 void Go::Disc::useCentreDegen ( ) [inline]

The NURBS representation of the disc will have degeneracy in the centre.

Definition at line 212 of file Disc.h.

29.103.3.29 void Go::Disc::useCornerDegen ( ) [inline]

The NURBS representation of the disc will have degenerate corners.

Definition at line 216 of file Disc.h.

29.103.3.30 virtual void Go::Disc::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

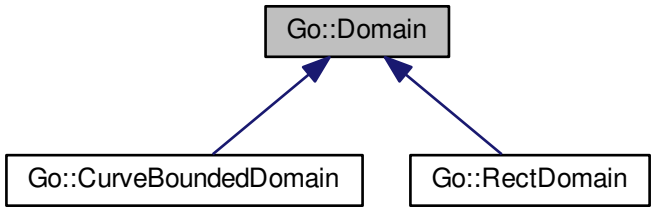
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Disc.h

29.104 Go::Domain Class Reference

`#include <Domain.h>`

Inheritance diagram for Go::Domain:



Public Member Functions

- virtual ~Domain ()

  virtual destructor ensures safe inheritance
- virtual bool isInDomain (const Array< double, 2 > &point, double tolerance) const =0
- virtual int isInDomain2 (const Array< double, 2 > &point, double tolerance) const =0
- virtual bool isOnBoundary (const Array< double, 2 > &point, double tolerance) const =0
- virtual void closestInDomain (const Array< double, 2 > &point, Array< double, 2 > &clo_pt, double tolerance) const =0
- virtual void closestOnBoundary (const Array< double, 2 > &point, Array< double, 2 > &clo_bd_pt, double tolerance) const =0

29.104.1 Detailed Description

Abstract base class representing a 2D parameter domain.

Definition at line 54 of file Domain.h.

29.104.2 Constructor & Destructor Documentation

29.104.2.1 virtual Go::Domain::~Domain ( ) [inline], [virtual]

virtual destructor ensures safe inheritance

Definition at line 58 of file Domain.h.

29.104.3 Member Function Documentation

29.104.3.1 virtual void Go::Domain::closestInDomain (const Array< double, 2 > & *point*, Array< double, 2 > & *clo_pt*, double *tolerance*) const [pure virtual]

Find the (u, v) point in the Domain that is closest (using Euclidean distance in R^2) to a given (u, v) point. If the given point is in the domain, then the answer is obviously the same point.

Parameters

point	the (u,v) parameter pair that we want to find the closest parameter pair to *inside* Domain.
clo_pt	the resulting closest parameter point.
tolerance	the tolerance used in defining whether the given point is already inside the domain.

Implemented in Go::CurveBoundedDomain, and Go::RectDomain.

29.104.3.2 virtual void Go::Domain::closestOnBoundary (const Array< double, 2 > & *point*, Array< double, 2 > & *clo_bd_pt*, double *tolerance*) const [pure virtual]

Find the (u, v) point on the boundary of the Domain that is closest (using Euclidean distance in R^2) to a given (u, v) point. If the point is already considered *on* the boundary, then the answer is obviously the same point.

Parameters

point	the (u,v) parameter pair that we want to find to closest parameter pair to *on* the Domain border.
clo_bd_pt	the resulting closest border point.
tolerance	the tolerance used in defining whether the given point is

Implemented in Go::CurveBoundedDomain, and Go::RectDomain.

29.104.3.3 virtual bool Go::Domain::isInDomain (const Array< double, 2 > & *point*, double *tolerance*) const [pure virtual]

check whether a given parameter pair is located inside the domain

Parameters

point	the (u,v)-pair that we want to test.
tolerance	the tolerance used (ruling what to do when 'point' is located very near the edge of the domain).

Returns

'true' if 'point' is inside the domain, or within 'tolerance' from being inside the domain, 'false' otherwise'.

Implemented in Go::CurveBoundedDomain, and Go::RectDomain.

29.104.3.4 virtual int Go::Domain::isInDomain2 (const Array< double, 2 > & *point*, double *tolerance*) const [pure virtual]

Query whether a given parameter pair is inside the domain or not.

Parameters

point	array containing the parameter pair
tolerance	the tolerance to be used. In order to be considered 'inside', the point must be located inside one of the defining CurveLoop s, as well as being at a distance more than 'tolerance' from any point on that CurveLoop.

Returns

'1' if the point is found to be inside the domain, '2' if it is found to be on the boundary '0' otherwise.

Implemented in Go::CurveBoundedDomain, and Go::RectDomain.

29.104.3.5 virtual bool Go::Domain::isOnBoundary (const Array< double, 2 > & *point*, double *tolerance*) const [pure virtual]

check whether a given parameter pair is located on the domain boundary

Parameters

point	the (u,v)-pair that we want to test
tolerance	the tolerance used (how 'far' from the boundary our (u,v) pair can be and still be considered 'on' the boundary.

Returns

'true' if the point is considered to be on the boundary (within 'tolerance', 'false' otherwise.

Implemented in Go::CurveBoundedDomain, and Go::RectDomain.

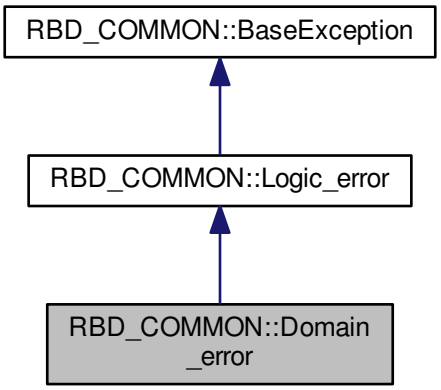
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Domain.h

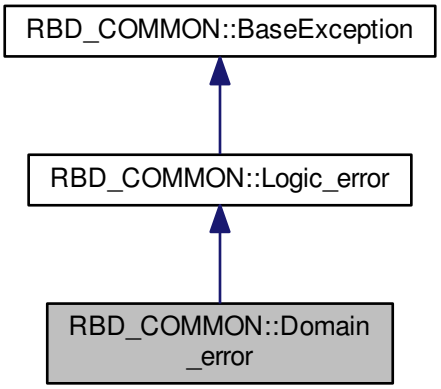
29.105 RBD_COMMON::Domain_error Class Reference

`#include <myexcept.h>`

Inheritance diagram for RBD_COMMON::Domain_error:



Collaboration diagram for RBD_COMMON::Domain_error:



- static unsigned long Select
- Domain_error (const char *a_what=0)

Additional Inherited Members

29.105.1 Detailed Description

Definition at line 371 of file myexcept.h.

29.105.2 Constructor & Destructor Documentation

29.105.2.1 Domain_error::Domain_error (const char * *a_what* = 0)

Definition at line 412 of file myexcept.cpp.

29.105.3 Member Data Documentation

29.105.3.1 unsigned long Domain_error::Select [static]

Definition at line 374 of file myexcept.h.

The documentation for this class was generated from the following files:

- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

29.106 Go::LRSplineSurface::double_pair_hash Struct Reference

`#include <LRSplineSurface.h>`

Public Member Functions

- size_t operator() (const std::pair< double, double > &dp) const

29.106.1 Detailed Description

Definition at line 117 of file LRSplineSurface.h.

29.106.2 Member Function Documentation

29.106.2.1 size_t Go::LRSplineSurface::double_pair_hash::operator() (const std::pair< double, double > & *dp*) const [inline]

Definition at line 118 of file LRSplineSurface.h.

The documentation for this struct was generated from the following file:

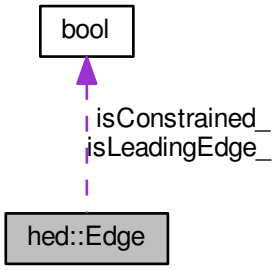
- lrsplines2D/include/GoTools/lrsplines2D/LRSplineSurface.h

29.107 hed::Edge Class Reference

Edge class in the in the half-edge data structure.

`#include <HeTriang.h>`

Collaboration diagram for hed::Edge:



Public Member Functions

- Edge ()
  Constructor.
- ∼Edge ()
  Destructor.
- void setSourceNode (Node ∗node)
  Sets the source node.
- void setNextEdgeInFace (Edge ∗edge)
  Sets the next edge in face.
- void setTwinEdge (Edge ∗edge)
  Sets the twin edge.
- void setAsLeadingEdge (bool val=true)
  Sets the edge as a leading edge.
- bool isLeadingEdge () const
  Checks if an edge is a leading edge.
- void setConstrained (bool val=true)
  Sets the edge as a constrained edge.
- bool isConstrained () const
  Checks if an edge is constrained.
- Edge ∗ getTwinEdge () const
  Returns the twin edge.
- Edge ∗ getNextEdgeInFace () const
  Returns the next edge in face.
- Node ∗ getSourceNode ()
  Retuns the source node.
- Node ∗ getTargetNode ()
  Returns the target node.

29.107.1 Detailed Description

Edge class in the in the half-edge data structure.

Definition at line 152 of file HeTriang.h.

29.107.2 Constructor & Destructor Documentation

29.107.2.1 hed::Edge::Edge ( ) [inline]

Constructor.

Definition at line 165 of file HeTriang.h.

29.107.2.2 hed::Edge::~Edge ( ) [inline]

Destructor.

Definition at line 169 of file HeTriang.h.

29.107.3 Member Function Documentation

29.107.3.1 Edge* hed::Edge::getNextEdgeInFace ( ) const [inline]

Returns the next edge in face.

Definition at line 197 of file HeTriang.h.

29.107.3.2 Node* hed::Edge::getSourceNode ( ) [inline]

Retuns the source node.

Definition at line 200 of file HeTriang.h.

29.107.3.3 Node* hed::Edge::getTargetNode ( ) [inline]

Returns the target node.

Definition at line 203 of file HeTriang.h.

29.107.3.4 Edge* hed::Edge::getTwinEdge ( ) const [inline]

Returns the twin edge.

Definition at line 194 of file HeTriang.h.

29.107.3.5 bool hed::Edge::isConstrained ( ) const [inline]

Checks if an edge is constrained.

Definition at line 191 of file HeTriang.h.

29.107.3.6 bool hed::Edge::isLeadingEdge ( ) const [inline]

Checks if an edge is a leading edge.

Definition at line 184 of file HeTriang.h.

29.107.3.7 void hed::Edge::setAsLeadingEdge (bool *val* = true) [inline]

Sets the edge as a leading edge.

Definition at line 181 of file HeTriang.h.

29.107.3.8 void hed::Edge::setConstrained (bool *val* = true) [inline]

Sets the edge as a constrained edge.

Definition at line 187 of file HeTriang.h.

29.107.3.9 void hed::Edge::setNextEdgeInFace (Edge * *edge*) [inline]

Sets the next edge in face.

Definition at line 175 of file HeTriang.h.

29.107.3.10 void hed::Edge::setSourceNode (Node * *node*) [inline]

Sets the source node.

Definition at line 172 of file HeTriang.h.

29.107.3.11 void hed::Edge::setTwinEdge (Edge * *edge*) [inline]

Sets the twin edge.

Definition at line 178 of file HeTriang.h.

29.107.4 Member Data Documentation

29.107.4.1 bool hed::Edge::isConstrained_

Definition at line 160 of file HeTriang.h.

29.107.4.2 bool hed::Edge::isLeadingEdge_

Definition at line 159 of file HeTriang.h.

The documentation for this class was generated from the following file:

- ttl/include/ttl/halfedge/HeTriang.h

29.108 hetriang::Edge Class Reference

Edge class in the half-edge data structure

`#include <ttlTriang.h>`

Public Member Functions

- Edge ()
- ~Edge ()
- void setSourceNode (shared_ptr< Node > node)
- void setNextEdgeInFace (Edge *edge)
- void setTwinEdge (Edge *edge)
- void setAsLeadingEdge (bool val=true)
- bool isLeadingEdge () const
- Edge * getTwinEdge () const
- Edge * getNextEdgeInFace () const
- shared_ptr< Node > getSourceNode ()
- shared_ptr< Node > getTargetNode ()

29.108.1 Detailed Description

Edge class in the half-edge data structure

Definition at line 90 of file ttlTriang.h.

29.108.2 Constructor & Destructor Documentation

29.108.2.1 hetriang::Edge::Edge ( ) [inline]

Definition at line 97 of file ttlTriang.h.

29.108.2.2 hetriang::Edge::~Edge ( ) [inline]

Definition at line 99 of file ttlTriang.h.

29.108.3 Member Function Documentation

29.108.3.1 Edge* hetriang::Edge::getNextEdgeInFace ( ) const [inline]

Definition at line 107 of file ttlTriang.h.

29.108.3.2 shared_ptr<Node> hetriang::Edge::getSourceNode ( ) [inline]

Definition at line 108 of file ttlTriang.h.

29.108.3.3 shared_ptr<Node> hetriang::Edge::getTargetNode ( ) [inline]

Definition at line 109 of file ttlTriang.h.

29.108.3.4 Edge* hetriang::Edge::getTwinEdge ( ) const [inline]

Definition at line 106 of file ttlTriang.h.

29.108.3.5 bool hetriang::Edge::isLeadingEdge ( ) const [inline]

Definition at line 105 of file ttlTriang.h.

29.108.3.6 void hetriang::Edge::setAsLeadingEdge (bool *val* = true) [inline]

Definition at line 104 of file ttlTriang.h.

29.108.3.7 void hetriang::Edge::setNextEdgeInFace (Edge * *edge*) [inline]

Definition at line 102 of file ttlTriang.h.

29.108.3.8 void hetriang::Edge::setSourceNode (shared_ptr< Node > *node*) [inline]

Definition at line 101 of file ttlTriang.h.

29.108.3.9 void hetriang::Edge::setTwinEdge (Edge * *edge*) [inline]

Definition at line 103 of file ttlTriang.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ttlTriang.h

29.109 EdgeType Class Reference

`#include <PrPathTriangleSeq.h>`

Public Member Functions

- void initEdgeType ()
- bool isVertex (int node)

Public Attributes

- int vertex_ [2]

29.109.1 Detailed Description

EdgeType - used in PrPathTriangleSeq

Definition at line 58 of file PrPathTriangleSeq.h.

29.109.2 Member Function Documentation

29.109.2.1 void EdgeType::initEdgeType ( )

29.109.2.2 bool EdgeType::isVertex (int *node*)

29.109.3 Member Data Documentation

29.109.3.1 int EdgeType::vertex_[2]

Definition at line 61 of file PrPathTriangleSeq.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPathTriangleSeq.h

29.110 Go::EdgeVertex Class Reference

`#include <EdgeVertex.h>`

Public Member Functions

- EdgeVertex (std::vector< ftEdge * > edges)
  Constructor given a number of adjacent half edges.
- EdgeVertex (ftEdge *edge)
  Constructor given one half edge.
- ~EdgeVertex ()
  Destructor.
- void addEdge (ftEdge *edge)
- void removeEdge (ftEdge *edge)
- void addEdgeVertex (EdgeVertex *other)
  Join the content of two edge vertex instances.
- std::vector< ftEdge * > allEdges () const
  Returns all edges meeting in this vertex including twins.
- std::vector< ftEdge * > allEdges (Body *bd)
- std::vector< ftEdge * > uniqueEdges ()
- std::vector< ftEdge * > uniqueEdges (Body *bd)
- int nmbUniqueEdges ()
- int nmbUniqueEdges (Body *bd) const
- ftEdge * getEdge (int idx)
- bool hasEdge (ftEdge *edge) const
  Check if a half edge is collected in this radial edge.
- bool hasEdgeSingle (ftEdge *edge) const
- std::vector< ftSurface * > getAdjacentFaces () const
  Get all adjacent faces.
- std::vector< ftSurface * > getAdjacentFaces (Body *bd) const
  Get all adjacent faces belonging to a given body.
- std::vector< Body * > getAdjacentBodies () const
  Get all adjacent bodies.
- void organizeTwins ()
  Reset twin organization.
- void reOrganize ()
  Reorganize edges to get better pairs of twins.
- void disconnectTwin (ftEdge *e1, ftEdge *e2)
- void splitAtVertex (shared_ptr< Vertex > v1, shared_ptr< Vertex > v2, shared_ptr< Vertex > split_vx)
  Split edge vertex.
- void averageSplineEdges (double eps)
- bool checkRadialEdgeTopology ()
  Debug functionality.

29.110.1 Detailed Description

Represents the radial edge structure in a non-manifold. Edges in a volume model setting. This entity corresponds to Vertex in the surface model setting.

Definition at line 63 of file EdgeVertex.h.

29.110.2 Constructor & Destructor Documentation

29.110.2.1 Go::EdgeVertex::EdgeVertex (std::vector< ftEdge * > *edges*)

Constructor given a number of adjacent half edges.

29.110.2.2 Go::EdgeVertex::EdgeVertex (ftEdge * *edge*)

Constructor given one half edge.

29.110.2.3 Go::EdgeVertex::~EdgeVertex ( )

Destructor.

29.110.3 Member Function Documentation

29.110.3.1 void Go::EdgeVertex::addEdge (ftEdge * *edge*)

Add another half edge to this radial edge. Used in topology build for volume models

29.110.3.2 void Go::EdgeVertex::addEdgeVertex (EdgeVertex * *other*)

Join the content of two edge vertex instances.

29.110.3.3 std::vector<ftEdge*> Go::EdgeVertex::allEdges ( ) const

Returns all edges meeting in this vertex including twins.

29.110.3.4 std::vector<ftEdge*> Go::EdgeVertex::allEdges (Body * *bd*)

Returns all edges belonging to a given body meeting in this vertex including twins

29.110.3.5 void Go::EdgeVertex::averageSplineEdges (double *eps*)

Average coefficients of all spline surfaces meeting in this radial edge

29.110.3.6 bool Go::EdgeVertex::checkRadialEdgeTopology ( )

Debug functionality.

29.110.3.7 void Go::EdgeVertex::disconnectTwin (ftEdge * *e1*, ftEdge * *e2*)

Disconnect twin edges collected into this edge vertex, also in this data structure. Called from ftEdge.

29.110.3.8 std::vector<Body*> Go::EdgeVertex::getAdjacentBodies ( ) const

Get all adjacent bodies.

29.110.3.9 std::vector<ftSurface*> Go::EdgeVertex::getAdjacentFaces ( ) const

Get all adjacent faces.

29.110.3.10 std::vector<ftSurface*> Go::EdgeVertex::getAdjacentFaces (Body * *bd*) const

Get all adjacent faces belonging to a given body.

29.110.3.11 ftEdge* Go::EdgeVertex::getEdge (int *idx*) [inline]

Fetch a specified half edge, twins are counted once and an arbitrary member of a twin pair is returned

Definition at line 115 of file EdgeVertex.h.

29.110.3.12 bool Go::EdgeVertex::hasEdge (ftEdge * *edge*) const

Check if a half edge is collected in this radial edge.

29.110.3.13 bool Go::EdgeVertex::hasEdgeSingle (ftEdge * *edge*) const

Check if a half edge is collected in this radial edge and has no twin information

29.110.3.14 int Go::EdgeVertex::nmbUniqueEdges ( ) [inline]

Number of unique edges meeting in this radial edge, twin information is counted only once. The number coincides with the number of bodies meeting in this edge

Definition at line 104 of file EdgeVertex.h.

29.110.3.15 int Go::EdgeVertex::nmbUniqueEdges (Body * *bd*) const

Number of unique edges of one body meeting in this radial edge, twin information is counted only once.

29.110.3.16 void Go::EdgeVertex::organizeTwins ( )

Reset twin organization.

29.110.3.17 void Go::EdgeVertex::removeEdge (ftEdge * *edge*)

Remove a half edge from this radial edge. Used in topology modifications for volume models

29.110.3.18 void Go::EdgeVertex::reOrganize ( )

Reorganize edges to get better pairs of twins.

29.110.3.19 void Go::EdgeVertex::splitAtVertex (shared_ptr< Vertex > *v1*, shared_ptr< Vertex > *v2*, shared_ptr< Vertex > *split_vx*)

Split edge vertex.

29.110.3.20 std::vector<ftEdge*> Go::EdgeVertex::uniqueEdges ( )

Returns all geometrically unique edges meeting in this vertex. One edge is return for a pair of twins.

29.110.3.21 std::vector<ftEdge*> Go::EdgeVertex::uniqueEdges (Body * *bd*)

Returns all geometrically unique edges belonging to a given body meeting in this vertex. One edge is return for a pair of twins.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/EdgeVertex.h

29.111 Go::Element2D Class Reference

`#include <Element2D.h>`

Public Member Functions

- Element2D ()
- Element2D (double start_u, double start_v, double stop_u, double stop_v)
- ~Element2D ()
- void removeSupportFunction (LRBSpline2D *f)
- void addSupportFunction (LRBSpline2D *f)
- bool hasSupportFunction (LRBSpline2D *f)
- Element2D * split (bool split_u, double par_value)
- Element2D * copy ()
- double umin () const
- double vmin () const
- double umax () const
- double vmax () const
- double area () const
- std::vector< LRBSpline2D * >::iterator supportBegin ()
- std::vector< LRBSpline2D * >::iterator supportEnd ()
- std::vector< LRBSpline2D * >::const_iterator supportBegin () const
- std::vector< LRBSpline2D * >::const_iterator supportEnd () const
- const std::vector< LRBSpline2D * > & getSupport () const
- bool contains (double upar, double vpar)

- LRBSpline2D * supportFunction (int i)
- int nmbBasisFunctions () const
- void setUmin (double u)
- void setVmin (double v)
- void setUmax (double u)
- void setVmax (double v)
- bool isOverloaded () const
- void resetOverloadCount ()
- int incrementOverloadCount ()
- int getOverloadCount () const
- void updateBasisPointers (std::vector< LRBSpline2D * > &basis)
- void swapParameterDirection ()
- bool hasDataPoints ()
- int nmbDataPoints ()

  Number of scattered data points.
- int nmbGhostPoints ()

  Number of ghost points.
- void eraseDataPoints ()

  Remove data points associated with the element.
- void eraseDataPoints (std::vector< double >::iterator start, std::vector< double >::iterator end)
- void eraseGhostPoints ()
- void addDataPoints (std::vector< double >::iterator start, std::vector< double >::iterator end, bool sort_in_u)

  Add data points to the element.
- void addDataPoints (std::vector< double >::iterator start, std::vector< double >::iterator end, int del, bool sort_in_u)
- void addGhostPoints (std::vector< double >::iterator start, std::vector< double >::iterator end, bool sort_in_u)
- void addGhostPoints (std::vector< double >::iterator start, std::vector< double >::iterator end, int del, bool sort_in_u)
- std::vector< double > & getDataPoints ()

  Fetch data points.
- std::vector< double > & getGhostPoints ()

  Fetch artificial data points intended for stabilization.
- void getOutsidePoints (std::vector< double > &points, Direction2D d, bool &sort_in_u)
- void getOutsideGhostPoints (std::vector< double > &points, Direction2D d, bool &sort_in_u)
- bool hasLSMatrix ()

  Check if a submatrix for least squares approximation exists.
- void setLSMatrix ()
- void getLSMatrix (double *&LSmat, double *&LSright, int &ncond)

  Fetch local least squares arrays.
- bool hasAccuracyInfo ()

  Check if the element has accuracy information.
- void getAccuracyInfo (double &average_error, double &max_error, int &nmb_outside_tol)

  Fetch accuracy information.
- int getNmbOutsideTol ()
- double getAverageError ()
- double getAccumulatedError ()
- double getMaxError ()
- void setAccuracyInfo (double accumulated_error, double average_error, double max_error, int nmb_outside_tol)

  Store accuracy information.
- void resetAccuracyInfo ()
- bool getDataBoundingBox (double bb[ ])

- void makeDataPoints3D ()
- void updateAccuracyInfo ()
- void updateLSDataParDomain (double u1, double u2, double v1, double v2, double u1new, double u2new, double v1new, double v2new)
- bool isModified ()

  Check if the element has been modified lately.
- void resetModificationFlag ()

  Reset modified flag.
- void setModified ()

  Set modified flag to true.
- double sumOfScaledBsplines (double upar, double vpar)
- std::vector< double > unitSquareBernsteinBasis () const
- SplineCurve * curveOnElement (double start_u, double start_v, double end_u, double end_v) const

29.111.1 Detailed Description

Definition at line 251 of file Element2D.h.

29.111.2 Constructor & Destructor Documentation

29.111.2.1 Go::Element2D::Element2D ( )

29.111.2.2 Go::Element2D::Element2D (double *start_u,* double *start_v,* double *stop_u,* double *stop_v*)

29.111.2.3 Go::Element2D::~Element2D ( )

29.111.3 Member Function Documentation

29.111.3.1 void Go::Element2D::addDataPoints (std::vector< double >::iterator *start,* std::vector< double >::iterator *end,* bool *sort_in_u*) [inline]

Add data points to the element.

Definition at line 341 of file Element2D.h.

29.111.3.2 void Go::Element2D::addDataPoints (std::vector< double >::iterator *start,* std::vector< double >::iterator *end,* int *del,* bool *sort_in_u*) [inline]

Definition at line 349 of file Element2D.h.

29.111.3.3 void Go::Element2D::addGhostPoints (std::vector< double >::iterator *start,* std::vector< double >::iterator *end,* bool *sort_in_u*) [inline]

Definition at line 359 of file Element2D.h.

29.111.3.4 void Go::Element2D::addGhostPoints (std::vector< double >::iterator *start,* std::vector< double >::iterator *end,* int *del,* bool *sort_in_u*) [inline]

Definition at line 367 of file Element2D.h.

29.111.3.5 void Go::Element2D::addSupportFunction (LRBSpline2D * *f*)

29.111.3.6 double Go::Element2D::area ( ) const [inline]

Definition at line 267 of file Element2D.h.

29.111.3.7 bool Go::Element2D::contains (double *upar,* double *vpar*) [inline]

Definition at line 281 of file Element2D.h.

29.111.3.8 Element2D* Go::Element2D::copy ( )

29.111.3.9 SplineCurve* Go::Element2D::curveOnElement (double *start_u,* double *start_v,* double *end_u,* double *end_v*) const

Get the Bezier curve (as a spline curve) given as the image of a line segment in the parameter space of the spline surface. The parameter domain of the curve will be [0, 1].

Parameters

start_u	The u-value of the start point of the line segment
start_v	The v-value of the start point of the line segment
end_u	The u-value of the start point of the line segment
end_v	The v-value of the start point of the line segment

Returns

The spline curve

29.111.3.10 void Go::Element2D::eraseDataPoints ( ) [inline]

Remove data points associated with the element.

Definition at line 321 of file Element2D.h.

29.111.3.11 void Go::Element2D::eraseDataPoints (std::vector< double >::iterator *start,* std::vector< double >::iterator *end*) [inline]

Definition at line 327 of file Element2D.h.

29.111.3.12 void Go::Element2D::eraseGhostPoints ( ) [inline]

Definition at line 334 of file Element2D.h.

29.111.3.13 double Go::Element2D::getAccumulatedError ( ) [inline]

Definition at line 461 of file Element2D.h.

29.111.3.14 void Go::Element2D::getAccuracyInfo (double & *average_error,* double & *max_error,* int & *nmb_outside_tol*) [inline]

Fetch accuracy information.

Definition at line 431 of file Element2D.h.

29.111.3.15 double Go::Element2D::getAverageError ( ) [inline]

Definition at line 452 of file Element2D.h.

29.111.3.16 bool Go::Element2D::getDataBoundingBox (double *bb[]*)

29.111.3.17 std::vector<double>& Go::Element2D::getDataPoints ( ) [inline]

Fetch data points.

Definition at line 377 of file Element2D.h.

29.111.3.18 std::vector<double>& Go::Element2D::getGhostPoints ( ) [inline]

Fetch artificial data points intended for stabilization.

Definition at line 385 of file Element2D.h.

29.111.3.19 void Go::Element2D::getLSMatrix (double *&* *LSmat,* double *&* *LSright,* int & *ncond*) [inline]

Fetch local least squares arrays.

Definition at line 414 of file Element2D.h.

29.111.3.20 double Go::Element2D::getMaxError ( ) [inline]

Definition at line 470 of file Element2D.h.

29.111.3.21 int Go::Element2D::getNmbOutsideTol ( ) [inline]

Definition at line 443 of file Element2D.h.

29.111.3.22 void Go::Element2D::getOutsideGhostPoints (std::vector< double > & *points,* Direction2D *d,* bool & *sort_in_u*)

29.111.3.23 void Go::Element2D::getOutsidePoints (std::vector< double > & *points,* Direction2D *d,* bool & *sort_in_u*)

Split point set according to a modified size of the element and return the points lying outside the current element

29.111.3.24 int Go::Element2D::getOverloadCount ( ) const [inline]

Definition at line 297 of file Element2D.h.

29.111.3.25 const std::vector<LRBSpline2D*>& Go::Element2D::getSupport ( ) const [inline]

Definition at line 272 of file Element2D.h.

29.111.3.26 bool Go::Element2D::hasAccuracyInfo ( ) [inline]

Check if the element has accuracy information.

Definition at line 422 of file Element2D.h.

29.111.3.27 bool Go::Element2D::hasDataPoints ( ) [inline]

Check if the element is associated data points to be used in least squares approximation

Definition at line 306 of file Element2D.h.

29.111.3.28 bool Go::Element2D::hasLSMatrix ( ) [inline]

Check if a submatrix for least squares approximation exists.

Definition at line 401 of file Element2D.h.

29.111.3.29 bool Go::Element2D::hasSupportFunction (LRBSpline2D * *f*)

29.111.3.30 int Go::Element2D::incrementOverloadCount ( ) [inline]

Definition at line 296 of file Element2D.h.

29.111.3.31 bool Go::Element2D::isModified ( ) [inline]

Check if the element has been modified lately.

Definition at line 515 of file Element2D.h.

29.111.3.32 bool Go::Element2D::isOverloaded ( ) const

29.111.3.33 void Go::Element2D::makeDataPoints3D ( )

29.111.3.34 int Go::Element2D::nmbBasisFunctions ( ) const [inline]

Definition at line 288 of file Element2D.h.

29.111.3.35 int Go::Element2D::nmbDataPoints ( )

Number of scattered data points.

29.111.3.36 int Go::Element2D::nmbGhostPoints ( )

Number of ghost points.

29.111.3.37 void Go::Element2D::removeSupportFunction (LRBSpline2D * *f*)

29.111.3.38 void Go::Element2D::resetAccuracyInfo ( ) [inline]

Definition at line 491 of file Element2D.h.

29.111.3.39 void Go::Element2D::resetModificationFlag ( ) [inline]

Reset modified flag.

Definition at line 521 of file Element2D.h.

29.111.3.40 void Go::Element2D::resetOverloadCount ( ) [inline]

Definition at line 295 of file Element2D.h.

29.111.3.41 void Go::Element2D::setAccuracyInfo (double *accumulated_error,* double *average_error,* double *max_error,* int *nmb_outside_tol*) [inline]

Store accuracy information.

Definition at line 480 of file Element2D.h.

29.111.3.42 void Go::Element2D::setLSMatrix ( )

Create scratch to store local least squares approximation arrays

29.111.3.43 void Go::Element2D::setModified ( ) [inline]

Set modified flag to true.

Definition at line 527 of file Element2D.h.

29.111.3.44 void Go::Element2D::setUmax (double *u*) [inline]

Definition at line 291 of file Element2D.h.

29.111.3.45 void Go::Element2D::setUmin (double *u*) [inline]

Definition at line 289 of file Element2D.h.

29.111.3.46 void Go::Element2D::setVmax (double *v*) [inline]

Definition at line 292 of file Element2D.h.

29.111.3.47 void Go::Element2D::setVmin (double *v*) [inline]

Definition at line 290 of file Element2D.h.

29.111.3.48 Element2D* Go::Element2D::split (bool *split_u,* double *par_value*)

29.111.3.49 double Go::Element2D::sumOfScaledBsplines (double *upar,* double *vpar*)

29.111.3.50 std::vector<LRBSpline2D*>::iterator Go::Element2D::supportBegin ( ) [inline]

Definition at line 268 of file Element2D.h.

29.111.3.51 std::vector<LRBSpline2D*>::const_iterator Go::Element2D::supportBegin ( ) const [inline]

Definition at line 270 of file Element2D.h.

29.111.3.52 std::vector<LRBSpline2D*>::iterator Go::Element2D::supportEnd ( ) [inline]

Definition at line 269 of file Element2D.h.

29.111.3.53 std::vector<LRBSpline2D*>::const_iterator Go::Element2D::supportEnd ( ) const [inline]

Definition at line 271 of file Element2D.h.

29.111.3.54 LRBSpline2D* Go::Element2D::supportFunction (int *i*) [inline]

Definition at line 287 of file Element2D.h.

29.111.3.55 void Go::Element2D::swapParameterDirection ( )

29.111.3.56 double Go::Element2D::umax ( ) const [inline]

Definition at line 265 of file Element2D.h.

29.111.3.57 double Go::Element2D::umin ( ) const [inline]

Definition at line 263 of file Element2D.h.

29.111.3.58 std::vector<double> Go::Element2D::unitSquareBernsteinBasis ( ) const

Get the coefficients of the underlying lr-splinesurface on this element, expressed by the Bernstein basis after a linear transformation sending this element to the unit square

Returns

a vector of the coefficients of the control points p_ij in order p_00[0], p_00[1], ..., p_10[0], ..., p_01[0], ...

29.111.3.59 void Go::Element2D::updateAccuracyInfo ( )

29.111.3.60 void Go::Element2D::updateBasisPointers (std::vector< LRBSpline2D * > & *basis*)

29.111.3.61 void Go::Element2D::updateLSDataParDomain (double *u1,* double *u2,* double *v1,* double *v2,* double *u1new,* double *u2new,* double *v1new,* double *v2new*)

29.111.3.62 double Go::Element2D::vmax ( ) const [inline]

Definition at line 266 of file Element2D.h.

29.111.3.63 double Go::Element2D::vmin ( ) const [inline]

Definition at line 264 of file Element2D.h.

The documentation for this class was generated from the following file:

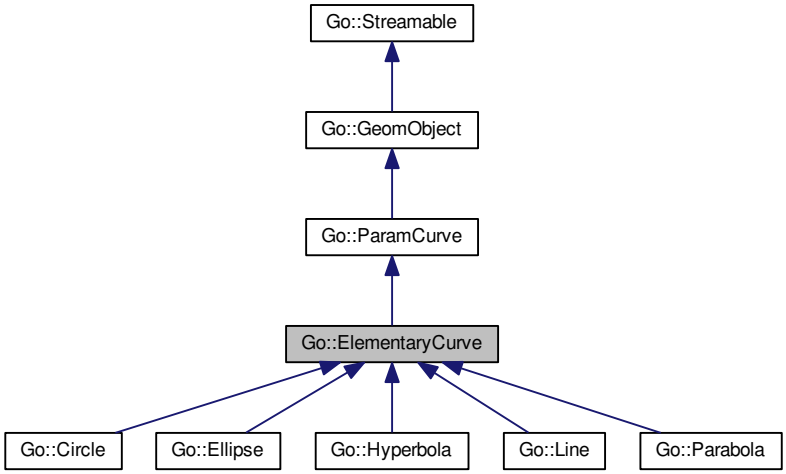
- lrsplines2D/include/GoTools/lrsplines2D/Element2D.h

29.112 Go::ElementaryCurve Class Reference

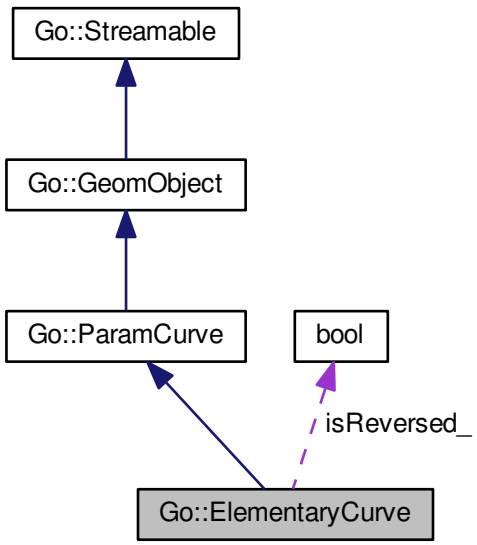
ElementaryCurve is a base class for elementary curves like lines and circles. Such curves have natural parametrizations and ElementaryCurve is therefore a subclass of ParamCurve.

`#include <ElementaryCurve.h>`

Inheritance diagram for Go::ElementaryCurve:



Collaboration diagram for Go::ElementaryCurve:



Public Member Functions

- ElementaryCurve ()
- virtual ~ElementaryCurve ()

  Virtual destructor, enables safe inheritance.
- virtual ElementaryCurve * clone () const =0
- virtual void reverseParameterDirection (bool switchparam=false)
- virtual SplineCurve * createSplineCurve () const =0
- virtual void setParamBounds (double startpar, double endpar)=0
- virtual void translateCurve (const Point &dir)=0
- virtual bool isReversed () const
- virtual void swapParameters2D ()=0
- virtual ElementaryCurve * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMETER_EPSILON) const =0

Protected Member Functions

- void getReversedParameter (double &t) const

Protected Attributes

- bool isReversed_

Additional Inherited Members

29.112.1 Detailed Description

ElementaryCurve is a base class for elementary curves like lines and circles. Such curves have natural parametrizations and ElementaryCurve is therefore a subclass of ParamCurve.

Definition at line 54 of file ElementaryCurve.h.

29.112.2 Constructor & Destructor Documentation

29.112.2.1 Go::ElementaryCurve::ElementaryCurve ( )

29.112.2.2 virtual Go::ElementaryCurve::~ElementaryCurve ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.112.3 Member Function Documentation

29.112.3.1 virtual ElementaryCurve* Go::ElementaryCurve::clone ( ) const [pure virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::ParamCurve.

Implemented in Go::Line, Go::Circle, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.112.3.2 virtual SplineCurve* Go::ElementaryCurve::createSplineCurve ( ) const [pure virtual]

Implemented in Go::Circle, Go::Line, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.112.3.3 void Go::ElementaryCurve::getReversedParameter (double & *t*) const [protected]

29.112.3.4 virtual bool Go::ElementaryCurve::isReversed ( ) const [virtual]

29.112.3.5 virtual void Go::ElementaryCurve::reverseParameterDirection (bool *switchparam* = false) [virtual]

Set the parameter direction of the curve. The curve's parameter interval will always remain constant, but by flipping the parameter direction, the curve will be traced the opposite way when moving a parameter over the parameter interval.

Parameters

switchparam	if true, and the curve is 2D, the x and y coordinates should be swapped. This is used when turning the orientation of bounded (trimmed) surfaces.

Implements Go::ParamCurve.

29.112.3.6 virtual void Go::ElementaryCurve::setParamBounds (double *startpar,* double *endpar*) [pure virtual]

Set bounds for the parametrization of the curve

Parameters

startpar	start parameter
endpar	end parameter

Implemented in Go::Circle, Go::Ellipse, Go::Line, Go::Hyperbola, and Go::Parabola.

29.112.3.7 virtual ElementaryCurve* Go::ElementaryCurve::subCurve (double *from_par,* double *to_par,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [pure virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implements Go::ParamCurve.

Implemented in Go::Circle, Go::Line, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.112.3.8 virtual void Go::ElementaryCurve::swapParameters2D ( ) [pure virtual]

Implemented in Go::Circle, Go::Ellipse, Go::Line, Go::Hyperbola, and Go::Parabola.

29.112.3.9 virtual void Go::ElementaryCurve::translateCurve (const Point & *dir*) [pure virtual]

Implemented in Go::Circle, Go::Ellipse, Go::Line, Go::Parabola, and Go::Hyperbola.

29.112.4 Member Data Documentation

29.112.4.1 bool Go::ElementaryCurve::isReversed_ [protected]

Definition at line 92 of file ElementaryCurve.h.

The documentation for this class was generated from the following file:

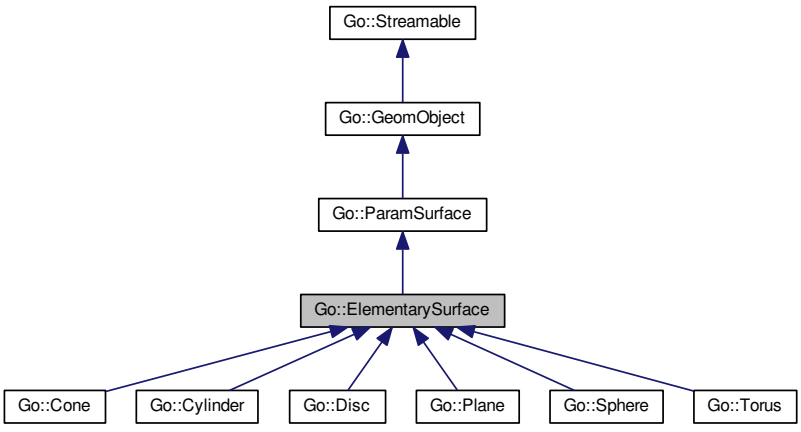
- gotools-core/include/GoTools/geometry/ElementaryCurve.h

29.113 Go::ElementarySurface Class Reference

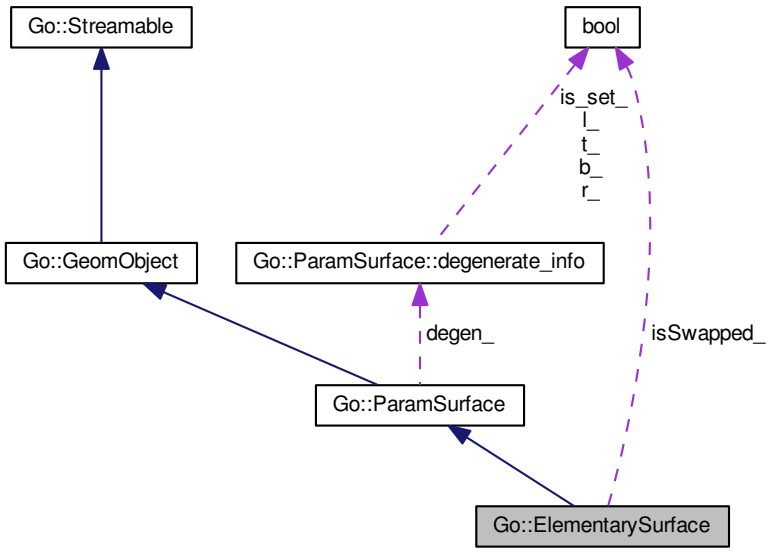
ElementarySurface is a base class for elementary surfaces like planes and cylinders. Such surfaces have natural parametrizations and ElementartSurface is therefore a subclass of ParamSurface. These surfaces are non-self-intersecting.

`#include <ElementarySurface.h>`

Inheritance diagram for Go::ElementarySurface:



Collaboration diagram for Go::ElementarySurface:



Public Member Functions

- ElementarySurface ()
- virtual ~ElementarySurface ()

  Virtual destructor, enables safe inheritance.
- virtual ElementarySurface * clone () const =0
- virtual CurveLoop outerBoundaryLoop (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- RectDomain containingDomain () const
- virtual Point closestInDomain (double u, double v) const
- virtual bool inDomain (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies inside the domain of this surface.
- virtual int inDomain2 (double u, double v, double eps=1.0e-4) const
- virtual bool onBoundary (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies at the boundary of this surface.
- virtual double area (double tol) const
- virtual void getCornerPoints (std::vector< std::pair< Point, Point > > &corners) const
- virtual SplineSurface * asSplineSurface ()

  Return the spline surface represented by this surface, if any.
- virtual bool isBounded () const
- virtual bool isClosed (bool &closed_dir_u, bool &closed_dir_v) const
- virtual SplineSurface * geometrySurface () const =0
- virtual SplineSurface * createSplineSurface () const =0

  Create a SplineSurface representation of the elementary surface.
- virtual void setParameterBounds (double from_upar, double from_vpar, double to_upar, double to_vpar)=0

  Limit the surface by limiting the parameter domain.
- virtual shared_ptr< ElementaryCurve > getElementaryParamCurve (ElementaryCurve *space_crv, double tol, const Point *start_par_pt=NULL, const Point *end_par_pt=NULL) const
- virtual void turnOrientation ()

Turns the direction of the normal of the surface.

- virtual void reverseParameterDirection (bool direction_is_u)
- virtual void swapParameterDirection ()

  Swaps the two parameter directions.
- virtual bool isSwapped () const

Protected Member Functions

- void getOrientedParameters (double &u, double &v) const

Protected Attributes

- bool isSwapped_

Additional Inherited Members

29.113.1 Detailed Description

ElementarySurface is a base class for elementary surfaces like planes and cylinders. Such surfaces have natural parametrizations and ElementartSurface is therefore a subclass of ParamSurface. These surfaces are non-self-intersecting.

Definition at line 60 of file ElementarySurface.h.

29.113.2 Constructor & Destructor Documentation

29.113.2.1 Go::ElementarySurface::ElementarySurface ( )

29.113.2.2 virtual Go::ElementarySurface::~ElementarySurface ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.113.3 Member Function Documentation

29.113.3.1 virtual double Go::ElementarySurface::area (double *tol*) const [virtual]

Compute the total area of this surface up to some tolerance

Parameters

tol	the relative tolerance when approximating the area, i.e. stop iteration when error becomes smaller than tol/(surface area)

Returns

the area calculated

Implements Go::ParamSurface.

29.113.3.2 virtual SplineSurface* Go::ElementarySurface::asSplineSurface ( ) [virtual]

Return the spline surface represented by this surface, if any.

Reimplemented from Go::ParamSurface.

29.113.3.3 virtual ElementarySurface* Go::ElementarySurface::clone ( ) const [pure virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ParamSurface.

Implemented in Go::Disc, Go::Torus, Go::Plane, Go::Cone, Go::Cylinder, and Go::Sphere.

29.113.3.4 virtual Point Go::ElementarySurface::closestInDomain (double *u*, double *v*) const [virtual]

Fetch the parameter value in the parameter domain of the surface closest to the parameter pair (u,v)

Implements Go::ParamSurface.

29.113.3.5 RectDomain Go::ElementarySurface::containingDomain ( ) const [virtual]

Get a rectangular parameter domain that is guaranteed to contain the surface's parameterDomain(). It may be the same. There is no guarantee that this is the smallest domain containing the actual domain.

Returns

a RectDomain that is guaranteed to include the surface's total parameter domain.

Implements Go::ParamSurface.

29.113.3.6 virtual SplineSurface* Go::ElementarySurface::createSplineSurface ( ) const [pure virtual]

Create a SplineSurface representation of the elementary surface.

Implemented in Go::Torus, Go::Cone, Go::Cylinder, Go::Sphere, Go::Plane, and Go::Disc.

29.113.3.7 virtual SplineSurface* Go::ElementarySurface::geometrySurface ( ) const [pure virtual]

Implemented in Go::Torus, Go::Cone, Go::Cylinder, Go::Sphere, Go::Plane, and Go::Disc.

29.113.3.8 virtual void Go::ElementarySurface::getCornerPoints (std::vector< std::pair< Point, Point > > & *corners*) const [virtual]

Return surface corners, geometric and parametric points in that sequence

Implements Go::ParamSurface.

29.113.3.9 virtual shared_ptr<ElementaryCurve> Go::ElementarySurface::getElementaryParamCurve (ElementaryCurve * *space_crv*, double *tol*, const Point * *start_par_pt* = NULL, const Point * *end_par_pt* = NULL) const [virtual]

Fetch the parameter curve in the domain of the elementary surface corresponding to a given elementary curve in geometry space if this curve has a simpler elementary representation. Otherwise, nothing is returned

Reimplemented in Go::Cone, Go::Cylinder, and Go::Sphere.

29.113.3.10 void Go::ElementarySurface::getOrientedParameters (double & *u*, double & *v*) const [protected]

29.113.3.11 virtual bool Go::ElementarySurface::inDomain (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies inside the domain of this surface.

Implements Go::ParamSurface.

29.113.3.12 virtual int Go::ElementarySurface::inDomain2 (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies inside the domain of this surface return value = 0: outside = 1: internal = 2: at the boundary

Implements Go::ParamSurface.

29.113.3.13 virtual bool Go::ElementarySurface::isBounded ( ) const [virtual]

Reimplemented in Go::Plane, Go::Cylinder, Go::Cone, Go::Disc, Go::Torus, and Go::Sphere.

29.113.3.14 virtual bool Go::ElementarySurface::isClosed (bool & *closed_dir_u*, bool & *closed_dir_v*) const [virtual]

Reimplemented in Go::Plane, Go::Cone, Go::Cylinder, Go::Disc, Go::Torus, and Go::Sphere.

29.113.3.15 virtual bool Go::ElementarySurface::isSwapped ( ) const [virtual]

29.113.3.16 virtual bool Go::ElementarySurface::onBoundary (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies at the boundary of this surface.

Implements Go::ParamSurface.

29.113.3.17 virtual CurveLoop Go::ElementarySurface::outerBoundaryLoop (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise, outer boundary loop of the surface.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a CurveLoop describing the anticlockwise, outer boundary loop of the surface. A negative degenerate_epsilon indicates that all curves, also the degenerate ones are wanted

Implements Go::ParamSurface.

29.113.3.18 virtual void Go::ElementarySurface::reverseParameterDirection (bool *direction_is_u*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

direction_is_u	if 'true', the first parameter direction will be reversed, otherwise, the second parameter direction will be reversed

Implements Go::ParamSurface.

29.113.3.19 virtual void Go::ElementarySurface::setParameterBounds (double *from_upar*, double *from_vpar*, double *to_upar*, double *to_vpar*) [pure virtual]

Limit the surface by limiting the parameter domain.

Implemented in Go::Torus, Go::Disc, Go::Sphere, Go::Plane, Go::Cylinder, and Go::Cone.

29.113.3.20 virtual void Go::ElementarySurface::swapParameterDirection ( ) [virtual]

Swaps the two parameter directions.

Implements Go::ParamSurface.

29.113.3.21 virtual void Go::ElementarySurface::turnOrientation ( ) [virtual]

Turns the direction of the normal of the surface.

Implements Go::ParamSurface.

29.113.4 Member Data Documentation

29.113.4.1 bool Go::ElementarySurface::isSwapped_ [protected]

Definition at line 135 of file ElementarySurface.h.

The documentation for this class was generated from the following file:

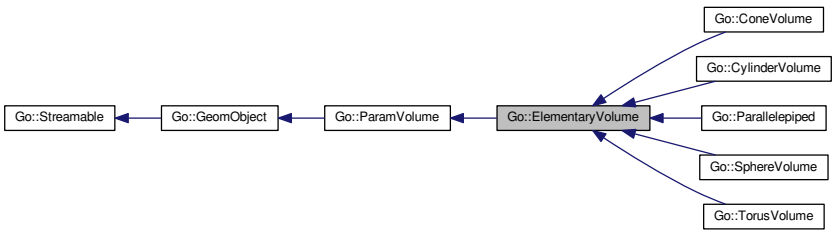
- gotools-core/include/GoTools/geometry/ElementarySurface.h

29.114 Go::ElementaryVolume Class Reference

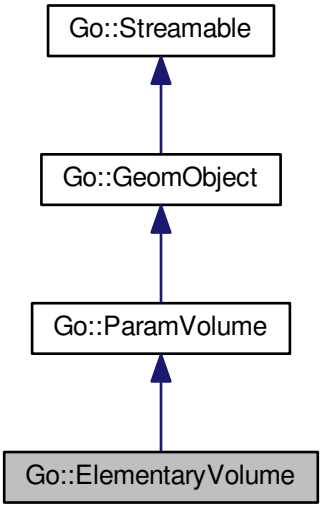
ElementaryVolume is a base class for elementary volumes like boxes and solid cylinders. Such volumes have natural parametrizations and ElementartVolume is therefore a subclass of ParamVolume. These volumes are non-self-intersecting.

`#include <ElementaryVolume.h>`

Inheritance diagram for Go::ElementaryVolume:



Collaboration diagram for Go::ElementaryVolume:



Public Member Functions

- virtual ~ElementaryVolume ()

  Virtual destructor, enables safe inheritance.
- virtual ElementaryVolume * clone () const =0
- virtual SplineVolume * geometryVolume () const =0

  Make a NURBS representation of the object.

Additional Inherited Members

29.114.1 Detailed Description

ElementaryVolume is a base class for elementary volumes like boxes and solid cylinders. Such volumes have natural parametrizations and ElementartVolume is therefore a subclass of ParamVolume. These volumes are non-self-intersecting.

Definition at line 58 of file ElementaryVolume.h.

29.114.2 Constructor & Destructor Documentation

29.114.2.1 virtual Go::ElementaryVolume::~ElementaryVolume ( ) [inline], [virtual]

Virtual destructor, enables safe inheritance.

Definition at line 64 of file ElementaryVolume.h.

29.114.3 Member Function Documentation

29.114.3.1 virtual ElementaryVolume* Go::ElementaryVolume::clone ( ) const [pure virtual]

make a clone of this volume and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ParamVolume.

Implemented in Go::TorusVolume, Go::ConeVolume, Go::CylinderVolume, Go::SphereVolume, and Go::Parallelepiped.

29.114.3.2 virtual SplineVolume* Go::ElementaryVolume::geometryVolume ( ) const [pure virtual]

Make a NURBS representation of the object.

Implemented in Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume, and Go::Parallelepiped.

The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/ElementaryVolume.h

29.115 Go::LRSplineSurface::ElemKey Struct Reference

`#include <LRSplineSurface.h>`

Public Member Functions

- bool operator< (const ElemKey &rhs) const

Public Attributes

- double u_min
- double v_min

29.115.1 Detailed Description

Definition at line 135 of file LRSplineSurface.h.

29.115.2 Member Function Documentation

29.115.2.1 bool Go::LRSplineSurface::ElemKey::operator< (const ElemKey & *rhs*) const [inline]

Definition at line 227 of file LRSplineSurface_impl.h.

29.115.3 Member Data Documentation

29.115.3.1 double Go::LRSplineSurface::ElemKey::u_min

Definition at line 137 of file LRSplineSurface.h.

29.115.3.2 double Go::LRSplineSurface::ElemKey::v_min

Definition at line 137 of file LRSplineSurface.h.

The documentation for this struct was generated from the following files:

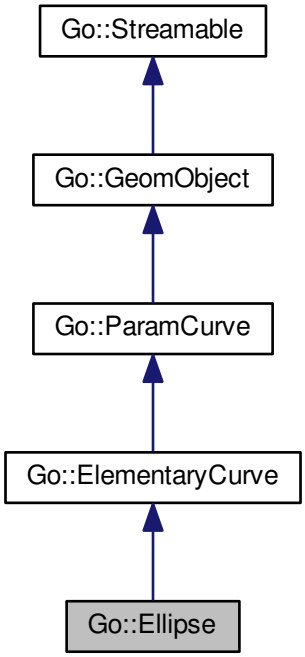
- lrsplines2D/include/GoTools/lrsplines2D/LRSplineSurface.h
- lrsplines2D/include/GoTools/lrsplines2D/LRSplineSurface_impl.h

29.116 Go::Ellipse Class Reference

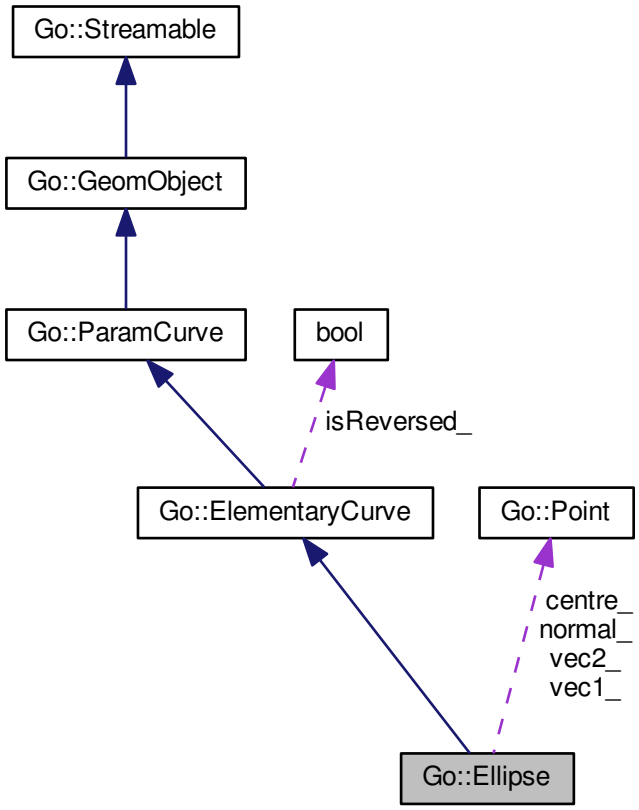
Class that represents an ellipse. It is a subclass of ElementaryCurve and thus has a parametrization.

`#include <Ellipse.h>`

Inheritance diagram for Go::Ellipse:



Collaboration diagram for Go::Ellipse:



Public Member Functions

- Ellipse ()
- Ellipse (Point centre, Point direction, Point normal, double r1, double r2, bool isReversed=false)
- virtual ~Ellipse ()

  virtual destructor - ensures safe inheritance
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual Ellipse * clone () const
- virtual void point (Point &pt, double tpar) const
- virtual void point (std::vector< Point > &pts, double tpar, int derivs, bool from_right=true) const
- virtual double startparam () const
- virtual double endparam () const

- virtual void setParameterInterval (double t1, double t2)

  Limit the curve by limiting the parameter domain.
- virtual SplineCurve * geometryCurve ()
- virtual SplineCurve * createSplineCurve () const

  Create the spline representation of this curve.
- virtual bool isDegenerate (double degenerate_epsilon)
- virtual Ellipse * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMETER_EPSI↩LON) const
- virtual DirectionCone directionCone () const
- virtual void appendCurve (ParamCurve *cv, bool reparam=true)
- virtual void appendCurve (ParamCurve *cv, int continuity, double &dist, bool reparam=true)
- virtual void closestPoint (const Point &pt, double tmin, double tmax, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const
- virtual double length (double tol)
- Point getCentre () const
- Point getNormal () const
- Point getXAxis () const
- double getRadius1 () const
- double getRadius2 () const
- virtual void setParamBounds (double startpar, double endpar)
- virtual void translateCurve (const Point &dir)
- virtual bool isInPlane (const Point &norm, double eps, Point &pos) const

  Check if the ellipse lies in a plane with a given normal.
- bool isClosed () const
- virtual void swapParameters2D ()

Static Public Member Functions

- static ClassType classType ()

Protected Member Functions

- void setSpanningVectors ()

Protected Attributes

- Point centre_
- Point vec1_
- Point vec2_
- Point normal_
- double r1_
- double r2_
- double startparam_
- double endparam_

29.116.1 Detailed Description

Class that represents an ellipse. It is a subclass of ElementaryCurve and thus has a parametrization.

An ellipse has a natural parametrization in terms of its values: f(t) = C + (R_1 * cos(t))*x + (R_2 * sin(t)) * y. This parametrization is bounded: 0 <= t <= 360 (degrees).

Definition at line 57 of file Ellipse.h.

29.116.2 Constructor & Destructor Documentation

29.116.2.1 Go::Ellipse::Ellipse ( ) [inline]

Default constructor. Constructs an uninitialized Ellipse which can only be assigned to or read into.

Definition at line 62 of file Ellipse.h.

29.116.2.2 Go::Ellipse::Ellipse (Point *centre*, Point *direction*, Point *normal*, double *r1*, double *r2*, bool *isReversed* = false)

Constructor. Input is point, axis direction and lengths of the two semi-axis.

29.116.2.3 virtual Go::Ellipse::~Ellipse ( ) [virtual]

virtual destructor - ensures safe inheritance

29.116.3 Member Function Documentation

29.116.3.1 virtual void Go::Ellipse::appendCurve (ParamCurve * *cv*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparametrization NB: This virtual member function currently only works for SplineCurves and CurveOnSurfaces. Moreover, 'this' curve and the 'cv' curve must be of the same type.

Parameters

cv	the curve to append to 'this' curve.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.116.3.2 virtual void Go::Ellipse::appendCurve (ParamCurve * *cv*, int *continuity*, double & *dist*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparmetrization

Parameters

cv	the curve to append to 'this' curve.
continuity	the required continuity at the transition. Can be G^(-1) and upwards.
dist	a measure of the local distorsion around the transition in order to achieve the specified continuity.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.116.3.3 virtual BoundingBox Go::Ellipse::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.116.3.4 static ClassType Go::Ellipse::classType ( ) [static]

29.116.3.5 virtual Ellipse* Go::Ellipse::clone ( ) const [virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::ElementaryCurve.

29.116.3.6 virtual void Go::Ellipse::closestPoint (const Point & *pt*, double *tmin*, double *tmax*, double & *clo_t*, Point & *clo_pt*, double & *clo_dist*, double const * *seed* = 0) const [virtual]

Compute the closest point from an interval of this curve to a specified point.

Parameters

pt	point we want to find the closest point to
tmin	start parameter of search interval
tmax	end parameter of search interval
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.
seed	pointer to initial guess value, provided by the user (can be 0, for which the algorithm will determine a (hopefully) reasonable choice).

Implements Go::ParamCurve.

29.116.3.7 virtual SplineCurve* Go::Ellipse::createSplineCurve ( ) const [virtual]

Create the spline representation of this curve.

Implements Go::ElementaryCurve.

29.116.3.8 virtual int Go::Ellipse::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.116.3.9 virtual DirectionCone Go::Ellipse::directionCone ( ) const [virtual]

Creates a DirectionCone which covers all tangent directions of this curve.

Returns

the smallest DirectionCone containing all tangent directions of this curve.

Implements Go::ParamCurve.

29.116.3.10 virtual double Go::Ellipse::endparam ( ) const [virtual]

Query the end parameter of the curve

Returns

the curve's end parameter

Implements Go::ParamCurve.

29.116.3.11 virtual SplineCurve* Go::Ellipse::geometryCurve ( ) [virtual]

If the definition of this ParamCurve contains a SplineCurve describing its spatial shape, then this function will return a pointer to this SplineCurve. Otherwise it will return a null pointer. The returned curve is NEWed, so the user is responsible for deleting it. This function may have side-effects.

Returns

a pointer to a SplineCurve representation of the ParamCurve, if it exists. Null pointer otherwise.

Implements Go::ParamCurve.

29.116.3.12 Point Go::Ellipse::getCentre ( ) const [inline]

Definition at line 140 of file Ellipse.h.

29.116.3.13 Point Go::Ellipse::getNormal ( ) const [inline]

Definition at line 145 of file Ellipse.h.

29.116.3.14 double Go::Ellipse::getRadius1 ( ) const [inline]

Definition at line 155 of file Ellipse.h.

29.116.3.15 double Go::Ellipse::getRadius2 ( ) const [inline]

Definition at line 160 of file Ellipse.h.

29.116.3.16 Point Go::Ellipse::getXAxis ( ) const [inline]

Definition at line 150 of file Ellipse.h.

29.116.3.17 virtual ClassType Go::Ellipse::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.116.3.18 bool Go::Ellipse::isClosed ( ) const

29.116.3.19 virtual bool Go::Ellipse::isDegenerate (double *degenerate_epsilon*) [virtual]

Query whether the curve is degenerate (collapsed into a single point).

Parameters

degenerate_epsilon	the tolerance used in determine whether the curve is degenerate. A curve is considered degenerate if its total length is shorter than this value.

Returns

`true` if the curve is degenerate, `false` otherwise.

Implements Go::ParamCurve.

29.116.3.20 virtual bool Go::Ellipse::isInPlane (const Point & *norm*, double *eps*, Point & *pos*) const [virtual]

Check if the ellipse lies in a plane with a given normal.

Reimplemented from Go::ParamCurve.

29.116.3.21 virtual double Go::Ellipse::length (double *tol*) [virtual]

Compute the total length of this curve up to some tolerance

Parameters

tol	the relative tolerance when approximating the length, i.e. stop iteration when error becomes smaller than tol/(curve length)

Returns

the length calculated

Implements Go::ParamCurve.

29.116.3.22 virtual void Go::Ellipse::point (Point & *pt,* double *tpar*) const [virtual]

Evaluate the curve's position at a given parameter

Parameters

pt	the evaluated position will be written to this Point
tpar	the parameter for which we wish to evaluate the curve

Implements Go::ParamCurve.

29.116.3.23 virtual void Go::Ellipse::point (std::vector< Point > & *pts,* double *tpar,* int *derivs,* bool *from_right* = true) const [virtual]

Evaluate the curve's position and a certain number of derivatives at a given parameter.

Parameters

pts	the evaluated position and derivatives (tangent, curvature vector, etc.) will be written to this vector. The first entry will be the position, the second entry will be the first derivative, etc. The size of this vector must be set to 'derivs'+ 1 prior to calling this function.
tpar	the parameter for which we want to evaluate the curve
derivs	the number of derivatives we want to have calculated
from_right	specify whether we should calculate derivatives 'from the right' or 'from the left' (default is from the right). This matters only when the curve presents discontinuities in its derivatives.

Implements Go::ParamCurve.

29.116.3.24 virtual void Go::Ellipse::read (std::istream & *is*) [virtual]

Read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.116.3.25 virtual void Go::Ellipse::setParamBounds (double *startpar,* double *endpar*) [virtual]

Set bounds for the parametrization of the Ellipse.

Parameters

startpar	start parameter
endpar	end parameter

Implements Go::ElementaryCurve.

29.116.3.26 virtual void Go::Ellipse::setParameterInterval (double *t1*, double *t2*) [virtual]

Limit the curve by limiting the parameter domain.

Implements Go::ParamCurve.

29.116.3.27 void Go::Ellipse::setSpanningVectors ( ) [protected]

29.116.3.28 virtual double Go::Ellipse::startparam ( ) const [virtual]

Query the start parameter of the curve

Returns

the curve's start parameter

Implements Go::ParamCurve.

29.116.3.29 virtual Ellipse* Go::Ellipse::subCurve (double *from_par*, double *to_par*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implements Go::ElementaryCurve.

29.116.3.30 virtual void Go::Ellipse::swapParameters2D ( ) [virtual]

If the curve is 2 dimensional, x and y coordinates will be swapped. Used when curve is a parameter curve.

Implements Go::ElementaryCurve.

29.116.3.31 virtual void Go::Ellipse::translateCurve (const Point & *dir*) [virtual]

Implements Go::ElementaryCurve.

29.116.3.32 virtual void Go::Ellipse::write (std::ostream & *os*) const [virtual]

Write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.116.4 Member Data Documentation

29.116.4.1 Point Go::Ellipse::centre_ [protected]

Definition at line 185 of file Ellipse.h.

29.116.4.2 double Go::Ellipse::endparam_ [protected]

Definition at line 194 of file Ellipse.h.

29.116.4.3 Point Go::Ellipse::normal_ [protected]

Definition at line 188 of file Ellipse.h.

29.116.4.4 double Go::Ellipse::r1_ [protected]

Definition at line 190 of file Ellipse.h.

29.116.4.5 double Go::Ellipse::r2_ [protected]

Definition at line 191 of file Ellipse.h.

29.116.4.6 double Go::Ellipse::startparam_ [protected]

Definition at line 193 of file Ellipse.h.

29.116.4.7 Point Go::Ellipse::vec1_ [protected]

Definition at line 186 of file Ellipse.h.

29.116.4.8 Point Go::Ellipse::vec2_ [protected]

Definition at line 187 of file Ellipse.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Ellipse.h

29.117 Go::EntityList Struct Reference

The entity number of all supported IGES entites.

```
#include <IGESconverter.h>
```

Public Member Functions

- EntityList ()
- bool validEntity (int ent)

29.117.1 Detailed Description

The entity number of all supported IGES entites.

Definition at line 118 of file IGESconverter.h.

29.117.2 Constructor & Destructor Documentation

29.117.2.1 Go::EntityList::EntityList ( ) [inline]

24 entities currently supported (072009). Note that for entities with multiple forms some forms may be missing. Circular arc.

Composite curve.

Conic arc.

Linear path (form 12).

Plane.

Line.

Point.

Ruled surface.

Surface of revolution.

Tabulated cylinder.

Direction.

Transformation matrix.

Rational B-spline curve.

Rational B-spline surface.

Boundary.

Curve on a parametric surface.

Bounded surface.

Trimmed (parametric) surface.

Plane surface.

Color definition.

Group without back pointers assoc. (form 7).

Vertex List.

Edge List.

Loop.

Face.

Definition at line 122 of file IGESconverter.h.

29.117.3 Member Function Documentation

29.117.3.1 bool Go::EntityList::validEntity (int *ent*)

The documentation for this struct was generated from the following file:

- igeslib/include/GoTools/igeslib/IGESconverter.h

29.118 Go::Streamable::EofException Class Reference

`#include <Streamable.h>`

29.118.1 Detailed Description

Definition at line 69 of file Streamable.h.

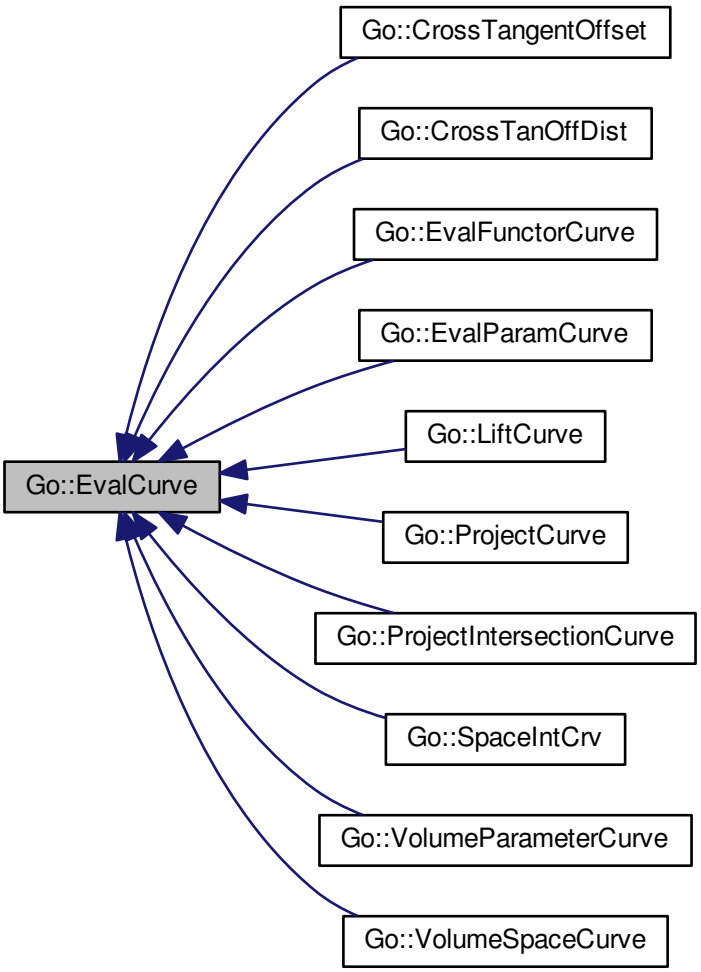
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Streamable.h

29.119 Go::EvalCurve Class Reference

`#include <EvalCurve.h>`

Inheritance diagram for Go::EvalCurve:



Public Member Functions

- virtual ~EvalCurve ()

  virtual destructor ensures save inheritance
- virtual Point eval (double t) const =0
- virtual void eval (double t, int n, Point der[ ]) const =0
- virtual double start () const =0
- virtual double end () const =0
- virtual int dim () const =0
- virtual bool approximationOK (double par, Point approxpos, double tol1, double tol2) const =0
- virtual void write (std::ostream &out) const

29.119.1 Detailed Description

This is the abstract base class of a curve type that can be evaluated. Representing the exact geometry, typically used when iteratively approximating the curve.

Definition at line 55 of file EvalCurve.h.

29.119.2 Constructor & Destructor Documentation

29.119.2.1 virtual Go::EvalCurve::~EvalCurve ( ) [virtual]

virtual destructor ensures save inheritance

29.119.3 Member Function Documentation

29.119.3.1 virtual bool Go::EvalCurve::approximationOK (double *par,* Point *approxpos,* double *tol1,* double *tol2*) const [pure virtual]

Check if the curve, evaluated at a given parameter, approximates a given position within a given tolerance.

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	approximation tolerance.
tol2	another approximation tolerance (its use is defined by some of the derived classes.

Returns

'true' if the curve approximates the point at the parameter, 'false' otherwise.

Implemented in Go::CrossTanOffDist, Go::VolumeParameterCurve, Go::ProjectCurve, Go::CrossTangentOffset, Go::ProjectIntersectionCurve, Go::VolumeSpaceCurve, Go::SpaceIntCrv, Go::EvalFunctorCurve, Go::LiftCurve, and Go::EvalParamCurve.

29.119.3.2 virtual int Go::EvalCurve::dim ( ) const [pure virtual]

Get the dimension of the space in which the curve lies.

Returns

the space dimension of the curve.

Implemented in Go::CrossTanOffDist, Go::VolumeParameterCurve, Go::ProjectCurve, Go::ProjectIntersection↩Curve, Go::SpaceIntCrv, Go::VolumeSpaceCurve, Go::CrossTangentOffset, Go::EvalFunctorCurve, Go::LiftCurve, and Go::EvalParamCurve.

29.119.3.3 virtual double Go::EvalCurve::end ( ) const [pure virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implemented in Go::CrossTanOffDist, Go::VolumeParameterCurve, Go::ProjectCurve, Go::ProjectIntersectionCurve, Go::SpaceIntCrv, Go::VolumeSpaceCurve, Go::CrossTangentOffset, Go::EvalFunctorCurve, Go::LiftCurve, and Go::EvalParamCurve.

29.119.3.4 virtual Point Go::EvalCurve::eval (double *t*) const [pure virtual]

Evaluate a point on the curve for a given parameter

Parameters

t	the parameter for which to evaluate the curve.

Returns

the evaluated point

Implemented in Go::ProjectCurve, Go::CrossTanOffDist, Go::CrossTangentOffset, Go::ProjectIntersectionCurve, Go::SpaceIntCrv, Go::VolumeParameterCurve, Go::LiftCurve, Go::VolumeSpaceCurve, Go::EvalParamCurve, and Go::EvalFunctorCurve.

29.119.3.5 virtual void Go::EvalCurve::eval (double *t*, int *n*, Point *der[]*) const [pure virtual]

Evaluate a point and a certain number of derivatives on the curve for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalCurve', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implemented in Go::CrossTanOffDist, Go::ProjectCurve, Go::VolumeParameterCurve, Go::ProjectIntersectionCurve, Go::SpaceIntCrv, Go::CrossTangentOffset, Go::VolumeSpaceCurve, Go::EvalFunctorCurve, Go::LiftCurve, and Go::EvalParamCurve.

29.119.3.6 virtual double Go::EvalCurve::start ( ) const [pure virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implemented in Go::CrossTanOffDist, Go::ProjectCurve, Go::VolumeParameterCurve, Go::ProjectIntersectionCurve, Go::SpaceIntCrv, Go::VolumeSpaceCurve, Go::CrossTangentOffset, Go::EvalFunctorCurve, Go::LiftCurve, and Go::EvalParamCurve.

29.119.3.7 virtual void Go::EvalCurve::write (std::ostream & *out*) const [virtual]

Reimplemented in Go::EvalParamCurve.

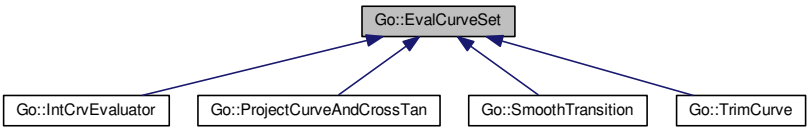
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/EvalCurve.h

29.120 Go::EvalCurveSet Class Reference

`#include <EvalCurveSet.h>`

Inheritance diagram for Go::EvalCurveSet:



Public Member Functions

- virtual ~EvalCurveSet ()

  virtual destructor ensures safe inheritance
- virtual std::vector< Point > eval (double t)=0
- virtual void eval (double t, int n, std::vector< std::vector< Point > > &der)=0
- virtual double start ()=0
- virtual double end ()=0
- virtual int dim ()=0
- virtual bool approximationOK (double par, const std::vector< Point > &approxpos, double tol1, double tol2)=0
- virtual int nmbCvs ()=0
- virtual void resetErr ()

  Reset intermediate error.

29.120.1 Detailed Description

This abstract class provides an interface to a set of curves that can be evaluated. Representing the actual geometry, typically used when iteratively approximating the set of curves on the same basis.

Definition at line 55 of file EvalCurveSet.h.

29.120.2 Constructor & Destructor Documentation

29.120.2.1 virtual Go::EvalCurveSet::~EvalCurveSet ( ) [inline], [virtual]

virtual destructor ensures safe inheritance

Definition at line 59 of file EvalCurveSet.h.

29.120.3 Member Function Documentation

29.120.3.1 virtual bool Go::EvalCurveSet::approximationOK (double *par*, const std::vector< Point > & *approxpos*, double *tol1*, double *tol2*) [pure virtual]

Whether the approximation is within tolerances in input parameter.

Parameters

par	parameter in which to evaluate.
approxpos	whether the input points are within tolerance from the evaluated points (as given by eval()).
tol1	tolerance used to decide approximation accuracy.
tol2	tolerance used to decide approximation accuracy.

Returns

whether the approximation is within tolerances in input parameter.

Implemented in Go::TrimCurve, Go::IntCrvEvaluator, and Go::SmoothTransition.

29.120.3.2 virtual int Go::EvalCurveSet::dim ( ) [pure virtual]

The geometric dimension of the spline curves.

Returns

geometric dimension of the space.

Implemented in Go::ProjectCurveAndCrossTan, Go::SmoothTransition, Go::TrimCurve, and Go::IntCrvEvaluator.

29.120.3.3 virtual double Go::EvalCurveSet::end ( ) [pure virtual]

End parameter of domain.

Returns

end parameter of the spline space.

Implemented in Go::ProjectCurveAndCrossTan, Go::SmoothTransition, Go::TrimCurve, and Go::IntCrvEvaluator.

29.120.3.4 virtual std::vector<Point> Go::EvalCurveSet::eval (double *t*) [pure virtual]

Evaluate the curves.

Parameters

t	parameter in which to evaluate.

Returns

the evaluated points for the curve set.

Implemented in Go::ProjectCurveAndCrossTan, Go::SmoothTransition, Go::TrimCurve, and Go::IntCrvEvaluator.

29.120.3.5 virtual void Go::EvalCurveSet::eval (double *t*, int *n*, std::vector< std::vector< Point > > & *der*) [pure virtual]

Evaluate the curve derivatives.

Parameters

t	parameter in which to evaluate.
n	number of derivatives to compute.
der	the evaluated points up to the n'th derivative for the curve set.

Implemented in Go::SmoothTransition, Go::TrimCurve, and Go::IntCrvEvaluator.

29.120.3.6 virtual int Go::EvalCurveSet::nmbCvs ( ) [pure virtual]

The number of curves in the curve set.

Returns

the number of curves in the curve set.

Implemented in Go::ProjectCurveAndCrossTan, Go::TrimCurve, Go::IntCrvEvaluator, and Go::SmoothTransition.

29.120.3.7 virtual void Go::EvalCurveSet::resetErr ( ) [inline], [virtual]

Reset intermediate error.

Reimplemented in Go::IntCrvEvaluator.

Definition at line 100 of file EvalCurveSet.h.

29.120.3.8 virtual double Go::EvalCurveSet::start ( ) [pure virtual]

Start parameter of domain.

Returns

start parameter of the spline space.

Implemented in Go::ProjectCurveAndCrossTan, Go::SmoothTransition, Go::TrimCurve, and Go::IntCrvEvaluator.

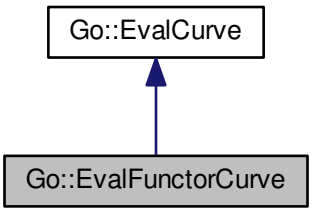
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/EvalCurveSet.h

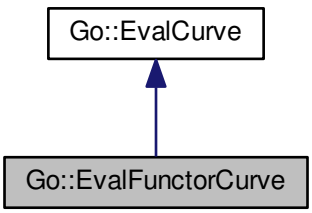
29.121 Go::EvalFunctorCurve Class Reference

`#include <EvalFunctorCurve.h>`

Inheritance diagram for Go::EvalFunctorCurve:



Collaboration diagram for Go::EvalFunctorCurve:



Public Member Functions

- EvalFunctorCurve (BdCondFunctor *fbd, shared_ptr< SplineCurve > geo_curve, int dimension)
- virtual ~EvalFunctorCurve ()
- virtual Point eval (double t) const
- virtual void eval (double t, int n, Point der[ ]) const
- virtual double start () const
- virtual double end () const
- virtual int dim () const
- virtual bool approximationOK (double par, Point approxpos, double tol1, double tol2) const

29.121.1 Detailed Description

Definition at line 54 of file EvalFunctorCurve.h.

29.121.2 Constructor & Destructor Documentation

29.121.2.1 Go::EvalFunctorCurve::EvalFunctorCurve (BdCondFunctor * *fbd*, shared_ptr< SplineCurve > *geo_curve*, int *dimension*)

29.121.2.2 virtual Go::EvalFunctorCurve::~EvalFunctorCurve ( ) [virtual]

29.121.3 Member Function Documentation

29.121.3.1 virtual bool Go::EvalFunctorCurve::approximationOK (double *par*, Point *approxpos*, double *tol1*, double *tol2*) const [virtual]

Check if the curve, evaluated at a given parameter, approximates a given position within a given tolerance.

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	approximation tolerance.
tol2	another approximation tolerance (its use is defined by some of the derived classes.

Returns

'true' if the curve approximates the point at the parameter, 'false' otherwise.

Implements Go::EvalCurve.

29.121.3.2 virtual int Go::EvalFunctorCurve::dim ( ) const [virtual]

Get the dimension of the space in which the curve lies.

Returns

the space dimension of the curve.

Implements Go::EvalCurve.

29.121.3.3 virtual double Go::EvalFunctorCurve::end ( ) const [virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implements Go::EvalCurve.

29.121.3.4 virtual Point Go::EvalFunctorCurve::eval (double *t*) const [virtual]

Evaluate a point on the curve for a given parameter

Parameters

t	the parameter for which to evaluate the curve.

Returns

the evaluated point

Implements Go::EvalCurve.

29.121.3.5 virtual void Go::EvalFunctorCurve::eval (double *t*, int *n*, Point *der[ ]*) const [virtual]

Evaluate a point and a certain number of derivatives on the curve for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalCurve', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implements Go::EvalCurve.

29.121.3.6 virtual double Go::EvalFunctorCurve::start ( ) const [virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implements Go::EvalCurve.

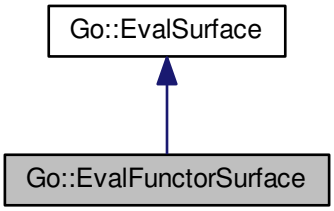
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/EvalFunctorCurve.h

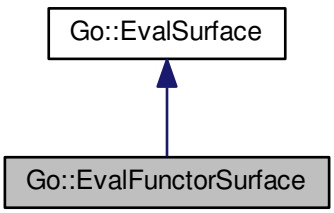
29.122 Go::EvalFunctorSurface Class Reference

`#include <EvalFunctorSurface.h>`

Inheritance diagram for Go::EvalFunctorSurface:



Collaboration diagram for Go::EvalFunctorSurface:



Public Member Functions

- EvalFunctorSurface (BdCondFunctor *fbd, shared_ptr< SplineSurface > geo_surface, int dimension)
- virtual ~EvalFunctorSurface ()
- virtual Point eval (double u, double v) const
- virtual void eval (double u, double v, int n, Point der[]) const
- virtual double start_u () const
- virtual double start_v () const
- virtual double end_u () const
- virtual double end_v () const
- virtual int dim () const
- virtual bool approximationOK (double par_u, double par_v, Point approxpos, double tol1, double tol2) const

29.122.1 Detailed Description

Definition at line 54 of file EvalFunctorSurface.h.

29.122.2 Constructor & Destructor Documentation

29.122.2.1 Go::EvalFunctorSurface::EvalFunctorSurface (BdCondFunctor * *fbd*, shared_ptr< SplineSurface > *geo_surface*, int *dimension*)

29.122.2.2 virtual Go::EvalFunctorSurface::~EvalFunctorSurface ( ) [virtual]

29.122.3 Member Function Documentation

29.122.3.1 virtual bool Go::EvalFunctorSurface::approximationOK (double *par_u*, double *par_v*, Point *approxpos*, double *tol1*, double *tol2*) const [virtual]

Check if the surface, evaluated at a given parameter, approximates a given position within a given tolerance.

Parameters

par	the parameter at which to check the surface
approxpos	the position we want to check whether or not the surface approximates for parameter 'par'.
tol1	approximation tolerance.
tol2	another approximation tolerance (its use is defined by some of the derived classes.

Returns

'true' if the surface approximates the point at the parameter, 'false' otherwise.

Implements Go::EvalSurface.

29.122.3.2 virtual int Go::EvalFunctorSurface::dim ( ) const [virtual]

Get the dimension of the space in which the surface lies.

Returns

the space dimension of the surface.

Implements Go::EvalSurface.

29.122.3.3 virtual double Go::EvalFunctorSurface::end_u ( ) const [virtual]

Get the end parameter of the surface.

Returns

the end parameter of the surface.

Implements Go::EvalSurface.

29.122.3.4 virtual double Go::EvalFunctorSurface::end_v ( ) const [virtual]

Implements Go::EvalSurface.

29.122.3.5 virtual Point Go::EvalFunctorSurface::eval (double *u*, double *v*) const [virtual]

Evaluate a point on the surface for a given parameter

Parameters

t	the parameter for which to evaluate the surface.

Returns

the evaluated point

Implements Go::EvalSurface.

29.122.3.6 virtual void Go::EvalFunctorSurface::eval (double *u*, double *v*, int *n*, Point *der[ ]*) const [virtual]

Evaluate a point and a certain number of derivatives on the surface for a given parameter.

Parameters

t	the parameter for which to evaluate the surface.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalSurface', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implements Go::EvalSurface.

29.122.3.7 virtual double Go::EvalFunctorSurface::start_u ( ) const [virtual]

Get the start parameter of the surface.

Returns

the start parameter of the surface.

Implements Go::EvalSurface.

29.122.3.8 virtual double Go::EvalFunctorSurface::start_v ( ) const [virtual]

Implements Go::EvalSurface.

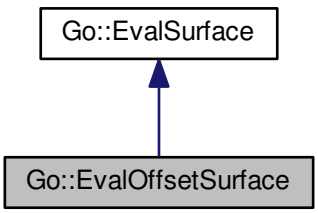
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/EvalFunctorSurface.h

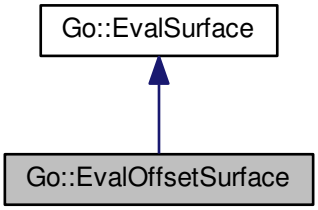
29.123 Go::EvalOffsetSurface Class Reference

`#include <EvalOffsetSurface.h>`

Inheritance diagram for Go::EvalOffsetSurface:



Collaboration diagram for Go::EvalOffsetSurface:



Public Member Functions

- EvalOffsetSurface (shared_ptr< ftFaceBase > base_sf, double offset_dist, double epsgeo)
- virtual ~EvalOffsetSurface ()
- virtual Point eval (double u, double v) const
- virtual void eval (double u, double v, int n, Point der[ ]) const
- virtual double start_u () const
- virtual double start_v () const
- virtual double end_u () const
- virtual double end_v () const
- virtual int dim () const
- virtual bool approximationOK (double par_u, double par_v, Point approxpos, double tol1, double tol2) const
- void gridSelfIntersections (const HermiteGrid2D &grid, std::vector< int > &grid_self_intersections, std::vector< double > &radius_of_curv) const
- void gridKinks (const HermiteGrid2D &grid, const std::vector< shared_ptr< SplineCurve > > &kink_cvs_2d, std::vector< int > &grid_kinks) const
- std::vector< shared_ptr< SplineCurve > > getProjKinkCurves (std::vector< pair< shared_ptr< ParamCurve >, shared_ptr< ParamCurve > > > &par_cvs, std::vector< pair< shared_ptr< ParamSurface >, shared_ptr< ParamSurface > > > &sfs)

29.123.1 Detailed Description

Definition at line 64 of file EvalOffsetSurface.h.

29.123.2 Constructor & Destructor Documentation

29.123.2.1 Go::EvalOffsetSurface::EvalOffsetSurface (shared_ptr< ftFaceBase > *base_sf*, double *offset_dist*, double *epsgeo*)

29.123.2.2 virtual Go::EvalOffsetSurface::~EvalOffsetSurface ( ) [virtual]

29.123.3 Member Function Documentation

29.123.3.1 virtual bool Go::EvalOffsetSurface::approximationOK (double *par_u*, double *par_v*, Point *approxpos*, double *tol1*, double *tol2*) const [virtual]

Check if the curve, evaluated at a given parameter, approximates a given position within a given tolerance.

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	approximation tolerance.
tol2	another approximation tolerance (its use is defined by some of the derived classes.

Returns

'true' if the curve approximates the point at the parameter, 'false' otherwise.

Implements Go::EvalSurface.

29.123.3.2 virtual int Go::EvalOffsetSurface::dim ( ) const [virtual]

Get the dimension of the space in which the curve lies.

Returns

the space dimension of the curve.

Implements Go::EvalSurface.

29.123.3.3 virtual double Go::EvalOffsetSurface::end_u ( ) const [virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implements Go::EvalSurface.

29.123.3.4 virtual double Go::EvalOffsetSurface::end_v ( ) const [virtual]

Implements Go::EvalSurface.

29.123.3.5 virtual Point Go::EvalOffsetSurface::eval (double *u*, double *v*) const [virtual]

Evaluate a point on the surface for a given parameter

Parameters

t	the parameter for which to evaluate the surface.

Returns

the evaluated point

Implements Go::EvalSurface.

29.123.3.6 virtual void Go::EvalOffsetSurface::eval (double *u*, double *v*, int *n*, Point *der[ ]*) const [virtual]

Evaluate a point and a certain number of derivatives on the surface for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalSurface', the implementation actually only supports the computation of one derivative, i.e. if n > 1, only one derivative will be computed anyway.

Implements Go::EvalSurface.

29.123.3.7 std::vector<shared_ptr<SplineCurve> > Go::EvalOffsetSurface::getProjKinkCurves (std::vector< pair< shared_ptr< ParamCurve >, shared_ptr< ParamCurve > > > & *par_cvs*, std::vector< pair< shared_ptr< ParamSurface >, shared_ptr< ParamSurface > > > & *sfs*)

29.123.3.8 void Go::EvalOffsetSurface::gridKinks (const HermiteGrid2D & *grid*, const std::vector< shared_ptr< SplineCurve > > & *kink_cvs_2d*, std::vector< int > & *grid_kinks*) const

29.123.3.9 void Go::EvalOffsetSurface::gridSelfIntersections (const HermiteGrid2D & *grid*, std::vector< int > & *grid_self_intersections*, std::vector< double > & *radius_of_curv*) const

29.123.3.10 virtual double Go::EvalOffsetSurface::start_u ( ) const [virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implements Go::EvalSurface.

29.123.3.11 virtual double Go::EvalOffsetSurface::start_v ( ) const [virtual]

Implements Go::EvalSurface.

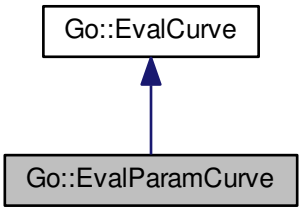
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/EvalOffsetSurface.h

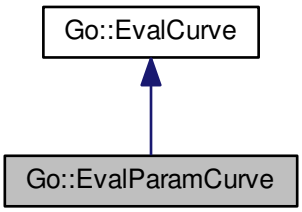
29.124 Go::EvalParamCurve Class Reference

`#include <EvalParamCurve.h>`

Inheritance diagram for Go::EvalParamCurve:



Collaboration diagram for Go::EvalParamCurve:



Public Member Functions

- EvalParamCurve (shared_ptr< Go::ParamCurve > &crv)

  Constructor, taking a parametric curve.
- virtual ~EvalParamCurve ()

  virtual destructor enables safe inheritance
- virtual Point eval (double t) const
- virtual void eval (double t, int n, Point der[]) const
- virtual double start () const
- virtual double end () const
- virtual int dim () const

  Dimension of the lifted curve (i.e. 3).
- virtual bool approximationOK (double par, Point approxpos, double tol1, double tol2) const
- virtual void write (std::ostream &out) const

29.124.1 Detailed Description

This class represents a interface to a ParamCurve to make it fit into the evaluator based curve concept

Definition at line 59 of file EvalParamCurve.h.

29.124.2 Constructor & Destructor Documentation

29.124.2.1 Go::EvalParamCurve::EvalParamCurve (shared_ptr< Go::ParamCurve > & *crv*)

Constructor, taking a parametric curve.

29.124.2.2 virtual Go::EvalParamCurve::~EvalParamCurve ( ) [virtual]

virtual destructor enables safe inheritance

29.124.3 Member Function Documentation

29.124.3.1 virtual bool Go::EvalParamCurve::approximationOK (double *par,* Point *approxpos,* double *tol1,* double *tol2*) const [virtual]

Inherited from EvalCurve::approximationOK().

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	unused
tol2	unused

Returns

'true' if the curve approximates the point at the parameter (within the tolerance given in the constructor, 'epsgeo'). 'false' otherwise.

Implements Go::EvalCurve.

29.124.3.2 virtual int Go::EvalParamCurve::dim ( ) const [virtual]

Dimension of the lifted curve (i.e. 3).

Implements Go::EvalCurve.

29.124.3.3 virtual double Go::EvalParamCurve::end ( ) const [virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implements Go::EvalCurve.

29.124.3.4 virtual Point Go::EvalParamCurve::eval (double *t*) const [virtual]

Evaluate a point on the curve for a given parameter

Parameters

t	the parameter for which to evaluate the curve.

Returns

the evaluated point

Implements Go::EvalCurve.

29.124.3.5 virtual void Go::EvalParamCurve::eval (double *t*, int *n*, Point *der[ ]*) const [virtual]

Evaluate a point and a certain number of derivatives on the curve for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalCurve', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implements Go::EvalCurve.

29.124.3.6 virtual double Go::EvalParamCurve::start ( ) const [virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implements Go::EvalCurve.

29.124.3.7 virtual void Go::EvalParamCurve::write (std::ostream & *out*) const [virtual]

Reimplemented from Go::EvalCurve.

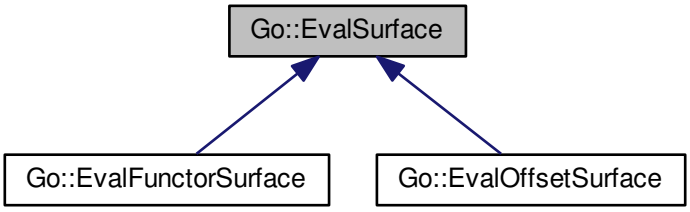
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/EvalParamCurve.h

29.125 Go::EvalSurface Class Reference

`#include <EvalSurface.h>`

Inheritance diagram for Go::EvalSurface:



Public Member Functions

- virtual ~EvalSurface ()
  virtual destructor ensures save inheritance
- virtual Point eval (double u, double v) const =0
- virtual void eval (double u, double v, int n, Point der[ ]) const =0
- virtual double start_u () const =0
- virtual double start_v () const =0
- virtual double end_u () const =0
- virtual double end_v () const =0
- virtual int dim () const =0
- virtual bool approximationOK (double par_u, double par_v, Point approxpos, double tol1, double tol2) const =0
- virtual void write (std::ostream &out) const

29.125.1 Detailed Description

This is the abstract base class of a curve type that can be evaluated. Representing the exact geometry, typically used when iteratively approximating the curve.

Definition at line 56 of file EvalSurface.h.

29.125.2 Constructor & Destructor Documentation

29.125.2.1 virtual Go::EvalSurface::~EvalSurface ( ) [virtual]

virtual destructor ensures save inheritance

29.125.3 Member Function Documentation

29.125.3.1 virtual bool Go::EvalSurface::approximationOK (double *par_u*, double *par_v*, Point *approxpos*, double *tol1*, double *tol2*) const [pure virtual]

Check if the curve, evaluated at a given parameter, approximates a given position within a given tolerance.

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	approximation tolerance.
tol2	another approximation tolerance (its use is defined by some of the derived classes.

Returns

'true' if the curve approximates the point at the parameter, 'false' otherwise.

Implemented in Go::EvalOffsetSurface, and Go::EvalFunctorSurface.

29.125.3.2 virtual int Go::EvalSurface::dim ( ) const [pure virtual]

Get the dimension of the space in which the curve lies.

Returns

the space dimension of the curve.

Implemented in Go::EvalOffsetSurface, and Go::EvalFunctorSurface.

29.125.3.3 virtual double Go::EvalSurface::end_u ( ) const [pure virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implemented in Go::EvalOffsetSurface, and Go::EvalFunctorSurface.

29.125.3.4 virtual double Go::EvalSurface::end_v ( ) const [pure virtual]

Implemented in Go::EvalOffsetSurface, and Go::EvalFunctorSurface.

29.125.3.5 virtual Point Go::EvalSurface::eval (double *u*, double *v*) const [pure virtual]

Evaluate a point on the surface for a given parameter

Parameters

t	the parameter for which to evaluate the curve.

Returns

the evaluated point

Implemented in Go::EvalOffsetSurface, and Go::EvalFunctorSurface.

29.125.3.6 virtual void Go::EvalSurface::eval (double *u*, double *v*, int *n*, Point *der[ ]*) const [pure virtual]

Evaluate a point and a certain number of derivatives on the surface for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalSurface', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implemented in Go::EvalOffsetSurface, and Go::EvalFunctorSurface.

29.125.3.7 virtual double Go::EvalSurface::start_u ( ) const [pure virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implemented in Go::EvalOffsetSurface, and Go::EvalFunctorSurface.

29.125.3.8 virtual double Go::EvalSurface::start_v ( ) const [pure virtual]

Implemented in Go::EvalOffsetSurface, and Go::EvalFunctorSurface.

29.125.3.9 virtual void Go::EvalSurface::write (std::ostream & *out*) const [virtual]

The documentation for this class was generated from the following file:

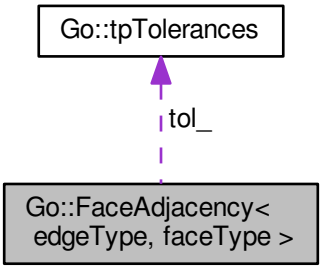
- gotools-core/include/GoTools/creators/EvalSurface.h

29.126 Go::FaceAdjacency< edgeType, faceType > Class Template Reference

Compute adjacency information for a set of surfaces.

`#include <FaceAdjacency.h>`

Collaboration diagram for Go::FaceAdjacency< edgeType, faceType >:



Public Member Functions

- FaceAdjacency (double tol_gap, double tol_neighbour, double tol_kink, double tol_bend)
- FaceAdjacency (const tpTolerances &tol)
- ~FaceAdjacency ()
- void setTolerances (const tpTolerances &tol)

  Changes the tolerances used in adjacency analysis.
- tpTolerances getTolerances ()

  Fetch the topological tolerances used in the adjaceny analysis.
- void computeAdjacency (const std::vector< shared_ptr< faceType > > &faces, int first_idx)

  Compute the adjecency between the given faces.
- void computeAdjacency (const std::vector< shared_ptr< faceType > > &faces, std::vector< std::pair< faceType *, faceType * > > &orient_inconsist, int first_idx)
- void setConnectivity (const std::vector< shared_ptr< faceType > > &faces)
- void setConnectivity (const std::vector< faceType * > &faces)
- std::vector< edgeType * > connectTwins (edgeType *e1, edgeType *e2, double min1, double max1, double min2, double max2, int &status)
- void releaseFaceAdjacency (shared_ptr< faceType > face)
- void computeFaceAdjacency (std::vector< shared_ptr< faceType > > faces, shared_ptr< faceType > new_face)
- void computeFaceAdjacency (std::vector< faceType * > faces, faceType *new_face)
- void computeFaceAdjacency (std::vector< shared_ptr< faceType > > faces, shared_ptr< faceType > new_face, std::vector< std::pair< faceType *, faceType * > > &orient_inconsist)
- void computeFaceAdjacency (std::vector< faceType * > faces, faceType *new_face, std::vector< std::pair< faceType *, faceType * > > &orient_inconsist)
- void updateConnectivity (edgeType *e1, edgeType *e2)

Protected Attributes

- tpTolerances tol_
- std::vector< shared_ptr< edgeType > > new_edges_

29.126.1 Detailed Description

template<class edgeType, class faceType>
class Go::FaceAdjacency< edgeType, faceType >

Compute adjacency information for a set of surfaces.

Definition at line 85 of file FaceAdjacency.h.

29.126.2 Constructor & Destructor Documentation

29.126.2.1 template<class edgeType , class faceType > Go::FaceAdjacency< edgeType, faceType >::FaceAdjacency (double *tol_gap,* double *tol_neighbour,* double *tol_kink,* double *tol_bend*) [inline]

Constructor.

Parameters

tol_gap	Tolerance for when two faces are assumed to be C0 continuous
tol_neighbour	Tolerance for when two faces are assumed to be neighbours
tol_kink	Tolerance for when two adjacent faces are assumed to be C1 continous
tol_bend	Tolerance for when two adjacent faces are assumed to have an intentially smooth connection

Definition at line 104 of file FaceAdjacency.h.

29.126.2.2 template<class edgeType , class faceType > Go::FaceAdjacency< edgeType, faceType >::FaceAdjacency (const tpTolerances & *tol*) [inline]

Constructor.

Parameters

tol	Topological tolerances

Definition at line 112 of file FaceAdjacency.h.

29.126.2.3 template<class edgeType , class faceType > Go::FaceAdjacency< edgeType, faceType >::~FaceAdjacency ( ) [inline]

Destructor. Detailed description.

Definition at line 120 of file FaceAdjacency.h.

29.126.3 Member Function Documentation

29.126.3.1 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::computeAdjacency (const std::vector< shared_ptr< faceType > > & *faces,* int *first_idx*) [inline]

Compute the adjecency between the given faces.

Definition at line 144 of file FaceAdjacency.h.

29.126.3.2 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::computeAdjacency (const std::vector< shared_ptr< faceType > > & *faces,* std::vector< std::pair< faceType *, faceType * > > & *orient_inconsist,* int *first_idx*) [inline]

Compute the adjecency between the given faces

Parameters

faces	The face set on which to compute adjacency
orient_inconsist	Information of adjacent faces where the direction of the face normal is inconsistent

Definition at line 159 of file FaceAdjacency.h.

29.126.3.3 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::computeFaceAdjacency (std::vector< shared_ptr< faceType > > *faces,* shared_ptr< faceType > *new_face*) [inline]

Add one face to the topological structures of a face set

Parameters

faces	The set of faces where all topological information is computed
new_face	The face to add to the face set

Definition at line 438 of file FaceAdjacency.h.

29.126.3.4 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::computeFaceAdjacency (std::vector< faceType * > *faces,* faceType * *new_face*) [inline]

Definition at line 446 of file FaceAdjacency.h.

29.126.3.5 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::computeFaceAdjacency (std::vector< shared_ptr< faceType > > *faces,* shared_ptr< faceType > *new_face,* std::vector< std::pair< faceType *, faceType * > > & *orient_inconsist*) [inline]

Add one face to the topological structures of a face set

Parameters

faces	The set of faces where all topological information is computed
new_face	The face to add to the face set
orient_inconsist	Information of adjacent faces where the direction of the face normal is inconsistent

Definition at line 460 of file FaceAdjacency.h.

29.126.3.6 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::computeFaceAdjacency (std::vector< faceType * > *faces,* faceType * *new_face,* std::vector< std::pair< faceType *, faceType * > > & *orient_inconsist*) [inline]

Add one face to the topological structures of a face set

Parameters

faces	The set of faces where all topological information is computed
new_face	The face to add to the face set
orient_inconsist	Information of adjacent faces where the direction of the face normal is inconsistent

Definition at line 590 of file FaceAdjacency.h.

29.126.3.7 template<class edgeType , class faceType > std::vector<edgeType*> Go::FaceAdjacency< edgeType, faceType >::connectTwins (edgeType * *e1,* edgeType * *e2,* double *min1,* double *max1,* double *min2,* double *max2,* int & *status*) [inline]

Returns pointer to (vector of) twin edges. Updates topological structure and, if necessary, splits edges.

Definition at line 331 of file FaceAdjacency.h.

29.126.3.8 template<class edgeType , class faceType > tpTolerances Go::FaceAdjacency< edgeType, faceType >::getTolerances ( ) [inline]

Fetch the topological tolerances used in the adjaceny analysis.

Definition at line 135 of file FaceAdjacency.h.

29.126.3.9 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::releaseFaceAdjacency (shared_ptr< faceType > *face*) [inline]

Remove one face from the topological structures of the face set it belongs to

Definition at line 389 of file FaceAdjacency.h.

29.126.3.10 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::setConnectivity (const std::vector< shared_ptr< faceType > > & *faces*) [inline]

Fetch existing adjacency information between faces and set topological pointers representing this adjacency.

Definition at line 271 of file FaceAdjacency.h.

29.126.3.11 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::setConnectivity (const std::vector< faceType * > & *faces*) [inline]

Fetch existing adjacency information between faces and set topological pointers representing this adjacency.

Definition at line 301 of file FaceAdjacency.h.

29.126.3.12 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::setTolerances (const tpTolerances & *tol*) [inline]

Changes the tolerances used in adjacency analysis.

Definition at line 127 of file FaceAdjacency.h.

29.126.3.13 template<class edgeType , class faceType > void Go::FaceAdjacency< edgeType, faceType >::updateConnectivity (edgeType * *e1,* edgeType * *e2*) [inline]

Update topological information related to two neighbouring faces, i.e. recompute information regarding the type of connectivity between the faces

Definition at line 719 of file FaceAdjacency.h.

29.126.4 Member Data Documentation

29.126.4.1 template<class edgeType , class faceType > std::vector< shared_ptr<edgeType> > Go::FaceAdjacency< edgeType, faceType >::new_edges_ [protected]

Definition at line 90 of file FaceAdjacency.h.

29.126.4.2 template<class edgeType , class faceType > tpTolerances Go::FaceAdjacency< edgeType, faceType >::tol_ [protected]

Definition at line 89 of file FaceAdjacency.h.

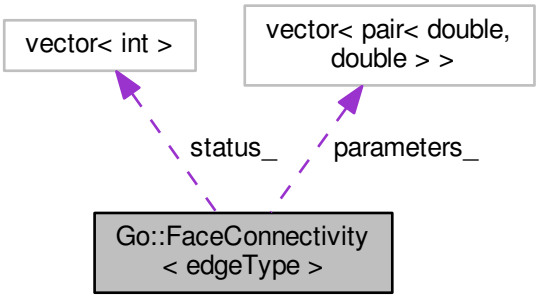
The documentation for this class was generated from the following file:

- topology/include/GoTools/topology/FaceAdjacency.h

29.127 Go::FaceConnectivity< edgeType > Struct Template Reference

`#include <FaceConnectivity.h>`

Collaboration diagram for Go::FaceConnectivity< edgeType >:



Public Member Functions

- FaceConnectivity (edgeType ∗e1, edgeType ∗e2)

  Constructor.
- void setEdges (edgeType ∗e1, edgeType ∗e2)

  Reset edge info.
- int BestStatus () const

  The highest continuity between the two faces.
- int WorstStatus () const

  The lowest continuity between the two faces.

Public Attributes

- edgeType ∗ e1_

  Edge of first face along the common boundary.
- edgeType ∗ e2_

  Edge of second face along the common boundary.
- vector< int > status_
- vector< pair< double, double > > parameters_

  Parameter intervals limiting the areas of the found state of continuity.

29.127.1 Detailed Description

template<class edgeType>
struct Go::FaceConnectivity< edgeType >

A structure storing the connectivity information between two adjacent faces

Definition at line 54 of file FaceConnectivity.h.

29.127.2 Constructor & Destructor Documentation

29.127.2.1 template<class edgeType > Go::FaceConnectivity< edgeType >::FaceConnectivity (edgeType ∗ *e1*, edgeType ∗ *e2*) [inline]

Constructor.

Definition at line 74 of file FaceConnectivity.h.

29.127.3 Member Function Documentation

29.127.3.1 template<class edgeType > int Go::FaceConnectivity< edgeType >::BestStatus ( ) const [inline]

The highest continuity between the two faces.

Definition at line 88 of file FaceConnectivity.h.

29.127.3.2 template<class edgeType > void Go::FaceConnectivity< edgeType >::setEdges (edgeType * *e1,* edgeType * *e2*) [inline]

Reset edge info.

Definition at line 81 of file FaceConnectivity.h.

29.127.3.3 template<class edgeType > int Go::FaceConnectivity< edgeType >::WorstStatus ( ) const [inline]

The lowest continuity between the two faces.

Definition at line 97 of file FaceConnectivity.h.

29.127.4 Member Data Documentation

29.127.4.1 template<class edgeType > edgeType* Go::FaceConnectivity< edgeType >::e1_

Edge of first face along the common boundary.

Definition at line 58 of file FaceConnectivity.h.

29.127.4.2 template<class edgeType > edgeType* Go::FaceConnectivity< edgeType >::e2_

Edge of second face along the common boundary.

Definition at line 60 of file FaceConnectivity.h.

29.127.4.3 template<class edgeType > vector< pair<double, double> > Go::FaceConnectivity< edgeType >::parameters_

Parameter intervals limiting the areas of the found state of continuity.

Definition at line 71 of file FaceConnectivity.h.

29.127.4.4 template<class edgeType > vector<int> Go::FaceConnectivity< edgeType >::status_

The status is: 0 : edges join smoothly. G^1. 1 : edges join, but normals are slightly discontinous. A kink. 2 : edges join, but the normals are discontinous. G^0. 3 : edges almost join. A gap. 4 : edges are totally discontinous. The minimal tpTopologicalInfo has a one-element status vector and a two-element parameters vector

Definition at line 69 of file FaceConnectivity.h.

The documentation for this struct was generated from the following file:

- topology/include/GoTools/topology/FaceConnectivity.h

29.128 Go::FaceConnectivityUtils< edgeType, faceType > Class Template Reference

Utilities used in adjacency computations of face sets.

`#include <FaceConnectivityUtils.h>`

Public Member Functions

- void BoundaryLoops (const std::vector< shared_ptr< faceType > > &faces, std::vector< std::vector< edgeType * > > &loopvec)
- void BoundaryLoops (const std::vector< shared_ptr< faceType > > &faces, std::vector< std::vector< shared_ptr< edgeType > > > &loopvec)

  Returns all boundary loops. Edges are returned as shared pointers.
- void disjointObjects (const std::vector< shared_ptr< faceType > > &faces, std::vector< std::vector< faceType * > > &grouped_faces)

  Separates objects which are not path connected.
- void cornersAndKinks (const std::vector< shared_ptr< faceType > > &faces, std::vector< edgeType * > &vec)
- void smoothEdges (const std::vector< shared_ptr< faceType > > &faces, std::vector< edgeType * > &vec)
- std::vector< edgeType * > edgesBoundingFace (faceType *face)

  Returns all edges bounding a specific face.

29.128.1 Detailed Description

template<class edgeType, class faceType>
class Go::FaceConnectivityUtils< edgeType, faceType >

Utilities used in adjacency computations of face sets.

Definition at line 56 of file FaceConnectivityUtils.h.

29.128.2 Member Function Documentation

29.128.2.1 template<class edgeType , class faceType > void Go::FaceConnectivityUtils< edgeType, faceType >::BoundaryLoops (const std::vector< shared_ptr< faceType > > & *faces*, std::vector< std::vector< edgeType * > > & *loopvec*) [inline]

Returns all boundary loops. Edges are returned as pointers. Keep in mind that calling next() on elements on the boundary will not iterate around the boundary, but around the face the edge comes from.

Definition at line 66 of file FaceConnectivityUtils.h.

29.128.2.2 template<class edgeType , class faceType > void Go::FaceConnectivityUtils< edgeType, faceType >::BoundaryLoops (const std::vector< shared_ptr< faceType > > & *faces*, std::vector< std::vector< shared_ptr< edgeType > > > & *loopvec*) [inline]

Returns all boundary loops. Edges are returned as shared pointers.

Definition at line 117 of file FaceConnectivityUtils.h.

29.128.2.3 template<class edgeType , class faceType > void Go::FaceConnectivityUtils< edgeType, faceType >::cornersAndKinks (const std::vector< shared_ptr< faceType > > & *faces,* std::vector< edgeType * > & *vec*) [inline]

Gives the first of every pair of edges representing a corner edge or kink edge.

Definition at line 203 of file FaceConnectivityUtils.h.

29.128.2.4 template<class edgeType , class faceType > void Go::FaceConnectivityUtils< edgeType, faceType >::disjointObjects (const std::vector< shared_ptr< faceType > > & *faces,* std::vector< std::vector< faceType * > > & *grouped_faces*) [inline]

Separates objects which are not path connected.

Definition at line 178 of file FaceConnectivityUtils.h.

29.128.2.5 template<class edgeType , class faceType > std::vector<edgeType*> Go::FaceConnectivityUtils< edgeType, faceType >::edgesBoundingFace (faceType * *face*) [inline]

Returns all edges bounding a specific face.

Definition at line 290 of file FaceConnectivityUtils.h.

29.128.2.6 template<class edgeType , class faceType > void Go::FaceConnectivityUtils< edgeType, faceType >::smoothEdges (const std::vector< shared_ptr< faceType > > & *faces,* std::vector< edgeType * > & *vec*) [inline]

Gives the first of every pair of edges representing a smooth edge (edges with gaps excluded)

Definition at line 247 of file FaceConnectivityUtils.h.

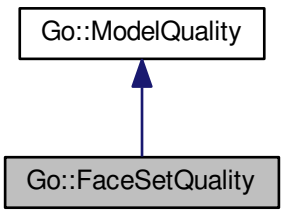
The documentation for this class was generated from the following file:

- topology/include/GoTools/topology/FaceConnectivityUtils.h

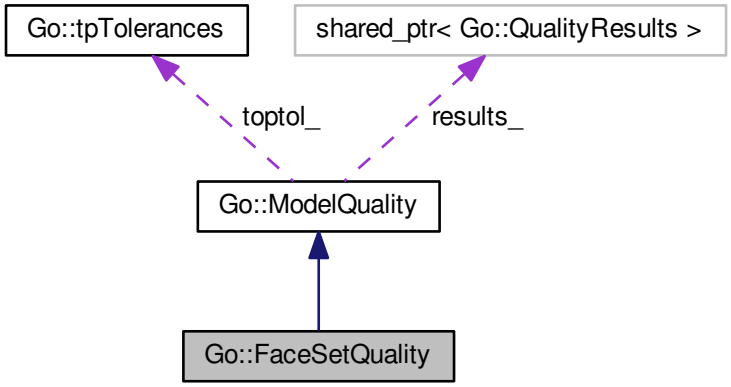
29.129 Go::FaceSetQuality Class Reference

`#include <FaceSetQuality.h>`

Inheritance diagram for Go::FaceSetQuality:



Collaboration diagram for Go::FaceSetQuality:



Public Member Functions

- FaceSetQuality (double gap, double kink, double approx)
- FaceSetQuality (const tpTolerances &toptol, double approx)
- FaceSetQuality (shared_ptr< SurfaceModel > sfmodel)
- virtual ~FaceSetQuality ()
- void attach (shared_ptr< SurfaceModel > sfmodel)
- virtual void degenSurfaces (std::vector< shared_ptr< ParamSurface > > &deg_sfs)

  Does not generate new geometry.
- virtual void degenerateSfCorners (std::vector< shared_ptr< ftPoint > > &deg_corners)

  Generates new points, pointers to existing surfaces.
- virtual void identicalVertices (std::vector< std::pair< shared_ptr< Vertex >, shared_ptr< Vertex > > > &identical_vertices)

  Uses existing topological entity.
- virtual void identicalOrEmbeddedEdges (std::vector< std::pair< shared_ptr< ftEdge >, shared_ptr< ftEdge > > > &identical_edges, std::vector< std::pair< shared_ptr< ftEdge >, shared_ptr< ftEdge > > > &embedded_edges)

  Uses existing topological entities. May contain generated curves.
- virtual void identicalOrEmbeddedFaces (std::vector< std::pair< shared_ptr< ftSurface >, shared_ptr< ftSurface > > > &identical_faces, std::vector< std::pair< shared_ptr< ftSurface >, shared_ptr< ftSurface > > > &embedded_faces)

  Uses existing topological entities. Points to existing surfaces.
- virtual void miniEdges (std::vector< shared_ptr< ftEdge > > &mini_edges)

  Uses existing topological entities.
- virtual void miniSurfaces (std::vector< shared_ptr< ftSurface > > &mini_surfaces)

  Uses existing topological entities. Points to existing surfaces.
- virtual void vanishingSurfaceNormal (std::vector< shared_ptr< ftPoint > > &singular_points, std::vector< shared_ptr< ftCurve > > &singular_curves)

  Returns ftPoints and ftCurves that will contain generated geometry.
- virtual void vanishingCurveTangent (std::vector< shared_ptr< PointOnCurve > > &sing_points, std::vector< std::pair< shared_ptr< PointOnCurve >, shared_ptr< PointOnCurve > > > &sing_curves)

Contains generated points and curves fetched from topological entities.

- virtual void sliverSurfaces (std::vector< shared_ptr< ParamSurface > > &sliver_sfs, double thickness, double factor=2.0)

  Uses existing geometry.
- virtual void narrowRegion (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > &narrow_regions)

  Uses existing topological entities. Contains generated geometry.
- virtual void edgeVertexDistance (std::vector< std::pair< ftEdge *, shared_ptr< Vertex > > > &edge_↩ vertices)

  Uses existing topological entities.
- virtual void faceVertexDistance (std::vector< std::pair< ftSurface *, shared_ptr< Vertex > > > &face_↩ vertices)

  Existing topology. Partly generated geometry, existing surfaces.
- virtual void faceEdgeDistance (std::vector< std::pair< ftSurface *, ftEdge * > > &face_edges)

  Existing topology. Partly generated geometry, existing surfaces.
- virtual void edgePosAndTangDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > &pos_disconts, std::vector< std::pair< ftEdge *, ftEdge * > > &tang_disconts)

  Uses existing topological entities.
- virtual void facePositionDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > &pos_disconts)

  Uses existing topological entities. Existing surfaces available.
- virtual void faceTangentDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > &tangent_disconts)

  Uses existing topological entities. Existing surfaces available.
- virtual void loopOrientationConsistency (std::vector< shared_ptr< Loop > > &inconsistent_loops)

  Uses existing topological entities.
- virtual void faceNormalConsistency (std::vector< shared_ptr< ftSurface > > &inconsistent_faces)

  Uses existing topological entities. Existing surfaces available.
- virtual void sfG1Discontinuity (std::vector< shared_ptr< ftSurface > > &discont_sfs)

  Uses existing topological entities. Existing surfaces available.
- virtual void sfC1Discontinuity (std::vector< shared_ptr< ftSurface > > &discont_sfs)

  Uses existing topological entities. Existing surfaces available.
- virtual void cvC1G1Discontinuity (std::vector< shared_ptr< ParamCurve > > &c1_discont, std::vector< shared_ptr< ParamCurve > > &g1_discont)

  Contains curves fetched from topological entities.
- virtual void cvCurvatureRadius (std::vector< std::pair< shared_ptr< PointOnCurve >, double > > &small↩ _curv_rad, std::pair< shared_ptr< PointOnCurve >, double > &minimum_curv_rad)

  Contains generated points and curves fetched from topological entities.
- virtual void sfCurvatureRadius (std::vector< std::pair< shared_ptr< ftPoint >, double > > &small_curv_rad, std::pair< shared_ptr< ftPoint >, double > &minimum_curv_rad)

  Generates new points, pointers to existing surfaces.
- virtual void acuteEdgeAngle (std::vector< std::pair< ftEdge *, ftEdge * > > &edge_acute)

  Uses existing topological entities.
- virtual void acuteFaceAngle (std::vector< std::pair< ftSurface *, ftSurface * > > &face_acute)

  Uses existing topological entities. Existing surfaces available.
- virtual void loopIntersection (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOn↩ Edge > > > &loop_intersection)

  Uses existing topological entities. Contains generated geometry.
- virtual void loopSelfIntersection (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< Point↩ OnEdge > > > &loop_self_intersection)

  Uses existing topological entities. Contains generated geometry.
- virtual void indistinctKnots (std::vector< shared_ptr< ParamCurve > > &cv_knots, std::vector< shared_↩ ptr< ParamSurface > > &sf_knots, double tol=1.0e-8)

  Uses existing surface and possibly generated curves.
- shared_ptr< SurfaceModel > getAssociatedSfModel ()

Additional Inherited Members

29.129.1 Detailed Description

Definition at line 50 of file FaceSetQuality.h.

29.129.2 Constructor & Destructor Documentation

29.129.2.1 Go::FaceSetQuality::FaceSetQuality (double *gap,* double *kink,* double *approx*)

29.129.2.2 Go::FaceSetQuality::FaceSetQuality (const tpTolerances & *toptol,* double *approx*)

29.129.2.3 Go::FaceSetQuality::FaceSetQuality (shared_ptr< SurfaceModel > *sfmodel*)

29.129.2.4 virtual Go::FaceSetQuality::~FaceSetQuality ( ) [virtual]

29.129.3 Member Function Documentation

29.129.3.1 virtual void Go::FaceSetQuality::acuteEdgeAngle (std::vector< std::pair< ftEdge *, ftEdge * > > & *edge_acute*) [virtual]

Uses existing topological entities.

Reimplemented from Go::ModelQuality.

29.129.3.2 virtual void Go::FaceSetQuality::acuteFaceAngle (std::vector< std::pair< ftSurface *, ftSurface * > > & *face_acute*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented from Go::ModelQuality.

29.129.3.3 void Go::FaceSetQuality::attach (shared_ptr< SurfaceModel > *sfmodel*)

29.129.3.4 virtual void Go::FaceSetQuality::cvC1G1Discontinuity (std::vector< shared_ptr< ParamCurve > > & *c1_discont,* std::vector< shared_ptr< ParamCurve > > & *g1_discont*) [virtual]

Contains curves fetched from topological entities.

Reimplemented from Go::ModelQuality.

29.129.3.5 virtual void Go::FaceSetQuality::cvCurvatureRadius (std::vector< std::pair< shared_ptr< PointOnCurve >, double > > & *small_curv_rad,* std::pair< shared_ptr< PointOnCurve >, double > & *minimum_curv_rad*) [virtual]

Contains generated points and curves fetched from topological entities.

Reimplemented from Go::ModelQuality.

29.129.3.6 virtual void Go::FaceSetQuality::degenerateSfCorners (std::vector< shared_ptr< ftPoint > > & *deg_corners*) [virtual]

Generates new points, pointers to existing surfaces.

Reimplemented from Go::ModelQuality.

29.129.3.7 virtual void Go::FaceSetQuality::degenSurfaces (std::vector< shared_ptr< ParamSurface > > & *deg_sfs*) [virtual]

Does not generate new geometry.

Reimplemented from Go::ModelQuality.

29.129.3.8 virtual void Go::FaceSetQuality::edgePosAndTangDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > & *pos_disconts,* std::vector< std::pair< ftEdge *, ftEdge * > > & *tang_disconts*) [virtual]

Uses existing topological entities.

Reimplemented from Go::ModelQuality.

29.129.3.9 virtual void Go::FaceSetQuality::edgeVertexDistance (std::vector< std::pair< ftEdge *, shared_ptr< Vertex > > > & *edge_vertices*) [virtual]

Uses existing topological entities.

Reimplemented from Go::ModelQuality.

29.129.3.10 virtual void Go::FaceSetQuality::faceEdgeDistance (std::vector< std::pair< ftSurface *, ftEdge * > > & *face_edges*) [virtual]

Existing topology. Partly generated geometry, existing surfaces.

Reimplemented from Go::ModelQuality.

29.129.3.11 virtual void Go::FaceSetQuality::faceNormalConsistency (std::vector< shared_ptr< ftSurface > > & *inconsistent_faces*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented from Go::ModelQuality.

29.129.3.12 virtual void Go::FaceSetQuality::facePositionDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > & *pos_disconts*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented from Go::ModelQuality.

29.129.3.13 virtual void Go::FaceSetQuality::faceTangentDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > & *tangent_disconts*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented from Go::ModelQuality.

29.129.3.14 virtual void Go::FaceSetQuality::faceVertexDistance (std::vector< std::pair< ftSurface *, shared_ptr< Vertex > > > & *face_vertices*) [virtual]

Existing topology. Partly generated geometry, existing surfaces.

Reimplemented from Go::ModelQuality.

29.129.3.15 shared_ptr<SurfaceModel> Go::FaceSetQuality::getAssociatedSfModel ( ) [inline]

Definition at line 178 of file FaceSetQuality.h.

29.129.3.16 virtual void Go::FaceSetQuality::identicalOrEmbeddedEdges (std::vector< std::pair< shared_ptr< ftEdge >, shared_ptr< ftEdge > > > & *identical_edges,* std::vector< std::pair< shared_ptr< ftEdge >, shared_ptr< ftEdge > > > & *embedded_edges*) [virtual]

Uses existing topological entities. May contain generated curves.

Reimplemented from Go::ModelQuality.

29.129.3.17 virtual void Go::FaceSetQuality::identicalOrEmbeddedFaces (std::vector< std::pair< shared_ptr< ftSurface >, shared_ptr< ftSurface > > > & *identical_faces,* std::vector< std::pair< shared_ptr< ftSurface >, shared_ptr< ftSurface > > > & *embedded_faces*) [virtual]

Uses existing topological entities. Points to existing surfaces.

Reimplemented from Go::ModelQuality.

29.129.3.18 virtual void Go::FaceSetQuality::identicalVertices (std::vector< std::pair< shared_ptr< Vertex >, shared_ptr< Vertex > > > & *identical_vertices*) [virtual]

Uses existing topological entity.

Reimplemented from Go::ModelQuality.

29.129.3.19 virtual void Go::FaceSetQuality::indistinctKnots (std::vector< shared_ptr< ParamCurve > > & *cv_knots,* std::vector< shared_ptr< ParamSurface > > & *sf_knots,* double *tol* = 1.0e-8) [virtual]

Uses existing surface and possibly generated curves.

Reimplemented from Go::ModelQuality.

29.129.3.20 virtual void Go::FaceSetQuality::loopIntersection (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > & *loop_intersection*) [virtual]

Uses existing topological entities. Contains generated geometry.

Reimplemented from Go::ModelQuality.

29.129.3.21 virtual void Go::FaceSetQuality::loopOrientationConsistency (std::vector< shared_ptr< Loop > > & *inconsistent_loops*) [virtual]

Uses existing topological entities.

Reimplemented from Go::ModelQuality.

29.129.3.22 virtual void Go::FaceSetQuality::loopSelfIntersection (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > & *loop_self_intersection*) [virtual]

Uses existing topological entities. Contains generated geometry.

Reimplemented from Go::ModelQuality.

29.129.3.23 virtual void Go::FaceSetQuality::miniEdges (std::vector< shared_ptr< ftEdge > > & *mini_edges*) [virtual]

Uses existing topological entities.

Reimplemented from Go::ModelQuality.

29.129.3.24 virtual void Go::FaceSetQuality::miniSurfaces (std::vector< shared_ptr< ftSurface > > & *mini_surfaces*) [virtual]

Uses existing topological entities. Points to existing surfaces.

Reimplemented from Go::ModelQuality.

29.129.3.25 virtual void Go::FaceSetQuality::narrowRegion (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > & *narrow_regions*) [virtual]

Uses existing topological entities. Contains generated geometry.

Reimplemented from Go::ModelQuality.

29.129.3.26 virtual void Go::FaceSetQuality::sfC1Discontinuity (std::vector< shared_ptr< ftSurface > > & *discont_sfs*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented from Go::ModelQuality.

29.129.3.27 virtual void Go::FaceSetQuality::sfCurvatureRadius (std::vector< std::pair< shared_ptr< ftPoint >, double > > & *small_curv_rad,* std::pair< shared_ptr< ftPoint >, double > & *minimum_curv_rad*) [virtual]

Generates new points, pointers to existing surfaces.

Reimplemented from Go::ModelQuality.

29.129.3.28 virtual void Go::FaceSetQuality::sfG1Discontinuity (std::vector< shared_ptr< ftSurface > > & *discont_sfs*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented from Go::ModelQuality.

29.129.3.29 virtual void Go::FaceSetQuality::sliverSurfaces (std::vector< shared_ptr< ParamSurface > > & *sliver_sfs,* double *thickness,* double *factor* = 2.0) [virtual]

Uses existing geometry.

Reimplemented from Go::ModelQuality.

29.129.3.30 virtual void Go::FaceSetQuality::vanishingCurveTangent (std::vector< shared_ptr< PointOnCurve > > & *sing_points,* std::vector< std::pair< shared_ptr< PointOnCurve >, shared_ptr< PointOnCurve > > > & *sing_curves*) [virtual]

Contains generated points and curves fetched from topological entities.

Reimplemented from Go::ModelQuality.

29.129.3.31 virtual void Go::FaceSetQuality::vanishingSurfaceNormal (std::vector< shared_ptr< ftPoint > > & *singular_points,* std::vector< shared_ptr< ftCurve > > & *singular_curves*) [virtual]

Returns ftPoints and ftCurves that will contain generated geometry.

Reimplemented from Go::ModelQuality.

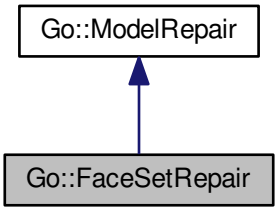
The documentation for this class was generated from the following file:

- qualitymodule/include/GoTools/qualitymodule/FaceSetQuality.h

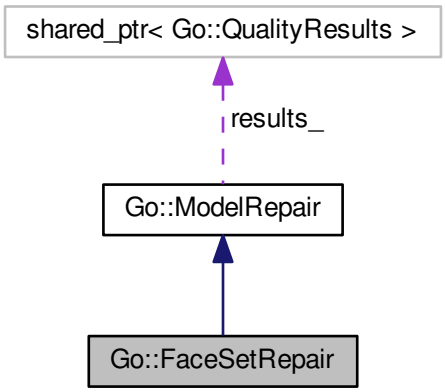
29.130 Go::FaceSetRepair Class Reference

`#include <FaceSetRepair.h>`

Inheritance diagram for Go::FaceSetRepair:



Collaboration diagram for Go::FaceSetRepair:



Public Member Functions

- FaceSetRepair (shared_ptr< SurfaceModel > sfmodel)
  Constructor.
- FaceSetRepair (shared_ptr< FaceSetQuality > quality)
  Constructor, given quality check class.
- ~FaceSetRepair ()
  Destructor.
- virtual void mendGaps ()
  Remove gaps in the model.

- virtual void identicalAndEmbeddedFaces ()

  Remove identical and embedded faces.
- virtual void identicalVertices ()

  Handle identical vertices.
- virtual void consistentFaceNormal ()

  Handle inconsistent face normals.
- virtual void optimizeVertexPosition ()
- virtual void mendEdgeDistance ()
- shared_ptr< SurfaceModel > getAssociatedSfModel ()

Additional Inherited Members

29.130.1 Detailed Description

Definition at line 53 of file FaceSetRepair.h.

29.130.2 Constructor & Destructor Documentation

29.130.2.1 Go::FaceSetRepair::FaceSetRepair (shared_ptr< SurfaceModel > *sfmodel*)

Constructor.

29.130.2.2 Go::FaceSetRepair::FaceSetRepair (shared_ptr< FaceSetQuality > *quality*)

Constructor, given quality check class.

29.130.2.3 Go::FaceSetRepair::~FaceSetRepair ( )

Destructor.

29.130.3 Member Function Documentation

29.130.3.1 virtual void Go::FaceSetRepair::consistentFaceNormal ( ) [virtual]

Handle inconsistent face normals.

Implements Go::ModelRepair.

29.130.3.2 shared_ptr<SurfaceModel> Go::FaceSetRepair::getAssociatedSfModel ( ) [inline]

Definition at line 82 of file FaceSetRepair.h.

29.130.3.3 virtual void Go::FaceSetRepair::identicalAndEmbeddedFaces ( ) [virtual]

Remove identical and embedded faces.

Implements Go::ModelRepair.

29.130.3.4 virtual void Go::FaceSetRepair::identicalVertices ( ) [virtual]

Handle identical vertices.

Implements Go::ModelRepair.

29.130.3.5 virtual void Go::FaceSetRepair::mendEdgeDistance ( ) [virtual]

Implements Go::ModelRepair.

29.130.3.6 virtual void Go::FaceSetRepair::mendGaps ( ) [virtual]

Remove gaps in the model.

Implements Go::ModelRepair.

29.130.3.7 virtual void Go::FaceSetRepair::optimizeVertexPosition ( ) [virtual]

Implements Go::ModelRepair.

The documentation for this class was generated from the following file:

- qualitymodule/include/GoTools/qualitymodule/FaceSetRepair.h

29.131 Go::Factorial< N > Struct Template Reference

Compile-time factorial calculations.

`#include <Factorial.h>`

Public Types

- enum { value = N * Factorial<N-1>::value }

29.131.1 Detailed Description

template<int N>
struct Go::Factorial< N >

Compile-time factorial calculations.

Calculate the factorial of a given integer N.

Definition at line 52 of file Factorial.h.

29.131.2 Member Enumeration Documentation

29.131.2.1 template<int N> anonymous enum

Enumerator

value

Definition at line 53 of file Factorial.h.

The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/utils/Factorial.h

29.132 Go::Factorial< 1 > Struct Template Reference

`#include <Factorial.h>`

Public Types

- enum { value = 1 }

29.132.1 Detailed Description

template<>
struct Go::Factorial< 1 >

Definition at line 59 of file Factorial.h.

29.132.2 Member Enumeration Documentation

29.132.2.1 anonymous enum

Enumerator

value

Definition at line 60 of file Factorial.h.

The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/utils/Factorial.h

29.133 Go::Factory Class Reference

`#include <Factory.h>`

Public Member Functions

- ~Factory ()
- void registerClass (ClassType class_type, Creator *c)

Static Public Member Functions

- static GeomObject * createObject (ClassType class_type)
- static Factory * globalFactory ()

29.133.1 Detailed Description

This is the Factory for creating instances of GeomObjects of type requested by the user. There will be one, global Factory object, called Go::global_factory_. However, the user will not have to deal with this directly. The user need only interact with the Factory using the static member function 'createObject(ClassType)' and the template Register() function (or Registrator class, if the compiler misbehaves. In practice, this means calling 'GoTools::init()' early in the code.

Definition at line 83 of file Factory.h.

29.133.2 Constructor & Destructor Documentation

29.133.2.1 Go::Factory::~Factory ( ) [inline]

Definition at line 86 of file Factory.h.

29.133.3 Member Function Documentation

29.133.3.1 static GeomObject* Go::Factory::createObject (ClassType *class_type*) [inline], [static]

Makes a new GeomObject instance of the specified ClassType and returns a pointer to it. The user assumes ownership over the created object.

Parameters

class_type	the class type of the object that the user wants to have constructed.

Definition at line 97 of file Factory.h.

29.133.3.2 static Factory* Go::Factory::globalFactory ( ) [inline], [static]

This function returns a pointer to the unique, global Factory.

Returns

pointer to global Factory.

Definition at line 118 of file Factory.h.

29.133.3.3 void Go::Factory::registerClass (ClassType *class_type*, Creator * *c*) [inline]

Register a ClassType with the Factory. This amounts to provide the Factory with the Creator object that is used to generate a new GeomObject of type ClassType. Usually, the user would not want to call this function directly, but through the (template) function Register() or by using a Registrator

Parameters

class_type	the ClassType for which we want the Factory to associate a particular Creator.
c	pointer to the Creator object to be used by the Factory when creating objects of type ClassType.

Definition at line 111 of file Factory.h.

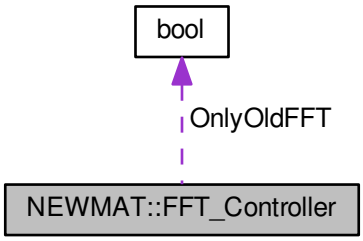
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Factory.h

29.134 NEWMAT::FFT_Controller Class Reference

```
#include <newmatap.h>
```

Collaboration diagram for NEWMAT::FFT_Controller:



Static Public Member Functions

- static bool ar_1d_ft (int PTS, Real *X, Real *Y)
- static bool CanFactor (int PTS)

Static Public Attributes

- static bool OnlyOldFFT

29.134.1 Detailed Description

Definition at line 81 of file newmatap.h.

29.134.2 Member Function Documentation

29.134.2.1 bool FFT_Controller::ar_1d_ft (int *PTS*, Real * *X*, Real * *Y*) [static]

Definition at line 145 of file newfft.cpp.

29.134.2.2 bool FFT_Controller::CanFactor (int *PTS*) [static]

Definition at line 987 of file newfft.cpp.

29.134.3 Member Data Documentation

29.134.3.1 bool FFT_Controller::OnlyOldFFT [static]

Definition at line 84 of file newmatap.h.

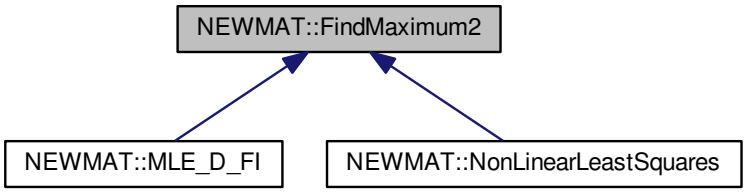
The documentation for this class was generated from the following files:

- newmat/include/newmatap.h
- newmat/src/newfft.cpp

29.135 NEWMAT::FindMaximum2 Class Reference

`#include <newmatnl.h>`

Inheritance diagram for NEWMAT::FindMaximum2:



Public Member Functions

- void Fit (ColumnVector &, int)
- virtual ~FindMaximum2 ()

29.135.1 Detailed Description

Definition at line 171 of file newmatnl.h.

29.135.2 Constructor & Destructor Documentation

29.135.2.1 virtual NEWMAT::FindMaximum2::~FindMaximum2 ( ) [inline], [virtual]

Definition at line 178 of file newmatnl.h.

29.135.3 Member Function Documentation

29.135.3.1 void FindMaximum2::Fit (ColumnVector & *Theta,* int *n_it*)

Definition at line 18 of file newmatnl.cpp.

The documentation for this class was generated from the following files:

- newmat/include/newmatnl.h
- newmat/src/newmatnl.cpp

29.136 NEWMAT::FloatingPointPrecision Class Reference

Floating point precision (type double).

`#include <precisio.h>`

Static Public Member Functions

- static int Dig ()
- static Real Epsilon ()
- static int Mantissa ()
- static Real Maximum ()
- static int MaximumDecimalExponent ()
- static int MaximumExponent ()
- static Real LnMaximum ()
- static Real Minimum ()
- static int MinimumDecimalExponent ()
- static int MinimumExponent ()
- static Real LnMinimum ()
- static int Radix ()
- static int Rounds ()

29.136.1 Detailed Description

Floating point precision (type double).

Definition at line 136 of file precisio.h.

29.136.2 Member Function Documentation

29.136.2.1 static int NEWMAT::FloatingPointPrecision::Dig ( ) [inline], [static]

Definition at line 140 of file precisio.h.

29.136.2.2 static Real NEWMAT::FloatingPointPrecision::Epsilon ( ) [inline], [static]

Definition at line 143 of file precisio.h.

29.136.2.3 static Real NEWMAT::FloatingPointPrecision::LnMaximum ( ) [inline], [static]

Definition at line 158 of file precisio.h.

29.136.2.4 static Real NEWMAT::FloatingPointPrecision::LnMinimum ( ) [inline], [static]

Definition at line 176 of file precisio.h.

29.136.2.5 static int NEWMAT::FloatingPointPrecision::Mantissa ( ) [inline], [static]

Definition at line 146 of file precisio.h.

29.136.2.6 static Real NEWMAT::FloatingPointPrecision::Maximum ( ) [inline], [static]

Definition at line 149 of file precisio.h.

29.136.2.7 static int NEWMAT::FloatingPointPrecision::MaximumDecimalExponent ( ) [inline], [static]

Definition at line 152 of file precisio.h.

29.136.2.8 static int NEWMAT::FloatingPointPrecision::MaximumExponent ( ) [inline], [static]

Definition at line 155 of file precisio.h.

29.136.2.9 static Real NEWMAT::FloatingPointPrecision::Minimum ( ) [inline], [static]

Definition at line 161 of file precisio.h.

29.136.2.10 static int NEWMAT::FloatingPointPrecision::MinimumDecimalExponent ( ) [inline], [static]

Definition at line 170 of file precisio.h.

29.136.2.11 static int NEWMAT::FloatingPointPrecision::MinimumExponent ( ) [inline], [static]

Definition at line 173 of file precisio.h.

29.136.2.12 static int NEWMAT::FloatingPointPrecision::Radix ( ) [inline], [static]

Definition at line 180 of file precisio.h.

29.136.2.13 static int NEWMAT::FloatingPointPrecision::Rounds ( ) [inline], [static]

Definition at line 183 of file precisio.h.

The documentation for this class was generated from the following file:

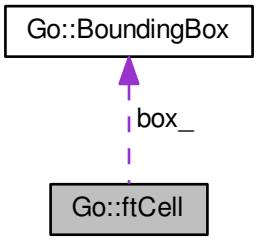
- newmat/include/precisio.h

29.137 Go::ftCell Class Reference

Helper class handling one of the cells in class CellDivision.

`#include <CellDivision.h>`

Collaboration diagram for Go::ftCell:



Public Member Functions

- ftCell ()
- ~ftCell ()
- void setBox (const BoundingBox &box)
- void addFace (ftSurface *f)
- void addFaceBox (BoundingBox &box)
- const BoundingBox & box () const
- int num_faces () const
- ftSurface * face (int i) const
- const BoundingBox & faceBox (int i) const
- void removeFace (ftSurface *face)

Protected Attributes

- std::vector< ftSurface * > faces_
- std::vector< BoundingBox > face_boxes_
- BoundingBox box_

29.137.1 Detailed Description

Helper class handling one of the cells in class CellDivision.

Definition at line 55 of file CellDivision.h.

29.137.2 Constructor & Destructor Documentation

29.137.2.1 Go::ftCell::ftCell ( ) [inline]

Definition at line 62 of file CellDivision.h.

29.137.2.2 Go::ftCell::~ftCell ( ) [inline]

Definition at line 63 of file CellDivision.h.

29.137.3 Member Function Documentation

29.137.3.1 void Go::ftCell::addFace (ftSurface * *f*) [inline]

Definition at line 66 of file CellDivision.h.

29.137.3.2 void Go::ftCell::addFaceBox (BoundingBox & *box*) [inline]

Definition at line 68 of file CellDivision.h.

29.137.3.3 const BoundingBox& Go::ftCell::box ( ) const [inline]

Definition at line 70 of file CellDivision.h.

29.137.3.4 ftSurface* Go::ftCell::face (int *i*) const [inline]

Definition at line 74 of file CellDivision.h.

29.137.3.5 const BoundingBox& Go::ftCell::faceBox (int *i*) const [inline]

Definition at line 76 of file CellDivision.h.

29.137.3.6 int Go::ftCell::num_faces ( ) const [inline]

Definition at line 72 of file CellDivision.h.

29.137.3.7 void Go::ftCell::removeFace (ftSurface * *face*) [inline]

Definition at line 79 of file CellDivision.h.

29.137.3.8 void Go::ftCell::setBox (const BoundingBox & *box*) [inline]

Definition at line 64 of file CellDivision.h.

29.137.4 Member Data Documentation

29.137.4.1 BoundingBox Go::ftCell::box_ [protected]

Definition at line 60 of file CellDivision.h.

29.137.4.2 std::vector<BoundingBox> Go::ftCell::face_boxes_ [protected]

Definition at line 59 of file CellDivision.h.

29.137.4.3 std::vector<ftSurface*> Go::ftCell::faces_ [protected]

Definition at line 58 of file CellDivision.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/CellDivision.h

29.138 Go::ftCellInfo Class Reference

Function object for sorting ftCells.

`#include <CellDivision.h>`

Public Member Functions

- ftCellInfo ()
- ftCellInfo (int i, double d)
- bool operator< (const ftCellInfo &ci) const

Public Attributes

- int index_
- double dist_

29.138.1 Detailed Description

Function object for sorting ftCells.

Definition at line 90 of file CellDivision.h.

29.138.2 Constructor & Destructor Documentation

29.138.2.1 Go::ftCellInfo::ftCellInfo ( ) [inline]

Definition at line 95 of file CellDivision.h.

29.138.2.2 Go::ftCellInfo::ftCellInfo (int *i*, double *d*) [inline]

Definition at line 96 of file CellDivision.h.

29.138.3 Member Function Documentation

29.138.3.1 bool Go::ftCellInfo::operator< (const ftCellInfo & *ci*) const [inline]

Definition at line 97 of file CellDivision.h.

29.138.4 Member Data Documentation

29.138.4.1 double Go::ftCellInfo::dist_

Definition at line 94 of file CellDivision.h.

29.138.4.2 int Go::ftCellInfo::index_

Definition at line 93 of file CellDivision.h.

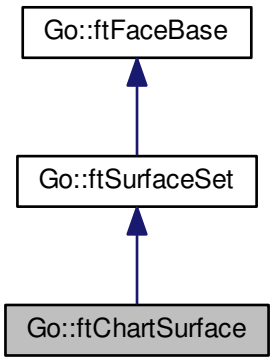
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/CellDivision.h

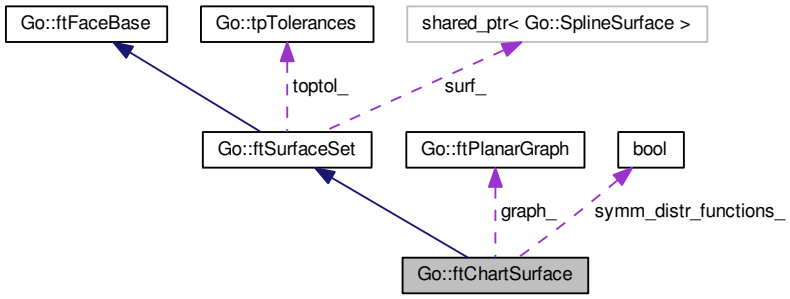
29.139 Go::ftChartSurface Class Reference

`#include <ftChartSurface.h>`

Inheritance diagram for Go::ftChartSurface:



Collaboration diagram for Go::ftChartSurface:



Public Member Functions

- ftChartSurface (const std::vector< shared_ptr< ParamSurface > > &surfaces, tpTolerances &topeps, double approxeps, double curvature_tol, int m=0, int n=0)

  Constructor.
- ~ftChartSurface ()

  Destructor.
- virtual std::vector< shared_ptr< ftEdgeBase > > createInitialEdges (double degenerate_epsilon=DEFAU↩LT_SPACE_EPSILON, double kink=0.00015, bool no_split=false)
- virtual Point point (double u, double v) const

  Evaluation and interrogation. Overridden from ftFaceBase.

- Point point (double &u, double &v, shared_ptr< ftFaceBase > &face, double *seed=NULL, bool use_input_face=false) const
- virtual Point normal (double u, double v) const

  Evaluate surface normal.
- virtual ftMessage createSurf (double &max_error, double &mean_error)

  Merge the current surface patches to produce one SplineSurface.
- virtual void getError (double &max_error, double &mean_error)
- virtual ftTangPriority getPrioType () const

  Priority type.
- void setPrioType (ftTangPriority type)
- void setGridResolution (int m, int n)
- bool gridCreated (int &m, int &n) const

  We may also decide to add grid pts along an edge.
- void setEdgeScales (std::vector< std::pair< Point, double > > &edge_scales)
- void setSymmDistrFunctions (bool symm_distr_functions)
- ftMessage prepareGrid (RotationInfo *rot_info=NULL, ftCurve *outer_bd=NULL)
- ftMessage createGrid (RotationInfo *rot_info=NULL, ftCurve *outer_bd=NULL)
- std::vector< shared_ptr< ftSamplePoint > > getEdgeGrid (int edge_ind)
- void writeGrid (std::ostream &os) const
- void writeDebugGrid (std::ostream &os) const

  Write to file LineCloud describing grid. Still awaiting exchange format.
- vector< shared_ptr< FaceConnectivity< ftEdgeBase > > > getInnerEdgeCont () const

Protected Member Functions

- virtual bool sampleOnlyEdges () const

  Approximate only the edges in the group of surfaces.

Protected Attributes

- ftTangPriority prio_type_
- double curvature_tol_
- ftPlanarGraph graph_
- double maxerror_
- double meanerror_
- int m_
- int n_
- std::vector< shared_ptr< SplineCurve > > grid_distr_functions_
- std::vector< std::pair< Point, double > > edge_scales_
- bool symm_distr_functions_
- std::vector< bool > secn_distr_
- std::vector< std::vector< shared_ptr< ftSurfaceSetPoint > > > grid_pts_

29.139.1 Detailed Description

ftChartSurface - Short description. Detailed description.

Definition at line 52 of file ftChartSurface.h.

29.139.2 Constructor & Destructor Documentation

29.139.2.1 Go::ftChartSurface::ftChartSurface (const std::vector< shared_ptr< ParamSurface > > & *surfaces*, tpTolerances & *topeps*, double *approxeps*, double *curvature_tol*, int *m* = 0, int *n* = 0)

Constructor.

29.139.2.2 Go::ftChartSurface::~ftChartSurface ( )

Destructor.

29.139.3 Member Function Documentation

29.139.3.1 ftMessage Go::ftChartSurface::createGrid (RotationInfo * *rot_info* = NULL, ftCurve * *outer_bd* = NULL)

User may choose to let bd_edges of all sfs in the topology be in correspondence through a rotation of the entire set. For all members of topology it is expected that both createSurf() & prepareGrid() have been called.

29.139.3.2 virtual std::vector<shared_ptr<ftEdgeBase> > Go::ftChartSurface::createInitialEdges (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON, double *kink* = 0.00015, bool *no_split* = false) [virtual]

Warning! Assumes the return edges are taken care of, i.e. stored for further use. Otherwise first_edges_ will be invalid! To be called when topology is set up; essentially performed from constructor.

Implements Go::ftSurfaceSet.

29.139.3.3 virtual ftMessage Go::ftChartSurface::createSurf (double & *max_error*, double & *mean_error*) [virtual]

Merge the current surface patches to produce one SplineSurface.

Implements Go::ftSurfaceSet.

29.139.3.4 std::vector<shared_ptr<ftSamplePoint> > Go::ftChartSurface::getEdgeGrid (int *edge_ind*)

The created grid is returned (copied). The pts are returned in ccw order. Ordering is: b, t, l, r

29.139.3.5 virtual void Go::ftChartSurface::getError (double & *max_error*, double & *mean_error*) [virtual]

Fetch the error due to approximations in createSurf. Not applicable in normal configurations

Implements Go::ftSurfaceSet.

29.139.3.6 vector<shared_ptr<FaceConnectivity<ftEdgeBase> > > Go::ftChartSurface::getInnerEdgeCont ( ) const

29.139.3.7 virtual ftTangPriority Go::ftChartSurface::getPrioType ( ) const [virtual]

Priority type.

Implements Go::ftSurfaceSet.

29.139.3.8 bool Go::ftChartSurface::gridCreated (int & *m*, int & *n*) const

We may also decide to add grid pts along an edge.

29.139.3.9 virtual Point Go::ftChartSurface::normal (double *u*, double *v*) const [virtual]

Evaluate surface normal.

Implements Go::ftSurfaceSet.

29.139.3.10 virtual Point Go::ftChartSurface::point (double *u*, double *v*) const [virtual]

Evaluation and interrogation. Overridden from ftFaceBase.

Implements Go::ftSurfaceSet.

29.139.3.11 Point Go::ftChartSurface::point (double & *u*, double & *v*, shared_ptr< ftFaceBase > & *face*, double * *seed* = NULL, bool *use_input_face* = false) const

Given par values in surf_, return corresponding par values in faces_[i]. If use_input_face == true, we do not search in graph but go directly to face.

29.139.3.12 ftMessage Go::ftChartSurface::prepareGrid (RotationInfo * *rot_info* = NULL, ftCurve * *outer_bd* = NULL)

Flicking on grid_distr_functions_ so that they both agree along and towards common bd. For all members of topology it is expected that both createSurf() has been called.

29.139.3.13 virtual bool Go::ftChartSurface::sampleOnlyEdges ( ) const [protected], [virtual]

Approximate only the edges in the group of surfaces.

Implements Go::ftSurfaceSet.

29.139.3.14 void Go::ftChartSurface::setEdgeScales (std::vector< std::pair< Point, double > > & *edge_scales*)

29.139.3.15 void Go::ftChartSurface::setGridResolution (int *m,* int *n*)

29.139.3.16 void Go::ftChartSurface::setPrioType (ftTangPriority *type*)

29.139.3.17 void Go::ftChartSurface::setSymmDistrFunctions (bool *symm_distr_functions*)

29.139.3.18 void Go::ftChartSurface::writeDebugGrid (std::ostream & *os*) const

Write to file LineCloud describing grid. Still awaiting exchange format.

29.139.3.19 void Go::ftChartSurface::writeGrid (std::ostream & *os*) const

29.139.4 Member Data Documentation

29.139.4.1 double Go::ftChartSurface::curvature_tol_ [protected]

Definition at line 127 of file ftChartSurface.h.

29.139.4.2 std::vector<std::pair<Point, double> > Go::ftChartSurface::edge_scales_ [protected]

Definition at line 143 of file ftChartSurface.h.

29.139.4.3 ftPlanarGraph Go::ftChartSurface::graph_ [protected]

Definition at line 128 of file ftChartSurface.h.

29.139.4.4 std::vector<shared_ptr<SplineCurve> > Go::ftChartSurface::grid_distr_functions_ [protected]

Definition at line 139 of file ftChartSurface.h.

29.139.4.5 std::vector<std::vector<shared_ptr<ftSurfaceSetPoint> > > Go::ftChartSurface::grid_pts_ [protected]

Definition at line 148 of file ftChartSurface.h.

29.139.4.6 int Go::ftChartSurface::m_ [protected]

Definition at line 136 of file ftChartSurface.h.

29.139.4.7 double Go::ftChartSurface::maxerror_ [protected]

Definition at line 130 of file ftChartSurface.h.

29.139.4.8 double Go::ftChartSurface::meanerror_ [protected]

Definition at line 131 of file ftChartSurface.h.

29.139.4.9 int Go::ftChartSurface::n_ [protected]

Definition at line 137 of file ftChartSurface.h.

29.139.4.10 ftTangPriority Go::ftChartSurface::prio_type_ [protected]

Definition at line 122 of file ftChartSurface.h.

29.139.4.11 std::vector<bool> Go::ftChartSurface::secn_distr_ [protected]

Definition at line 146 of file ftChartSurface.h.

29.139.4.12 bool Go::ftChartSurface::symm_distr_functions_ [protected]

Definition at line 145 of file ftChartSurface.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftChartSurface.h

29.140 Go::ftCurve Class Reference

`#include <ftCurve.h>`

Public Member Functions

- ftCurve ()

  Constructor.
- ftCurve (ftCurveType t)
- ftCurve & operator+= (const ftCurve &cv)

  Append curve.
- void appendCurve (const ftCurve &cv)

  Append the ftCurve cv after this curve.
- void prependCurve (const ftCurve &cv)

  Place the ftCurve cv before this curve.
- void appendSegment (const ftCurveSegment &seg)

  A new segment after this curve.
- void prependSegment (const ftCurveSegment &seg)

  A new segment prior to this curve.
- void joinSegments (double gap_tol, double neighbour_tol, double kink_tol, double bend_tol)
- void orientSegments (double neighbour_tol, bool assume_manifold=true)
- void reverse ()

  Reverse the curve and maintain correct joint types between segments.
- void chopOff (const BoundingBox &box)

  Remove the parts of this curve lying outside the specified bounding box.
- int numSegments () const

  Number of segments in ftCurve.
- double startOfSegment (int segment) const

  Start parameter of segment number segment.
- double endOfSegment (int segment) const

  End parameter of segment number segment.
- const ftCurveSegment & segment (int segment) const

  Fetch segment number segment.
- ftCurveType curveType () const
- tpJointType jointAfter (int segment) const
- tpJointType worstJointType () const

  Least continous joint between segments.
- int numDisjointSubcurves () const

  Number of disjoint subcurves.
- void point (double t, int segment, Point &pt) const

  Compute position given segment number and parameter within segment.
- void tangent (double t, int segment, Point &tan) const

  Compute tangent given segment number and parameter within segment.
- void normal (double t, int segment, int side, Point &normal, double eps) const
- double arcLength (double t1, int seg1, double t2, int seg2) const

  Curve length.
- void reparametrize (double eps_go=1.0e-6)

  Reparametrization.
- void tesselate (std::vector< shared_ptr< LineStrip > > &meshes) const

  Tesselation with default number of line segments.
- void tesselate (int resolution, std::vector< shared_ptr< LineStrip > > &meshes) const

  Tesselation, number of line segments for each ftCurveSegment given.
- void tesselate (double density, std::vector< shared_ptr< LineStrip > > &meshes) const
- void write (std::ostream &os) const

  Debug.
- void writeSpaceCurve (std::ostream &os) const

  Debug.
- void deleteSpaceCurveRepresentation ()

  Debug.

Protected Attributes

- ftCurveType type_
- std::vector< ftCurveSegment > segments_

29.140.1 Detailed Description

ftCurve - contains a number of (possibly disjoint) curve segments. The ftCurve class has interfaces for most operations (such as evaluation) that one might want to perform on them

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Definition at line 236 of file ftCurve.h.

29.140.2 Constructor & Destructor Documentation

29.140.2.1 Go::ftCurve::ftCurve ( ) [inline]

Constructor.

Definition at line 240 of file ftCurve.h.

29.140.2.2 Go::ftCurve::ftCurve (ftCurveType *t*) [inline]

Constructor of curve given curve type -1 = no specified type, 0 = intersection curve, 1 = edge curve, 2 = kink curve, 3 = corner curve, 4 = gap curve, 5 = singularity curve

Definition at line 245 of file ftCurve.h.

29.140.3 Member Function Documentation

29.140.3.1 void Go::ftCurve::appendCurve (const ftCurve & *cv*) [inline]

Append the ftCurve cv after this curve.

Definition at line 360 of file ftCurve.h.

29.140.3.2 void Go::ftCurve::appendSegment (const ftCurveSegment & *seg*) [inline]

A new segment after this curve.

Definition at line 378 of file ftCurve.h.

29.140.3.3 double Go::ftCurve::arcLength (double *t1,* int *seg1,* double *t2,* int *seg2*) const

Curve length.

29.140.3.4 void Go::ftCurve::chopOff (const BoundingBox & *box*) [inline]

Remove the parts of this curve lying outside the specified bounding box.

Definition at line 408 of file ftCurve.h.

29.140.3.5 ftCurveType Go::ftCurve::curveType ( ) const [inline]

Type of curve -1 = no specified type, 0 = intersection curve, 1 = edge curve, 2 = kink curve, 3 = corner curve, 4 = gap curve, 5 = singularity curve

Definition at line 453 of file ftCurve.h.

29.140.3.6 void Go::ftCurve::deleteSpaceCurveRepresentation ( ) [inline]

Debug.

Definition at line 339 of file ftCurve.h.

29.140.3.7 double Go::ftCurve::endOfSegment (int *segment*) const [inline]

End parameter of segment number segment.

Definition at line 439 of file ftCurve.h.

29.140.3.8 void Go::ftCurve::joinSegments (double *gap_tol,* double *neighbour_tol,* double *kink_tol,* double *bend_tol*)

Flag the connections between segments according to their continuity. This function assumes that the segments have already been sorted and oriented. Sorting and orienting of segments can be done with orientSegments()

29.140.3.9 tpJointType Go::ftCurve::jointAfter (int *segment*) const [inline]

Type of joint between segment number segment and the next segment 0 = g1 continuity, 1 = not quite g1, 2 = g0 continuity, 3 = gap, 4 = discontinuous, 5 = last segment

Definition at line 460 of file ftCurve.h.

29.140.3.10 void Go::ftCurve::normal (double *t,* int *segment,* int *side,* Point & *normal,* double *eps*) const [inline]

Compute normal given segment number, parameter within segment and the number of the associated face

Definition at line 503 of file ftCurve.h.

29.140.3.11 int Go::ftCurve::numDisjointSubcurves ( ) const [inline]

Number of disjoint subcurves.

Definition at line 478 of file ftCurve.h.

29.140.3.12 int Go::ftCurve::numSegments ( ) const [inline]

Number of segments in ftCurve.

Definition at line 425 of file ftCurve.h.

29.140.3.13 ftCurve & Go::ftCurve::operator+= (const ftCurve & *cv*) [inline]

Append curve.

Definition at line 352 of file ftCurve.h.

29.140.3.14 void Go::ftCurve::orientSegments (double *neighbour_tol*, bool *assume_manifold* = true)

Assures that the segments are consistently oriented and sorted such that the end point of segment 'k' is coincident (within the specified tolerance) with the start point of segment 'k+1' if those segments are connected. If we cannot a priori be sure that our curve is describing an 1-manifold (no 'branches' on the curve), the last argument should be set to 'false'. This may effect performance, though not severely unless the number of segments is very high.

29.140.3.15 void Go::ftCurve::point (double *t*, int *segment*, Point & *pt*) const [inline]

Compute position given segment number and parameter within segment.

Definition at line 489 of file ftCurve.h.

29.140.3.16 void Go::ftCurve::prependCurve (const ftCurve & *cv*) [inline]

Place the ftCurve cv before this curve.

Definition at line 369 of file ftCurve.h.

29.140.3.17 void Go::ftCurve::prependSegment (const ftCurveSegment & *seg*) [inline]

A new segment prior to this curve.

Definition at line 385 of file ftCurve.h.

29.140.3.18 void Go::ftCurve::reparametrize (double *eps_go* = 1.0e-6)

Reparametrization.

The eps_go argument is used as a tolerance if ever this function has to regenerate the spacecurve from its underlying surface and parametric curve

29.140.3.19 void Go::ftCurve::reverse ( ) [inline]

Reverse the curve and maintain correct joint types between segments.

Definition at line 392 of file ftCurve.h.

29.140.3.20 const ftCurveSegment & Go::ftCurve::segment (int *segment*) const [inline]

Fetch segment number segment.

Definition at line 446 of file ftCurve.h.

29.140.3.21 double Go::ftCurve::startOfSegment (int *segment*) const [inline]

Start parameter of segment number segment.

Definition at line 432 of file ftCurve.h.

29.140.3.22 void Go::ftCurve::tangent (double *t*, int *segment*, Point & *tan*) const [inline]

Compute tangent given segment number and parameter within segment.

Definition at line 496 of file ftCurve.h.

29.140.3.23 void Go::ftCurve::tesselate (std::vector< shared_ptr< LineStrip > > & *meshes*) const

Tesselation with default number of line segments.

29.140.3.24 void Go::ftCurve::tesselate (int *resolution*, std::vector< shared_ptr< LineStrip > > & *meshes*) const

Tesselation, number of line segments for each ftCurveSegment given.

29.140.3.25 void Go::ftCurve::tesselate (double *density*, std::vector< shared_ptr< LineStrip > > & *meshes*) const

Tesselation, number of line segments for each ftCurveSegment depends on the length of the segment and the given density

29.140.3.26 tpJointType Go::ftCurve::worstJointType ( ) const [inline]

Least continous joint between segments.

Definition at line 467 of file ftCurve.h.

29.140.3.27 void Go::ftCurve::write (std::ostream & *os*) const

Debug.

29.140.3.28 void Go::ftCurve::writeSpaceCurve (std::ostream & *os*) const

Debug.

29.140.4 Member Data Documentation

29.140.4.1 std::vector<ftCurveSegment> Go::ftCurve::segments_ [protected]

Definition at line 347 of file ftCurve.h.

29.140.4.2 ftCurveType Go::ftCurve::type_ [protected]

Definition at line 346 of file ftCurve.h.

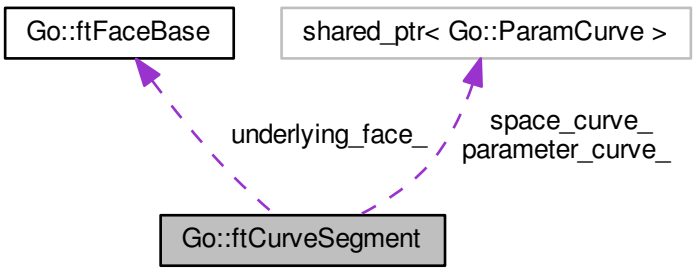
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftCurve.h

29.141 Go::ftCurveSegment Class Reference

`#include <ftCurve.h>`

Collaboration diagram for Go::ftCurveSegment:



Public Member Functions

- ftCurveSegment (ftCurveType type, tpJointType joint, ftFaceBase *f0, ftFaceBase *f1, shared_ptr< ParamCurve > paramcv0, shared_ptr< ParamCurve > paramcv1, shared_ptr< ParamCurve > spacecv, double eps_geo=1.0e-6)
- ftCurveType segmentType () const
- void setJointAfter (tpJointType jt)
- tpJointType jointAfter () const

  Fetch joint type between this curve segment and the next.
- ftFaceBase * face (int number) const

  Fetch face number number associated with this curve segment.
- double startOfSegment () const

  Return start parameter of segment.
- double endOfSegment () const

  Return end parameter of segment.
- void point (double t, Point &pt) const
- void tangent (double t, Point &tan) const
- void paramcurvePoint (int number, double t, Point &pt) const
- void paramcurveTangent (int number, double t, Point &pt) const

  Tangent to the curve in the parameter domain of face number.
- void reverse ()
- std::vector< ftCurveSegment > chopOff (const BoundingBox &box, bool &eraseme)

  Internal use.
- shared_ptr< ParamCurve > spaceCurve () const

  Return the space curve corresponding to this segment.
- shared_ptr< ParamCurve > parameterCurve (int number) const

  Return the curve in the parameter domain of face number.
- Point startPoint () const

  Start point of segment.
- Point endPoint () const

  End point of segment.
- void normal (double t, int side, Point &normal, double eps) const
- double arcLength (double t1, double t2) const

  The arc length of this curve segment limited by the interval [t1, t2].
- void reparametrize (double eps_go=1.0e-6)
- shared_ptr< LineStrip > tesselate (int resolution) const

  Tesselate curve segment to return a linear approximation.
- void deleteSpaceCurveRepresentation ()

  Debug purpose.

Protected Member Functions

- void redefineSpaceCurve (double eps_go)

Protected Attributes

- ftCurveType segment_type_
- tpJointType joint_
- ftFaceBase * underlying_face_ [2]

  Surface(s) on which curve is lying.
- shared_ptr< ParamCurve > parameter_curve_ [2]

  Curves in surface domain.
- shared_ptr< ParamCurve > space_curve_

  Curve in space.

29.141.1 Detailed Description

ftCurveSegment - One segment describing a curve lying on one or two surfaces. The curve can be of type intersection, edge curve, kink curve, corner curve or gap curve. The curve is an output of a computation corresponding to the curve type.

Definition at line 78 of file ftCurve.h.

29.141.2 Constructor & Destructor Documentation

29.141.2.1 Go::ftCurveSegment::ftCurveSegment (ftCurveType *type,* tpJointType *joint,* ftFaceBase * *f0,* ftFaceBase * *f1,* shared_ptr< ParamCurve > *paramcv0,* shared_ptr< ParamCurve > *paramcv1,* shared_ptr< ParamCurve > *spacecv,* double *eps_geo* = `1.0e-6`)

Constructor. The segment owns the nurbscurves, but not the faces

29.141.3 Member Function Documentation

29.141.3.1 double Go::ftCurveSegment::arcLength (double *t1,* double *t2*) const

The arc length of this curve segment limited by the interval [t1, t2].

29.141.3.2 std::vector<ftCurveSegment> Go::ftCurveSegment::chopOff (const BoundingBox & *box,* bool & *eraseme*)

Internal use.

29.141.3.3 void Go::ftCurveSegment::deleteSpaceCurveRepresentation ( ) `[inline]`

Debug purpose.

Definition at line 160 of file ftCurve.h.

29.141.3.4 double Go::ftCurveSegment::endOfSegment ( ) const

Return end parameter of segment.

29.141.3.5 Point Go::ftCurveSegment::endPoint ( ) const

End point of segment.

29.141.3.6 ftFaceBase * Go::ftCurveSegment::face (int *number*) const `[inline]`

Fetch face number number associated with this curve segment.

Definition at line 208 of file ftCurve.h.

29.141.3.7 tpJointType Go::ftCurveSegment::jointAfter ( ) const [inline]

Fetch joint type between this curve segment and the next.

Definition at line 201 of file ftCurve.h.

29.141.3.8 void Go::ftCurveSegment::normal (double *t*, int *side*, Point & *normal*, double *eps*) const

The normal of the surface corresponding to this curve.

29.141.3.9 void Go::ftCurveSegment::paramcurvePoint (int *number*, double *t*, Point & *pt*) const

Comput point on curve in the parameter domain of face number in the parameter t. If the parameter curve does not exist, the closest point in the specified face to the space curve point corresponding to t is returned.

29.141.3.10 void Go::ftCurveSegment::paramcurveTangent (int *number*, double *t*, Point & *pt*) const

Tangent to the curve in the parameter domain of face number.

29.141.3.11 shared_ptr< ParamCurve > Go::ftCurveSegment::parameterCurve (int *number*) const [inline]

Return the curve in the parameter domain of face number.

Definition at line 222 of file ftCurve.h.

29.141.3.12 void Go::ftCurveSegment::point (double *t*, Point & *pt*) const

Evaluate a point on the curve.

29.141.3.13 void Go::ftCurveSegment::redefineSpaceCurve (double *eps_go*) [protected]

29.141.3.14 void Go::ftCurveSegment::reparametrize (double *eps_go* = 1.0e-6)

The eps_go argument is used as a tolerance if ever this function has to regenerate the spacecurve from its underlying surface and parametric curve

29.141.3.15 void Go::ftCurveSegment::reverse ( )

Reverse the direction of the curve segment. NB! The joint types will not be correct

29.141.3.16 ftCurveType Go::ftCurveSegment::segmentType ( ) const [inline]

Fetch info about the type of this curve segment -1 = no specified type, 0 = intersection curve, 1 = edge curve, 2 = kink curve, 3 = corner curve, 4 = gap curve, 5 = singularity curve

Definition at line 187 of file ftCurve.h.

29.141.3.17 void Go::ftCurveSegment::setJointAfter (tpJointType *jt*) [inline]

Set joint type between this curve segment and the next 0 = g1 continuity, 1 = not quite g1, 2 = g0 continuity, 3 = gap, 4 = discontinuous, 5 = last segment

Definition at line 194 of file ftCurve.h.

29.141.3.18 shared_ptr< ParamCurve > Go::ftCurveSegment::spaceCurve ( ) const [inline]

Return the space curve corresponding to this segment.

Definition at line 215 of file ftCurve.h.

29.141.3.19 double Go::ftCurveSegment::startOfSegment ( ) const

Return start parameter of segment.

29.141.3.20 Point Go::ftCurveSegment::startPoint ( ) const

Start point of segment.

29.141.3.21 void Go::ftCurveSegment::tangent (double *t,* Point & *tan*) const

Get the curve tangent in a given parameter.

29.141.3.22 shared_ptr<LineStrip> Go::ftCurveSegment::tesselate (int *resolution*) const

Tesselate curve segment to return a linear approximation.

29.141.4 Member Data Documentation

29.141.4.1 tpJointType Go::ftCurveSegment::joint_ [protected]

Definition at line 173 of file ftCurve.h.

29.141.4.2 shared_ptr<ParamCurve> Go::ftCurveSegment::parameter_curve_[2] [protected]

Curves in surface domain.

Definition at line 177 of file ftCurve.h.

29.141.4.3 ftCurveType Go::ftCurveSegment::segment_type_ [protected]

Definition at line 172 of file ftCurve.h.

29.141.4.4 shared_ptr<ParamCurve> Go::ftCurveSegment::space_curve_ [protected]

Curve in space.

Definition at line 179 of file ftCurve.h.

29.141.4.5 ftFaceBase* Go::ftCurveSegment::underlying_face_[2] [protected]

Surface(s) on which curve is lying.

Definition at line 175 of file ftCurve.h.

The documentation for this class was generated from the following file:

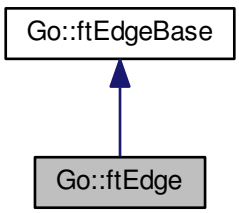
- compositemodel/include/GoTools/compositemodel/ftCurve.h

29.142 Go::ftEdge Class Reference

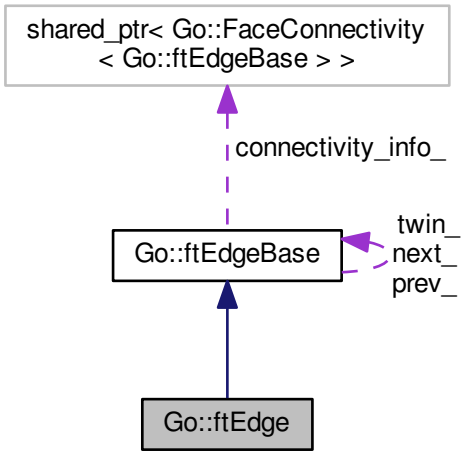
The ftEdge is a half-edge implementation of a topological data structure.

`#include <ftEdge.h>`

Inheritance diagram for Go::ftEdge:



Collaboration diagram for Go::ftEdge:



Public Member Functions

- ftEdge (ftFaceBase *face, shared_ptr< ParamCurve > cv, double tmin, double tmax, int entry_id=-1)
- ftEdge (shared_ptr< ParamCurve > cv, double tmin, double tmax, int entry_id=-1)
- ftEdge (ftFaceBase *face, shared_ptr< ParamCurve > cv, shared_ptr< Vertex > v1, shared_ptr< Vertex > v2, bool is_reversed=false, int entry_id=-1)
- ftEdge (shared_ptr< ParamCurve > cv, shared_ptr< Vertex > v1, shared_ptr< Vertex > v2, bool is_reversed=false, int entry_id=-1)
- ~ftEdge ()

  Destructor.
- virtual double tMin () const

  Minimum parameter of curve restricted to edge.
- virtual double tMax () const

  Maximum parameter of curve restricted to edge.
- virtual void setReversed (bool is_reversed)
- virtual bool isReversed ()
- void reverseGeomCurve ()
- virtual ftFaceBase * face ()

  The face associated to this edge.
- virtual void setFace (ftFaceBase *face)

  Set pointer to the face associated to this edge.
- virtual BoundingBox boundingBox ()

  Bounding box surrounding this edge. The box may be too large.
- virtual ftEdge * split (double t)

  Split edge in a given parameter.
- shared_ptr< ftEdge > split2 (double t)

  Split edge and update associated edge loop.
- shared_ptr< ftEdge > splitAtVertex (shared_ptr< Vertex > vx)

  Split according to an already existing vertex.

- virtual int entryId ()

  Fetch Id corresponding to this edge. It is not necessarily uniquely set.
- virtual void setEntryId (int id)

  Set Id corresponding to this edge.
- virtual Point point (double t) const

  Evaluate position given edge parameter.
- virtual Point tangent (double t) const

  Evaluate tangent of edge given edge parameter.
- virtual Point normal (double t) const

  Evaluate normal of associated face given edge parameter.
- virtual Point normal (double t, Point &face_par_pt, double *face_seed) const
- virtual void closestPoint (const Point &pt, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const

  Closest point on edge to a given point.
- virtual void connectAfter (ftEdgeBase *edge)

  Connect this edge to the given one.
- virtual void closeLoop (ftEdgeBase *last)

  Closing of loop.
- virtual void disconnectThis ()
- virtual void connectTwin (ftEdgeBase *twin, int &status)
- virtual void disconnectTwin ()

  Remove twin information in this edge.
- void joinVertices (ftEdgeBase *twin)

  Update associated vertices when two edges are identified as twins.
- virtual ftEdge * geomEdge ()

  Return edge pointer.
- virtual bool orientationOK () const

  Compare orientation of curve and edge.
- void point (double t, int der, std::vector< Point > &derivs) const
- shared_ptr< ParamCurve > geomCurve ()

  Fetch the geometry curve associated with this edge.
- double estimatedCurveLength ()

  Estimate the length of the curve corresponding to this edge.
- double estimatedCurveLength (double min_par, double max_par)
- Point faceParameter (double t, double *seed=NULL) const
- void setGeomCurve (shared_ptr< ParamCurve > geom_curve)
- virtual void updateGeomCurve (double tol)
- bool updateEdgeInfo (double tol)

  Update geometry info if possible.
- int getCurveIndex () const
- shared_ptr< Vertex > getVertex (bool at_start)
- void getVertices (shared_ptr< Vertex > &v1, shared_ptr< Vertex > &v2)
- shared_ptr< Vertex > getOtherVertex (const Vertex *vx)
- shared_ptr< Vertex > getCommonVertex (ftEdge *other)
- bool hasVertex (Vertex *vx)

  Check if the vertex vx belongs to this edge.
- void setVertices (shared_ptr< Vertex > v1, shared_ptr< Vertex > v2)

  Assign vertices to this edge.
- double parAtVertex (const Vertex *vx) const
- void replaceVertex (shared_ptr< Vertex > &this_vertex, shared_ptr< Vertex > &other_vertex)

  Interchange one of this edge's vertex. Used in topology build.
- void addEdgeMultiplicityInstance (ftEdge *other)

Functionality related to non-manifold models.

- bool hasEdgeMultiplicity ()

  Check if this edge belongs to a radial edge (EdgeVertex)
- shared_ptr< EdgeVertex > getEdgeMultiplicityInstance ()

  Fetch the radial edge to which this edge belongs.
- void setEdgeVertex (shared_ptr< EdgeVertex > radial_edge)
- void joinEdgeVertex (shared_ptr< EdgeVertex > radial_edge)
- void removeEdgeVertex ()

  Remove radial edge instance.
- void joinVertex (shared_ptr< Vertex > this_vertex, shared_ptr< Vertex > other_vertex)

  Connect to adjacent vertices including updating edge information.
- std::vector< ftSurface * > getAdjacentFaces () const

  Get all (up to 2) faces meeting in this edge.
- std::vector< ftSurface * > getAllAdjacentFaces () const

  Get all faces meeting in this edge, including non-manifold cases.
- bool hasCommonVertices (ftEdge *other) const

  Check for common vertices between two edges.
- bool commonVertex (ftEdge *other) const
- bool hasCommonRadialEdge (ftEdge *other) const
- bool checkEdgeTopology ()

  Debug functionality.

Additional Inherited Members

29.142.1 Detailed Description

The ftEdge is a half-edge implementation of a topological data structure.

ftEdge - topological edge for Fantastic

The ftEdge is a half-edge implementation of a topological data structure. It implements the ftEdgeBase interface by using the Go geometry library.

Author

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See also

ftEdgeBase

Definition at line 68 of file ftEdge.h.

29.142.2 Constructor & Destructor Documentation

29.142.2.1 Go::ftEdge::ftEdge (ftFaceBase * *face*, shared_ptr< ParamCurve > *cv*, double *tmin*, double *tmax*, int *entry_id* = -1)

Constructor. Detailed description.

29.142.2.2 Go::ftEdge::ftEdge (shared_ptr< ParamCurve > *cv*, double *tmin*, double *tmax*, int *entry_id* = -1)

Constructor. Input is the curve representing the geometry of the edge and parameter values for the two vertices. There is no reference to a face object.

29.142.2.3 Go::ftEdge::ftEdge (ftFaceBase * *face*, shared_ptr< ParamCurve > *cv*, shared_ptr< Vertex > *v1*, shared_ptr< Vertex > *v2*, bool *is_reversed* = false, int *entry_id* = -1)

Constructor.

Parameters

face	the face to which this edge is associate
cv	geometric curve
v1	vertex in the start of the edge
v2	vertex in the end of the edge
is_reversed	whether the geometrc curve is reversed with respect to the start and end vertices. Needed to sort out closed curves.

29.142.2.4 Go::ftEdge::ftEdge (shared_ptr< ParamCurve > *cv*, shared_ptr< Vertex > *v1*, shared_ptr< Vertex > *v2*, bool *is_reversed* = false, int *entry_id* = -1)

Constructor. Input is the curve representing the geometry of the edge and two vertices. There is no reference to a face object.

29.142.2.5 Go::ftEdge::~ftEdge ( )

Destructor.

29.142.3 Member Function Documentation

29.142.3.1 void Go::ftEdge::addEdgeMultiplicityInstance (ftEdge * *other*)

Functionality related to non-manifold models.

29.142.3.2 virtual BoundingBox Go::ftEdge::boundingBox ( ) [virtual]

Bounding box surrounding this edge. The box may be too large.

Implements Go::ftEdgeBase.

29.142.3.3 bool Go::ftEdge::checkEdgeTopology ( )

Debug functionality.

29.142.3.4 virtual void Go::ftEdge::closeLoop (ftEdgeBase * *last*) [virtual]

Closing of loop.

Reimplemented from Go::ftEdgeBase.

29.142.3.5 virtual void Go::ftEdge::closestPoint (const Point & *pt*, double & *clo_t*, Point & *clo_pt*, double & *clo_dist*, double const * *seed* = 0) const [virtual]

Closest point on edge to a given point.

Implements Go::ftEdgeBase.

29.142.3.6 bool Go::ftEdge::commonVertex (ftEdge * *other*) const [inline]

Definition at line 369 of file ftEdge.h.

29.142.3.7 virtual void Go::ftEdge::connectAfter (ftEdgeBase * *edge*) [virtual]

Connect this edge to the given one.

Reimplemented from Go::ftEdgeBase.

29.142.3.8 virtual void Go::ftEdge::connectTwin (ftEdgeBase * *twin*, int & *status*) [virtual]

Represent adjacency by connecting this edge to its twin edge on the adjace face

Reimplemented from Go::ftEdgeBase.

29.142.3.9 virtual void Go::ftEdge::disconnectThis ( ) [virtual]

Disconnect this edge from its neighbours in the loop of edges limiting a face

Reimplemented from Go::ftEdgeBase.

29.142.3.10 virtual void Go::ftEdge::disconnectTwin ( ) [virtual]

Remove twin information in this edge.

Reimplemented from Go::ftEdgeBase.

29.142.3.11 virtual int Go::ftEdge::entryId ( ) [inline], [virtual]

Fetch Id corresponding to this edge. It is not necessarily uniquely set.

Implements Go::ftEdgeBase.

Definition at line 162 of file ftEdge.h.

29.142.3.12 double Go::ftEdge::estimatedCurveLength ( )

Estimate the length of the curve corresponding to this edge.

29.142.3.13 double Go::ftEdge::estimatedCurveLength (double *min_par,* double *max_par*)

Estimate the length of the curve corresponding to this edge limited by edge parameters

29.142.3.14 virtual ftFaceBase* Go::ftEdge::face ( ) [virtual]

The face associated to this edge.

Implements Go::ftEdgeBase.

29.142.3.15 Point Go::ftEdge::faceParameter (double *t,* double * *seed* = NULL) const

Fetch the parameter in the associated face, given the edge parameter

29.142.3.16 shared_ptr<ParamCurve> Go::ftEdge::geomCurve ( ) [inline]

Fetch the geometry curve associated with this edge.

Definition at line 219 of file ftEdge.h.

29.142.3.17 virtual ftEdge* Go::ftEdge::geomEdge ( ) [virtual]

Return edge pointer.

Implements Go::ftEdgeBase.

29.142.3.18 std::vector<ftSurface*> Go::ftEdge::getAdjacentFaces ( ) const

Get all (up to 2) faces meeting in this edge.

29.142.3.19 std::vector<ftSurface*> Go::ftEdge::getAllAdjacentFaces ( ) const

Get all faces meeting in this edge, including non-manifold cases.

29.142.3.20 shared_ptr<Vertex> Go::ftEdge::getCommonVertex (ftEdge * *other*) [inline]

Fetch the vertex that is common to this edge and the edge other. If no such vertex exist, an empty shared pointer is returned

Definition at line 287 of file ftEdge.h.

29.142.3.21 int Go::ftEdge::getCurveIndex ( ) const

Fetch index of geometry curve with respect to associated surface, if this information exists: -1 : No info or not a rectangular surface 0 : umin 1 : umax 2 : vmin 3 : vmax

29.142.3.22 shared_ptr<EdgeVertex> Go::ftEdge::getEdgeMultiplicityInstance ( ) [inline]

Fetch the radial edge to which this edge belongs.

Definition at line 328 of file ftEdge.h.

29.142.3.23 shared_ptr<Vertex> Go::ftEdge::getOtherVertex (const Vertex * *vx*) [inline]

Given one of the vertices belonging to this edge, fetch the other

Definition at line 274 of file ftEdge.h.

29.142.3.24 shared_ptr<Vertex> Go::ftEdge::getVertex (bool *at_start*)

Access function for vertices. The function takes into account whether or not the orientation is reversed.

29.142.3.25 void Go::ftEdge::getVertices (shared_ptr< Vertex > & *v1*, shared_ptr< Vertex > & *v2*) [inline]

Access function for vertices. This function does not take into account the orientation of the edge.

Definition at line 265 of file ftEdge.h.

29.142.3.26 bool Go::ftEdge::hasCommonRadialEdge (ftEdge * *other*) const [inline]

Check if this edge and the edge other have a common radial edge (EdgeVertex)

Definition at line 380 of file ftEdge.h.

29.142.3.27 bool Go::ftEdge::hasCommonVertices (ftEdge * *other*) const [inline]

Check for common vertices between two edges.

Definition at line 360 of file ftEdge.h.

29.142.3.28 bool Go::ftEdge::hasEdgeMultiplicity ( ) [inline]

Check if this edge belongs to a radial edge (EdgeVertex)

Definition at line 322 of file ftEdge.h.

29.142.3.29 bool Go::ftEdge::hasVertex (Vertex * *vx*) [inline]

Check if the vertex vx belongs to this edge.

Definition at line 299 of file ftEdge.h.

29.142.3.30 virtual bool Go::ftEdge::isReversed ( ) [virtual]

Get the value of the flag indicating that the orientation of the edge is reversed with respect to the parametrization of the underlying ParamCurve.

Returns

true if orientation is reversed, *false* otherwise

Implements Go::ftEdgeBase.

29.142.3.31 void Go::ftEdge::joinEdgeVertex (shared_ptr< EdgeVertex > *radial_edge*)

Connect to adjacent radial edges. Used in topology build for volumes

29.142.3.32 void Go::ftEdge::joinVertex (shared_ptr< Vertex > *this_vertex,* shared_ptr< Vertex > *other_vertex*)

Connect to adjacent vertices including updating edge information.

29.142.3.33 void Go::ftEdge::joinVertices (ftEdgeBase * *twin*)

Update associated vertices when two edges are identified as twins.

29.142.3.34 virtual Point Go::ftEdge::normal (double *t*) const [virtual]

Evaluate normal of associated face given edge parameter.

Implements Go::ftEdgeBase.

29.142.3.35 virtual Point Go::ftEdge::normal (double *t,* Point & *face_par_pt,* double * *face_seed*) const [virtual]

Evaluate normal of associated face given a seed to the search for the corresponding face parameter

Implements Go::ftEdgeBase.

29.142.3.36 virtual bool Go::ftEdge::orientationOK ( ) const [virtual]

Compare orientation of curve and edge.

Reimplemented from Go::ftEdgeBase.

29.142.3.37 double Go::ftEdge::parAtVertex (const Vertex * *vx*) const

Fetch the parameter of the curve associated to this edge at a given vertex

29.142.3.38 virtual Point Go::ftEdge::point (double *t*) const [virtual]

Evaluate position given edge parameter.

Implements Go::ftEdgeBase.

29.142.3.39 void Go::ftEdge::point (double *t,* int *der,* std::vector< Point > & *derivs*) const

Evaluate this edge at the parameter t, including derivatives up to der

29.142.3.40 void Go::ftEdge::removeEdgeVertex ( )

Remove radial edge instance.

29.142.3.41 void Go::ftEdge::replaceVertex (shared_ptr< Vertex > & *this_vertex,* shared_ptr< Vertex > & *other_vertex*)

Interchange one of this edge's vertex. Used in topology build.

29.142.3.42 void Go::ftEdge::reverseGeomCurve ( )

Reverse the geometric curve. A call to this function will reverse the direction of the geometry curve, swap the vertices, and change the 'is_reversed' flag. The geometry curve will be cloned.

29.142.3.43 void Go::ftEdge::setEdgeVertex (shared_ptr< EdgeVertex > *radial_edge*) [inline]

Assign a radial edge to this edge. Used in topology build for volumes

Definition at line 335 of file ftEdge.h.

29.142.3.44 virtual void Go::ftEdge::setEntryId (int *id*) [inline], [virtual]

Set Id corresponding to this edge.

Implements Go::ftEdgeBase.

Definition at line 165 of file ftEdge.h.

29.142.3.45 virtual void Go::ftEdge::setFace (ftFaceBase * *face*) [inline], [virtual]

Set pointer to the face associated to this edge.

Implements Go::ftEdgeBase.

Definition at line 136 of file ftEdge.h.

29.142.3.46 void Go::ftEdge::setGeomCurve (shared_ptr< ParamCurve > *geom_curve*)

Convenience function to set or reset the geometry representation of the edge.

Parameters

geom_curve	The curve representing the geometry of the edge. This will frequently be a CurveOnSurface.

29.142.3.47 virtual void Go::ftEdge::setReversed (bool *is_reversed*) [virtual]

Set a flag to indicate that the orientation of the edge is reversed with respect to the parametrization of the underlying ParamCurve.

Parameters

is_reversed	value of the orientation flag

Implements Go::ftEdgeBase.

29.142.3.48 void Go::ftEdge::setVertices (shared_ptr< Vertex > *v1*, shared_ptr< Vertex > *v2*)

Assign vertices to this edge.

29.142.3.49 virtual ftEdge* Go::ftEdge::split (double *t*) [virtual]

Split edge in a given parameter.

Implements Go::ftEdgeBase.

29.142.3.50 shared_ptr<ftEdge> Go::ftEdge::split2 (double *t*)

Split edge and update associated edge loop.

29.142.3.51 shared_ptr<ftEdge> Go::ftEdge::splitAtVertex (shared_ptr< Vertex > *vx*)

Split according to an already existing vertex.

29.142.3.52 virtual Point Go::ftEdge::tangent (double *t*) const [virtual]

Evaluate tangent of edge given edge parameter.

Implements Go::ftEdgeBase.

29.142.3.53 virtual double Go::ftEdge::tMax ( ) const [inline], [virtual]

Maximum parameter of curve restricted to edge.

Implements Go::ftEdgeBase.

Definition at line 115 of file ftEdge.h.

29.142.3.54 virtual double Go::ftEdge::tMin ( ) const [inline], [virtual]

Minimum parameter of curve restricted to edge.

Implements Go::ftEdgeBase.

Definition at line 110 of file ftEdge.h.

29.142.3.55 bool Go::ftEdge::updateEdgeInfo (double *tol*)

Update geometry info if possible.

29.142.3.56 virtual void Go::ftEdge::updateGeomCurve (double *tol*) [virtual]

Update pointer to geometry curve associated to this edge after changes to the associated face. To be used when topology changes are applied to a model.

The documentation for this class was generated from the following file:

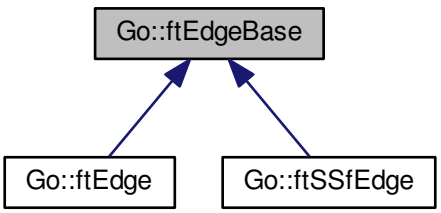
- compositemodel/include/GoTools/compositemodel/ftEdge.h

29.143 Go::ftEdgeBase Class Reference

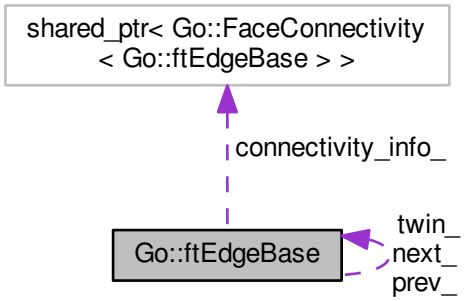
Base class for edges. Defines the interface used in topology analysis.

`#include <ftEdgeBase.h>`

Inheritance diagram for Go::ftEdgeBase:



Collaboration diagram for Go::ftEdgeBase:



Public Member Functions

- ftEdgeBase ()
  Constructor.
- virtual ~ftEdgeBase ()
  Destructor.
- ftEdgeBase * next ()
  Next edge in the edge loop.
- ftEdgeBase * prev ()
  Previous edge in the edge loop.
- ftEdgeBase * twin ()
- virtual double tMin () const =0
  Start parameter value of edge.
- virtual double tMax () const =0
  End parameter value of edge.
- virtual void setReversed (bool is_reversed)=0
- virtual bool isReversed ()=0
- virtual ftFaceBase * face ()=0
  The face corresponding to this edge.
- virtual void setFace (ftFaceBase *face)=0
  Set face pointer.
- virtual Go::BoundingBox boundingBox ()=0
  Coordinate box surrounding this edge.
- virtual int entryId ()=0
  Id of edge. Default set to -1.
- virtual void setEntryId (int id)=0
  Set id of edge.
- virtual ftEdgeBase * split (double t)=0
- virtual Go::Point point (double t) const =0
  Evaluate position.
- virtual Go::Point tangent (double t) const =0
  Evaluate tangent.
- virtual Go::Point normal (double t) const =0

Evaluate normal of associated face.

- virtual Go::Point normal (double t, Go::Point &face_par_pt, double *face_seed) const =0
- virtual void closestPoint (const Go::Point &pt, double &clo_t, Go::Point &clo_pt, double &clo_dist, double const *seed=0) const =0

  Closest point on this edge to a given point.
- virtual void connectAfter (ftEdgeBase *edge)

  Add the edge edge to the edge loop after this edge.
- virtual void closeLoop (ftEdgeBase *last)
- virtual void disconnectThis ()

  Remove this edge from the edge loop it belongs to.
- virtual void connectTwin (ftEdgeBase *twin, int &status)
- virtual void disconnectTwin ()
- bool onBoundary ()
- void adjacentEdges (bool at_start_of_edge, std::vector< ftEdgeBase * > &adjacent, std::vector< bool > &at_start)
- tpJointType checkContinuity (ftEdgeBase *nextedge, double neighbour, double gap, double bend, double kink) const
- virtual bool orientationOK () const

  Compare orientation of curve and edge.
- virtual ftEdge * geomEdge ()=0

  Return edge pointer.
- bool checkOverlap (ftEdgeBase *other, double tol, int nmbsample, double &t1, double &t2, double &t3, double &t4, bool &same_dir, bool no_snap=true) const

  Compute an eventual overlap between this edge and the edge other.
- bool hasConnectivityInfo ()
- shared_ptr< FaceConnectivity< ftEdgeBase > > getConnectivityInfo ()
- void setConnectivityInfo (shared_ptr< FaceConnectivity< ftEdgeBase > > info)
- void resetConnectivityInfo ()

  Mark the connectivity information associated to this edge as outdated.

Protected Attributes

- ftEdgeBase * next_
- ftEdgeBase * prev_
- ftEdgeBase * twin_
- shared_ptr< FaceConnectivity< ftEdgeBase > > connectivity_info_

29.143.1 Detailed Description

Base class for edges. Defines the interface used in topology analysis.

Definition at line 58 of file ftEdgeBase.h.

29.143.2 Constructor & Destructor Documentation

29.143.2.1 Go::ftEdgeBase::ftEdgeBase ( )

Constructor.

29.143.2.2 virtual Go::ftEdgeBase::~ftEdgeBase ( ) [virtual]

Destructor.

29.143.3 Member Function Documentation

29.143.3.1 void Go::ftEdgeBase::adjacentEdges (bool *at_start_of_edge,* std::vector< ftEdgeBase * > & *adjacent,* std::vector< bool > & *at_start*)

Consider the 'node' or 'corner' implied by the startpoint (if at_start_of_edge is true) or endpoint (if it is false). The vector adjacent is filled with all edges with that 'node' as a startpoint (indicated by a true at the corresponding place in the at_start vector) or endpoint (false in at_start). The edge originally asked for is not included.

29.143.3.2 virtual Go::BoundingBox Go::ftEdgeBase::boundingBox ( ) [pure virtual]

Coordinate box surrounding this edge.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.3 tpJointType Go::ftEdgeBase::checkContinuity (ftEdgeBase * *nextedge,* double *neighbour,* double *gap,* double *bend,* double *kink*) const

Compute the continuity between this edge and nextedge given the necessary continuity parameters. 0 = g1 continuity, 1 = not quite g1, 2 = g0 continuity, 3 = gap, 4 = discontinuous, 5 = last segment

29.143.3.4 bool Go::ftEdgeBase::checkOverlap (ftEdgeBase * *other,* double *tol,* int *nmbsample,* double & *t1,* double & *t2,* double & *t3,* double & *t4,* bool & *same_dir,* bool *no_snap* = true) const

Compute an eventual overlap between this edge and the edge other.

29.143.3.5 virtual void Go::ftEdgeBase::closeLoop (ftEdgeBase * *last*) [virtual]

Close edge loop by setting the appropriate pointers between this edge and last edge

Reimplemented in Go::ftEdge.

29.143.3.6 virtual void Go::ftEdgeBase::closestPoint (const Go::Point & *pt,* double & *clo_t,* Go::Point & *clo_pt,* double & *clo_dist,* double const * *seed* = 0) const [pure virtual]

Closest point on this edge to a given point.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.7 virtual void Go::ftEdgeBase::connectAfter (ftEdgeBase * *edge*) [virtual]

Add the edge edge to the edge loop after this edge.

Reimplemented in Go::ftEdge.

29.143.3.8 virtual void Go::ftEdgeBase::connectTwin (ftEdgeBase * *twin*, int & *status*) [virtual]

Set adjacency between the face connected to this edge and the face connected to twin by setting twin pointers

Reimplemented in Go::ftEdge.

29.143.3.9 virtual void Go::ftEdgeBase::disconnectThis ( ) [virtual]

Remove this edge from the edge loop it belongs to.

Reimplemented in Go::ftEdge.

29.143.3.10 virtual void Go::ftEdgeBase::disconnectTwin ( ) [virtual]

Disconnect this edge from its twin, i.e. remove adjacency information between the face connected to this edge and the face connected to the twin edge

Reimplemented in Go::ftEdge.

29.143.3.11 virtual int Go::ftEdgeBase::entryId ( ) [pure virtual]

Id of edge. Default set to -1.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.12 virtual ftFaceBase* Go::ftEdgeBase::face ( ) [pure virtual]

The face corresponding to this edge.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.13 virtual ftEdge* Go::ftEdgeBase::geomEdge ( ) [pure virtual]

Return edge pointer.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.14 shared_ptr<FaceConnectivity<ftEdgeBase> > Go::ftEdgeBase::getConnectivityInfo ( ) [inline]

Fetch the continuity information regarding the joint between the face corresponding to this edge and the adjacent face along this edge

Definition at line 181 of file ftEdgeBase.h.

29.143.3.15 bool Go::ftEdgeBase::hasConnectivityInfo ( ) [inline]

Check if this edge has access to continuity information regarding the joint between the face corresponding to this edge and the adjacent face along this edge

Definition at line 174 of file ftEdgeBase.h.

29.143.3.16 virtual bool Go::ftEdgeBase::isReversed ( ) [pure virtual]

Get the value of the flag indicating that the orientation of the edge is reversed with respect to the parametrization of the underlying ParamCurve.

Returns

true if orientation is reversed, *false* otherwise

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.17 ftEdgeBase* Go::ftEdgeBase::next ( )

Next edge in the edge loop.

29.143.3.18 virtual Go::Point Go::ftEdgeBase::normal (double *t*) const [pure virtual]

Evaluate normal of associated face.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.19 virtual Go::Point Go::ftEdgeBase::normal (double *t*, Go::Point & *face_par_pt*, double * *face_seed*) const [pure virtual]

Evaluate normal of associated face given a seed to the search for the corresponding face parameter

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.20 bool Go::ftEdgeBase::onBoundary ( ) [inline]

Check if this edge lies on the boundary of the associated face set, i.e. it has no neighbour

Definition at line 140 of file ftEdgeBase.h.

29.143.3.21 virtual bool Go::ftEdgeBase::orientationOK ( ) const [virtual]

Compare orientation of curve and edge.

Reimplemented in Go::ftEdge.

29.143.3.22 virtual Go::Point Go::ftEdgeBase::point (double *t*) const [pure virtual]

Evaluate position.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.23 ftEdgeBase* Go::ftEdgeBase::prev ( )

Previous edge in the edge loop.

29.143.3.24 void Go::ftEdgeBase::resetConnectivityInfo ( ) [inline]

Mark the connectivity information associated to this edge as outdated.

Definition at line 194 of file ftEdgeBase.h.

29.143.3.25 void Go::ftEdgeBase::setConnectivityInfo (shared_ptr< FaceConnectivity< ftEdgeBase > > *info*) [inline]

Store the continuity information regarding the joint between the face corresponding to this edge and the adjacent face along this edge

Definition at line 188 of file ftEdgeBase.h.

29.143.3.26 virtual void Go::ftEdgeBase::setEntryId (int *id*) [pure virtual]

Set id of edge.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.27 virtual void Go::ftEdgeBase::setFace (ftFaceBase * *face*) [pure virtual]

Set face pointer.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.28 virtual void Go::ftEdgeBase::setReversed (bool *is_reversed*) [pure virtual]

Set a flag to indicate that the orientation of the edge is reversed with respect to the parametrization of the underlying ParamCurve.

Parameters

is_reversed	value of the orientation flag

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.29 virtual ftEdgeBase* Go::ftEdgeBase::split (double *t*) [pure virtual]

Split the edge at the given parameter t. This edge will then represent the first part of the original edge, the second part is returned to the caller.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.30 virtual Go::Point Go::ftEdgeBase::tangent (double *t*) const [pure virtual]

Evaluate tangent.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.31 virtual double Go::ftEdgeBase::tMax ( ) const [pure virtual]

End parameter value of edge.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.32 virtual double Go::ftEdgeBase::tMin ( ) const [pure virtual]

Start parameter value of edge.

Implemented in Go::ftEdge, and Go::ftSSfEdge.

29.143.3.33 ftEdgeBase* Go::ftEdgeBase::twin ( )

The corresponding edge on the neighbouring face. If no such neighbour exists, the function returns null.

29.143.4 Member Data Documentation

29.143.4.1 shared_ptr<FaceConnectivity<ftEdgeBase> > Go::ftEdgeBase::connectivity_info_ [protected]

Definition at line 204 of file ftEdgeBase.h.

29.143.4.2 ftEdgeBase* Go::ftEdgeBase::next_ [protected]

Definition at line 201 of file ftEdgeBase.h.

29.143.4.3 ftEdgeBase* Go::ftEdgeBase::prev_ [protected]

Definition at line 202 of file ftEdgeBase.h.

29.143.4.4 ftEdgeBase* Go::ftEdgeBase::twin_ [protected]

Definition at line 203 of file ftEdgeBase.h.

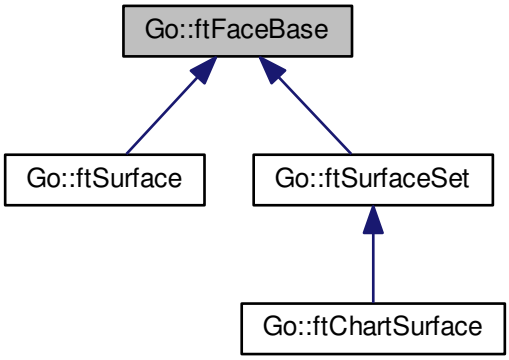
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftEdgeBase.h

29.144 Go::ftFaceBase Class Reference

`#include <ftFaceBase.h>`

Inheritance diagram for Go::ftFaceBase:



Public Member Functions

- ftFaceBase ()
  Constructor.
- ftFaceBase (int id)
  Constructor.
- virtual ~ftFaceBase ()
  Destructor.
- virtual ftSurface * asFtSurface ()
- virtual void clearInitialEdges ()
  Reset loop information.

- virtual std::vector< shared_ptr< ftEdgeBase > > createInitialEdges (double degenerate_epsilon=DEFAULT_SPACE_EPSILON, double kink=0.00015, bool no_split=false)=0
- virtual std::vector< shared_ptr< ftEdgeBase > > startEdges ()=0

  Return pointers to first part of all bd cvs.
- virtual Point point (double u, double v) const =0

  Evaluate point on face.
- virtual Point normal (double u, double v) const =0

  Evaluate surface normal.
- virtual BoundingBox boundingBox ()=0

  The bounding box corresponding to this face.
- virtual void setId (int id)

  Set id for this face.
- virtual int getId ()

  Return id, default id is -1.
- virtual shared_ptr< ParamSurface > surface ()=0

  Fetch geometric surface.
- virtual ftMessage createSurf (double &max_error, double &mean_error)=0
- virtual void getError (double &max_error, double &mean_error)=0
- virtual ftTangPriority getPrioType () const =0

  Priority of current face. Not applicable in normal configurations.
- virtual void updateBoundaryLoops (shared_ptr< ftEdgeBase > new_edge)
- virtual void isolateFace ()

  Remove all adjacency information related to this face.
- virtual ftMessage removeGap (ftEdgeBase *e1, ftEdgeBase *e2, ftFaceBase *other)

  Close gap between adjacent faces.
- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon) const =0

  Closest point between this face and a point.

Protected Attributes

- int id_

29.144.1 Detailed Description

ftFaceBase - An abstract interface to a topological face

Definition at line 60 of file ftFaceBase.h.

29.144.2 Constructor & Destructor Documentation

29.144.2.1 Go::ftFaceBase::ftFaceBase ( )

Constructor.

29.144.2.2 Go::ftFaceBase::ftFaceBase (int *id*)

Constructor.

29.144.2.3 virtual Go::ftFaceBase::~ftFaceBase ( ) [virtual]

Destructor.

29.144.3 Member Function Documentation

29.144.3.1 virtual ftSurface* Go::ftFaceBase::asFtSurface ( ) [virtual]

Reimplemented in Go::ftSurface.

29.144.3.2 virtual BoundingBox Go::ftFaceBase::boundingBox ( ) [pure virtual]

The bounding box corresponding to this face.

Implemented in Go::ftSurface, and Go::ftSurfaceSet.

29.144.3.3 virtual void Go::ftFaceBase::clearInitialEdges ( ) [inline], [virtual]

Reset loop information.

Reimplemented in Go::ftSurface.

Definition at line 74 of file ftFaceBase.h.

29.144.3.4 virtual void Go::ftFaceBase::closestPoint (const Point & *pt,* double & *clo_u,* double & *clo_v,* Point & *clo_pt,* double & *clo_dist,* double *epsilon*) const [pure virtual]

Closest point between this face and a point.

Implemented in Go::ftSurface, and Go::ftSurfaceSet.

29.144.3.5 virtual std::vector<shared_ptr<ftEdgeBase> > Go::ftFaceBase::createInitialEdges (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON, double *kink* = 0.00015, bool *no_split* = false) [pure virtual]

Compute the edges associated to this face or fetch already existing edges

Implemented in Go::ftSurface, Go::ftChartSurface, and Go::ftSurfaceSet.

29.144.3.6 virtual ftMessage Go::ftFaceBase::createSurf (double & *max_error,* double & *mean_error*) [pure virtual]

Make sure that a geometric surface exists. Not applicable in normal configurations

Implemented in Go::ftSurface, Go::ftSurfaceSet, and Go::ftChartSurface.

29.144.3.7 virtual void Go::ftFaceBase::getError (double & *max_error,* double & *mean_error*) [pure virtual]

Fetch the error due to approximations in createSurf. Not applicable in normal configurations

Implemented in Go::ftSurface, Go::ftSurfaceSet, and Go::ftChartSurface.

29.144.3.8 virtual int Go::ftFaceBase::getId ( ) [virtual]

Return id, default id is -1.

Reimplemented in Go::ftSurface, and Go::ftSurfaceSet.

29.144.3.9 virtual ftTangPriority Go::ftFaceBase::getPrioType ( ) const [pure virtual]

Priority of current face. Not applicable in normal configurations.

Implemented in Go::ftSurface, Go::ftSurfaceSet, and Go::ftChartSurface.

29.144.3.10 virtual void Go::ftFaceBase::isolateFace ( ) [inline], [virtual]

Remove all adjacency information related to this face.

Reimplemented in Go::ftSurface.

Definition at line 116 of file ftFaceBase.h.

29.144.3.11 virtual Point Go::ftFaceBase::normal (double *u,* double *v*) const [pure virtual]

Evaluate surface normal.

Implemented in Go::ftSurface, Go::ftChartSurface, and Go::ftSurfaceSet.

29.144.3.12 virtual Point Go::ftFaceBase::point (double *u,* double *v*) const [pure virtual]

Evaluate point on face.

Implemented in Go::ftSurface, Go::ftSurfaceSet, and Go::ftChartSurface.

29.144.3.13 virtual ftMessage Go::ftFaceBase::removeGap (ftEdgeBase * *e1,* ftEdgeBase * *e2,* ftFaceBase * *other*) [inline], [virtual]

Close gap between adjacent faces.

Definition at line 123 of file ftFaceBase.h.

29.144.3.14 virtual void Go::ftFaceBase::setId (int *id*) [virtual]

Set id for this face.

Reimplemented in Go::ftSurface, and Go::ftSurfaceSet.

29.144.3.15 virtual std::vector<shared_ptr<ftEdgeBase> > Go::ftFaceBase::startEdges ( ) [pure virtual]

Return pointers to first part of all bd cvs.

Implemented in Go::ftSurface, and Go::ftSurfaceSet.

29.144.3.16 virtual shared_ptr<ParamSurface> Go::ftFaceBase::surface ( ) [pure virtual]

Fetch geometric surface.

Implemented in Go::ftSurface, and Go::ftSurfaceSet.

29.144.3.17 virtual void Go::ftFaceBase::updateBoundaryLoops (shared_ptr< ftEdgeBase > *new_edge*) [virtual]

Update the boundary loops corresponding to this face with a new edge, i.e. one edge is split and all related topology information must be updated accordingly

Reimplemented in Go::ftSurface.

29.144.4 Member Data Documentation

29.144.4.1 int Go::ftFaceBase::id_ [protected]

Definition at line 137 of file ftFaceBase.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftFaceBase.h

29.145 Go::ftGraphEdge Class Reference

```
#include <ftPlanarGraph.h>
```

Public Member Functions

- ftGraphEdge ()
  Constructor.
- ftGraphEdge (ftSurfaceSetPoint *&lower, ftSurfaceSetPoint *&upper)
- ~ftGraphEdge ()
  Destructor.
- double startparam () const
- double endparam () const
- Vector2D startPoint () const
- Vector2D endPoint () const
- Vector2D point (double v_par)
- Vector2D point (double v_par, shared_ptr< ftFaceBase > face)
  Return parameter point in domain of face, given by its's v_par on graph edge.
- const std::vector< shared_ptr< ftFaceBase > > & getFaces () const
  Return the face(s) to which the edge belongs.
- Vector2D lower () const
- Vector2D upper () const

29.145.1 Detailed Description

Edge is defined by two end points. The face(s) to which it belongs is also known. y-value of startpoint() is less than that of endpoint().

Definition at line 39 of file ftPlanarGraph.h.

29.145.2 Constructor & Destructor Documentation

29.145.2.1 Go::ftGraphEdge::ftGraphEdge ( )

Constructor.

29.145.2.2 Go::ftGraphEdge::ftGraphEdge (ftSurfaceSetPoint *& *lower*, ftSurfaceSetPoint *& *upper*)

29.145.2.3 Go::ftGraphEdge::~ftGraphEdge ( )

Destructor.

29.145.3 Member Function Documentation

29.145.3.1 double Go::ftGraphEdge::endparam ( ) const

29.145.3.2 Vector2D Go::ftGraphEdge::endPoint ( ) const

29.145.3.3 const std::vector<shared_ptr<ftFaceBase> >& Go::ftGraphEdge::getFaces ( ) const

Return the face(s) to which the edge belongs.

29.145.3.4 Vector2D Go::ftGraphEdge::lower ( ) const

29.145.3.5 Vector2D Go::ftGraphEdge::point (double *v_par*)

29.145.3.6 Vector2D Go::ftGraphEdge::point (double *v_par*, shared_ptr< ftFaceBase > *face*)

Return parameter point in domain of face, given by its's v_par on graph edge.

29.145.3.7 double Go::ftGraphEdge::startparam ( ) const

29.145.3.8 Vector2D Go::ftGraphEdge::startPoint ( ) const

29.145.3.9 Vector2D Go::ftGraphEdge::upper ( ) const

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftPlanarGraph.h

29.146 Go::ftGroupGeom Class Reference

A group of geometrical objects.

`#include <ftGroupGeom.h>`

Public Member Functions

- ftGroupGeom ()
- ~ftGroupGeom ()
- shared_ptr< GeomObject > operator[ ] (int idx) const

  Fetch object number idx.
- int size () const

  The number of objects in the group.
- ftTangPriority getType () const
- void setType (ftTangPriority type)
- void addGeomObj (shared_ptr< GeomObject > obj)

  Add a new geometry entitiy to the group.

Protected Attributes

- std::vector< shared_ptr< GeomObject > > geomobj_
- ftTangPriority type_

29.146.1 Detailed Description

A group of geometrical objects.

Definition at line 53 of file ftGroupGeom.h.

29.146.2 Constructor & Destructor Documentation

29.146.2.1 Go::ftGroupGeom::ftGroupGeom ( ) [inline]

Definition at line 57 of file ftGroupGeom.h.

29.146.2.2 Go::ftGroupGeom::~ftGroupGeom ( ) [inline]

Definition at line 62 of file ftGroupGeom.h.

29.146.3 Member Function Documentation

29.146.3.1 void Go::ftGroupGeom::addGeomObj (shared_ptr< GeomObject > *obj*) [inline]

Add a new geometry entitiy to the group.

Definition at line 86 of file ftGroupGeom.h.

29.146.3.2 ftTangPriority Go::ftGroupGeom::getType ( ) const [inline]

Whether the group of objects (surfaces) are a master, a slave or not specified. Related to tangent plane continuity between groups of surfaces

Definition at line 76 of file ftGroupGeom.h.

29.146.3.3 shared_ptr<GeomObject> Go::ftGroupGeom::operator[] (int *idx*) const [inline]

Fetch object number idx.

Definition at line 66 of file ftGroupGeom.h.

29.146.3.4 void Go::ftGroupGeom::setType (ftTangPriority *type*) [inline]

Set whether the group of objects (surfaces) are a master, a slave or not specified. Related to tangent plane continuity between groups of surfaces

Definition at line 82 of file ftGroupGeom.h.

29.146.3.5 int Go::ftGroupGeom::size ( ) const [inline]

The number of objects in the group.

Definition at line 70 of file ftGroupGeom.h.

29.146.4 Member Data Documentation

29.146.4.1 std::vector<shared_ptr<GeomObject> > Go::ftGroupGeom::geomobj_ [protected]

Definition at line 91 of file ftGroupGeom.h.

29.146.4.2 ftTangPriority Go::ftGroupGeom::type_ [protected]

Definition at line 92 of file ftGroupGeom.h.

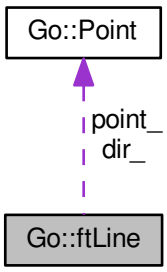
The documentation for this class was generated from the following file:

- igeslib/include/GoTools/igeslib/ftGroupGeom.h

29.147 Go::ftLine Class Reference

`#include <ftLine.h>`

Collaboration diagram for Go::ftLine:



Public Member Functions

- ftLine ()

  Default constructor.
- ftLine (const Point &dir, const Point &pnt)
- ~ftLine ()

  Destructor.
- void getTwoPlanes (ftPlane &plane1, ftPlane &plane2) const

  Find two planes intersecting in this line.
- bool closeToScaledPoint (const Point &pt, const Point &scale, double dist2) const
- ftLine scaled (const Point &scale) const

  Return a new line corresponding to this line after a rescaling of the coordinates.
- bool intersectsSphereOfBox (const BoundingBox &box) const
- bool intersectsBox (const BoundingBox &box) const

  Determine if the line intersects a box.
- bool planesIntersectBox (const BoundingBox &box) const
- const Point & direction () const

  The direction of this line.
- const Point & point () const

  A point on this line.

Protected Attributes

- Point dir_
- Point point_

29.147.1 Detailed Description

ftLine - A line

Definition at line 59 of file ftLine.h.

29.147.2 Constructor & Destructor Documentation

29.147.2.1 Go::ftLine::ftLine ( ) [inline]

Default constructor.

Definition at line 70 of file ftLine.h.

29.147.2.2 Go::ftLine::ftLine (const Point & *dir,* const Point & *pnt*) [inline]

Constructor. First parameter is a vector normal to the plane, second parameter is a point in the plane.

Definition at line 76 of file ftLine.h.

29.147.2.3 Go::ftLine::~ftLine ( )

Destructor.

29.147.3 Member Function Documentation

29.147.3.1 bool Go::ftLine::closeToScaledPoint (const Point & *pt,* const Point & *scale,* double *dist2*) const

Determine if this line comes close enough to a given point after a rescaling of pt's coordinates

29.147.3.2 const Point& Go::ftLine::direction ( ) const [inline]

The direction of this line.

Definition at line 108 of file ftLine.h.

29.147.3.3 void Go::ftLine::getTwoPlanes (ftPlane & *plane1,* ftPlane & *plane2*) const

Find two planes intersecting in this line.

29.147.3.4 bool Go::ftLine::intersectsBox (const BoundingBox & *box*) const

Determine if the line intersects a box.

29.147.3.5 bool Go::ftLine::intersectsSphereOfBox (const BoundingBox & *box*) const

Determine if the line intersects the smallest eliposide containing a box Is about 2 times faster than intersectsBox, but returns true about 50% more often than intersectsBox

29.147.3.6 bool Go::ftLine::planesIntersectBox (const BoundingBox & *box*) const

Determine if two surfaces of the line intersect a box Returns true about 45% more often than intersectsBox

29.147.3.7 const Point& Go::ftLine::point ( ) const [inline]

A point on this line.

Definition at line 110 of file ftLine.h.

29.147.3.8 ftLine Go::ftLine::scaled (const Point & *scale*) const

Return a new line corresponding to this line after a rescaling of the coordinates.

29.147.4 Member Data Documentation

29.147.4.1 Point Go::ftLine::dir_ [protected]

Definition at line 65 of file ftLine.h.

29.147.4.2 Point Go::ftLine::point_ [protected]

Definition at line 66 of file ftLine.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftLine.h

29.148 Go::ftMessage Class Reference

```
#include <ftMessage.h>
```

Public Member Functions

- ftMessage ()
  Constructor.
- ftMessage (ftmessages message)
  Constructor.
- ~ftMessage ()
  Destructor.
- void setError (ftmessages error)
  Set message.
- void addWarning (ftmessages warning)
  Add a warning.
- bool isOK ()
  Check for error and warning messages.
- ftmessages getMessage ()
  Return current message.
- int noOfWarnings ()
  Check number of warnings.
- ftmessages getWarning (int i)
  Return requested warning.

29.148.1 Detailed Description

ftMessage - Error and warning messages. Used only in some contexts

Definition at line 92 of file ftMessage.h.

29.148.2 Constructor & Destructor Documentation

29.148.2.1 Go::ftMessage::ftMessage ( ) [inline]

Constructor.

Definition at line 97 of file ftMessage.h.

29.148.2.2 Go::ftMessage::ftMessage (ftmessages *message*) [inline]

Constructor.

Definition at line 102 of file ftMessage.h.

29.148.2.3 Go::ftMessage::~ftMessage ( ) [inline]

Destructor.

Definition at line 107 of file ftMessage.h.

29.148.3 Member Function Documentation

29.148.3.1 void Go::ftMessage::addWarning (ftmessages *warning*) [inline]

Add a warning.

Definition at line 114 of file ftMessage.h.

29.148.3.2 ftmessages Go::ftMessage::getMessage ( ) [inline]

Return current message.

Definition at line 123 of file ftMessage.h.

29.148.3.3 ftmessages Go::ftMessage::getWarning (int *i*) [inline]

Return requested warning.

Definition at line 131 of file ftMessage.h.

29.148.3.4 bool Go::ftMessage::isOK ( ) [inline]

Check for error and warning messages.

Definition at line 119 of file ftMessage.h.

29.148.3.5 int Go::ftMessage::noOfWarnings ( ) [inline]

Check number of warnings.

Definition at line 127 of file ftMessage.h.

29.148.3.6 void Go::ftMessage::setError (ftmessages *error*) [inline]

Set message.

Definition at line 110 of file ftMessage.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftMessage.h

29.149 Go::ftPlanarGraph Class Reference

`#include <ftPlanarGraph.h>`

Public Member Functions

- ftPlanarGraph ()

  Constructor.
- ftPlanarGraph (std::vector< ftSamplePoint * > &nodes)
- ~ftPlanarGraph ()

  Destructor.
- void setGraph (std::vector< ftSamplePoint * > &nodes)
- shared_ptr< ftFaceBase > locateInGraph (double u, double v) const

  Given input of parameter points, return the corresponding ftFaceBase.
- void getLocalParameters (double &u, double &v, shared_ptr< ftFaceBase > &face) const

29.149.1 Detailed Description

The chosen structure of graph is, in essense, taken from "Computational Geometry, 2.2.2.1, F. P. Preparata & M. I. Shamos, 1985", and is well suited for fast searching of points inside graph.

Definition at line 123 of file ftPlanarGraph.h.

29.149.2 Constructor & Destructor Documentation

29.149.2.1 Go::ftPlanarGraph::ftPlanarGraph ( )

Constructor.

29.149.2.2 Go::ftPlanarGraph::ftPlanarGraph (std::vector< **ftSamplePoint** * > & *nodes*)

Warning! points are really of type ftSurfaceSetPoint! We cast... We expect that every pair of points differ in their parameter values.

29.149.2.3 Go::ftPlanarGraph::~ftPlanarGraph ( )

Destructor.

29.149.3 Member Function Documentation

29.149.3.1 void Go::ftPlanarGraph::getLocalParameters (**double** & *u*, **double** & *v*, shared_ptr< **ftFaceBase** > & *face*) const

Return local parameter values in corresponding patch. We locate a bounding trapezoid inside a patch, and then make a qualified guess from corner values.

29.149.3.2 shared_ptr<**ftFaceBase**> Go::ftPlanarGraph::locateInGraph (**double** *u*, **double** *v*) const

Given input of parameter points, return the corresponding ftFaceBase.

29.149.3.3 void Go::ftPlanarGraph::setGraph (std::vector< ftSamplePoint * > & *nodes*)

Warning! points are really of type ftSurfaceSetPoint! We cast... We expect that every pair of points differ in their parameter values. We only use those points which are on a subsurface-boundary.

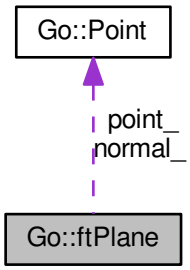
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftPlanarGraph.h

29.150 Go::ftPlane Class Reference

`#include <ftPlane.h>`

Collaboration diagram for Go::ftPlane:



Public Member Functions

- ftPlane ()
- ftPlane (const Point &n, const Point &p)
- ftPlane (const Point &x, const Point &y, const Point &z)
- ftPlane (const ftPlane &plane)

  Copy constructor.
- ~ftPlane ()

  Destructor.
- const Point & normal () const

  Get plane normal.
- const Point & point () const

  Get point in plane.
- bool intersectsBox (const BoundingBox &box) const

  Check if the plane intersects a bounding box.

Protected Attributes

- Point normal_
- Point point_

29.150.1 Detailed Description

ftPlane - Representing a plane

Author

Atgeirr F Rasmussen atgeirr@sintef.no

Definition at line 60 of file ftPlane.h.

29.150.2 Constructor & Destructor Documentation

29.150.2.1 Go::ftPlane::ftPlane ( ) [inline]

Definition at line 71 of file ftPlane.h.

29.150.2.2 Go::ftPlane::ftPlane (const Point & *n*, const Point & *p*) [inline]

Constructor. First parameter is a vector normal to the plane, second parameter is a point in the plane.

Definition at line 77 of file ftPlane.h.

29.150.2.3 Go::ftPlane::ftPlane (const Point & *x*, const Point & *y*, const Point & *z*) [inline]

Constructor. Parameters are three points in the plane

Definition at line 84 of file ftPlane.h.

29.150.2.4 Go::ftPlane::ftPlane (const ftPlane & *plane*)

Copy constructor.

29.150.2.5 Go::ftPlane::~ftPlane ( ) [inline]

Destructor.

Definition at line 95 of file ftPlane.h.

29.150.3 Member Function Documentation

29.150.3.1 bool Go::ftPlane::intersectsBox (const BoundingBox & *box*) const

Check if the plane intersects a bounding box.

29.150.3.2 const Point& Go::ftPlane::normal ( ) const [inline]

Get plane normal.

Definition at line 98 of file ftPlane.h.

29.150.3.3 const Point& Go::ftPlane::point ( ) const [inline]

Get point in plane.

Definition at line 100 of file ftPlane.h.

29.150.4 Member Data Documentation

29.150.4.1 Point Go::ftPlane::normal_ [protected]

Definition at line 66 of file ftPlane.h.

29.150.4.2 Point Go::ftPlane::point_ [protected]

Definition at line 67 of file ftPlane.h.

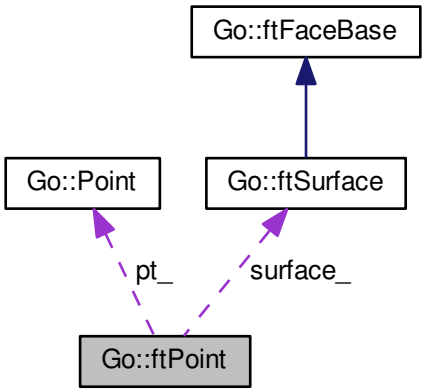
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftPlane.h

29.151 Go::ftPoint Class Reference

`#include <ftPoint.h>`

Collaboration diagram for Go::ftPoint:



Public Member Functions

- ftPoint (Point pt, ftSurface *sf=0, double u=0, double v=0)
- ftPoint (double x, double y, double z)

  Constructor. Point in 3d given by space coordinates.
- const Point & position () const

  Position of point.
- ftSurface * face () const

  Associated face/surface.
- double u () const
- double v () const
- Point normal () const

  Normal of surface in point.

Protected Attributes

- Point pt_
- ftSurface * surface_
- double u_
- double v_

29.151.1 Detailed Description

ftPoint - represents a point, possibly lying on a surface ftPoint contains representations for both a 3D point in space and possibly also parameters for the point on a specific surface.

Author

Atgeirr F Rasmussen atgeirr@sintef.no

Definition at line 59 of file ftPoint.h.

29.151.2 Constructor & Destructor Documentation

29.151.2.1 Go::ftPoint::ftPoint (Point *pt*, ftSurface * *sf* = 0, double *u* = 0, double *v* = 0) [inline]

Constructor

Parameters

pt	Point
sf	Associated surface
u	First parameter in surface corresponding to point
v	Second parameter in surface corresponding to point

Definition at line 72 of file ftPoint.h.

29.151.2.2 Go::ftPoint::ftPoint (double *x*, double *y*, double *z*) [inline]

Constructor. Point in 3d given by space coordinates.

Definition at line 75 of file ftPoint.h.

29.151.3 Member Function Documentation

29.151.3.1 ftSurface* Go::ftPoint::face ( ) const [inline]

Associated face/surface.

Definition at line 80 of file ftPoint.h.

29.151.3.2 Point Go::ftPoint::normal ( ) const

Normal of surface in point.

29.151.3.3 const Point& Go::ftPoint::position ( ) const [inline]

Position of point.

Definition at line 78 of file ftPoint.h.

29.151.3.4 double Go::ftPoint::u ( ) const [inline]

1. parameter in surface

Definition at line 82 of file ftPoint.h.

29.151.3.5 double Go::ftPoint::v ( ) const [inline]

1. parameter in surface

Definition at line 84 of file ftPoint.h.

29.151.4 Member Data Documentation

29.151.4.1 Point Go::ftPoint::pt_ [protected]

Definition at line 62 of file ftPoint.h.

29.151.4.2 ftSurface* Go::ftPoint::surface_ [protected]

Definition at line 63 of file ftPoint.h.

29.151.4.3 double Go::ftPoint::u_ [protected]

Definition at line 64 of file ftPoint.h.

29.151.4.4 double Go::ftPoint::v_ [protected]

Definition at line 64 of file ftPoint.h.

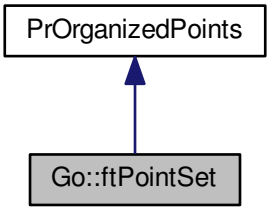
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftPoint.h

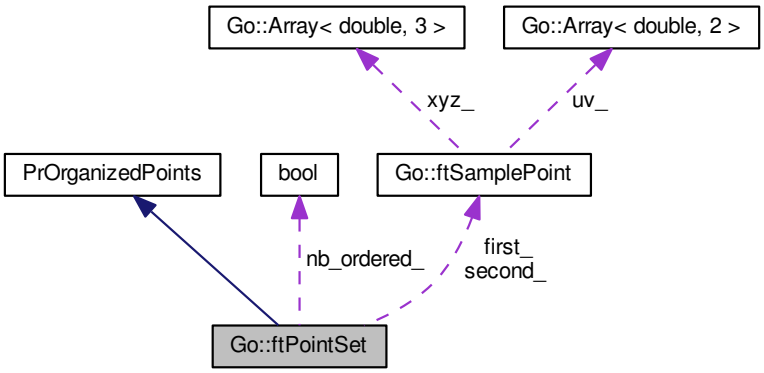
29.152 Go::ftPointSet Class Reference

`#include <ftPointSet.h>`

Inheritance diagram for Go::ftPointSet:



Collaboration diagram for Go::ftPointSet:



Public Member Functions

- ftPointSet ()

  Constructor.
- virtual ~ftPointSet ()

  Destructor.
- int size () const

  Get the number of points.
- ftSamplePoint * operator[ ] (int idx)

  Operator overload [].
- const ftSamplePoint * operator[ ] (int idx) const

  Operator overload [].
- PointIter addEntry (shared_ptr< ftSamplePoint > point)

  Add a new point to the point set.
- void removePoint (PointIter point)

  Remove a point from the point set.
- void setFirst (PointIter point)

  Mark the first point around the boundary of this point set.
- void setSecond (PointIter point)

  Mark the second point around the boundary of this point set.
- PointIter lastAdded ()

  Mark the last point added to this point set.
- double getMaxDist () const

  Return the maximum distance in the pointset.
- double getMeanDist () const

  Return the medium distance in the pointset.
- void computeParametricDist (shared_ptr< ParamSurface > surf)
- void computeDist (shared_ptr< ParamSurface > surf)
- void computeDistAndRepar (shared_ptr< ParamSurface > surf)
- double reparBdy (shared_ptr< ParamSurface > surf, bool use_seed=true)

  Reparameterize points at the boundary of the point set.
- double reparInnerPoints (shared_ptr< ParamSurface > surf, bool use_seed=true)

  Reparameterize points in the inner of the point set.
- void orderNeighbours ()

  Reorganize the sequence of neighbours.
- void append (shared_ptr< ftPointSet > triang)
- void cleanNodeIdentity (double tol)

  Remove identical boundary nodes.
- void mergeBoundary (shared_ptr< ftFaceBase > face1, int range1_idx1, int range1_idx2, shared_ptr< ftFaceBase > face2, int range2_idx1, int range2_idx2, double eps)
- void identifyBdPnts (std::vector< Point > &points, std::vector< int > &pnt_ix)

  Fetch index of specified points at the boundary (closest to given point)
- void getTriangles (std::vector< std::vector< int > > &triangles) const

  Fetch all triangles in the connectivity graph.
- void getPoints (std::vector< Vector3D > &positions) const

  Get the position of all points.
- void checkAndUpdateTriangCorners ()

  Avoid boundary points being connected to three other boundary points.
- void getOrientedTriangles (std::vector< std::vector< int > > &triangles)
- void write (std::ostream &os) const

  Write point set to stream.

- void write2D (std::ostream &os) const
  Write parameter points to stream.
- void printPoints (std::ostream &os) const
  Debug.
- virtual int getNumNodes () const
  Number of points in point set.
- virtual Vector3D get3dNode (int i) const
  Get content of point number i.
- virtual void set3dNode (int i, const Vector3D &p)
  Change content on point number i.
- virtual void getNeighbours (int i, std::vector< int > &neighbours) const
  Fetch all neighbours to point number i.
- virtual bool isBoundary (int i) const
  Check if point number i lies at the boundary of the point set.
- virtual double getU (int i) const
  Fetch 1. parameter of point number i.
- virtual double getV (int i) const
  Fetch 2. parameter of point number i.
- virtual void setU (int i, double u)
  Set 1. parameter of point number i.
- virtual void setV (int i, double v)
  Set 2. parameter of point number i.

Protected Attributes

- PointList points_
- std::vector< PointIter > index_to_iter_
- bool nb_ordered_
- PointIter first_
- PointIter second_

Additional Inherited Members

29.152.1 Detailed Description

ftPointSet - A set of sample points used as data in surface approximation

Definition at line 181 of file ftPointSet.h.

29.152.2 Constructor & Destructor Documentation

29.152.2.1 Go::ftPointSet::ftPointSet ( )

Constructor.

29.152.2.2 virtual Go::ftPointSet::~ftPointSet ( ) [virtual]

Destructor.

29.152.3 Member Function Documentation

29.152.3.1 PointIter Go::ftPointSet::addEntry (shared_ptr< ftSamplePoint > *point*) [inline]

Add a new point to the point set.

Definition at line 209 of file ftPointSet.h.

29.152.3.2 void Go::ftPointSet::append (shared_ptr< ftPointSet > *triang*)

Extend the point set with points from another set. Avoid points with no connectivity

29.152.3.3 void Go::ftPointSet::checkAndUpdateTriangCorners ( )

Avoid boundary points being connected to three other boundary points.

29.152.3.4 void Go::ftPointSet::cleanNodeIdentity (double *tol*)

Remove identical boundary nodes.

29.152.3.5 void Go::ftPointSet::computeDist (shared_ptr< ParamSurface > *surf*)

Compute the distances from the points in the point set to the given surface.

29.152.3.6 void Go::ftPointSet::computeDistAndRepar (shared_ptr< ParamSurface > *surf*)

Compute the distances from the points in the point set to the given surface, and reparametrize.

29.152.3.7 void Go::ftPointSet::computeParametricDist (shared_ptr< ParamSurface > *surf*)

Compute the distances from the points in the point set to the given surface, at the same parameter value.

29.152.3.8 virtual Vector3D Go::ftPointSet::get3dNode (int *i*) const [virtual]

Get content of point number i.

Implements PrOrganizedPoints.

29.152.3.9 double Go::ftPointSet::getMaxDist ( ) const

Return the maximum distance in the pointset.

29.152.3.10 double Go::ftPointSet::getMeanDist ( ) const

Return the medium distance in the pointset.

29.152.3.11 virtual void Go::ftPointSet::getNeighbours (int *i*, std::vector< int > & *neighbours*) const [virtual]

Fetch all neighbours to point number i.

Implements PrOrganizedPoints.

29.152.3.12 virtual int Go::ftPointSet::getNumNodes ( ) const [virtual]

Number of points in point set.

Implements PrOrganizedPoints.

29.152.3.13 void Go::ftPointSet::getOrientedTriangles (std::vector< std::vector< int > > & *triangles*)

Fetch all triangles in the connectivity graph and make sure that the triangle orientation is consistent, i.e. opposite directions of edges between the same two nodes

29.152.3.14 void Go::ftPointSet::getPoints (std::vector< Vector3D > & *positions*) const

Get the position of all points.

29.152.3.15 void Go::ftPointSet::getTriangles (std::vector< std::vector< int > > & *triangles*) const

Fetch all triangles in the connectivity graph.

29.152.3.16 virtual double Go::ftPointSet::getU (int *i*) const [virtual]

Fetch 1. parameter of point number i.

Implements PrOrganizedPoints.

29.152.3.17 virtual double Go::ftPointSet::getV (int *i*) const [virtual]

Fetch 2. parameter of point number i.

Implements PrOrganizedPoints.

29.152.3.18 void Go::ftPointSet::identifyBdPnts (std::vector< Point > & *points*, std::vector< int > & *pnt_ix*)

Fetch index of specified points at the boundary (closest to given point)

29.152.3.19 virtual bool Go::ftPointSet::isBoundary (int *i*) const [virtual]

Check if point number i lies at the boundary of the point set.

Implements PrOrganizedPoints.

29.152.3.20 PointIter Go::ftPointSet::lastAdded ( ) [inline]

Mark the last point added to this point set.

Definition at line 234 of file ftPointSet.h.

29.152.3.21 void Go::ftPointSet::mergeBoundary (shared_ptr< ftFaceBase > *face1,* int *range1_idx1,* int *range1_idx2,* shared_ptr< ftFaceBase > *face2,* int *range2_idx1,* int *range2_idx2,* double *eps*)

Given to faces, rearrange points on the common boundary between these two faces

29.152.3.22 ftSamplePoint* Go::ftPointSet::operator[ ] (int *idx*) [inline]

Operator overload [].

Definition at line 196 of file ftPointSet.h.

29.152.3.23 const ftSamplePoint* Go::ftPointSet::operator[ ] (int *idx*) const [inline]

Operator overload [].

Definition at line 203 of file ftPointSet.h.

29.152.3.24 void Go::ftPointSet::orderNeighbours ( )

Reorganize the sequence of neighbours.

29.152.3.25 void Go::ftPointSet::printPoints (std::ostream & *os*) const

Debug.

29.152.3.26 void Go::ftPointSet::removePoint (PointIter *point*)

Remove a point from the point set.

29.152.3.27 double Go::ftPointSet::reparBdy (shared_ptr< ParamSurface > *surf,* bool *use_seed* = true)

Reparameterize points at the boundary of the point set.

29.152.3.28 double Go::ftPointSet::reparInnerPoints (shared_ptr< ParamSurface > *surf,* bool *use_seed* = true)

Reparameterize points in the inner of the point set.

29.152.3.29 virtual void Go::ftPointSet::set3dNode (int *i,* const Vector3D & *p*) [virtual]

Change content on point number i.

29.152.3.30 void Go::ftPointSet::setFirst (PointIter *point*) [inline]

Mark the first point around the boundary of this point set.

Definition at line 222 of file ftPointSet.h.

29.152.3.31 void Go::ftPointSet::setSecond (PointIter *point*) [inline]

Mark the second point around the boundary of this point set.

Definition at line 228 of file ftPointSet.h.

29.152.3.32 virtual void Go::ftPointSet::setU (int *i,* double *u*) [virtual]

Set 1. parameter of point number i.

Implements PrOrganizedPoints.

29.152.3.33 virtual void Go::ftPointSet::setV (int *i,* double *v*) [virtual]

Set 2. parameter of point number i.

Implements PrOrganizedPoints.

29.152.3.34 int Go::ftPointSet::size ( ) const [inline]

Get the number of points.

Definition at line 192 of file ftPointSet.h.

29.152.3.35 void Go::ftPointSet::write (std::ostream & *os*) const

Write point set to stream.

29.152.3.36 void Go::ftPointSet::write2D (std::ostream & *os*) const

Write parameter points to stream.

29.152.4 Member Data Documentation

29.152.4.1 PointIter Go::ftPointSet::first_ [protected]

Definition at line 326 of file ftPointSet.h.

29.152.4.2 std::vector<PointIter> Go::ftPointSet::index_to_iter_ [protected]

Definition at line 324 of file ftPointSet.h.

29.152.4.3 bool Go::ftPointSet::nb_ordered_ [mutable], [protected]

Definition at line 325 of file ftPointSet.h.

29.152.4.4 PointList Go::ftPointSet::points_ [protected]

Definition at line 323 of file ftPointSet.h.

29.152.4.5 PointIter Go::ftPointSet::second_ [protected]

Definition at line 327 of file ftPointSet.h.

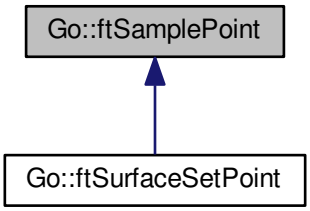
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftPointSet.h

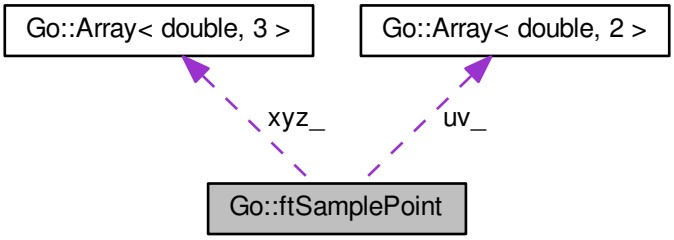
29.153 Go::ftSamplePoint Class Reference

`#include <ftPointSet.h>`

Inheritance diagram for Go::ftSamplePoint:



Collaboration diagram for Go::ftSamplePoint:



Public Member Functions

- ftSamplePoint (Vector3D xyz, int bnd)
  Constructor.
- virtual ~ftSamplePoint ()
  Destructor.
- void setPoint (Vector3D xyz)
  Set point.
- void setPar (Vector2D uv)
  Set parameter value.
- void setDist (double d)
  Set dist.
- void setIndex (int i)
  Set index.

- void setBoundary (int bd_info)

  Set boundary information.
- virtual ftSurfaceSetPoint * asSurfaceSetPoint ()

  Return pointer to sub class entity if the point is of that type.
- virtual bool containsFace (ftFaceBase *face) const

  Check if a face is associated this point.
- void addNeighbour (PointIter next)

  Add a new neighbouring point.
- void removeNeighbour (PointIter neighbour)

  If neighbour exists it is removed from neighbour vector.
- bool isOnBoundary () const

  Am I on the boundary?
- bool isOnSubSurfaceBoundary () const

  Am I on sub surface boundary?
- int getNmbNeighbour () const

  Get number of neighbours.
- const std::vector< PointIter > & getNeighbours () const

  Fetch all neighbouring points.
- bool isConnected (PointIter pnt)

  Check if the point pnt is a neighbour to this point.
- Vector3D getPoint () const

  Return 3D point value.
- Vector2D getPar () const

  Return parameter value.
- double getDist () const

  Return distance.
- int getIndex () const

  Return index.
- void orderNeighbours (ftSamplePoint *nextpoint, bool forward)

  Order the neighbours for one given point.
- PointIter getFirstNeighbour ()

  Get first neighbour.
- double pntDist (ftSamplePoint *other) const

  Distance between sample points.
- void getAttachedTriangles (std::vector< std::vector< int > > &triangles) const

  Fetch all triangles containing this point.
- virtual void write2Dval (std::ostream &os) const

  Debug.

Protected Attributes

- Vector3D xyz_
- Vector2D uv_
- double dist_
- int index_
- int at_boundary_
- std::vector< PointIter > next_

29.153.1 Detailed Description

ftSamplePoint - One point in a set of sample points

Definition at line 69 of file ftPointSet.h.

29.153.2 Constructor & Destructor Documentation

29.153.2.1 Go::ftSamplePoint::ftSamplePoint (Vector3D *xyz*, int *bnd*)

Constructor.

29.153.2.2 virtual Go::ftSamplePoint::~ftSamplePoint ( ) [inline], [virtual]

Destructor.

Definition at line 76 of file ftPointSet.h.

29.153.3 Member Function Documentation

29.153.3.1 void Go::ftSamplePoint::addNeighbour (PointIter *next*)

Add a new neighbouring point.

29.153.3.2 virtual ftSurfaceSetPoint* Go::ftSamplePoint::asSurfaceSetPoint ( ) [inline], [virtual]

Return pointer to sub class entity if the point is of that type.

Reimplemented in Go::ftSurfaceSetPoint.

Definition at line 97 of file ftPointSet.h.

29.153.3.3 virtual bool Go::ftSamplePoint::containsFace (ftFaceBase * *face*) const [inline], [virtual]

Check if a face is associated this point.

Reimplemented in Go::ftSurfaceSetPoint.

Definition at line 103 of file ftPointSet.h.

29.153.3.4 void Go::ftSamplePoint::getAttachedTriangles (std::vector< std::vector< int > > & *triangles*) const

Fetch all triangles containing this point.

29.153.3.5 double Go::ftSamplePoint::getDist ( ) const [inline]

Return distance.

Definition at line 142 of file ftPointSet.h.

29.153.3.6 PointIter Go::ftSamplePoint::getFirstNeighbour ( ) [inline]

Get first neighbour.

Definition at line 150 of file ftPointSet.h.

29.153.3.7 int Go::ftSamplePoint::getIndex ( ) const [inline]

Return index.

Definition at line 145 of file ftPointSet.h.

29.153.3.8 const std::vector<PointIter>& Go::ftSamplePoint::getNeighbours ( ) const [inline]

Fetch all neighbouring points.

Definition at line 123 of file ftPointSet.h.

29.153.3.9 int Go::ftSamplePoint::getNmbNeighbour ( ) const [inline]

Get number of neighbours.

Definition at line 120 of file ftPointSet.h.

29.153.3.10 Vector2D Go::ftSamplePoint::getPar ( ) const [inline]

Return parameter value.

Definition at line 139 of file ftPointSet.h.

29.153.3.11 Vector3D Go::ftSamplePoint::getPoint ( ) const [inline]

Return 3D point value.

Definition at line 136 of file ftPointSet.h.

29.153.3.12 bool Go::ftSamplePoint::isConnected (PointIter *pnt*) [inline]

Check if the point pnt is a neighbour to this point.

Definition at line 127 of file ftPointSet.h.

29.153.3.13 bool Go::ftSamplePoint::isOnBoundary ( ) const [inline]

Am I on the boundary?

Definition at line 114 of file ftPointSet.h.

29.153.3.14 bool Go::ftSamplePoint::isOnSubSurfaceBoundary ( ) const [inline]

Am I on sub surface boundary?

Definition at line 117 of file ftPointSet.h.

29.153.3.15 void Go::ftSamplePoint::orderNeighbours (ftSamplePoint * *nextpoint,* bool *forward*)

Order the neighbours for one given point.

29.153.3.16 double Go::ftSamplePoint::pntDist (ftSamplePoint * *other*) const

Distance between sample points.

29.153.3.17 void Go::ftSamplePoint::removeNeighbour (PointIter *neighbour*)

If neighbour exists it is removed from neighbour vector.

29.153.3.18 void Go::ftSamplePoint::setBoundary (int *bd_info*) [inline]

Set boundary information.

Definition at line 91 of file ftPointSet.h.

29.153.3.19 void Go::ftSamplePoint::setDist (double *d*) [inline]

Set dist.

Definition at line 85 of file ftPointSet.h.

29.153.3.20 void Go::ftSamplePoint::setIndex (int *i*) [inline]

Set index.

Definition at line 88 of file ftPointSet.h.

29.153.3.21 void Go::ftSamplePoint::setPar (Vector2D *uv*) [inline]

Set parameter value.

Definition at line 82 of file ftPointSet.h.

29.153.3.22 void Go::ftSamplePoint::setPoint (Vector3D *xyz*) [inline]

Set point.

Definition at line 79 of file ftPointSet.h.

29.153.3.23 virtual void Go::ftSamplePoint::write2Dval (std::ostream & *os*) const [virtual]

Debug.

Reimplemented in Go::ftSurfaceSetPoint.

29.153.4 Member Data Documentation

29.153.4.1 int Go::ftSamplePoint::at_boundary_ [protected]

Definition at line 168 of file ftPointSet.h.

29.153.4.2 double Go::ftSamplePoint::dist_ [protected]

Definition at line 166 of file ftPointSet.h.

29.153.4.3 int Go::ftSamplePoint::index_ [protected]

Definition at line 167 of file ftPointSet.h.

29.153.4.4 std::vector<PointIter> Go::ftSamplePoint::next_ [protected]

Definition at line 170 of file ftPointSet.h.

29.153.4.5 Vector2D Go::ftSamplePoint::uv_ [protected]

Definition at line 165 of file ftPointSet.h.

29.153.4.6 Vector3D Go::ftSamplePoint::xyz_ [protected]

Definition at line 164 of file ftPointSet.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftPointSet.h

29.154 Go::ftSearchNode Class Reference

`#include <ftPlanarGraph.h>`

Public Member Functions

- ftSearchNode (ftSurfaceSetPoint *node)

  Constructor.
- ~ftSearchNode ()

  Destructor.
- Vector2D node () const

  As we allow to set param value of point, function nor return val are const.
- void setOrderedSegments (const std::vector< ftGraphEdge > &edges)
- const std::vector< ftGraphEdge > & getOrderedSegments () const

29.154.1 Detailed Description

Node inside a graph. A ftSearchNode contains all edges in graph crossing horisontal y0-line (point = (x0, y0)), ordered from left to right, enabling fast searching of points inside graph. We also store ftFaceBase's of point.

Definition at line 91 of file ftPlanarGraph.h.

29.154.2 Constructor & Destructor Documentation

29.154.2.1 Go::ftSearchNode::ftSearchNode (ftSurfaceSetPoint * *node*)

Constructor.

29.154.2.2 Go::ftSearchNode::~ftSearchNode ( )

Destructor.

29.154.3 Member Function Documentation

29.154.3.1 const std::vector<ftGraphEdge>& Go::ftSearchNode::getOrderedSegments ( ) const

29.154.3.2 Vector2D Go::ftSearchNode::node ( ) const

As we allow to set param value of point, function nor return val are const.

29.154.3.3 void Go::ftSearchNode::setOrderedSegments (const std::vector< ftGraphEdge > & *edges*)

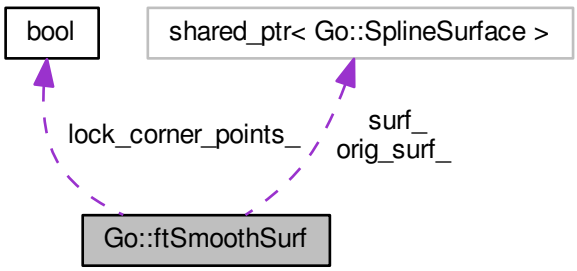
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftPlanarGraph.h

29.155 Go::ftSmoothSurf Class Reference

`#include <ftSmoothSurf.h>`

Collaboration diagram for Go::ftSmoothSurf:



Public Member Functions

- ftSmoothSurf (shared_ptr< SplineSurface > surf, double approxtol, double approx_orig_tol, std::vector< int > ccw_edge_derivs, int maxiter, bool lock_corner_points=false)
- ~ftSmoothSurf ()

  Destructor.
- void setSmoothU (int k)
- void setSmoothV (int k)
- void refineSurf (ftPointSet &points, bool reparam=true)

  Express the surface to be modified on a refined knot vector.
- bool update (ftPointSet &points, double gapeps, bool reparam=true)
- void setApproxWeight (double weight)

  Weight on point approximation.
- double getApproxWeight ()

  Fetch weight on point approximation.
- void getError (double &max_error, double &mean_error)

  Fetch maximum and average error in approximation.

Protected Attributes

- shared_ptr< SplineSurface > surf_
- shared_ptr< SplineSurface > orig_surf_
- double approxtol_
- double approx_orig_tol_
- double init_approx_weight_
- std::vector< int > ccw_edge_derivs_
- double max_error_
- double mean_error_
- int maxiter_
- bool lock_corner_points_
- int seem_ [2]

29.155.1 Detailed Description

ftSmoothSurf - Surface smoothing and approximation. Interface to SmoothSurf in gotools-core/creators. An iterative process with parameter iteration and refinement of the initial surface with respect to approximation errors at each step.

Definition at line 61 of file ftSmoothSurf.h.

29.155.2 Constructor & Destructor Documentation

29.155.2.1 Go::ftSmoothSurf::ftSmoothSurf (shared_ptr< SplineSurface > *surf*, double *approxtol*, double *approx_orig_tol*, std::vector< int > *ccw_edge_derivs*, int *maxiter*, bool *lock_corner_points* = false)

Constructor

Parameters

surf	initial surface
approxtol	tolerance in point approximation
approx_orig_tol	allowed deviance from the original surface
ccw_edge_derivs	number of derivatives to keep fixed along the boundaries, sequence: umin, vmax, umax, vmin
maxiter	maximum allowed number of iterations in approximation
lock_corner_points	indicates if the surface corners are fixed

29.155.2.2 Go::ftSmoothSurf::~ftSmoothSurf ( )

Destructor.

29.155.3 Member Function Documentation

29.155.3.1 double Go::ftSmoothSurf::getApproxWeight ( ) [inline]

Fetch weight on point approximation.

Definition at line 101 of file ftSmoothSurf.h.

29.155.3.2 void Go::ftSmoothSurf::getError (double & *max_error,* double & *mean_error*) [inline]

Fetch maximum and average error in approximation.

Definition at line 105 of file ftSmoothSurf.h.

29.155.3.3 void Go::ftSmoothSurf::refineSurf (ftPointSet & *points,* bool *reparam* = true)

Express the surface to be modified on a refined knot vector.

29.155.3.4 void Go::ftSmoothSurf::setApproxWeight (double *weight*) [inline]

Weight on point approximation.

Definition at line 97 of file ftSmoothSurf.h.

29.155.3.5 void Go::ftSmoothSurf::setSmoothU (int *k*)

Set expected continuity of seem in 1. parameter direction 0 <= k <= 1, C0 and C1 continuity possible

29.155.3.6 void Go::ftSmoothSurf::setSmoothV (int *k*)

Set expected continuity of seem in 2. parameter direction 0 <= k <= 1, C0 and C1 continuity possible

29.155.3.7 bool Go::ftSmoothSurf::update (ftPointSet & *points,* double *gapeps,* bool *reparam* = true)

Modify the surface. User may turn off reparametrization of points. If smoothing was a success, true is returned.

29.155.4 Member Data Documentation

29.155.4.1 double Go::ftSmoothSurf::approx_orig_tol_ [protected]

Definition at line 115 of file ftSmoothSurf.h.

29.155.4.2 double Go::ftSmoothSurf::approxtol_ [protected]

Definition at line 114 of file ftSmoothSurf.h.

29.155.4.3 std::vector<int> Go::ftSmoothSurf::ccw_edge_derivs_ [protected]

Definition at line 117 of file ftSmoothSurf.h.

29.155.4.4 double Go::ftSmoothSurf::init_approx_weight_ [protected]

Definition at line 116 of file ftSmoothSurf.h.

29.155.4.5 bool Go::ftSmoothSurf::lock_corner_points_ [protected]

Definition at line 122 of file ftSmoothSurf.h.

29.155.4.6 double Go::ftSmoothSurf::max_error_ [protected]

Definition at line 119 of file ftSmoothSurf.h.

29.155.4.7 int Go::ftSmoothSurf::maxiter_ [protected]

Definition at line 121 of file ftSmoothSurf.h.

29.155.4.8 double Go::ftSmoothSurf::mean_error_ [protected]

Definition at line 120 of file ftSmoothSurf.h.

29.155.4.9 shared_ptr<SplineSurface> Go::ftSmoothSurf::orig_surf_ [protected]

Definition at line 113 of file ftSmoothSurf.h.

29.155.4.10 int Go::ftSmoothSurf::seem_[2] [protected]

Definition at line 123 of file ftSmoothSurf.h.

29.155.4.11 shared_ptr<SplineSurface> Go::ftSmoothSurf::surf_ [protected]

Definition at line 112 of file ftSmoothSurf.h.

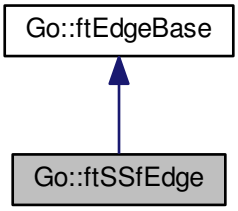
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftSmoothSurf.h

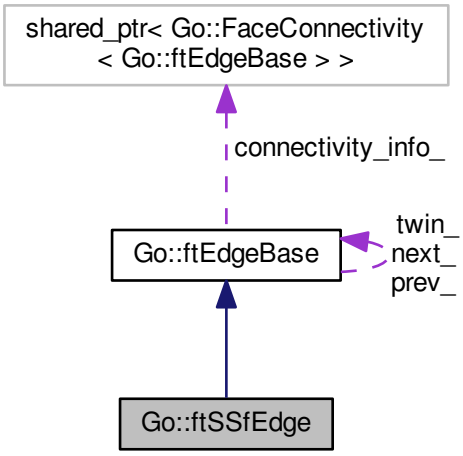
29.156 Go::ftSSfEdge Class Reference

`#include <ftSSfEdge.h>`

Inheritance diagram for Go::ftSSfEdge:



Collaboration diagram for Go::ftSSfEdge:



Public Member Functions

- ftSSfEdge (ftFaceBase *face, ftEdge *edge, int entry_id=-1)
- ~ftSSfEdge ()

  Empty destructor.
- virtual double tMin () const

  Start parameter value of edge.
- virtual double tMax () const

End parameter value of edge.

- virtual void setReversed (bool is_reversed)
- virtual bool isReversed ()
- virtual void setFace (ftFaceBase *face)

  Set face pointer.
- virtual ftFaceBase * face ()

  The face corresponding to this edge.
- virtual BoundingBox boundingBox ()

  Coordinate box surrounding this edge.
- virtual ftSSfEdge * split (double t)
- virtual int entryId ()

  Id of edge. Default set to -1.
- virtual void setEntryId (int id)

  Set id of edge.
- virtual Point point (double t) const

  Evaluate position.
- virtual Point tangent (double t) const

  Evaluate tangent.
- virtual Point normal (double t) const

  Evaluate normal of associated face.
- virtual Point normal (double t, Point &face_par_pt, double *face_seed) const
- virtual void closestPoint (const Point &pt, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const

  Closest point on this edge to a given point.
- virtual ftEdge * geomEdge ()

  Return edge pointer.

Additional Inherited Members

29.156.1 Detailed Description

ftSSfEdge - topological edge for Fantastic corresponding to ftSuperSurface Detailed description.

The ftSSfEdge is a half-edge implementation of a topological data structure. It implements the ftEdgeBase interface by using the Go geometry library.

Author

Atgeirr F Rasmussen atgeirr@sintef.no

Bug Not tested

See also

ftEdgeBase

Definition at line 41 of file ftSSfEdge.h.

29.156.2 Constructor & Destructor Documentation

29.156.2.1 Go::ftSSfEdge::ftSSfEdge (ftFaceBase * face, ftEdge * edge, int entry_id = -1)

Constructor. Detailed description.

29.156.2.2 Go::ftSSfEdge::~ftSSfEdge ( )

Empty destructor.

29.156.3 Member Function Documentation

29.156.3.1 virtual BoundingBox Go::ftSSfEdge::boundingBox ( ) [virtual]

Coordinate box surrounding this edge.

Implements Go::ftEdgeBase.

29.156.3.2 virtual void Go::ftSSfEdge::closestPoint (const Point & pt, double & clo_t, Point & clo_pt, double & clo_dist, double const * seed = 0) const [virtual]

Closest point on this edge to a given point.

Implements Go::ftEdgeBase.

29.156.3.3 virtual int Go::ftSSfEdge::entryId ( ) [inline], [virtual]

Id of edge. Default set to -1.

Implements Go::ftEdgeBase.

Definition at line 93 of file ftSSfEdge.h.

29.156.3.4 virtual ftFaceBase* Go::ftSSfEdge::face ( ) [virtual]

The face corresponding to this edge.

Implements Go::ftEdgeBase.

29.156.3.5 virtual ftEdge* Go::ftSSfEdge::geomEdge ( ) [virtual]

Return edge pointer.

Implements Go::ftEdgeBase.

29.156.3.6 virtual bool Go::ftSSfEdge::isReversed ( ) [inline], [virtual]

Get the value of the flag indicating that the orientation of the edge is reversed with respect to the parametrization of the underlying ParamCurve.

Returns

true if orientation is reversed, *false* otherwise

Implements Go::ftEdgeBase.

Definition at line 69 of file ftSSfEdge.h.

29.156.3.7 virtual Point Go::ftSSfEdge::normal (double *t*) const [virtual]

Evaluate normal of associated face.

Implements Go::ftEdgeBase.

29.156.3.8 virtual Point Go::ftSSfEdge::normal (double *t*, Point & *face_par_pt*, double * *face_seed*) const [virtual]

Evaluate normal of associated face given a seed to the search for the corresponding face parameter

Implements Go::ftEdgeBase.

29.156.3.9 virtual Point Go::ftSSfEdge::point (double *t*) const [virtual]

Evaluate position.

Implements Go::ftEdgeBase.

29.156.3.10 virtual void Go::ftSSfEdge::setEntryId (int *id*) [inline], [virtual]

Set id of edge.

Implements Go::ftEdgeBase.

Definition at line 94 of file ftSSfEdge.h.

29.156.3.11 virtual void Go::ftSSfEdge::setFace (ftFaceBase * *face*) [inline], [virtual]

Set face pointer.

Implements Go::ftEdgeBase.

Definition at line 74 of file ftSSfEdge.h.

29.156.3.12 virtual void Go::ftSSfEdge::setReversed (bool *is_reversed*) [inline], [virtual]

Set a flag to indicate that the orientation of the edge is reversed with respect to the parametrization of the underlying ParamCurve.

Parameters

is_reversed	value of the orientation flag

Implements Go::ftEdgeBase.

Definition at line 64 of file ftSSfEdge.h.

29.156.3.13 virtual ftSSfEdge* Go::ftSSfEdge::split (double *t*) [virtual]

Split the edge at the given parameter t. This edge will then represent the first part of the original edge, the second part is returned to the caller.

Implements Go::ftEdgeBase.

29.156.3.14 virtual Point Go::ftSSfEdge::tangent (double *t*) const [virtual]

Evaluate tangent.

Implements Go::ftEdgeBase.

29.156.3.15 virtual double Go::ftSSfEdge::tMax ( ) const [inline], [virtual]

End parameter value of edge.

Implements Go::ftEdgeBase.

Definition at line 56 of file ftSSfEdge.h.

29.156.3.16 virtual double Go::ftSSfEdge::tMin ( ) const [inline], [virtual]

Start parameter value of edge.

Implements Go::ftEdgeBase.

Definition at line 52 of file ftSSfEdge.h.

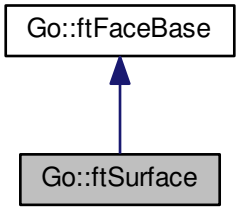
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftSSfEdge.h

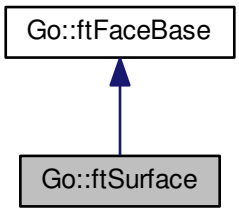
29.157 Go::ftSurface Class Reference

`#include <ftSurface.h>`

Inheritance diagram for Go::ftSurface:



Collaboration diagram for Go::ftSurface:



Public Member Functions

- ftSurface (shared_ptr< ParamSurface > sf, int id)
- ftSurface (shared_ptr< ParamSurface > sf, shared_ptr< Loop > loop, int id=-1)
- virtual ~ftSurface ()

  Empty destructor.
- virtual ftSurface * asFtSurface ()

  Return as type ftSurface.
- virtual void clearInitialEdges ()

  Reset loop information.
- virtual std::vector< shared_ptr< ftEdgeBase > > createInitialEdges (double degenerate_epsilon=DEFAULT_SPACE_EPSILON, double kink=0.00015, bool no_split=false)
- virtual std::vector< shared_ptr< ftEdgeBase > > startEdges ()

  Return pointers to first part of all bd cvs.
- virtual Point point (double u, double v) const

Evaluate point on face.

- virtual Point normal (double u, double v) const

  Evaluate surface normal.
- virtual BoundingBox boundingBox ()

  The bounding box corresponding to this face.
- virtual void setId (int id)

  Set Id of this face.
- virtual int getId ()

  Fetch Id of this face, may not be uniquely set.
- virtual shared_ptr< ParamSurface > surface ()

  Turn orientation of the corresponding surface.
- virtual ftMessage createSurf (double &max_error, double &mean_error)

  By inheritage, not relevant for this entity.
- virtual void getError (double &max_error, double &mean_error)

  By inheritage, not relevant for this entity.
- virtual ftTangPriority getPrioType () const

  Priority type, not relevant for this entity.
- void setPrioType (ftTangPriority type)

  Priority type, not relevant for this entity.
- virtual void updateBoundaryLoops (shared_ptr< ftEdgeBase > new_edge)

  Update the information stored in the boundary loops.
- virtual void isolateFace ()

  Remove all adjacency information related to this face.
- void addBoundaryLoops (std::vector< shared_ptr< Loop > > &bd_loops)
- void addOuterBoundaryLoop (shared_ptr< Loop > outer_loop)
- int nmbBoundaryLoops ()
- shared_ptr< Loop > getBoundaryLoop (int idx)

  Get the specified boundary loops.
- int nmbEdges () const

  Number of edges in all loops.
- std::vector< shared_ptr< ftEdge > > getAllEdges () const

  Fetch all edges in all loops.
- std::vector< shared_ptr< ftEdge > > getAllEdges (int loop_idx) const

  Fetch all edges in given loop.
- std::vector< ftEdge * > getAllEdgePtrs () const

  Fetch pointers to all edges in all loops.
- std::vector< ftEdge * > getAllEdgePtrs (int loop_idx) const

  Fetch pointers to all edges in specified loop.
- bool onlyOuterTrim () const

  Check if this face contains any holes.
- int nmbOuterBdCrvs (double gap, double neighbour, double angtol) const
- shared_ptr< ParamSurface > getUntrimmed (double gap, double neighbour, double angtol, bool only_↩ corner=false)
- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon) const

  Closest point between this face and a point.
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest, double *seed) const

  Closest point between a domain of this face and a point.
- ftEdgeBase * closestBoundaryPoint (const Point &pt, const Point &in_vec, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double &clo_par) const

Closest point between a boundary on this face and a point.

- ftEdgeBase * closestOuterBoundaryPoint (const Point &pt, const Point &in_vec, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double &clo_par) const

  Closest point between the outer boundary on this face and a point.
- ftEdgeBase * edgeClosestToPoint (double u, double v)

  Return the edge on this face closest to a point.
- void write (std::ostream &os)

  Write surface to stream.
- ftMessage smoothOutFace (int edge_cont, double approx_orig_tol, double deg_tol, double &maxerr, double &meanerr, double approx_weight=0.8)
- shared_ptr< SplineCurve > getBoundaryPiece (Point &pt1, Point &pt2, double eps)
- bool getSurfaceKinks (double angtol, std::vector< double > &g1_disc_u, std::vector< double > &g1_disc_v)

  Check for constant parameter line kinks.
- bool getSurfaceDisconts (double tol, std::vector< double > &disc_u, std::vector< double > &disc_v)

  Check for constant parameter line kinks, i.e. C1 discontinuities.
- std::vector< shared_ptr< ftSurface > > splitAlongKinks (double angtol)
- virtual ftMessage removeGap (ftEdgeBase *e1, ftEdgeBase *e2, ftFaceBase *other, double epsge)

  Close the gap between adjacent surfaces if the configuration allows it.
- bool isClose (shared_ptr< Vertex > v, double tol) const

  Test if a Vertex is close to the surface within some tolerance.
- std::vector< shared_ptr< Vertex > > vertices () const

  Get all vertices, duplicates removed.
- std::vector< shared_ptr< Vertex > > getNonCornerVertices (double kink) const

  Get non corner vertices.
- std::vector< shared_ptr< Vertex > > getNonCornerVertices (double kink, int loop_idx) const

  Get non corner vertices restricted to a particular loop.
- std::vector< shared_ptr< Vertex > > getCornerVertices (double kink) const

  Get corner vertices.
- std::vector< shared_ptr< Vertex > > getCornerVertices (double kink, int loop_idx) const

  Get corner vertices restricted to a particular loop.
- std::vector< shared_ptr< Vertex > > getCommonVertices (ftSurface *other) const

  Get all vertices common to this face and another face.
- std::vector< shared_ptr< ftEdge > > getCommonEdges (ftSurface *other) const
- shared_ptr< Vertex > getClosestVertex (const Point &pnt) const

  Get the vertex closest to a given point.
- void getBadDistance (std::vector< std::pair< ftSurface *, shared_ptr< Vertex > > > &badPairs, double tol)

  Collect all pairs of surface and vertex points where distance is greater than a tolerance.
- void getBadDistance (std::vector< std::pair< ftSurface *, ftEdge * > > &badPairs, double tol) const
- void getBadDistance (std::vector< std::pair< ftEdge *, shared_ptr< Vertex > > > &badPairs, double tol) const
- void getPosTangentSurfaceDiscont (std::vector< ftEdge * > &badPos, std::vector< ftEdge * > &bad↩ Tangent, double tol, double kink, double bend, int leastSurfIndex, shared_ptr< SurfaceModel > sm) const
- bool checkLoopOrientation (std::vector< shared_ptr< Loop > > &inconsistent_loops) const

  Check consistency of boundary loops.
- bool hasAcuteAngle (ftEdge *along_edge, double angtol) const

  Used in quality checing of a surface model.
- void getNarrowRegion (double gap_tol, double tol, std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > &narrow_pt)

  Get pairs of close boundary loop points.
- bool checkAndFixBoundaries ()
- double area (double tol) const

  Compute face area.

- void setBoundaryConditions (int bd_type, int bd)

  Set boundary conditions (related to isogeometric analysis)
- bool hasBoundaryConditions () const
- void getBoundaryConditions (int &bd_type, int &bd) const
- void getAdjacentFaces (std::vector< ftSurface * > &neighbours) const

  Get neighbouring faces.
- double getCurrEps () const

  Fetch tolerance used in check for degenerace.
- void setBody (Body *body)

  Boundary model / volume model, set associated body.
- Body * getBody () const

  Fetch associated body, if any.
- bool hasBody () const

  Whether or not this face belongs to a solid.
- ftSurface * twin ()

  Non-manifold, set adjacency information between two bodies.
- bool hasTwin ()
- std::vector< Body * > getAdjacentBodies () const

  Get all (up to 2) adjacent bodies.
- void setTwin (ftSurface *newtwin)
- bool connectTwin (ftSurface *newtwin, double tol, bool no_snap=true)
- void connectTwin (ftSurface *newtwin, std::vector< ftEdgeBase * > first1, std::vector< ftEdgeBase * > first2, std::vector< int > forward)
- void disconnectTwin ()

  Disconnect twin info. NB radial edge information is NOT removed.
- bool areNeighbours (ftSurface *other, shared_ptr< ftEdge > &edge1, shared_ptr< ftEdge > &edge2, int adj_idx=0) const

  the edge along which this acjacency ocurrs
- int nmbAdjacencies (ftSurface *other) const

  Number of edges along which the two faces are adjacent.
- int nmbNextNeighbours (ftSurface *other) const

  Number neighbouring faces common to the two given faces.
- bool isSpline () const

  Check if the face is represented as a spline.
- bool commonSplineSpace (ftSurface *other, double tol)
- void makeCommonSplineSpace (ftSurface *other)
- bool isCornerToCorner (ftSurface *other, double tol, int adj_idx=0)
- void splitAtInternalCorner (ftSurface *other, std::vector< shared_ptr< ftSurface > > &new_face1, std::vector< shared_ptr< ftSurface > > &new_face2, double tol=DEFAULT_SPACE_EPSILON)
- bool getAdjacencyInfo (ftSurface *other, double tol, int &bd1, int &bd2, bool &same_orient)
- AdjacencyInfo getAdjacencyInfo (ftSurface *other, double tol, int adj_idx=0, bool test_corner=false)

  Fetch info on adjacency between neighbouring faces.
- AdjacencyInfo getAdjacencyInfo (ftEdge *edge, ftSurface *other, double tol)
- bool checkDegAdjacency (ftSurface *other, shared_ptr< Vertex > vx, double tol, shared_ptr< ParamCurve > &bdcv1, shared_ptr< ParamCurve > &bdcv2)

  Check if two degenerate surface boundaries meet in a vertex.
- bool getCorrCoefEnumeration (ftSurface *other, double tol, std::vector< std::pair< int, int > > &enumeration)
- bool getFreeBoundaryInfo (double tol, std::vector< int > &free_boundaries)
- bool getBoundaryCoefEnumeration (int bd, std::vector< int > &enumeration)
- std::vector< shared_ptr< EdgeVertex > > getRadialEdges () const

  Get all instances of radial edges.
- bool hasRadialEdges () const

- bool hasRealRadialEdges () const
- bool allRadialEdges () const

  All edges is connected a radial edge.
- std::vector< ftSurface * > fetchCorrespondingFaces () const
- bool pointInFace (double u, double v, double tol)

  Point in face testing.
- int pointInFace2 (double u, double v, double tol)
- bool pointOnBd (double u, double v, double tol)

  Point on surface boundary.
- int ElementOnBoundary (int elem_ix, double eps)
- int ElementBoundaryStatus (int elem_ix, double eps)
- bool checkFaceTopology ()

  Debug functionality.

Protected Member Functions

- void replaceSurf (shared_ptr< ParamSurface > sf)

Additional Inherited Members

29.157.1 Detailed Description

ftSurface - A topological face. The class also provides an interface for operations on the assosiated surface. Detailed description.

Author

Vibeke Skytt

See also

ftFaceBase

Definition at line 91 of file ftSurface.h.

29.157.2 Constructor & Destructor Documentation

29.157.2.1 Go::ftSurface::ftSurface (shared_ptr< ParamSurface > *sf*, int *id*)

Constructor. Typically, the ParamSurface in this constructor will be a BoundedSurface. A loop will be built from this, but if we already have a loop and the edges in the loop has twins, then we must explicitly set this loop with addBoundaryLoops(). Note: In STEP, ftSurface corresponds to the entity 'advanced_face'.

29.157.2.2 Go::ftSurface::ftSurface (shared_ptr< ParamSurface > *sf*, shared_ptr< Loop > *loop*, int *id* = -1)

Constructor. Input is the geometrical surface representing the underlying face, and the topological loop that bounds the face. Typically, the ParamSurface in this constructor will be a SplineSurface or an ElementarySurface. Note: In STEP, ftSurface corresponds to the entity 'advanced_face'.

29.157.2.3 virtual Go::ftSurface::~ftSurface ( ) [virtual]

Empty destructor.

29.157.3 Member Function Documentation

29.157.3.1 void Go::ftSurface::addBoundaryLoops (std::vector< shared_ptr< Loop > > & *bd_loops*)

Set information about boundary loops. Intended for use when topology information exist prior to building a GoTools face set (i.e. SurfaceModel). The function removes any existing loops prior to setting the input. Note that the function will throw if the loop information is inconsistent with the already existing information in surf_ or the given loops are not consistent with the rules. If more than one loop is given, the first loop is the outer one. Subsequent loops must lie inside the outer loop. The loops may not intersect.

29.157.3.2 void Go::ftSurface::addOuterBoundaryLoop (shared_ptr< Loop > *outer_loop*)

Set the outer boundary loop. Any existing loops are removed prior to setting the outer_loop.

29.157.3.3 bool Go::ftSurface::allRadialEdges ( ) const

All edges is connected a radial edge.

29.157.3.4 double Go::ftSurface::area (double *tol*) const

Compute face area.

29.157.3.5 bool Go::ftSurface::areNeighbours (ftSurface * *other*, shared_ptr< ftEdge > & *edge1*, shared_ptr< ftEdge > & *edge2*, int *adj_idx* = 0) const

the edge along which this acjacency ocurrs

Check if two faces are adjacent, and return information about

29.157.3.6 virtual ftSurface* Go::ftSurface::asFtSurface ( ) [virtual]

Return as type ftSurface.

Reimplemented from Go::ftFaceBase.

29.157.3.7 virtual BoundingBox Go::ftSurface::boundingBox ( ) [virtual]

The bounding box corresponding to this face.

Implements Go::ftFaceBase.

29.157.3.8 bool Go::ftSurface::checkAndFixBoundaries ( )

Check and fix orientation of boundary loops of trimmed surfaces

Returns

`true` if the orientation of a boundary loop was fixed, `false` otherwise

29.157.3.9 bool Go::ftSurface::checkDegAdjacency (ftSurface * *other,* shared_ptr< Vertex > *vx,* double *tol,* shared_ptr< ParamCurve > & *bdcv1,* shared_ptr< ParamCurve > & *bdcv2*)

Check if two degenerate surface boundaries meet in a vertex.

29.157.3.10 bool Go::ftSurface::checkFaceTopology ( )

Debug functionality.

29.157.3.11 bool Go::ftSurface::checkLoopOrientation (std::vector< shared_ptr< Loop > > & *inconsistent_loops*) const

Check consistency of boundary loops.

29.157.3.12 virtual void Go::ftSurface::clearInitialEdges ( ) [virtual]

Reset loop information.

Reimplemented from Go::ftFaceBase.

29.157.3.13 ftEdgeBase* Go::ftSurface::closestBoundaryPoint (const Point & *pt,* const Point & *in_vec,* double & *clo_u,* double & *clo_v,* Point & *clo_pt,* double & *clo_dist,* double & *clo_par*) const

Closest point between a boundary on this face and a point.

29.157.3.14 ftEdgeBase* Go::ftSurface::closestOuterBoundaryPoint (const Point & *pt,* const Point & *in_vec,* double & *clo_u,* double & *clo_v,* Point & *clo_pt,* double & *clo_dist,* double & *clo_par*) const

Closest point between the outer boundary on this face and a point.

29.157.3.15 virtual void Go::ftSurface::closestPoint (const Point & *pt,* double & *clo_u,* double & *clo_v,* Point & *clo_pt,* double & *clo_dist,* double *epsilon*) const [virtual]

Closest point between this face and a point.

Implements Go::ftFaceBase.

29.157.3.16 void Go::ftSurface::closestPoint (const Point & *pt,* double & *clo_u,* double & *clo_v,* Point & *clo_pt,* double & *clo_dist,* double *epsilon,* const RectDomain * *domain_of_interest,* double * *seed*) const

Closest point between a domain of this face and a point.

29.157.3.17 bool Go::ftSurface::commonSplineSpace (ftSurface * *other,* double *tol*)

Check if two bodies are neighbours, are splines and have common a spline space at the interface

29.157.3.18 bool Go::ftSurface::connectTwin (ftSurface * *newtwin,* double *tol,* bool *no_snap* = true)

Set adjacency between bodies Radial edge information is set

29.157.3.19 void Go::ftSurface::connectTwin (ftSurface * *newtwin,* std::vector< ftEdgeBase * > *first1,* std::vector< ftEdgeBase * > *first2,* std::vector< int > *forward*)

Set adjacency between bodies Correspondence of surface loops is given as input

29.157.3.20 virtual std::vector<shared_ptr<ftEdgeBase> > Go::ftSurface::createInitialEdges (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON, double *kink* = 0.00015, bool *no_split* = false) [virtual]

Compute the edges associated to this face or fetch already existing edges

Implements Go::ftFaceBase.

29.157.3.21 virtual ftMessage Go::ftSurface::createSurf (double & *max_error,* double & *mean_error*) [virtual]

By inheritage, not relevant for this entity.

Implements Go::ftFaceBase.

29.157.3.22 void Go::ftSurface::disconnectTwin ( )

Disconnect twin info. NB radial edge information is NOT removed.

29.157.3.23 ftEdgeBase* Go::ftSurface::edgeClosestToPoint (double *u,* double *v*)

Return the edge on this face closest to a point.

29.157.3.24 int Go::ftSurface::ElementBoundaryStatus (int *elem_ix,* double *eps*) [inline]

Check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries of this ftSurface, is inside or outside

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y
eps	Intersection tolerance

Returns

-1: Not a spline surface or element index out of range 0: Outside trimmed volume 1: On boundary (intersection with boundary found) 2: Internal to trimmed surfaces Note that a touch with the boundaries of the underlying surface is not consdered a boundary intersection while touching a trimming curve is seen as an intersection

Definition at line 586 of file ftSurface.h.

29.157.3.25 int Go::ftSurface::ElementOnBoundary (int *elem_ix*, double *eps*) [inline]

Check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries of this ftSurface

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y
eps	Intersection tolerance

Returns

-1: Not a spline surface or element index out of range 0: Not on boundary or touching a boundary curve 1: On boundary (intersection with boundary found) Note that a touch with the boundaries of the underlying surfaces is not consdered a boundary intersection while touching a trimming curve is seen as an intersection

Definition at line 569 of file ftSurface.h.

29.157.3.26 std::vector<ftSurface*> Go::ftSurface::fetchCorrespondingFaces ( ) const

Fetch all faces that belongs to all radial edges corresponding to this face

29.157.3.27 bool Go::ftSurface::getAdjacencyInfo (ftSurface * *other*, double *tol*, int & *bd1*, int & *bd2*, bool & *same_orient*)

DEPRECATED METHOD. USE THE OTHER getAdjacencyInfo() instead Fetch info on adjacency between neighbouring faces

Parameters

other	The other face
tol	Adjacency tolerance
bd1	Boundary index of first surface 0 = umin, 1 = umax, 2 = vmin, 3 = vmax
bd2	Boundary index of second surface 0 = umin, 1 = umax, 2 = vmin, 3 = vmax
same_orient	Indicates whether the surfaces are equally oriented along the common boundary

Returns

true if adjacency is found and both faces are non-trimmed or boundary trimmed

29.157.3.28 AdjacencyInfo Go::ftSurface::getAdjacencyInfo (ftSurface * *other,* double *tol,* int *adj_idx* = 0, bool *test_corner* = false)

Fetch info on adjacency between neighbouring faces.

29.157.3.29 AdjacencyInfo Go::ftSurface::getAdjacencyInfo (ftEdge * *edge,* ftSurface * *other,* double *tol*)

Fetch info on adjacency between neighbouring faces given information about the common edge

29.157.3.30 std::vector<Body*> Go::ftSurface::getAdjacentBodies ( ) const

Get all (up to 2) adjacent bodies.

29.157.3.31 void Go::ftSurface::getAdjacentFaces (std::vector< ftSurface * > & *neighbours*) const

Get neighbouring faces.

29.157.3.32 std::vector<ftEdge*> Go::ftSurface::getAllEdgePtrs ( ) const

Fetch pointers to all edges in all loops.

29.157.3.33 std::vector<ftEdge*> Go::ftSurface::getAllEdgePtrs (int *loop_idx*) const

Fetch pointers to all edges in specified loop.

29.157.3.34 std::vector<shared_ptr<ftEdge> > Go::ftSurface::getAllEdges ( ) const

Fetch all edges in all loops.

29.157.3.35 std::vector<shared_ptr<ftEdge> > Go::ftSurface::getAllEdges (int *loop_idx*) const

Fetch all edges in given loop.

29.157.3.36 void Go::ftSurface::getBadDistance (std::vector< std::pair< ftSurface *, shared_ptr< Vertex > > > & *badPairs,* double *tol*)

Collect all pairs of surface and vertex points where distance is greater than a tolerance.

29.157.3.37 void Go::ftSurface::getBadDistance (std::vector< std::pair< ftSurface *, ftEdge * > > & *badPairs,* double *tol*) const

Collect all pairs of surface and edge where some part of the edge has a distance to the surface greater than a tolerance

29.157.3.38 void Go::ftSurface::getBadDistance (std::vector< std::pair< ftEdge *, shared_ptr< Vertex > > > & *badPairs,* double *tol*) const

Collect all pairs of edge and vertex where the vertex has a distance to the edge greater than a tolerance

29.157.3.39 Body* Go::ftSurface::getBody ( ) const [inline]

Fetch associated body, if any.

Definition at line 398 of file ftSurface.h.

29.157.3.40 bool Go::ftSurface::getBoundaryCoefEnumeration (int *bd,* std::vector< int > & *enumeration*)

For a spline surface, get the local enumeration of coefficients along a specified boundary return value: true if spline, false if not

29.157.3.41 void Go::ftSurface::getBoundaryConditions (int & *bd_type,* int & *bd*) const [inline]

Definition at line 375 of file ftSurface.h.

29.157.3.42 shared_ptr<Loop> Go::ftSurface::getBoundaryLoop (int *idx*) [inline]

Get the specified boundary loops.

Definition at line 185 of file ftSurface.h.

29.157.3.43 shared_ptr<SplineCurve> Go::ftSurface::getBoundaryPiece (Point & *pt1,* Point & *pt2,* double *eps*)

Return a part of the boundary of the current surface, specified by two points belonging to this boundary curve

29.157.3.44 shared_ptr<Vertex> Go::ftSurface::getClosestVertex (const Point & *pnt*) const

Get the vertex closest to a given point.

29.157.3.45 std::vector<shared_ptr<ftEdge> > Go::ftSurface::getCommonEdges (ftSurface * *other*) const

Get all edges common to this face and another face represented by the half edges in this face

29.157.3.46 std::vector<shared_ptr<Vertex> > Go::ftSurface::getCommonVertices (ftSurface * *other*) const

Get all vertices common to this face and another face.

29.157.3.47 std::vector<shared_ptr<Vertex> > Go::ftSurface::getCornerVertices (double *kink*) const

Get corner vertices.

29.157.3.48 std::vector<shared_ptr<Vertex> > Go::ftSurface::getCornerVertices (double *kink,* int *loop_idx*) const

Get corner vertices restricted to a particular loop.

29.157.3.49 bool Go::ftSurface::getCorrCoefEnumeration (ftSurface * *other,* double *tol,* std::vector< std::pair< int, int > > & *enumeration*)

Given two adjacent spline faces represented in the same spline space, return local enumeration of the coefficients. This surface is given first and the other surface second

29.157.3.50 double Go::ftSurface::getCurrEps ( ) const [inline]

Fetch tolerance used in check for degenerace.

Definition at line 385 of file ftSurface.h.

29.157.3.51 virtual void Go::ftSurface::getError (double & *max_error,* double & *mean_error*) [virtual]

By inheritage, not relevant for this entity.

Implements Go::ftFaceBase.

29.157.3.52 bool Go::ftSurface::getFreeBoundaryInfo (double *tol,* std::vector< int > & *free_boundaries*)

Return the boundary number of outer boundary edges that follow surface boundaries return value = true: All free boundaries are associated with surface boundaries = false:Some free boundaries are not associated with surface boundaries

29.157.3.53 virtual int Go::ftSurface::getId ( ) [virtual]

Fetch Id of this face, may not be uniquely set.

Reimplemented from Go::ftFaceBase.

29.157.3.54 void Go::ftSurface::getNarrowRegion (double *gap_tol,* double *tol,* std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > & *narrow_pt*)

Get pairs of close boundary loop points.

29.157.3.55 std::vector<shared_ptr<Vertex> > Go::ftSurface::getNonCornerVertices (double *kink*) const

Get non corner vertices.

29.157.3.56 std::vector<shared_ptr<Vertex> > Go::ftSurface::getNonCornerVertices (double *kink,* int *loop_idx*) const

Get non corner vertices restricted to a particular loop.

29.157.3.57 void Go::ftSurface::getPosTangentSurfaceDiscont (std::vector< ftEdge * > & *badPos,* std::vector< ftEdge * > & *badTangent,* double *tol,* double *kink,* double *bend,* int *leastSurfIndex,* shared_ptr< SurfaceModel > *sm*) const

Information about discontinuites, used in quality checing of a surface model

29.157.3.58 virtual ftTangPriority Go::ftSurface::getPrioType ( ) const [virtual]

Priority type, not relevant for this entity.

Implements Go::ftFaceBase.

29.157.3.59 std::vector<shared_ptr<EdgeVertex> > Go::ftSurface::getRadialEdges ( ) const

Get all instances of radial edges.

29.157.3.60 bool Go::ftSurface::getSurfaceDisconts (double *tol,* std::vector< double > & *disc_u,* std::vector< double > & *disc_v*)

Check for constant parameter line kinks, i.e. C1 discontinuities.

29.157.3.61 bool Go::ftSurface::getSurfaceKinks (double *angtol,* std::vector< double > & *g1_disc_u,* std::vector< double > & *g1_disc_v*)

Check for constant parameter line kinks.

29.157.3.62 shared_ptr<ParamSurface> Go::ftSurface::getUntrimmed (double *gap,* double *neighbour,* double *angtol,* bool *only_corner* = false)

Approximate a regular face with a non-trimmed spline surface If the initial surface is not regular, no output is created

29.157.3.63 bool Go::ftSurface::hasAcuteAngle (ftEdge * *along_edge,* double *angtol*) const

Used in quality checing of a surface model.

29.157.3.64 bool Go::ftSurface::hasBody ( ) const [inline]

Whether or not this face belongs to a solid.

Definition at line 404 of file ftSurface.h.

29.157.3.65 bool Go::ftSurface::hasBoundaryConditions ( ) const [inline]

Definition at line 370 of file ftSurface.h.

29.157.3.66 bool Go::ftSurface::hasRadialEdges ( ) const

Check for radial edges Existence

29.157.3.67 bool Go::ftSurface::hasRealRadialEdges ( ) const

29.157.3.68 bool Go::ftSurface::hasTwin ( ) [inline]

Definition at line 415 of file ftSurface.h.

29.157.3.69 bool Go::ftSurface::isClose (shared_ptr< Vertex > *v,* double *tol*) const

Test if a Vertex is close to the surface within some tolerance.

29.157.3.70 bool Go::ftSurface::isCornerToCorner (ftSurface * *other,* double *tol,* int *adj_idx* = 0)

Check if two volumes are splines and meet in a corner-to-corner configuration

29.157.3.71 virtual void Go::ftSurface::isolateFace ( ) [virtual]

Remove all adjacency information related to this face.

Reimplemented from Go::ftFaceBase.

29.157.3.72 bool Go::ftSurface::isSpline ( ) const

Check if the face is represented as a spline.

29.157.3.73 void Go::ftSurface::makeCommonSplineSpace (ftSurface * other)

Ensure that two neighbouring spline surfaces have a common spline space at the interface Averaging of coefficients at the common boundary is also performed

29.157.3.74 int Go::ftSurface::nmbAdjacencies (ftSurface * other) const

Number of edges along which the two faces are adjacent.

29.157.3.75 int Go::ftSurface::nmbBoundaryLoops ( ) [inline]

Number of loops, the first is the outer boundary loop, further loops represents holes

Definition at line 179 of file ftSurface.h.

29.157.3.76 int Go::ftSurface::nmbEdges ( ) const

Number of edges in all loops.

29.157.3.77 int Go::ftSurface::nmbNextNeighbours (ftSurface * other) const

Number neighbouring faces common to the two given faces.

29.157.3.78 int Go::ftSurface::nmbOuterBdCrvs (double gap, double neighbour, double angtol) const

Count the number of curves in the outer boundary loop with regard to how many corners there is in this loop, but without regard to how the loop is actually divided into curves

29.157.3.79 virtual Point Go::ftSurface::normal (double u, double v) const [virtual]

Evaluate surface normal.

Implements Go::ftFaceBase.

29.157.3.80 bool Go::ftSurface::onlyOuterTrim ( ) const [inline]

Check if this face contains any holes.

Definition at line 208 of file ftSurface.h.

29.157.3.81 virtual Point Go::ftSurface::point (double u, double v) const [virtual]

Evaluate point on face.

Implements Go::ftFaceBase.

29.157.3.82 **bool Go::ftSurface::pointInFace (double *u,* double *v,* double *tol*)** [inline]

Point in face testing.

Definition at line 538 of file ftSurface.h.

29.157.3.83 **int Go::ftSurface::pointInFace2 (double *u,* double *v,* double *tol*)** [inline]

Point in face testing return value = 0 : Not in face = 1 : Internal in face = 2 : On boundary

Definition at line 547 of file ftSurface.h.

29.157.3.84 **bool Go::ftSurface::pointOnBd (double *u,* double *v,* double *tol*)** [inline]

Point on surface boundary.

Definition at line 553 of file ftSurface.h.

29.157.3.85 **virtual ftMessage Go::ftSurface::removeGap (ftEdgeBase * *e1,* ftEdgeBase * *e2,* ftFaceBase * *other,* double *epsge*)** [virtual]

Close the gap between adjacent surfaces if the configuration allows it.

29.157.3.86 **void Go::ftSurface::replaceSurf (shared_ptr< ParamSurface > *sf*)** [inline], [protected]

Definition at line 595 of file ftSurface.h.

29.157.3.87 **void Go::ftSurface::setBody (Body * *body*)** [inline]

Boundary model / volume model, set associated body.

Definition at line 392 of file ftSurface.h.

29.157.3.88 **void Go::ftSurface::setBoundaryConditions (int *bd_type,* int *bd*)** [inline]

Set boundary conditions (related to isogeometric analysis)

Definition at line 364 of file ftSurface.h.

29.157.3.89 **virtual void Go::ftSurface::setId (int *id*)** [virtual]

Set Id of this face.

Reimplemented from Go::ftFaceBase.

29.157.3.90 void Go::ftSurface::setPrioType (ftTangPriority *type*) [inline]

Priority type, not relevant for this entity.

Definition at line 153 of file ftSurface.h.

29.157.3.91 void Go::ftSurface::setTwin (ftSurface * *newtwin*)

Set adjacency between bodies Radial edge information is existed to exist

29.157.3.92 ftMessage Go::ftSurface::smoothOutFace (int *edge_cont*, double *approx_orig_tol*, double *deg_tol*, double & *maxerr*, double & *meanerr*, double *approx_weight* = 0.8)

Smooth the face, the associated surface is required to be of type SplineSurface.

29.157.3.93 std::vector<shared_ptr<ftSurface> > Go::ftSurface::splitAlongKinks (double *angtol*)

Split a surface along constant parameter line kinks. Currently only spline surface is implemented.

29.157.3.94 void Go::ftSurface::splitAtInternalCorner (ftSurface * *other*, std::vector< shared_ptr< ftSurface > > & *new_face1*, std::vector< shared_ptr< ftSurface > > & *new_face2*, double *tol* = DEFAULT_SPACE_EPSILON)

Ensure that two spline volumes meet in a corner to corner configuration

29.157.3.95 virtual std::vector<shared_ptr<ftEdgeBase> > Go::ftSurface::startEdges ( ) [virtual]

Return pointers to first part of all bd cvs.

Implements Go::ftFaceBase.

29.157.3.96 virtual shared_ptr<ParamSurface> Go::ftSurface::surface ( ) [inline], [virtual]

Turn orientation of the corresponding surface.

Get underlying surface

Implements Go::ftFaceBase.

Definition at line 142 of file ftSurface.h.

29.157.3.97 ftSurface* Go::ftSurface::twin ( ) [inline]

Non-manifold, set adjacency information between two bodies.

Definition at line 410 of file ftSurface.h.

29.157.3.98 virtual void Go::ftSurface::updateBoundaryLoops (shared_ptr< ftEdgeBase > *new_edge*) [virtual]

Update the information stored in the boundary loops.

Reimplemented from Go::ftFaceBase.

29.157.3.99 std::vector<shared_ptr<Vertex> > Go::ftSurface::vertices ( ) const

Get all vertices, duplicates removed.

29.157.3.100 void Go::ftSurface::write (std::ostream & *os*)

Write surface to stream.

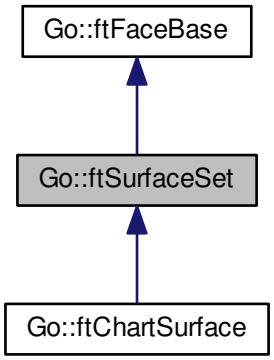
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftSurface.h

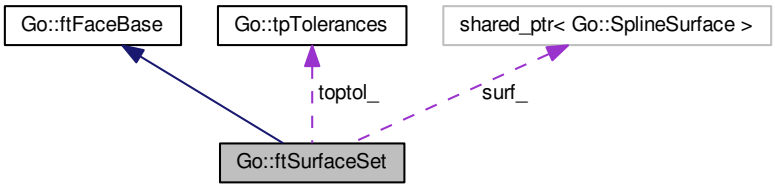
29.158 Go::ftSurfaceSet Class Reference

`#include <ftSurfaceSet.h>`

Inheritance diagram for Go::ftSurfaceSet:



Collaboration diagram for Go::ftSurfaceSet:



Public Member Functions

- ftSurfaceSet (const std::vector< shared_ptr< ParamSurface > > &surfaces, tpTolerances &topeps, double approxeps)

  Constructor.
- ~ftSurfaceSet ()

  Destructor.
- virtual std::vector< shared_ptr< ftEdgeBase > > createInitialEdges (double degenerate_epsilon=DEFAULT_SPACE_EPSILON, double kink=0.00015, bool no_split=false)=0
- virtual std::vector< shared_ptr< ftEdgeBase > > startEdges ()

  Return pointers to first part of all bd cvs.
- virtual Point point (double u, double v) const =0

  Evaluate point on face.
- virtual Point normal (double u, double v) const =0

  Evaluate surface normal.
- virtual BoundingBox boundingBox ()

  The bounding box corresponding to this face.
- virtual void setId (int id)

  Set id for this face.
- virtual int getId ()

  Return id, default id is -1.
- virtual shared_ptr< ParamSurface > surface ()

  Fetch geometric surface.
- virtual ftMessage createSurf (double &max_error, double &mean_error)=0
- virtual void getError (double &max_error, double &mean_error)=0
- virtual ftTangPriority getPrioType () const =0

  Priority type.
- ftMessage trimWithPlane (const ftPlane &plane)
- void getSurfaces (vector< shared_ptr< ParamSurface > > &surfaces)

  Return the surfaces belonging to the surface set.
- ftMessage modifySurface (int maxiter, int max_update_iter, std::vector< int > &edge_derivs, ftPointSet &points, double &max_error, double &mean_error)
- double getApproxweight ()
- void setApproxweight (double approxweight)
- void setAdditionalCornerPts (std::vector< Point > &add_corner_pts)
- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon) const

  Closest point between this face and a point.

Protected Member Functions

- virtual bool sampleOnlyEdges () const =0
- ftMessage getOuterLoop (std::vector< ftEdgeBase * > &outer_loop, std::vector< int > &corners, double bend_tol, double kink_tol)
- ftMessage fetchSamplePoints (const std::vector< ftEdgeBase * > &edgeloop, std::vector< int > &corner, std::vector< int > &cn, ftPointSet &points)
- void getInitBndData (std::vector< ftEdgeBase * > &edgc, ftPointSet &points, int cn[])
- ftMessage getInitInnerData2 (ftPointSet &points)
- ftMessage getInitInnerData (ftPointSet &points, int max_sample)
- ftMessage updatePointTopology (ftPointSet &points)
- ftMessage merge (double &max_error, double &mean_error, double bend_tol, double kink_tol)
- std::vector< double > estimateSurfSides (SplineSurface *surf)

- ftMessage reparametrizeSurf (const std::vector< ftEdgeBase * > &first_edges, const std::vector< int > &corners, ftPointSet &points, double umin=0, double umax=0, double vmin=0, double vmax=0)
- ftMessage getBoundaryConditions (const std::vector< ftEdgeBase * > &edgeloop, std::vector< int > &corner, std::vector< shared_ptr< SplineCurve > > &bd_curves, std::vector< shared_ptr< SplineCurve > > &cross_curves, bool compute_cross_curves, std::vector< BoundaryPiece > &bdpiece, bool require_cord↩_length_param=false)
- ftMessage getNextEdgePieceInfo (std::vector< ftEdgeBase * >::iterator &first_edge, std::vector< ftEdge↩Base * >::iterator &last_edge, ftFaceBase *&adjsurf, SplineCurve *&cv, Point &ptmin, Point &ptmax, double &length)
- shared_ptr< SplineCurve > joinCrossCurves (std::vector< shared_ptr< SplineCurve > > &cross_curves, double startpar, double endpar)
- shared_ptr< SplineCurve > getBoundaryPiece (Point &ptmin, Point &ptmax, double eps)

Protected Attributes

- tpTolerances toptol_
- std::vector< shared_ptr< ftFaceBase > > faces_
- shared_ptr< SplineSurface > surf_
- std::vector< shared_ptr< Loop > > boundary_loops_
- double approxtol_
- double approxweight_
- std::vector< shared_ptr< SplineCurve > > approx_bd_curves_
- std::vector< Point > additional_corner_pts_

29.158.1 Detailed Description

A set of surfaces is viewed as one surface. Member functions assume object is handled by a tpTopologyTable.

Definition at line 53 of file ftSurfaceSet.h.

29.158.2 Constructor & Destructor Documentation

29.158.2.1 Go::ftSurfaceSet::ftSurfaceSet (const std::vector< shared_ptr< ParamSurface > > & *surfaces,* tpTolerances & *topeps,* double *approxeps*)

Constructor.

29.158.2.2 Go::ftSurfaceSet::~ftSurfaceSet ( )

Destructor.

29.158.3 Member Function Documentation

29.158.3.1 virtual BoundingBox Go::ftSurfaceSet::boundingBox ( ) [virtual]

The bounding box corresponding to this face.

Implements Go::ftFaceBase.

29.158.3.2 virtual void Go::ftSurfaceSet::closestPoint (const Point & *pt,* double & *clo_u,* double & *clo_v,* Point & *clo_pt,* double & *clo_dist,* double *epsilon*) const [inline], [virtual]

Closest point between this face and a point.

Implements Go::ftFaceBase.

Definition at line 122 of file ftSurfaceSet.h.

29.158.3.3 virtual std::vector<shared_ptr<ftEdgeBase> > Go::ftSurfaceSet::createInitialEdges (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON, double *kink* = 0.00015, bool *no_split* = false) [pure virtual]

Compute the edges associated to this face or fetch already existing edges

Implements Go::ftFaceBase.

Implemented in Go::ftChartSurface.

29.158.3.4 virtual ftMessage Go::ftSurfaceSet::createSurf (double & *max_error,* double & *mean_error*) [pure virtual]

Make sure that a geometric surface exists. Not applicable in normal configurations

Implements Go::ftFaceBase.

Implemented in Go::ftChartSurface.

29.158.3.5 std::vector<double> Go::ftSurfaceSet::estimateSurfSides (SplineSurface * *surf*) [protected]

29.158.3.6 ftMessage Go::ftSurfaceSet::fetchSamplePoints (const std::vector< ftEdgeBase * > & *edgeloop,* std::vector< int > & *corner,* std::vector< int > & *cn,* ftPointSet & *points*) [protected]

29.158.3.7 double Go::ftSurfaceSet::getApproxweight ( ) [inline]

Definition at line 112 of file ftSurfaceSet.h.

29.158.3.8 ftMessage Go::ftSurfaceSet::getBoundaryConditions (const std::vector< ftEdgeBase * > & *edgeloop,* std::vector< int > & *corner,* std::vector< shared_ptr< SplineCurve > > & *bd_curves,* std::vector< shared_ptr< SplineCurve > > & *cross_curves,* bool *compute_cross_curves,* std::vector< BoundaryPiece > & *bdpiece,* bool *require_cord_length_param* = false) [protected]

29.158.3.9 shared_ptr<SplineCurve> Go::ftSurfaceSet::getBoundaryPiece (Point & *ptmin,* Point & *ptmax,* double *eps*) [protected]

29.158.3.10 virtual void Go::ftSurfaceSet::getError (double & *max_error,* double & *mean_error*) [pure virtual]

Fetch the error due to approximations in createSurf. Not applicable in normal configurations

Implements Go::ftFaceBase.

Implemented in Go::ftChartSurface.

29.158.3.11 virtual int Go::ftSurfaceSet::getId ( ) [virtual]

Return id, default id is -1.

Reimplemented from Go::ftFaceBase.

29.158.3.12 void Go::ftSurfaceSet::getInitBndData (std::vector< ftEdgeBase * > & *edgc*, ftPointSet & *points*, int *cn[]*) [protected]

29.158.3.13 ftMessage Go::ftSurfaceSet::getInitInnerData (ftPointSet & *points*, int *max_sample*) [protected]

29.158.3.14 ftMessage Go::ftSurfaceSet::getInitInnerData2 (ftPointSet & *points*) [protected]

29.158.3.15 ftMessage Go::ftSurfaceSet::getNextEdgePieceInfo (std::vector< ftEdgeBase * >::iterator & *first_edge*, std::vector< ftEdgeBase * >::iterator & *last_edge*, ftFaceBase *& *adjsurf*, SplineCurve *& *cv*, Point & *ptmin*, Point & *ptmax*, double & *length*) [protected]

29.158.3.16 ftMessage Go::ftSurfaceSet::getOuterLoop (std::vector< ftEdgeBase * > & *outer_loop*, std::vector< int > & *corners*, double *bend_tol*, double *kink_tol*) [protected]

29.158.3.17 virtual ftTangPriority Go::ftSurfaceSet::getPrioType ( ) const [pure virtual]

Priority type.

Implements Go::ftFaceBase.

Implemented in Go::ftChartSurface.

29.158.3.18 void Go::ftSurfaceSet::getSurfaces (vector< shared_ptr< ParamSurface > > & *surfaces*)

Return the surfaces belonging to the surface set.

29.158.3.19 shared_ptr<SplineCurve> Go::ftSurfaceSet::joinCrossCurves (std::vector< shared_ptr< SplineCurve > > & *cross_curves*, double *startpar*, double *endpar*) [protected]

29.158.3.20 ftMessage Go::ftSurfaceSet::merge (double & *max_error*, double & *mean_error*, double *bend_tol*, double *kink_tol*) [protected]

29.158.3.21 ftMessage Go::ftSurfaceSet::modifySurface (int *maxiter*, int *max_update_iter*, std::vector< int > & *edge_derivs*, ftPointSet & *points*, double & *max_error*, double & *mean_error*)

29.158.3.22 virtual Point Go::ftSurfaceSet::normal (double *u*, double *v*) const [pure virtual]

Evaluate surface normal.

Implements Go::ftFaceBase.

Implemented in Go::ftChartSurface.

29.158.3.23 virtual Point Go::ftSurfaceSet::point (double *u*, double *v*) const [pure virtual]

Evaluate point on face.

Implements Go::ftFaceBase.

Implemented in Go::ftChartSurface.

29.158.3.24 ftMessage Go::ftSurfaceSet::reparametrizeSurf (const std::vector< ftEdgeBase * > & *first_edges*, const std::vector< int > & *corners*, ftPointSet & *points*, double *umin* = 0, double *umax* = 0, double *vmin* = 0, double *vmax* = 0) [protected]

29.158.3.25 virtual bool Go::ftSurfaceSet::sampleOnlyEdges ( ) const [protected], [pure virtual]

Implemented in Go::ftChartSurface.

29.158.3.26 void Go::ftSurfaceSet::setAdditionalCornerPts (std::vector< Point > & *add_corner_pts*) [inline]

Definition at line 118 of file ftSurfaceSet.h.

29.158.3.27 void Go::ftSurfaceSet::setApproxweight (double *approxweight*) [inline]

Definition at line 115 of file ftSurfaceSet.h.

29.158.3.28 virtual void Go::ftSurfaceSet::setId (int *id*) [virtual]

Set id for this face.

Reimplemented from Go::ftFaceBase.

29.158.3.29 virtual std::vector<shared_ptr<ftEdgeBase> > Go::ftSurfaceSet::startEdges ( ) [virtual]

Return pointers to first part of all bd cvs.

Implements Go::ftFaceBase.

29.158.3.30 virtual shared_ptr<ParamSurface> Go::ftSurfaceSet::surface ( ) [inline], [virtual]

Fetch geometric surface.

Implements Go::ftFaceBase.

Definition at line 87 of file ftSurfaceSet.h.

29.158.3.31 ftMessage Go::ftSurfaceSet::trimWithPlane (const ftPlane & *plane*)

Faces or parts of faces in faces_ are trimmed if they lie above plane. Remember to update top_table_ and first_↩ edges_!

29.158.3.32 ftMessage Go::ftSurfaceSet::updatePointTopology (ftPointSet & *points*) [protected]

29.158.4 Member Data Documentation

29.158.4.1 std::vector<Point> Go::ftSurfaceSet::additional_corner_pts_ [protected]

Definition at line 150 of file ftSurfaceSet.h.

29.158.4.2 std::vector<shared_ptr<SplineCurve> > Go::ftSurfaceSet::approx_bd_curves_ [protected]

Definition at line 147 of file ftSurfaceSet.h.

29.158.4.3 double Go::ftSurfaceSet::approxtol_ [protected]

Definition at line 144 of file ftSurfaceSet.h.

29.158.4.4 double Go::ftSurfaceSet::approxweight_ [protected]

Definition at line 145 of file ftSurfaceSet.h.

29.158.4.5 std::vector<shared_ptr<Loop> > Go::ftSurfaceSet::boundary_loops_ [protected]

The boundary loops limiting this face, the first loop represents the initial boundary

Definition at line 142 of file ftSurfaceSet.h.

29.158.4.6 std::vector<shared_ptr<ftFaceBase> > Go::ftSurfaceSet::faces_ [protected]

Definition at line 137 of file ftSurfaceSet.h.

29.158.4.7 shared_ptr<SplineSurface> Go::ftSurfaceSet::surf_ [protected]

Definition at line 138 of file ftSurfaceSet.h.

29.158.4.8 tpTolerances Go::ftSurfaceSet::toptol_ [protected]

Definition at line 135 of file ftSurfaceSet.h.

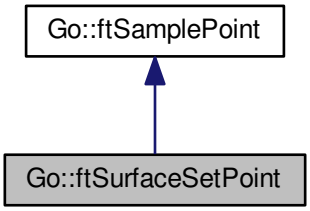
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ftSurfaceSet.h

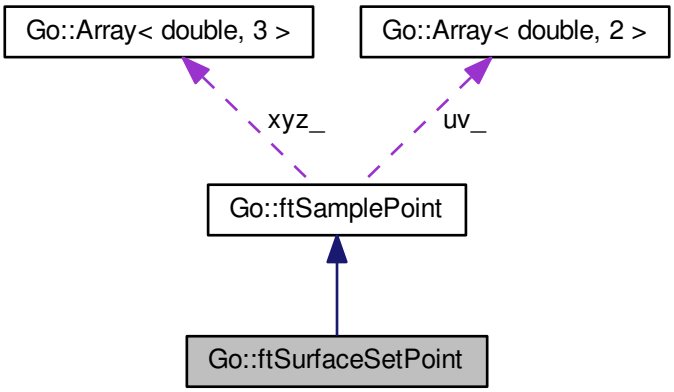
29.159 Go::ftSurfaceSetPoint Class Reference

`#include <ftSurfaceSetPoint.h>`

Inheritance diagram for Go::ftSurfaceSetPoint:



Collaboration diagram for Go::ftSurfaceSetPoint:



Public Member Functions

- ftSurfaceSetPoint (Vector3D xyz, int bnd)

  Constructor.
- ftSurfaceSetPoint (Vector3D xyz, int bnd, shared_ptr< ftFaceBase > &face, Vector2D par_pt)

  Constructor.
- virtual ~ftSurfaceSetPoint ()

  Destructor.
- virtual ftSurfaceSetPoint * asSurfaceSetPoint ()

  Return pointer to this point as a surface set point.
- virtual bool containsFace (ftFaceBase *face) const

  Check if a face is associated this point.
- void addPair (shared_ptr< ftFaceBase > &face, const Vector2D &par_pt)

  For a given point, add information about param values on another ftFaceBase.
- void addFace (shared_ptr< ftFaceBase > &face)

  For a given point, add another face. Parameter values are computed.
- int nmbFaces ()

  Return the number of faces in which point is member of.
- shared_ptr< ftFaceBase > face (int i)

  Return pointer to face number i (error if not enough faces).
- Vector2D parValue (int i)

  Fetch the parameter vale in face number i of this point.
- Vector2D getPar (ftFaceBase *face)

  Fetch the parameter value in face face of this point.
- void addInfo (ftSurfaceSetPoint *other)
- void resetPosition (Vector3D pos, int bnd)

  Change position of point and update parameter values accordingly.
- void resetPosition (Vector3D pos)
- virtual void write2Dval (std::ostream &os) const

  Write parameter information to stream.

Additional Inherited Members

29.159.1 Detailed Description

Subclass of ftSamplePoint; intended for use when a point is member of multiple ftFaceBase's.

Definition at line 54 of file ftSurfaceSetPoint.h.

29.159.2 Constructor & Destructor Documentation

29.159.2.1 Go::ftSurfaceSetPoint::ftSurfaceSetPoint (Vector3D *xyz*, int *bnd*)

Constructor.

29.159.2.2 Go::ftSurfaceSetPoint::ftSurfaceSetPoint (Vector3D *xyz*, int *bnd*, shared_ptr< ftFaceBase > & *face*, Vector2D *par_pt*)

Constructor.

29.159.2.3 virtual Go::ftSurfaceSetPoint::~ftSurfaceSetPoint ( ) [virtual]

Destructor.

29.159.3 Member Function Documentation

29.159.3.1 void Go::ftSurfaceSetPoint::addFace (shared_ptr< ftFaceBase > & *face*)

For a given point, add another face. Parameter values are computed.

29.159.3.2 void Go::ftSurfaceSetPoint::addInfo (ftSurfaceSetPoint * *other*)

Add face, parameter and connectivity info from the point other to this point NB! It is assumed that the position information is consistent

29.159.3.3 void Go::ftSurfaceSetPoint::addPair (shared_ptr< ftFaceBase > & *face,* const Vector2D & *par_pt*)

For a given point, add information about param values on another ftFaceBase.

29.159.3.4 virtual ftSurfaceSetPoint* Go::ftSurfaceSetPoint::asSurfaceSetPoint ( ) [inline], [virtual]

Return pointer to this point as a surface set point.

Reimplemented from Go::ftSamplePoint.

Definition at line 67 of file ftSurfaceSetPoint.h.

29.159.3.5 virtual bool Go::ftSurfaceSetPoint::containsFace (ftFaceBase * *face*) const [virtual]

Check if a face is associated this point.

Reimplemented from Go::ftSamplePoint.

29.159.3.6 shared_ptr<ftFaceBase> Go::ftSurfaceSetPoint::face (int *i*)

Return pointer to face number i (error if not enough faces).

29.159.3.7 Vector2D Go::ftSurfaceSetPoint::getPar (ftFaceBase * *face*)

Fetch the parameter value in face face of this point.

29.159.3.8 int Go::ftSurfaceSetPoint::nmbFaces ( )

Return the number of faces in which point is member of.

29.159.3.9 Vector2D Go::ftSurfaceSetPoint::parValue (int *i*)

Fetch the parameter vale in face number i of this point.

29.159.3.10 void Go::ftSurfaceSetPoint::resetPosition (Vector3D *pos*, int *bnd*)

Change position of point and update parameter values accordingly.

29.159.3.11 void Go::ftSurfaceSetPoint::resetPosition (Vector3D *pos*)

29.159.3.12 virtual void Go::ftSurfaceSetPoint::write2Dval (std::ostream & *os*) const [virtual]

Write parameter information to stream.

Reimplemented from Go::ftSamplePoint.

The documentation for this class was generated from the following file:

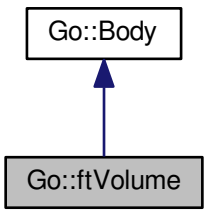
- compositemodel/include/GoTools/compositemodel/ftSurfaceSetPoint.h

29.160 Go::ftVolume Class Reference

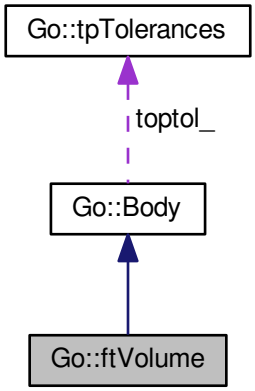
A topological solid with a trivariate geometry description.

`#include <ftVolume.h>`

Inheritance diagram for Go::ftVolume:



Collaboration diagram for Go::ftVolume:



Public Member Functions

- ftVolume (shared_ptr< ParamVolume > vol, int id=-1)

  Constructor given a trivariate volume description.
- ftVolume (shared_ptr< ParamVolume > vol, double gap_eps, double kink_eps, int id=-1)
- ftVolume (shared_ptr< ParamVolume > vol, double gap_eps, double neighbour, double kink_eps, double bend, int id=-1)
- ftVolume (shared_ptr< ParamVolume > vol, shared_ptr< SurfaceModel > shell, int id=-1)
- ftVolume (shared_ptr< ParamVolume > vol, std::vector< shared_ptr< SurfaceModel > > shells, int id=-1)
- ftVolume (shared_ptr< SurfaceModel > shell, int id=-1)

  Create a ftVolume when no geometry description is known yet.
- ~ftVolume ()

  Destructor.
- shared_ptr< ParamVolume > getVolume ()

  Fetch geometric description.
- int getId ()

  Fetch Id, not necessarily uniquely set.
- void closestPoint (Point &pt, double &clo_u, double &clo_v, double &clo_w, Point &clo_pt, double &clo_dist, double epsilon, double *seed=NULL) const

  Closest point between this possibly trimmed volume and a point.
- ftFaceBase * closestBoundaryPoint (Point &pt, double &clo_u, double &clo_v, double &clo_w, Point &clo_pt, double &clo_dist, double &clo_par_u, double &clo_par_v, double epsilon) const
- virtual BoundingBox boundingBox () const

  The bounding box corresponding to this solid.
- bool isSpline () const

  Check if the volume is represented as a spline.
- std::vector< shared_ptr< EdgeVertex > > radialEdges () const

  Fetch all radial edges belonging to this model.
- std::vector< shared_ptr< EdgeVertex > > getCommonEdges (ftVolume *other) const

  Fetch all radial edges common to this model and another one.
- std::vector< shared_ptr< ftEdge > > uniqueNonRadialEdges () const

- void getAdjacentBodies (std::vector< ftVolume * > &neighbours)

  Get neighbouring bodies.
- bool commonSplineSpace (ftVolume *other, double tol)
- bool makeCommonSplineSpace (ftVolume *other)
- bool isCornerToCorner (shared_ptr< ftVolume > other, double tol)
- void splitAtInternalCorner (ftVolume *other, std::vector< shared_ptr< ftVolume > > &new_vol1, std::vector< shared_ptr< ftVolume > > &new_vol2, double tol=DEFAULT_SPACE_EPSILON)
- bool getAdjacencyInfo (ftVolume *other, double tol, int &bd1, int &bd2, int &orientation, bool &same_seq)
- VolumeAdjacencyInfo getAdjacencyInfo (ftVolume *other, double tol, int adj_idx=0, bool test_corner=false)

  Fetch info on adjacency between neighbouring bodies.
- VolumeAdjacencyInfo getCornerAdjacencyInfo (ftVolume *other, EdgeVertex *evx, double tol, int adj_idx=0)
- VolumeAdjacencyInfo getCornerAdjacencyInfo (ftVolume *other, double tol, int adj_idx=0)
- bool checkDegAdjacency (ftVolume *other, shared_ptr< EdgeVertex > evx, double tol, shared_ptr< ParamSurface > &bdsf1, shared_ptr< ParamSurface > &bdsf2)
- bool getCorrCoefEnumeration (ftVolume *other, double tol, std::vector< std::pair< int, int > > &enumeration)
- bool getVertexPosition (shared_ptr< Vertex > vx, Point &param) const
- bool getVertexEnumeration (shared_ptr< Vertex > vx, Point &param, int &corner, int &coef_nmb) const
- bool getFreeBoundaryInfo (double tol, std::vector< int > &free_boundaries)
- bool getBoundaryCoefEnumeration (int bd, std::vector< int > &enumeration)
- int ElementOnBoundary (int elem_ix)
- int ElementBoundaryStatus (int elem_ix)
- bool isBoundaryTrimmed () const
- bool isIsoTrimmed () const
- bool ParamInVolume (double u, double v, double w)
- bool regularizeBdShells (std::vector< std::pair< Point, Point > > &corr_vx_pts, std::vector< SurfaceModel * > &modified_adjacent, int split_mode=1, bool pattern_split=false)
- bool isRegularized () const
- bool untrimRegular (int degree)

  Modify a regularized, possibly trimmed volume to become non-trimmed.
- std::vector< shared_ptr< ftVolume > > replaceWithRegVolumes (int degree, std::vector< SurfaceModel * > &modified_adjacent, bool performe_step2=true, int split_mode=1, bool pattern_split=false)
- void updateBoundaryInfo ()
- bool checkBodyTopology ()

  Debug.

Additional Inherited Members

29.160.1 Detailed Description

A topological solid with a trivariate geometry description.

Definition at line 91 of file ftVolume.h.

29.160.2 Constructor & Destructor Documentation

29.160.2.1 Go::ftVolume::ftVolume (shared_ptr< ParamVolume > *vol*, int *id* = -1)

Constructor given a trivariate volume description.

29.160.2.2 Go::ftVolume::ftVolume (shared_ptr< ParamVolume > *vol,* double *gap_eps,* double *kink_eps,* int *id* = -1)

Constructor given a trivariate volume description and tolerances for topology analysis of the boundary shell

29.160.2.3 Go::ftVolume::ftVolume (shared_ptr< ParamVolume > *vol,* double *gap_eps,* double *neighbour,* double *kink_eps,* double *bend,* int *id* = -1)

29.160.2.4 Go::ftVolume::ftVolume (shared_ptr< ParamVolume > *vol,* shared_ptr< SurfaceModel > *shell,* int *id* = -1)

Given a volume and boundary surfaces, create a possibly trimmed ftVolume

29.160.2.5 Go::ftVolume::ftVolume (shared_ptr< ParamVolume > *vol,* std::vector< shared_ptr< SurfaceModel > > *shells,* int *id* = -1)

Given a volume and a number of boundary shells, create a possibly trimmed ftVolume

29.160.2.6 Go::ftVolume::ftVolume (shared_ptr< SurfaceModel > *shell,* int *id* = -1)

Create a ftVolume when no geometry description is known yet.

29.160.2.7 Go::ftVolume::~ftVolume ( )

Destructor.

29.160.3 Member Function Documentation

29.160.3.1 virtual BoundingBox Go::ftVolume::boundingBox ( ) const [virtual]

The bounding box corresponding to this solid.

Reimplemented from Go::Body.

29.160.3.2 bool Go::ftVolume::checkBodyTopology ( )

Debug.

29.160.3.3 bool Go::ftVolume::checkDegAdjacency (ftVolume * *other,* shared_ptr< EdgeVertex > *evx,* double *tol,* shared_ptr< ParamSurface > & *bdsf1,* shared_ptr< ParamSurface > & *bdsf2*)

Look for adjacencey betweed degenerate volumes in a degenerate boundary surface

29.160.3.4 ftFaceBase* Go::ftVolume::closestBoundaryPoint (Point & *pt,* double & *clo_u,* double & *clo_v,* double & *clo_w,* Point & *clo_pt,* double & *clo_dist,* double & *clo_par_u,* double & *clo_par_v,* double *epsilon*) const

Closest point between a boundary on this possibly trimmed volume and a point

29.160.3.5 void Go::ftVolume::closestPoint (Point & *pt,* double & *clo_u,* double & *clo_v,* double & *clo_w,* Point & *clo_pt,* double & *clo_dist,* double *epsilon,* double * *seed* = `NULL`) const

Closest point between this possibly trimmed volume and a point.

29.160.3.6 bool Go::ftVolume::commonSplineSpace (ftVolume * *other,* double *tol*)

Check if two bodies are neighbours, are splines and have a common spline space at the interface

29.160.3.7 int Go::ftVolume::ElementBoundaryStatus (int *elem_ix*)

Check if a polynomial element (for spline volumes) intersects the (trimming) boundaries of this ftVolume, is inside or outside

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y and at last z

Returns

-1: Not a spline volume or element index out of range 0: Outside trimmed volume 1: On boundary (intersection with boundary found) 2: Internal to trimmed volume Note that a touch with the boundaries of the underlying volume is not consdered a boundary intersection while touching a trimming surface is seen as an intersection

29.160.3.8 int Go::ftVolume::ElementOnBoundary (int *elem_ix*)

Check if a polynomial element (for spline volumes) intersects the (trimming) boundaries of this ftVolume

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y and at last z

Returns

-1: Not a spline volume or element index out of range 0: Not on boundary or touching a boundary surface 1: On boundary (intersection with boundary found) Note that a touch with the boundaries of the underlying volume is not consdered a boundary intersection while touching a trimming surface is seen as an intersection

29.160.3.9 **bool Go::ftVolume::getAdjacencyInfo (ftVolume * *other,* double *tol,* int & *bd1,* int & *bd2,* int & *orientation,* bool & *same_seq*)**

DEPRECATED METHOD. USE THE OTHER getAdjacencyInfo() instead Fetch info on adjacency between neighbouring bodies return value true if adjacency is found and both bodies are non-trimmed or boundary trimmed bd1: boundary index of first volume 0 = umin, 1 = umax, 2 = vmin, 3 = vmax, 4 = wmin, 5 = wmax bd2: boundary index of second volume 0 = umin, 1 = umax, 2 = vmin, 3 = vmax, 4 = wmin, 5 = wmax orientation: Indicates whether the surfaces are equally oriented along the common boundary 0 = same orientation 1 = first parameter of the common boundary surface is opposite 2 = second parameter of the common boundary surface is opposite 3 = both parameters of the common boundary surface is opposite same_seq: Indicates if the two parameter directions of the common boundary surface are given in the same sequence

29.160.3.10 **VolumeAdjacencyInfo Go::ftVolume::getAdjacencyInfo (ftVolume * *other,* double *tol,* int *adj_idx* = 0, bool *test_corner* = false)**

Fetch info on adjacency between neighbouring bodies.

29.160.3.11 **void Go::ftVolume::getAdjacentBodies (std::vector< ftVolume * > & *neighbours*)**

Get neighbouring bodies.

29.160.3.12 **bool Go::ftVolume::getBoundaryCoefEnumeration (int *bd,* std::vector< int > & *enumeration*)**

For a spline volume, get the local enumeration of coefficients along a specified boundary return value: true if spline, false if not

29.160.3.13 **std::vector<shared_ptr<EdgeVertex> > Go::ftVolume::getCommonEdges (ftVolume * *other*) const**

Fetch all radial edges common to this model and another one.

29.160.3.14 **VolumeAdjacencyInfo Go::ftVolume::getCornerAdjacencyInfo (ftVolume * *other,* EdgeVertex * *evx,* double *tol,* int *adj_idx* = 0)**

29.160.3.15 **VolumeAdjacencyInfo Go::ftVolume::getCornerAdjacencyInfo (ftVolume * *other,* double *tol,* int *adj_idx* = 0)**

Fetch info on adjacence between bodies meeting an a common edge (no common face)

29.160.3.16 **bool Go::ftVolume::getCorrCoefEnumeration (ftVolume * *other,* double *tol,* std::vector< std::pair< int, int > > & *enumeration*)**

Given two adjacent spline volumes represented in the same spline space, return local enumeration of the coefficients. This surface is given first and the other volume second

29.160.3.17 bool Go::ftVolume::getFreeBoundaryInfo (double *tol,* std::vector< int > & *free_boundaries*)

Return the boundary number of outer boundary surfaces that follow volume boundaries return value = true: All free boundaries are associated with volume boundaries = false:Some free boundaries are not associated with volume boundaries

29.160.3.18 int Go::ftVolume::getId ( ) [inline]

Fetch Id, not necessarily uniquely set.

Definition at line 131 of file ftVolume.h.

29.160.3.19 bool Go::ftVolume::getVertexEnumeration (shared_ptr< Vertex > *vx,* Point & *param,* int & *corner,* int & *coef_nmb*) const

Given a vertex, find if this vertex is associated this body, compute the parameter value of the body associated with the vertex, and if this body is a spline volume, return the corner number and the number of the associated spline coefficient corner: 0=(umin,vmin,wmin), 1=(umax,vmin,wmin), 2=(umin,vmax,wmin), 3=(umax,vmax,wmin), 4=(umin,vmin,wmax), 5=(umax,vmin,wmax), 6=(umin,vmax,wmax), 7=(umax,vmax,wmax)

29.160.3.20 bool Go::ftVolume::getVertexPosition (shared_ptr< Vertex > *vx,* Point & *param*) const

Given a vertex, find if this vertex is associated this body and compute the parameter value of the body associated with the vertex

29.160.3.21 shared_ptr<ParamVolume> Go::ftVolume::getVolume ( ) [inline]

Fetch geometric description.

Definition at line 125 of file ftVolume.h.

29.160.3.22 bool Go::ftVolume::isBoundaryTrimmed ( ) const

Information about whether or not the volume is trimmed and how it is trimmed Check if the volume is boundary trimmed (not trimmed). The boundary surfaces themselves may be trimmed

29.160.3.23 bool Go::ftVolume::isCornerToCorner (shared_ptr< ftVolume > *other,* double *tol*)

Check if two volumes are splines and meet in a corner-to-corner configuration

29.160.3.24 bool Go::ftVolume::isIsoTrimmed ( ) const

Check if all boundary surfaces correspond to an iso-parameter in the volume

29.160.3.25 bool Go::ftVolume::isRegularized ( ) const

Check if this volume has 6 boundary surfaces that may act as the boundary surfaces of a non-trimmed spline volume

29.160.3.26 bool Go::ftVolume::isSpline ( ) const

Check if the volume is represented as a spline.

29.160.3.27 bool Go::ftVolume::makeCommonSplineSpace (ftVolume * other)

Ensure that two neighbouring spline volumes have a common spline space at the interface

29.160.3.28 bool Go::ftVolume::ParamInVolume (double u, double v, double w)

Check if all boundary surfaces spproximately correspond to an iso-parameter in the volume Check if a given parameter tripple is inside the possibly trimmed volume

29.160.3.29 std::vector<shared_ptr<EdgeVertex> > Go::ftVolume::radialEdges ( ) const

Fetch all radial edges belonging to this model.

29.160.3.30 bool Go::ftVolume::regularizeBdShells (std::vector< std::pair< Point, Point > > & corr_vx_pts, std::vector< SurfaceModel * > & modified_adjacent, int split_mode = 1, bool pattern_split = false)

Update the volume by regularizing all boundary shells, i.e. all faces in all boundary shells of all connected volumes should be 4-sided, and no T-joints are allowed

29.160.3.31 std::vector<shared_ptr<ftVolume> > Go::ftVolume::replaceWithRegVolumes (int degree, std::vector< SurfaceModel * > & modified_adjacent, bool performe_step2 = true, int split_mode = 1, bool pattern_split = false)

Divide a trimmed volume into a set of regular volumes NB! The boundary shells of the corresponding volume model (or this volume) must be regular. Not all configurations are handled. If an unknown configuration occur, nothing is returned Should be called from VolumeModel. Ruins the current ftVolume.

29.160.3.32 void Go::ftVolume::splitAtInternalCorner (ftVolume * other, std::vector< shared_ptr< ftVolume > > & new_vol1, std::vector< shared_ptr< ftVolume > > & new_vol2, double tol = DEFAULT_SPACE_EPSILON)

Ensure that two spline volumes meet in a corner to corner configuration

29.160.3.33 std::vector<shared_ptr<ftEdge> > Go::ftVolume::uniqueNonRadialEdges ( ) const

Fetch edges where no radial edge exist, i.e. there is no ajacent volume along any boundary surface meeting in this edge. Only one occurance in an edge, twin-edge pair is returned

29.160.3.34 bool Go::ftVolume::untrimRegular (int *degree*)

Modify a regularized, possibly trimmed volume to become non-trimmed.

29.160.3.35 void Go::ftVolume::updateBoundaryInfo ( )

Update boundary shells to reflect changes in the geometric volume while maintaining topology information

The documentation for this class was generated from the following file:

- trivariatemodel/include/GoTools/trivariatemodel/ftVolume.h

29.161 Go::Fun2Fun< Functor > Class Template Reference

`#include <brent_minimize.h>`

Public Member Functions

- Fun2Fun (const Functor &f, double a, double b)
- double operator() (const double *arg) const

  Evaluate functor.
- double minPar (int n) const

  Return start parameter of functor.
- double maxPar (int n) const

  Return end parameter.

29.161.1 Detailed Description

template<class Functor>
class Go::Fun2Fun< Functor >

Functor evaluation

Definition at line 51 of file brent_minimize.h.

29.161.2 Constructor & Destructor Documentation

29.161.2.1 template<class Functor> Go::Fun2Fun< Functor >::Fun2Fun (const Functor & *f*, double *a*, double *b*) [inline]

Constructor

Parameters

f	the functor
a	start parameter
b	end parameter

Definition at line 58 of file brent_minimize.h.

29.161.3 Member Function Documentation

29.161.3.1 template<class Functor> double Go::Fun2Fun< Functor >::maxPar (int *n*) const [inline]

Return end parameter.

Definition at line 69 of file brent_minimize.h.

29.161.3.2 template<class Functor> double Go::Fun2Fun< Functor >::minPar (int *n*) const [inline]

Return start parameter of functor.

Definition at line 67 of file brent_minimize.h.

29.161.3.3 template<class Functor> double Go::Fun2Fun< Functor >::operator() (const double * *arg*) const [inline]

Evaluate functor.

Definition at line 61 of file brent_minimize.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/brent_minimize.h

29.162 Go::FunctionMinimizer< Functor > Class Template Reference

```
#include <GeneralFunctionMinimizer.h>
```

Public Member Functions

- FunctionMinimizer (int num_param, const Functor &fun, const double *const seed, double tol=std::sqrt(std::numeric_limits< double >::epsilon()))
- ~FunctionMinimizer ()
- double minimize (const Point &dir, bool &hit_domain_edge, bool rerun=false)
- double linminBrent (const Point &dir, const double *bracket, const double *fval_brak)
- double fval () const

  evaluating distance function at the current point of evaluation
- double fval (const Point &param) const
- void grad (Point &result) const
- void grad (const Point &param, Point &result) const
- void moveUV (const Point &dir, double multiplier)
- bool atMin (int param_ix) const
- bool atMax (int param_ix) const
- double getPar (int param_ix) const

  Get the current value for parameter nb. 'param_ix'.
- const double * getPar () const

  Get a pointer to the array containing the current values of the parameters.
- int numPars () const

  Get the number of function parameters.

29.162.1 Detailed Description

template<class Functor>
class Go::FunctionMinimizer< Functor >

This is the FunctionMinimizer class that can be used ex. with minimise_conjugated_gradient. Together, they provide functionality for minimizing a function with an arbitrary number of parameters, using linear minimization along a set of directions which is chosen by the conjugated gradient algorithm, although the FunctionMinimizer can also be used independently for minimizing a function along any user-defined direction. The function to minimize must be presented in the form of a Functor, which has the following member functions:

```
/// double operator()(const double* arg) const; // to evaluate the function at the parameters
///                                              // pointed to by 'arg'.
/// void grad(const double* arg, double* grad) const; // to evaluate the function
///                                                   // gradient at the parameters
///                                                   // pointed to by 'arg'.  The resulting
///                                                   // vector will be written to 'grad'.
/// double minPar(int n) const; // return the lower bound of the n'th function parameter.
/// double maxPar(int n) const; // return the upper bound of the n'th function parameter.
///


Minimizing a function whose domain is R^n is a two-fold problem.  One is of linear
minimization along a specified direction.  Another is to choose a set of directions to
minimize along. The first problem is taken care of by the class FunctionMinimizer,
which wraps around the user-defined function and contains information about the current
point of evaluation and minimizing along a given direction.  The second problem can
be taken care of by the supplied function 'minimise_conjugated_gradient', or the user
can use FunctionMinimizer in combination with his or her own direction-choosing algorithm.

The user first should wrap his or hers Functor into a FunctionMinimizer, where the
starting seed and tolerances should also be specified.  The FunctionMinimizer can be
used separately to minimize along directions that the user specify (using the 'minimize'
member function), or alternatively can be given to the supplied nonmember function
'minimise_conjugated_gradient', which will try to find a local minimum starting from
the supplied seed.

Example:
Let us assume that the user has a function taking four arguments.  He defines the
functor MyFunction containing the required member functions, and instanciates it:
```

```
/// MyFunction f(...constructor arguments...)
///
```

He now wraps it in a FunctionMinimizer, giving the seed where he wants to start the search:

```
/// FunctionMinimizer<MyFunction> fmini(4, f, seed_p, 1.0e-8);
///
```

This function minimizer can now be used with the 'minimise_conjugated_gradient'-algorithm in order to search for a (local) minimum:

```
/// minimise_conjugated_gradient(fmini, 5);
///
```

The obtained 4-tuple of parameters corresponding to the found minimum can be obtained by:

```
/// const double* par_ptr = fmini.getPar();
///
```

Definition at line 49 of file GeneralFunctionMinimizer.h.

29.162.2 Constructor & Destructor Documentation

29.162.2.1 template<class Functor > Go::FunctionMinimizer< Functor >::FunctionMinimizer (int *num_param,* const Functor & *fun,* const double *const *seed,* double *tol =* std::sqrt(std::numeric_limits<double>::epsilon())) [inline]

Constructor. 'minimization_tol' should in general be kept no lower than the square root of machine precision. 'seed' is a pointer to an array containing the start values for the search in the 'num_param' parameters.

Definition at line 168 of file GeneralFunctionMinimizer_implementation.h.

29.162.2.2 template<class Functor> Go::FunctionMinimizer< Functor >::~FunctionMinimizer ( ) [inline]

Definition at line 125 of file GeneralFunctionMinimizer.h.

29.162.3 Member Function Documentation

29.162.3.1 template<class Functor> bool Go::FunctionMinimizer< Functor >::atMax (int *param_ix*) const [inline]

Definition at line 178 of file GeneralFunctionMinimizer.h.

29.162.3.2 template<class Functor> bool Go::FunctionMinimizer< Functor >::atMin (int *param_ix*) const [inline]

Returns 'true' if the current parameter for the first/second curve is equal to the start/end-parameter for the curve.

Definition at line 177 of file GeneralFunctionMinimizer.h.

29.162.3.3 template<class Functor > double Go::FunctionMinimizer< Functor >::fval ( ) const [inline]

evaluating distance function at the current point of evaluation

Definition at line 730 of file GeneralFunctionMinimizer_implementation.h.

29.162.3.4 template<class Functor > double Go::FunctionMinimizer< Functor >::fval (const Point & *param*) const [inline]

evaluating the distance function for an arbitrary parameter value (not the parameter pair).

Definition at line 742 of file GeneralFunctionMinimizer_implementation.h.

29.162.3.5 template<class Functor> double Go::FunctionMinimizer< Functor >::getPar (int *param_ix*) const [inline]

Get the current value for parameter nb. 'param_ix'.

Definition at line 181 of file GeneralFunctionMinimizer.h.

29.162.3.6 template<class Functor> const double* Go::FunctionMinimizer< Functor >::getPar ( ) const [inline]

Get a pointer to the array containing the current values of the parameters.

Definition at line 184 of file GeneralFunctionMinimizer.h.

29.162.3.7 template<class Functor > void Go::FunctionMinimizer< Functor >::grad (Point & *result*) const [inline]

evaluate the gradient (2 components) of the distance function at the currently set parameter pair of evaluation.

Definition at line 750 of file GeneralFunctionMinimizer_implementation.h.

29.162.3.8 template<class Functor > void Go::FunctionMinimizer< Functor >::grad (const Point & *param,* Point & *result*) const [inline]

evaluate the gradient (2 components) of the distance function for an arbitrary parameter value (not the current parameter pair).

Definition at line 762 of file GeneralFunctionMinimizer_implementation.h.

29.162.3.9 template<class Functor > double Go::FunctionMinimizer< Functor >::linminBrent (const Point & *dir,* const double * *bracket,* const double * *fval_brak*) [inline]

Move the current parameter point in order to minimize the function along a ray. The ray is given by the current parameter point and the parameter 'dir'. In contrast to minimize(), linminBrent() requires that the minimum is bracketed. The method uses an algorithm inspired by Brent's method (with certain modifications). This method is rapid when the function is well-behaved. Otherwise it will use a slow but robust 'golden mean'-search. The current parameter point is moved to the minimum found along the given ray. Before calling this function, the minimum must be bracketed, and the brackets must be given to the function through the 'brackets' variable, and the corresponding function values through the 'fval_brak' variable. The function value at the new minimum is returned.

Definition at line 324 of file GeneralFunctionMinimizer_implementation.h.

29.162.3.10 template<class Functor > double Go::FunctionMinimizer< Functor >::minimize (const Point & *dir,* bool & *hit_domain_edge,* bool *rerun* = false) [inline]

Move the current parameter point in order to minimize the function along an unoriented line. The line is given by the current parameter point and the parameter 'dir'.

Parameters

dir	a direction parallel to the search line

Return values

hit_domain_edge	indicates whether the found minimum is on the boundary of the domain.

Definition at line 209 of file GeneralFunctionMinimizer_implementation.h.

29.162.3.11 template<class Functor > void Go::FunctionMinimizer< Functor >::moveUV (const Point & *dir,* double *multiplier*) [inline]

movie the current parameter pair a certain distance ('multiplier') in a certain direction ('dir', which has 2 components)

Definition at line 770 of file GeneralFunctionMinimizer_implementation.h.

29.162.3.12 template<class Functor> int Go::FunctionMinimizer< Functor >::numPars ( ) const [inline]

Get the number of function parameters.

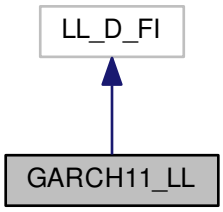
Definition at line 187 of file GeneralFunctionMinimizer.h.

The documentation for this class was generated from the following files:

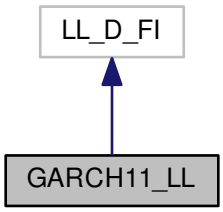
- gotools-core/include/GoTools/utils/GeneralFunctionMinimizer.h
- gotools-core/include/GoTools/utils/GeneralFunctionMinimizer_implementation.h

29.163 GARCH11_LL Class Reference

Inheritance diagram for GARCH11_LL:



Collaboration diagram for GARCH11_LL:



Public Member Functions

- GARCH11_LL (const ColumnVector &y, const ColumnVector &x)
- void Set (const ColumnVector &p)
- bool IsValid ()
- Real LogLikelihood ()
- ReturnMatrix Derivatives ()
- ReturnMatrix FI ()

29.163.1 Detailed Description

Definition at line 31 of file garch.cpp.

29.163.2 Constructor & Destructor Documentation

29.163.2.1 GARCH11_LL::GARCH11_LL (const ColumnVector & *y*, const ColumnVector & *x*) [inline]

Definition at line 43 of file garch.cpp.

29.163.3 Member Function Documentation

29.163.3.1 ReturnMatrix GARCH11_LL::Derivatives ( )

Definition at line 130 of file garch.cpp.

29.163.3.2 ReturnMatrix GARCH11_LL::FI ( )

Definition at line 133 of file garch.cpp.

29.163.3.3 bool GARCH11_LL::IsValid ( )

Definition at line 60 of file garch.cpp.

29.163.3.4 Real GARCH11_LL::LogLikelihood ( )

Definition at line 63 of file garch.cpp.

29.163.3.5 void GARCH11_LL::Set (const ColumnVector & *p*) [inline]

Definition at line 47 of file garch.cpp.

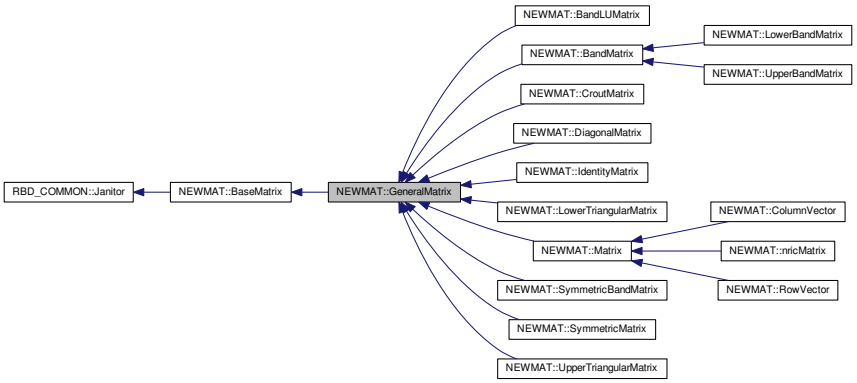
The documentation for this class was generated from the following file:

- newmat/app/garch.cpp

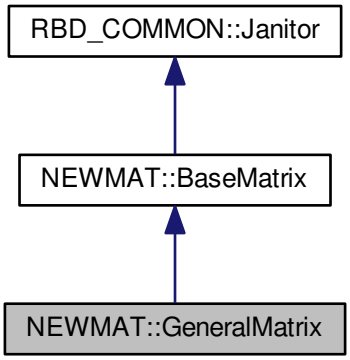
29.164 NEWMAT::GeneralMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::GeneralMatrix:



Collaboration diagram for NEWMAT::GeneralMatrix:



Public Member Functions

- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- virtual MatrixType Type () const =0
- int Nrows () const
- int Ncols () const
- int Storage () const
- Real * Store () const
- virtual ~GeneralMatrix ()
- void tDelete ()
- bool reuse ()
- void Protect ()
- int Tag () const
- bool IsZero () const
- void Release ()
- void Release (int t)
- void ReleaseAndDelete ()
- void operator<< (const Real *)
- void operator<< (const BaseMatrix &X)
- void Inject (const GeneralMatrix &)
- void operator+= (const BaseMatrix &)
- void operator-= (const BaseMatrix &)
- void operator*= (const BaseMatrix &)
- void operator|= (const BaseMatrix &)
- void operator&= (const BaseMatrix &)
- void operator+= (Real)
- void operator-= (Real r)
- void operator*= (Real)
- void operator/= (Real r)
- virtual GeneralMatrix * MakeSolver ()
- virtual void Solver (MatrixColX &, const MatrixColX &)
- virtual void GetRow (MatrixRowCol &)=0
- virtual void RestoreRow (MatrixRowCol &)

- virtual void NextRow (MatrixRowCol &)
- virtual void GetCol (MatrixRowCol &)=0
- virtual void GetCol (MatrixColX &)=0
- virtual void RestoreCol (MatrixRowCol &)
- virtual void RestoreCol (MatrixColX &)
- virtual void NextCol (MatrixRowCol &)
- virtual void NextCol (MatrixColX &)
- Real SumSquare () const
- Real SumAbsoluteValue () const
- Real Sum () const
- Real MaximumAbsoluteValue1 (int &i) const
- Real MinimumAbsoluteValue1 (int &i) const
- Real Maximum1 (int &i) const
- Real Minimum1 (int &i) const
- Real MaximumAbsoluteValue () const
- Real MaximumAbsoluteValue2 (int &i, int &j) const
- Real MinimumAbsoluteValue () const
- Real MinimumAbsoluteValue2 (int &i, int &j) const
- Real Maximum () const
- Real Maximum2 (int &i, int &j) const
- Real Minimum () const
- Real Minimum2 (int &i, int &j) const
- LogAndSign LogDeterminant () const
- virtual bool IsEqual (const GeneralMatrix &) const
- void CheckStore () const
- virtual void SetParameters (const GeneralMatrix *)
- operator ReturnMatrix () const
- ReturnMatrix ForReturn () const
- virtual bool SameStorageType (const GeneralMatrix &A) const
- virtual void ReSizeForAdd (const GeneralMatrix &A, const GeneralMatrix &B)
- virtual void ReSizeForSP (const GeneralMatrix &A, const GeneralMatrix &B)
- virtual void ReSize (const GeneralMatrix &A)
- MatrixInput operator<< (Real)
- MatrixInput operator<< (int f)
- void CleanUp ()

Protected Member Functions

- GeneralMatrix ()
- GeneralMatrix (ArrayLengthSpecifier)
- void Add (GeneralMatrix *, Real)
- void Add (Real)
- void NegAdd (GeneralMatrix *, Real)
- void NegAdd (Real)
- void Multiply (GeneralMatrix *, Real)
- void Multiply (Real)
- void Negate (GeneralMatrix *)
- void Negate ()
- void ReverseElements ()
- void ReverseElements (GeneralMatrix *)
- void operator= (Real)
- Real * GetStore ()
- GeneralMatrix * BorrowStore (GeneralMatrix *, MatrixType)
- void GetMatrix (const GeneralMatrix *)

- void Eq (const BaseMatrix &, MatrixType)
- void Eq (const BaseMatrix &, MatrixType, bool)
- void Eq2 (const BaseMatrix &, MatrixType)
- int search (const BaseMatrix *) const
- virtual GeneralMatrix * Transpose (TransposedMatrix *, MatrixType)
- void CheckConversion (const BaseMatrix &)
- void ReSize (int, int, int)
- virtual short SimpleAddOK (const GeneralMatrix *gm)

Protected Attributes

- int tag
- int nrows
- int ncols
- int storage
- Real * store

Friends

- class Matrix
- class nricMatrix
- class SymmetricMatrix
- class UpperTriangularMatrix
- class LowerTriangularMatrix
- class DiagonalMatrix
- class CroutMatrix
- class RowVector
- class ColumnVector
- class BandMatrix
- class LowerBandMatrix
- class UpperBandMatrix
- class SymmetricBandMatrix
- class BaseMatrix
- class AddedMatrix
- class MultipliedMatrix
- class SubtractedMatrix
- class SPMatrix
- class KPMatrix
- class ConcatenatedMatrix
- class StackedMatrix
- class SolvedMatrix
- class ShiftedMatrix
- class NegShiftedMatrix
- class ScaledMatrix
- class TransposedMatrix
- class ReversedMatrix
- class NegatedMatrix
- class InvertedMatrix
- class RowedMatrix
- class ColedMatrix
- class DiagedMatrix
- class MatedMatrix
- class GetSubMatrix
- class ReturnMatrixX
- class LinearEquationSolver
- class GenericMatrix

29.164.1 Detailed Description

Definition at line 415 of file newmat.h.

29.164.2 Constructor & Destructor Documentation

29.164.2.1 GeneralMatrix::GeneralMatrix ( ) [protected]

Definition at line 33 of file newmat4.cpp.

29.164.2.2 NEWMAT::GeneralMatrix::GeneralMatrix (ArrayLengthSpecifier) [protected]

29.164.2.3 GeneralMatrix::~GeneralMatrix ( ) [virtual]

Definition at line 132 of file newmat4.cpp.

29.164.3 Member Function Documentation

29.164.3.1 void NEWMAT::GeneralMatrix::Add (GeneralMatrix *, Real) [protected]

29.164.3.2 void NEWMAT::GeneralMatrix::Add (Real) [protected]

29.164.3.3 GeneralMatrix * GeneralMatrix::BorrowStore (GeneralMatrix * *gmx*, MatrixType *mt*) [protected]

Definition at line 587 of file newmat4.cpp.

29.164.3.4 void NEWMAT::GeneralMatrix::CheckConversion (const BaseMatrix &) [protected]

29.164.3.5 void GeneralMatrix::CheckStore ( ) const

Definition at line 808 of file newmat4.cpp.

29.164.3.6 void GeneralMatrix::CleanUp ( ) [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::BandLUMatrix, NEWMAT::CroutMatrix, NEWMAT::ColumnVector, NEWMAT::RowVector, and NEWMAT::nricMatrix.

Definition at line 817 of file newmat4.cpp.

29.164.3.7 void NEWMAT::GeneralMatrix::Eq (const BaseMatrix & , MatrixType) [protected]

29.164.3.8 void NEWMAT::GeneralMatrix::Eq (const BaseMatrix & , MatrixType , bool) [protected]

29.164.3.9 void GeneralMatrix::Eq2 (const BaseMatrix & *X*, MatrixType *mt*) [protected]

Definition at line 654 of file newmat4.cpp.

29.164.3.10 GeneralMatrix * GeneralMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Implements NEWMAT::BaseMatrix.

Definition at line 79 of file newmat5.cpp.

29.164.3.11 ReturnMatrixX GeneralMatrix::ForReturn ( ) const

Definition at line 190 of file newmat4.cpp.

29.164.3.12 virtual void NEWMAT::GeneralMatrix::GetCol (MatrixRowCol &) [pure virtual]

Implemented in NEWMAT::IdentityMatrix, NEWMAT::BandLUMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, NEWMAT::CroutMatrix, NEWMAT::RowVector, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, NEWMAT::SymmetricMatrix, and NEWMAT::Matrix.

29.164.3.13 virtual void NEWMAT::GeneralMatrix::GetCol (MatrixColX &) [pure virtual]

Implemented in NEWMAT::IdentityMatrix, NEWMAT::BandLUMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, NEWMAT::CroutMatrix, NEWMAT::RowVector, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, NEWMAT::SymmetricMatrix, and NEWMAT::Matrix.

29.164.3.14 void GeneralMatrix::GetMatrix (const GeneralMatrix * *gmx*) [protected]

Definition at line 580 of file newmat4.cpp.

29.164.3.15 virtual void NEWMAT::GeneralMatrix::GetRow (MatrixRowCol &) [pure virtual]

Implemented in NEWMAT::IdentityMatrix, NEWMAT::BandLUMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, NEWMAT::CroutMatrix, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, NEWMAT::SymmetricMatrix, and NEWMAT::Matrix.

29.164.3.16 Real * GeneralMatrix::GetStore ( ) [protected]

Definition at line 557 of file newmat4.cpp.

29.164.3.17 void GeneralMatrix::Inject (const GeneralMatrix & *X*)

Definition at line 666 of file newmat4.cpp.

29.164.3.18 bool GeneralMatrix::IsEqual (const GeneralMatrix & *A*) const [virtual]

Reimplemented in NEWMAT::BandLUMatrix, and NEWMAT::CroutMatrix.

Definition at line 996 of file newmat7.cpp.

29.164.3.19 bool GeneralMatrix::IsZero ( ) const

Definition at line 969 of file newmat7.cpp.

29.164.3.20 LogAndSign GeneralMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::BandLUMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::LowerBandMatrix, NEWMAT::UpperBandMatrix, NEWMAT::BandMatrix, NEWMAT::CroutMatrix, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, and NEWMAT::UpperTriangularMatrix.

Definition at line 686 of file newmat8.cpp.

29.164.3.21 GeneralMatrix * GeneralMatrix::MakeSolver ( ) [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::BandLUMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::LowerBandMatrix, NEWMAT::UpperBandMatrix, NEWMAT::BandMatrix, NEWMAT::CroutMatrix, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, and NEWMAT::Matrix.

Definition at line 24 of file newmat7.cpp.

29.164.3.22 Real GeneralMatrix::Maximum ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::SymmetricBandMatrix, and NEWMAT::BandMatrix.

Definition at line 252 of file newmat8.cpp.

29.164.3.23 Real GeneralMatrix::Maximum1 (int & *i*) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 261 of file newmat8.cpp.

29.164.3.24 Real GeneralMatrix::Maximum2 (int & *i,* int & *j*) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::Matrix.

Definition at line 320 of file newmat8.cpp.

29.164.3.25 Real GeneralMatrix::MaximumAbsoluteValue ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::SymmetricBandMatrix, and NEWMAT::BandMatrix.

Definition at line 212 of file newmat8.cpp.

29.164.3.26 Real GeneralMatrix::MaximumAbsoluteValue1 (int & *i*) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 221 of file newmat8.cpp.

29.164.3.27 Real GeneralMatrix::MaximumAbsoluteValue2 (int & *i,* int & *j*) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::Matrix.

Definition at line 290 of file newmat8.cpp.

29.164.3.28 Real GeneralMatrix::Minimum ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::SymmetricBandMatrix, and NEWMAT::BandMatrix.

Definition at line 271 of file newmat8.cpp.

29.164.3.29 Real GeneralMatrix::Minimum1 (int & *i*) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 280 of file newmat8.cpp.

29.164.3.30 Real GeneralMatrix::Minimum2 (int & *i*, int & *j*) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::Matrix.

Definition at line 335 of file newmat8.cpp.

29.164.3.31 Real GeneralMatrix::MinimumAbsoluteValue ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::SymmetricBandMatrix, and NEWMAT::BandMatrix.

Definition at line 232 of file newmat8.cpp.

29.164.3.32 Real GeneralMatrix::MinimumAbsoluteValue1 (int & *i*) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 241 of file newmat8.cpp.

29.164.3.33 Real GeneralMatrix::MinimumAbsoluteValue2 (int & *i*, int & *j*) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::Matrix.

Definition at line 305 of file newmat8.cpp.

29.164.3.34 void NEWMAT::GeneralMatrix::Multiply (GeneralMatrix *, Real) [protected]

29.164.3.35 void NEWMAT::GeneralMatrix::Multiply (Real) [protected]

29.164.3.36 int NEWMAT::GeneralMatrix::Ncols ( ) const [inline]

Definition at line 453 of file newmat.h.

29.164.3.37 void NEWMAT::GeneralMatrix::NegAdd (GeneralMatrix *, Real) [protected]

29.164.3.38 void NEWMAT::GeneralMatrix::NegAdd (Real) [protected]

29.164.3.39 void NEWMAT::GeneralMatrix::Negate (GeneralMatrix *) [protected]

29.164.3.40 void GeneralMatrix::Negate ( ) [protected]

Definition at line 434 of file newmat5.cpp.

29.164.3.41 virtual void NEWMAT::GeneralMatrix::NextCol (MatrixRowCol &) [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::RowVector, NEWMAT::DiagonalMatrix, and NEWMAT::Matrix.

29.164.3.42 virtual void NEWMAT::GeneralMatrix::NextCol (MatrixColX &) [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::RowVector, NEWMAT::DiagonalMatrix, and NEWMAT::Matrix.

29.164.3.43 void GeneralMatrix::NextRow (MatrixRowCol & *mrc*) [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::BandMatrix, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, and NEWMAT::Matrix.

Definition at line 81 of file newmat3.cpp.

29.164.3.44 int NEWMAT::GeneralMatrix::Nrows ( ) const [inline]

Definition at line 452 of file newmat.h.

29.164.3.45 NEWMAT::GeneralMatrix::operator ReturnMatrix ( ) const

29.164.3.46 void GeneralMatrix::operator&= (const BaseMatrix & *X*)

Definition at line 693 of file newmat6.cpp.

29.164.3.47 void NEWMAT::GeneralMatrix::operator*= (const BaseMatrix &)

29.164.3.48 void NEWMAT::GeneralMatrix::operator*= (Real)

29.164.3.49 void NEWMAT::GeneralMatrix::operator+= (const BaseMatrix &)

29.164.3.50 void NEWMAT::GeneralMatrix::operator+= (Real)

29.164.3.51 void NEWMAT::GeneralMatrix::operator-= (const BaseMatrix &)

29.164.3.52 void NEWMAT::GeneralMatrix::operator-= (Real *r*) [inline]

Definition at line 475 of file newmat.h.

29.164.3.53 void NEWMAT::GeneralMatrix::operator/= (Real *r*) [inline]

Definition at line 477 of file newmat.h.

29.164.3.54 void NEWMAT::GeneralMatrix::operator<< (const Real *)

29.164.3.55 void NEWMAT::GeneralMatrix::operator<< (const BaseMatrix & *X*) [inline]

Definition at line 466 of file newmat.h.

29.164.3.56 MatrixInput NEWMAT::GeneralMatrix::operator<< (Real)

29.164.3.57 MatrixInput NEWMAT::GeneralMatrix::operator<< (int *f*) [inline]

Definition at line 1784 of file newmat.h.

29.164.3.58 void GeneralMatrix::operator= (Real *f*) [protected]

Definition at line 511 of file newmat6.cpp.

29.164.3.59 void GeneralMatrix::operator|= (const BaseMatrix & *X*)

Definition at line 673 of file newmat6.cpp.

29.164.3.60 void NEWMAT::GeneralMatrix::Protect ( ) [inline]

Definition at line 459 of file newmat.h.

29.164.3.61 void NEWMAT::GeneralMatrix::Release ( ) [inline]

Definition at line 462 of file newmat.h.

29.164.3.62 void NEWMAT::GeneralMatrix::Release (int *t*) [inline]

Definition at line 463 of file newmat.h.

29.164.3.63 void NEWMAT::GeneralMatrix::ReleaseAndDelete ( ) [inline]

Definition at line 464 of file newmat.h.

29.164.3.64 void NEWMAT::GeneralMatrix::ReSize (int , int , int) [protected]

29.164.3.65 virtual void NEWMAT::GeneralMatrix::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::LowerBandMatrix, NEWMAT::UpperBandMatrix, NEWMAT::BandMatrix, NEWMAT::ColumnVector, NEWMAT::RowVector, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, NEWMAT::SymmetricMatrix, NEWMAT::nricMatrix, and NEWMAT::Matrix.

29.164.3.66 void GeneralMatrix::ReSizeForAdd (const GeneralMatrix & *A*, const GeneralMatrix & *B*) [virtual]

Reimplemented in NEWMAT::SymmetricBandMatrix, and NEWMAT::BandMatrix.

Definition at line 346 of file newmat4.cpp.

29.164.3.67 void GeneralMatrix::ReSizeForSP (const GeneralMatrix & *A*, const GeneralMatrix & *B*) [virtual]

Reimplemented in NEWMAT::SymmetricBandMatrix, and NEWMAT::BandMatrix.

Definition at line 349 of file newmat4.cpp.

29.164.3.68 virtual void NEWMAT::GeneralMatrix::RestoreCol (MatrixRowCol &) [inline], [virtual]

Reimplemented in NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, NEWMAT::RowVector, NEWMAT::↩ LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, NEWMAT::SymmetricMatrix, and NEWMAT::Matrix.

Definition at line 485 of file newmat.h.

29.164.3.69 virtual void NEWMAT::GeneralMatrix::RestoreCol (MatrixColX &) [inline], [virtual]

Reimplemented in NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, NEWMAT::RowVector, NEWMAT::↩ LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, NEWMAT::SymmetricMatrix, and NEWMAT::Matrix.

Definition at line 486 of file newmat.h.

29.164.3.70 virtual void NEWMAT::GeneralMatrix::RestoreRow (MatrixRowCol &) [inline], [virtual]

Definition at line 481 of file newmat.h.

29.164.3.71 bool GeneralMatrix::reuse ( )

Definition at line 538 of file newmat4.cpp.

29.164.3.72 void GeneralMatrix::ReverseElements ( ) [protected]

Definition at line 550 of file newmat5.cpp.

29.164.3.73 void NEWMAT::GeneralMatrix::ReverseElements (GeneralMatrix *) [protected]

29.164.3.74 bool GeneralMatrix::SameStorageType (const GeneralMatrix & *A*) const [virtual]

Reimplemented in NEWMAT::SymmetricBandMatrix, and NEWMAT::BandMatrix.

Definition at line 358 of file newmat4.cpp.

29.164.3.75 int GeneralMatrix::search (const BaseMatrix * *s*) const [protected], [virtual]

Implements NEWMAT::BaseMatrix.

Definition at line 367 of file newmat4.cpp.

29.164.3.76 virtual void NEWMAT::GeneralMatrix::SetParameters (const GeneralMatrix *) [inline], [virtual]

Reimplemented in NEWMAT::SymmetricBandMatrix, and NEWMAT::BandMatrix.

Definition at line 508 of file newmat.h.

29.164.3.77 virtual short NEWMAT::GeneralMatrix::SimpleAddOK (const GeneralMatrix * *gm*) [inline], [protected], [virtual]

Reimplemented in NEWMAT::BandMatrix.

Definition at line 447 of file newmat.h.

29.164.3.78 virtual void NEWMAT::GeneralMatrix::Solver (MatrixColX &, const MatrixColX &) [inline], [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::BandLUMatrix, NEWMAT::LowerBandMatrix, NEWMAT::UpperBandMatrix, NEWMAT::CroutMatrix, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, and NEWMAT::UpperTriangularMatrix.

Definition at line 479 of file newmat.h.

29.164.3.79 int NEWMAT::GeneralMatrix::Storage ( ) const [inline]

Definition at line 454 of file newmat.h.

29.164.3.80 Real* NEWMAT::GeneralMatrix::Store ( ) const [inline]

Definition at line 455 of file newmat.h.

29.164.3.81 Real GeneralMatrix::Sum ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, and NEWMAT::SymmetricMatrix.

Definition at line 166 of file newmat8.cpp.

29.164.3.82 Real GeneralMatrix::SumAbsoluteValue ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, and NEWMAT::SymmetricMatrix.

Definition at line 158 of file newmat8.cpp.

29.164.3.83 Real GeneralMatrix::SumSquare ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::BandMatrix, and NEWMAT::SymmetricMatrix.

Definition at line 150 of file newmat8.cpp.

29.164.3.84 int NEWMAT::GeneralMatrix::Tag ( ) const [inline]

Definition at line 460 of file newmat.h.

29.164.3.85 void GeneralMatrix::tDelete ( )

Definition at line 506 of file newmat4.cpp.

29.164.3.86 GeneralMatrix * GeneralMatrix::Transpose (TransposedMatrix * *tm,* MatrixType *mt*) [protected], [virtual]

Reimplemented in NEWMAT::IdentityMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::ColumnVector, NEWMAT::RowVector, NEWMAT::DiagonalMatrix, and NEWMAT::SymmetricMatrix.

Definition at line 27 of file newmat5.cpp.

29.164.3.87 virtual MatrixType NEWMAT::GeneralMatrix::Type ( ) const [pure virtual]

Implemented in NEWMAT::IdentityMatrix, NEWMAT::BandLUMatrix, NEWMAT::SymmetricBandMatrix, NEWMAT::LowerBandMatrix, NEWMAT::UpperBandMatrix, NEWMAT::BandMatrix, NEWMAT::CroutMatrix, NEWMAT::ColumnVector, NEWMAT::RowVector, NEWMAT::DiagonalMatrix, NEWMAT::LowerTriangularMatrix, NEWMAT::UpperTriangularMatrix, NEWMAT::SymmetricMatrix, and NEWMAT::Matrix.

29.164.4 Friends And Related Function Documentation

29.164.4.1 friend class AddedMatrix [friend]

Definition at line 535 of file newmat.h.

29.164.4.2 friend class BandMatrix [friend]

Definition at line 530 of file newmat.h.

29.164.4.3 friend class BaseMatrix [friend]

Definition at line 534 of file newmat.h.

29.164.4.4 friend class ColedMatrix [friend]

Definition at line 551 of file newmat.h.

29.164.4.5 friend class ColumnVector [friend]

Definition at line 529 of file newmat.h.

29.164.4.6 friend class ConcatenatedMatrix [friend]

Definition at line 540 of file newmat.h.

29.164.4.7 friend class CroutMatrix [friend]

Definition at line 527 of file newmat.h.

29.164.4.8 friend class DiagedMatrix [friend]

Definition at line 552 of file newmat.h.

29.164.4.9 friend class DiagonalMatrix [friend]

Definition at line 526 of file newmat.h.

29.164.4.10 friend class GenericMatrix [friend]

Definition at line 557 of file newmat.h.

29.164.4.11 friend class GetSubMatrix [friend]

Definition at line 554 of file newmat.h.

29.164.4.12 friend class InvertedMatrix [friend]

Definition at line 549 of file newmat.h.

29.164.4.13 friend class KPMatrix [friend]

Definition at line 539 of file newmat.h.

29.164.4.14 friend class LinearEquationSolver [friend]

Definition at line 556 of file newmat.h.

29.164.4.15 friend class LowerBandMatrix [friend]

Definition at line 531 of file newmat.h.

29.164.4.16 friend class LowerTriangularMatrix [friend]

Definition at line 525 of file newmat.h.

29.164.4.17 friend class MatedMatrix [friend]

Definition at line 553 of file newmat.h.

29.164.4.18 friend class Matrix [friend]

Definition at line 521 of file newmat.h.

29.164.4.19 friend class MultipliedMatrix [friend]

Definition at line 536 of file newmat.h.

29.164.4.20 friend class NegatedMatrix [friend]

Definition at line 548 of file newmat.h.

29.164.4.21 friend class NegShiftedMatrix [friend]

Definition at line 544 of file newmat.h.

29.164.4.22 friend class nricMatrix [friend]

Definition at line 522 of file newmat.h.

29.164.4.23 friend class ReturnMatrixX [friend]

Definition at line 555 of file newmat.h.

29.164.4.24 friend class ReversedMatrix [friend]

Definition at line 547 of file newmat.h.

29.164.4.25 friend class RowedMatrix [friend]

Definition at line 550 of file newmat.h.

29.164.4.26 friend class RowVector [friend]

Definition at line 528 of file newmat.h.

29.164.4.27 friend class ScaledMatrix [friend]

Definition at line 545 of file newmat.h.

29.164.4.28 friend class ShiftedMatrix [friend]

Definition at line 543 of file newmat.h.

29.164.4.29 friend class SolvedMatrix [friend]

Definition at line 542 of file newmat.h.

29.164.4.30 friend class SPMatrix [friend]

Definition at line 538 of file newmat.h.

29.164.4.31 friend class StackedMatrix [friend]

Definition at line 541 of file newmat.h.

29.164.4.32 friend class SubtractedMatrix [friend]

Definition at line 537 of file newmat.h.

29.164.4.33 friend class SymmetricBandMatrix [friend]

Definition at line 533 of file newmat.h.

29.164.4.34 friend class SymmetricMatrix [friend]

Definition at line 523 of file newmat.h.

29.164.4.35 friend class TransposedMatrix [friend]

Definition at line 546 of file newmat.h.

29.164.4.36 friend class UpperBandMatrix [friend]

Definition at line 532 of file newmat.h.

29.164.4.37 friend class UpperTriangularMatrix [friend]

Definition at line 524 of file newmat.h.

29.164.5 Member Data Documentation

29.164.5.1 int NEWMAT::GeneralMatrix::ncols [protected]

Definition at line 420 of file newmat.h.

29.164.5.2 int NEWMAT::GeneralMatrix::nrows [protected]

Definition at line 420 of file newmat.h.

29.164.5.3 int NEWMAT::GeneralMatrix::storage [protected]

Definition at line 421 of file newmat.h.

29.164.5.4 Real* NEWMAT::GeneralMatrix::store [protected]

Definition at line 422 of file newmat.h.

29.164.5.5 int NEWMAT::GeneralMatrix::tag [protected]

Definition at line 419 of file newmat.h.

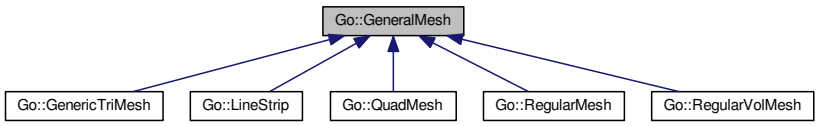
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat3.cpp
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp
- newmat/src/newmat6.cpp
- newmat/src/newmat7.cpp
- newmat/src/newmat8.cpp

29.165 Go::GeneralMesh Class Reference

`#include <GeneralMesh.h>`

Inheritance diagram for Go::GeneralMesh:



Public Member Functions

- GeneralMesh ()
- virtual ~GeneralMesh ()

  Destructor.
- virtual int numVertices ()=0

  Number of nodes in mesh.
- virtual double * vertexArray ()=0

  Fetch all nodes.
- virtual double * paramArray ()=0

  Fetch parameter values corresponding to the nodes.
- virtual int atBoundary (int idx)=0

  Check if a given node lies at the boundary.
- virtual int numTriangles ()

  The number of triangles represented by this mesh.
- virtual unsigned int * triangleIndexArray ()=0

  Indices of nodes belonging to each triangle.
- virtual RegularMesh * asRegularMesh ()

  Casting. Return as regular mesh if possible.
- virtual LineStrip * asLineStrip ()

  Casting. Return as line strip if possible.
- virtual GenericTriMesh * asGenericTriMesh ()

  Casting. Return as generic tri mesh if possible.
- void translate (const std::vector< double > &vert_translation)

  Translate all vertices by vert_translation, wrt the geometry, discarding any previus translation.

Public Attributes

- std::vector< double > vert_translation_
  The 3D-translation wrt the geometry.

29.165.1 Detailed Description

Super class for meshes. Used in transfer of mesh.

Definition at line 58 of file GeneralMesh.h.

29.165.2 Constructor & Destructor Documentation

29.165.2.1 Go::GeneralMesh::GeneralMesh ( )

29.165.2.2 virtual Go::GeneralMesh::~GeneralMesh ( ) [virtual]

Destructor.

29.165.3 Member Function Documentation

29.165.3.1 virtual GenericTriMesh* Go::GeneralMesh::asGenericTriMesh ( ) [virtual]

Casting. Return as generic tri mesh if possible.

Reimplemented in Go::GenericTriMesh.

29.165.3.2 virtual LineStrip* Go::GeneralMesh::asLineStrip ( ) [virtual]

Casting. Return as line strip if possible.

Reimplemented in Go::LineStrip.

29.165.3.3 virtual RegularMesh* Go::GeneralMesh::asRegularMesh ( ) [virtual]

Casting. Return as regular mesh if possible.

Reimplemented in Go::RegularMesh, and Go::RegularVolMesh.

29.165.3.4 virtual int Go::GeneralMesh::atBoundary (int *idx*) [pure virtual]

Check if a given node lies at the boundary.

Implemented in Go::RegularMesh, Go::QuadMesh, Go::RegularVolMesh, Go::GenericTriMesh, and Go::LineStrip.

29.165.3.5 virtual int Go::GeneralMesh::numTriangles ( ) [inline], [virtual]

The number of triangles represented by this mesh.

Reimplemented in Go::RegularMesh, Go::RegularVolMesh, Go::GenericTriMesh, and Go::QuadMesh.

Definition at line 80 of file GeneralMesh.h.

29.165.3.6 virtual int Go::GeneralMesh::numVertices ( ) [pure virtual]

Number of nodes in mesh.

Implemented in Go::RegularMesh, Go::RegularVolMesh, Go::GenericTriMesh, Go::QuadMesh, and Go::LineStrip.

29.165.3.7 virtual double* Go::GeneralMesh::paramArray ( ) [pure virtual]

Fetch parameter values corresponding to the nodes.

Implemented in Go::RegularMesh, Go::QuadMesh, Go::RegularVolMesh, Go::GenericTriMesh, and Go::LineStrip.

29.165.3.8 void Go::GeneralMesh::translate (const std::vector< double > & *vert_translation*)

Translate all vertices by vert_translation, wrt the geometry, discarding any previus translation.

29.165.3.9 virtual unsigned int* Go::GeneralMesh::triangleIndexArray ( ) [pure virtual]

Indices of nodes belonging to each triangle.

Implemented in Go::RegularMesh, Go::RegularVolMesh, Go::QuadMesh, Go::GenericTriMesh, and Go::LineStrip.

29.165.3.10 virtual double* Go::GeneralMesh::vertexArray ( ) [pure virtual]

Fetch all nodes.

Implemented in Go::RegularMesh, Go::RegularVolMesh, Go::QuadMesh, Go::GenericTriMesh, and Go::LineStrip.

29.165.4 Member Data Documentation

29.165.4.1 std::vector<double> Go::GeneralMesh::vert_translation_

The 3D-translation wrt the geometry.

Definition at line 101 of file GeneralMesh.h.

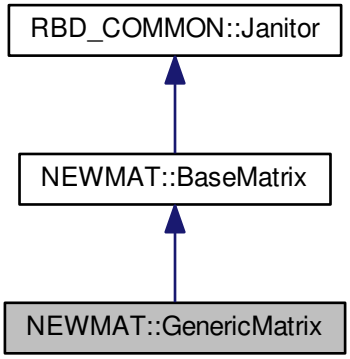
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/GeneralMesh.h

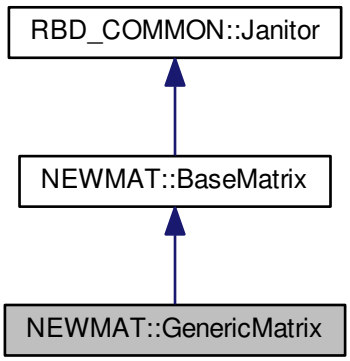
29.166 NEWMAT::GenericMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::GenericMatrix:



Collaboration diagram for NEWMAT::GenericMatrix:



Public Member Functions

- GenericMatrix ()
- GenericMatrix (const BaseMatrix &bm)
- GenericMatrix (const GenericMatrix &bm)
- void operator= (const GenericMatrix &)
- void operator= (const BaseMatrix &)

- void operator+= (const BaseMatrix &)
- void operator-= (const BaseMatrix &)
- void operator*= (const BaseMatrix &)
- void operator|= (const BaseMatrix &)
- void operator&= (const BaseMatrix &)
- void operator+= (Real)
- void operator-= (Real r)
- void operator*= (Real)
- void operator/= (Real r)
- ~GenericMatrix ()
- void CleanUp ()
- void Release ()
- GeneralMatrix * Evaluate (MatrixType=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix

Additional Inherited Members

29.166.1 Detailed Description

Definition at line 1141 of file newmat.h.

29.166.2 Constructor & Destructor Documentation

29.166.2.1 NEWMAT::GenericMatrix::GenericMatrix ( ) [inline]

Definition at line 1147 of file newmat.h.

29.166.2.2 NEWMAT::GenericMatrix::GenericMatrix (const BaseMatrix & *bm*) [inline]

Definition at line 1148 of file newmat.h.

29.166.2.3 NEWMAT::GenericMatrix::GenericMatrix (const GenericMatrix & *bm*) [inline]

Definition at line 1150 of file newmat.h.

29.166.2.4 NEWMAT::GenericMatrix::~GenericMatrix ( ) [inline]

Definition at line 1163 of file newmat.h.

29.166.3 Member Function Documentation

29.166.3.1 MatrixBandWidth GenericMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 415 of file newmat4.cpp.

29.166.3.2 void NEWMAT::GenericMatrix::CleanUp ( ) [inline], [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 1164 of file newmat.h.

29.166.3.3 GeneralMatrix * GenericMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Implements NEWMAT::BaseMatrix.

Definition at line 91 of file newmat5.cpp.

29.166.3.4 void GenericMatrix::operator&= (const BaseMatrix & *X*)

Definition at line 834 of file newmat6.cpp.

29.166.3.5 void NEWMAT::GenericMatrix::operator*= (const BaseMatrix &)

29.166.3.6 void NEWMAT::GenericMatrix::operator*= (Real)

29.166.3.7 void NEWMAT::GenericMatrix::operator+= (const BaseMatrix &)

29.166.3.8 void NEWMAT::GenericMatrix::operator+= (Real)

29.166.3.9 void NEWMAT::GenericMatrix::operator-= (const BaseMatrix &)

29.166.3.10 void NEWMAT::GenericMatrix::operator-= (Real *r*) [inline]

Definition at line 1160 of file newmat.h.

29.166.3.11 void NEWMAT::GenericMatrix::operator/= (Real *r*) [inline]

Definition at line 1162 of file newmat.h.

29.166.3.12 void NEWMAT::GenericMatrix::operator= (const GenericMatrix &)

29.166.3.13 void NEWMAT::GenericMatrix::operator= (const BaseMatrix &)

29.166.3.14 void GenericMatrix::operator= (const BaseMatrix & *X*)

Definition at line 812 of file newmat6.cpp.

29.166.3.15 void NEWMAT::GenericMatrix::Release ( ) [inline]

Definition at line 1165 of file newmat.h.

29.166.4 Friends And Related Function Documentation

29.166.4.1 friend class BaseMatrix [friend]

Definition at line 1145 of file newmat.h.

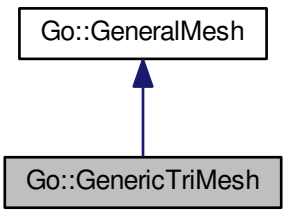
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp
- newmat/src/newmat6.cpp

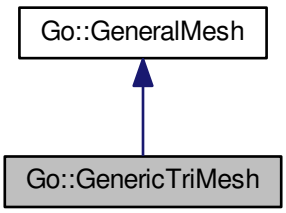
29.167 Go::GenericTriMesh Class Reference

```
#include <GenericTriMesh.h>
```

Inheritance diagram for Go::GenericTriMesh:



Collaboration diagram for Go::GenericTriMesh:



Public Member Functions

- GenericTriMesh (int num_vert=0, int num_tri=0, bool use_normals=true, bool use_texcoords=false)
- ~GenericTriMesh ()

  Destructor.
- bool useNormals ()

  Check if normals will be computed.
- bool useTexCoords ()

  Check if texture coordinates will be computed.
- virtual int numTriangles ()

  The total number of triangles.
- virtual int numVertices ()

  Number of nodes in mesh.
- void resize (int num_vert, int num_tri)

  Change mesh size.
- virtual double * vertexArray ()

  Fetch all nodes.
- virtual double * paramArray ()

  Fetch parameter values corresponding to the nodes.
- virtual int atBoundary (int idx)

  Check if a given node lies at the boundary.
- int * boundaryArray ()

  Indices to boundary nodes.
- double * normalArray ()

  Normal information.
- double * texcoordArray ()

  Texture coordinate information.
- virtual unsigned int * triangleIndexArray ()

  Indices of nodes belonging to each triangle.
- virtual GenericTriMesh * asGenericTriMesh ()

  Casting. Return as generic tri mesh.

Additional Inherited Members

29.167.1 Detailed Description

Based on RegularMesh, designed to store data for GL visualizing (regular triangles, not triangle strips).

Definition at line 58 of file GenericTriMesh.h.

29.167.2 Constructor & Destructor Documentation

29.167.2.1 Go::GenericTriMesh::GenericTriMesh (int *num_vert* = 0, int *num_tri* = 0, bool *use_normals* = true, bool *use_texcoords* = false)

Constructor. Give mesh size. Set whether or not normals and texture coordinates should be computed

29.167.2.2 Go::GenericTriMesh::~GenericTriMesh ( )

Destructor.

29.167.3 Member Function Documentation

29.167.3.1 virtual GenericTriMesh* Go::GenericTriMesh::asGenericTriMesh ( ) [virtual]

Casting. Return as generic tri mesh.

Reimplemented from Go::GeneralMesh.

29.167.3.2 virtual int Go::GenericTriMesh::atBoundary (int *idx*) [virtual]

Check if a given node lies at the boundary.

Implements Go::GeneralMesh.

29.167.3.3 int* Go::GenericTriMesh::boundaryArray ( )

Indices to boundary nodes.

29.167.3.4 double* Go::GenericTriMesh::normalArray ( )

Normal information.

29.167.3.5 virtual int Go::GenericTriMesh::numTriangles ( ) [inline], [virtual]

The total number of triangles.

Reimplemented from Go::GeneralMesh.

Definition at line 79 of file GenericTriMesh.h.

29.167.3.6 virtual int Go::GenericTriMesh::numVertices ( ) [inline], [virtual]

Number of nodes in mesh.

Implements Go::GeneralMesh.

Definition at line 82 of file GenericTriMesh.h.

29.167.3.7 virtual double* Go::GenericTriMesh::paramArray ( ) [virtual]

Fetch parameter values corresponding to the nodes.

Implements Go::GeneralMesh.

29.167.3.8 void Go::GenericTriMesh::resize (int *num_vert,* int *num_tri*)

Change mesh size.

29.167.3.9 double* Go::GenericTriMesh::texcoordArray ( )

Texture coordinate information.

29.167.3.10 virtual unsigned int* Go::GenericTriMesh::triangleIndexArray ( ) [virtual]

Indices of nodes belonging to each triangle.

Implements Go::GeneralMesh.

29.167.3.11 bool Go::GenericTriMesh::useNormals ( ) [inline]

Check if normals will be computed.

Definition at line 71 of file GenericTriMesh.h.

29.167.3.12 bool Go::GenericTriMesh::useTexCoords ( ) [inline]

Check if texture coordinates will be computed.

Definition at line 75 of file GenericTriMesh.h.

29.167.3.13 virtual double* Go::GenericTriMesh::vertexArray ( ) [virtual]

Fetch all nodes.

Implements Go::GeneralMesh.

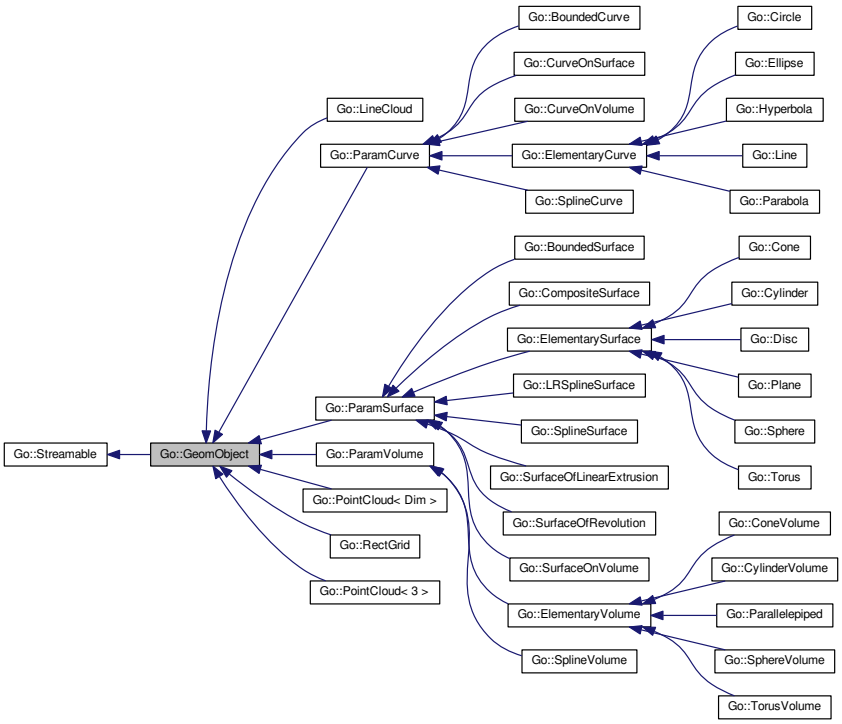
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/GenericTriMesh.h

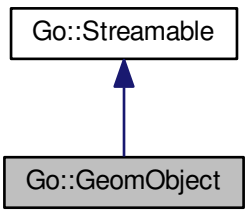
29.168 Go::GeomObject Class Reference

`#include <GeomObject.h>`

Inheritance diagram for Go::GeomObject:



Collaboration diagram for Go::GeomObject:



Public Member Functions

- virtual ~GeomObject ()
- virtual BoundingBox boundingBox () const =0

  Return the object's bounding box.
- virtual int dimension () const =0

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const =0

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual GeomObject * clone () const =0

  Clone the GeomObject and return a pointer to the clone.
- void writeStandardHeader (std::ostream &os) const

Static Public Member Functions

- static ClassType classType ()

  Return the class type identifier of a given class derived from GeomObject.

29.168.1 Detailed Description

Base class for geometrical objects (curves, surfaces, etc.) regrouping all the properties that they have in common.

Definition at line 59 of file GeomObject.h.

29.168.2 Constructor & Destructor Documentation

29.168.2.1 virtual Go::GeomObject::~GeomObject ( ) [virtual]

29.168.3 Member Function Documentation

29.168.3.1 virtual BoundingBox Go::GeomObject::boundingBox ( ) const [pure virtual]

Return the object's bounding box.

Implemented in Go::SplineVolume, Go::SplineSurface, Go::LRSplineSurface, Go::SplineCurve, Go::BoundedSurface, Go::CurveOnSurface, Go::SurfaceOnVolume, Go::Disc, Go::Torus, Go::SurfaceOfRevolution, Go::CurveOnVolume, Go::Plane, Go::Cone, Go::Cylinder, Go::Sphere, Go::TorusVolume, Go::ConeVolume, Go::CylinderVolume, Go::SphereVolume, Go::Parallelepiped, Go::PointCloud< Dim >, Go::PointCloud< 3 >, Go::LineCloud, Go::BoundedCurve, Go::CompositeSurface, Go::SurfaceOfLinearExtrusion, Go::Line, Go::Circle, Go::Hyperbola, Go::Parabola, Go::Ellipse, and Go::RectGrid.

29.168.3.2 static ClassType Go::GeomObject::classType ( ) [static]

Return the class type identifier of a given class derived from GeomObject.

29.168.3.3 virtual GeomObject* Go::GeomObject::clone ( ) const [pure virtual]

Clone the GeomObject and return a pointer to the clone.

Implemented in Go::SplineVolume, Go::SplineSurface, Go::LRSplineSurface, Go::ParamCurve, Go::SplineCurve, Go::CurveOnSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::CurveOnVolume, Go::Disc, Go::LineCloud, Go::PointCloud< Dim >, Go::PointCloud< 3 >, Go::Torus, Go::SurfaceOfRevolution, Go::CompositeSurface, Go::Plane, Go::Cone, Go::Cylinder, Go::Sphere, Go::TorusVolume, Go::BoundedCurve, Go::ConeVolume, Go::CylinderVolume, Go::SphereVolume, Go::Parallelepiped, Go::Line, Go::Circle, Go::Hyperbola, Go::Parabola, Go::SurfaceOfLinearExtrusion, Go::RectGrid, Go::Ellipse, Go::ParamSurface, Go::ElementarySurface, Go::ParamVolume, Go::ElementaryVolume, and Go::ElementaryCurve.

29.168.3.4 virtual int Go::GeomObject::dimension ( ) const [pure virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implemented in Go::SplineVolume, Go::SplineSurface, Go::LRSplineSurface, Go::SplineCurve, Go::BoundedSurface, Go::CurveOnSurface, Go::SurfaceOnVolume, Go::CurveOnVolume, Go::Disc, Go::Torus, Go::PointCloud< Dim >, Go::PointCloud< 3 >, Go::SurfaceOfRevolution, Go::LineCloud, Go::BoundedCurve, Go::CompositeSurface, Go::Plane, Go::Cone, Go::Cylinder, Go::Sphere, Go::TorusVolume, Go::Line, Go::ConeVolume, Go::CylinderVolume, Go::SphereVolume, Go::Circle, Go::Hyperbola, Go::Parabola, Go::Parallelepiped, Go::Ellipse, Go::SurfaceOfLinearExtrusion, and Go::RectGrid.

29.168.3.5 virtual ClassType Go::GeomObject::instanceType ( ) const [pure virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implemented in Go::SplineVolume, Go::SplineSurface, Go::LRSplineSurface, Go::SplineCurve, Go::BoundedSurface, Go::CurveOnSurface, Go::SurfaceOnVolume, Go::CurveOnVolume, Go::Disc, Go::PointCloud< Dim >, Go::Torus, Go::PointCloud< 3 >, Go::LineCloud, Go::SurfaceOfRevolution, Go::CompositeSurface, Go::BoundedCurve, Go::Plane, Go::Cone, Go::Cylinder, Go::Sphere, Go::TorusVolume, Go::Line, Go::ConeVolume, Go::CylinderVolume, Go::SphereVolume, Go::Circle, Go::Hyperbola, Go::Parabola, Go::Parallelepiped, Go::Ellipse, Go::SurfaceOfLinearExtrusion, and Go::RectGrid.

29.168.3.6 void Go::GeomObject::writeStandardHeader (std::ostream & *os*) const

Write header information of the GeomObject to stream. This typically precedes the act of writing the object itself to a stream, to signal to the receiver what object is streamed.

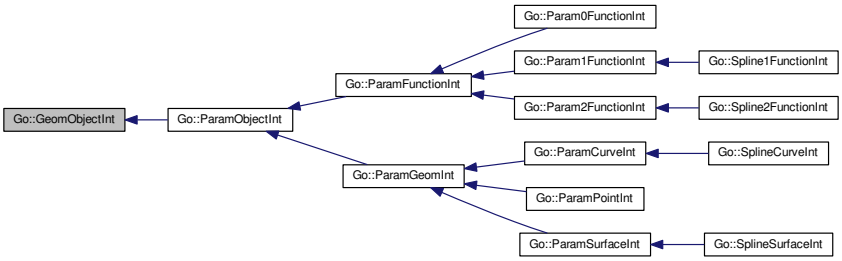
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/GeomObject.h

29.169 Go::GeomObjectInt Class Reference

`#include <GeomObjectInt.h>`

Inheritance diagram for Go::GeomObjectInt:



Public Member Functions

- virtual ~GeomObjectInt ()

  Destructor.

29.169.1 Detailed Description

This class is an abstract base class providing an interface to the "intersection objects". An intersection object is a wrapper around a corresponding geometric object, containing additional functionality, and that is used in the intersection algorithms.

Definition at line 52 of file GeomObjectInt.h.

29.169.2 Constructor & Destructor Documentation

29.169.2.1 virtual Go::GeomObjectInt::~GeomObjectInt ( ) [inline], [virtual]

Destructor.

Definition at line 55 of file GeomObjectInt.h.

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/GeomObjectInt.h

29.170 Go::GeoTol Class Reference

Class handling various tolerances.

`#include <GeoTol.h>`

Public Member Functions

- GeoTol (double epsge, double rel_par_res=1.0e-12, double numerical_tol=1.0e-16)

  Constructor.
- GeoTol (GeoTol *epsge)

  Constructor.
- ~GeoTol ()

  Destructor.
- const double & getEpsge () const

  Get constant tolerance.
- const double & getMinEpsge () const
- const double & getRelParRes () const

  Get relative parameter resolution.
- const double & getMaxEpsge () const
- const double & getEpsBracket () const
- const double & getRefAng () const
- const double & getAngleTol () const

  Get angular tolerance.
- const double & getNumericalTol () const

  Get numerical tolerance.
- void write (std::ostream &os) const

  Write to output stream.
- void read (std::istream &is)

  Read from input stream.

29.170.1 Detailed Description

Class handling various tolerances.

Definition at line 62 of file GeoTol.h.

29.170.2 Constructor & Destructor Documentation

29.170.2.1 Go::GeoTol::GeoTol (double *epsge*, double *rel_par_res* = 1.0e-12, double *numerical_tol* = 1.0e-16)

Constructor.

29.170.2.2 Go::GeoTol::GeoTol (GeoTol * *epsge*)

Constructor.

29.170.2.3 Go::GeoTol::~GeoTol ( )

Destructor.

29.170.3 Member Function Documentation

29.170.3.1 const double& Go::GeoTol::getAngleTol ( ) const [inline]

Get angular tolerance.

Definition at line 98 of file GeoTol.h.

29.170.3.2 const double& Go::GeoTol::getEpsBracket ( ) const [inline]

Get "bracket" tolerance used to specify confidence intervals in the parameter domain

Definition at line 91 of file GeoTol.h.

29.170.3.3 const double& Go::GeoTol::getEpsge ( ) const [inline]

Get constant tolerance.

Definition at line 75 of file GeoTol.h.

29.170.3.4 const double& Go::GeoTol::getMaxEpsge ( ) const [inline]

Definition at line 86 of file GeoTol.h.

29.170.3.5 const double& Go::GeoTol::getMinEpsge ( ) const [inline]

Definition at line 78 of file GeoTol.h.

29.170.3.6 const double& Go::GeoTol::getNumericalTol ( ) const [inline]

Get numerical tolerance.

Definition at line 102 of file GeoTol.h.

29.170.3.7 const double& Go::GeoTol::getRefAng ( ) const [inline]

Definition at line 94 of file GeoTol.h.

29.170.3.8 const double& Go::GeoTol::getRelParRes ( ) const [inline]

Get relative parameter resolution.

Definition at line 83 of file GeoTol.h.

29.170.3.9 void Go::GeoTol::read (std::istream & *is*)

Read from input stream.

29.170.3.10 void Go::GeoTol::write (std::ostream & *os*) const

Write to output stream.

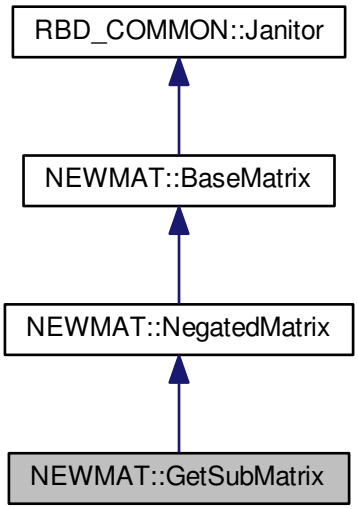
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/GeoTol.h

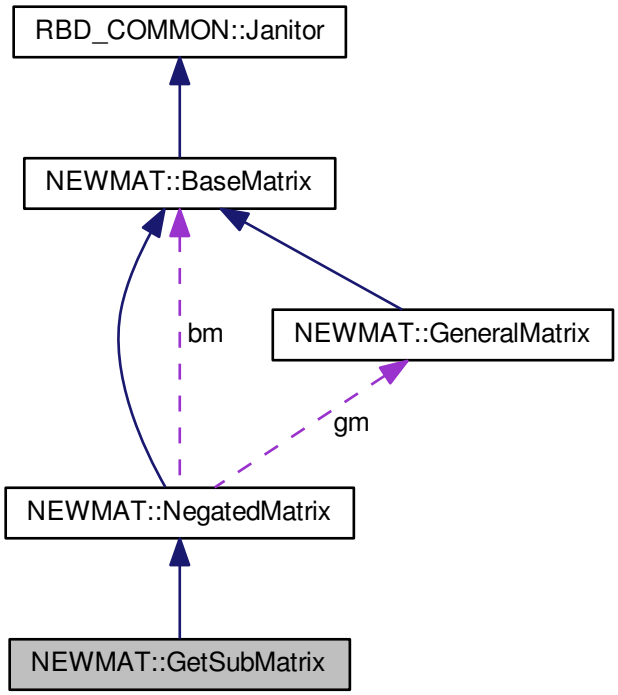
29.171 NEWMAT::GetSubMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::GetSubMatrix:



Collaboration diagram for NEWMAT::GetSubMatrix:



Public Member Functions

- GetSubMatrix (const GetSubMatrix &g)
- ~GetSubMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- void operator= (const BaseMatrix &)
- void operator+= (const BaseMatrix &)
- void operator-= (const BaseMatrix &)
- void operator= (const GetSubMatrix &m)
- void operator<< (const BaseMatrix &)
- void operator<< (const Real *)
- MatrixInput operator<< (Real)
- MatrixInput operator<< (int f)
- void operator= (Real)
- void operator+= (Real)
- void operator-= (Real r)
- void operator*= (Real)
- void operator/= (Real r)
- void Inject (const GeneralMatrix &)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix

Additional Inherited Members

29.171.1 Detailed Description

Definition at line 1488 of file newmat.h.

29.171.2 Constructor & Destructor Documentation

29.171.2.1 NEWMAT::GetSubMatrix::GetSubMatrix (const GetSubMatrix & *g*) [inline]

Definition at line 1503 of file newmat.h.

29.171.2.2 NEWMAT::GetSubMatrix::~GetSubMatrix ( ) [inline]

Definition at line 1506 of file newmat.h.

29.171.3 Member Function Documentation

29.171.3.1 MatrixBandWidth GetSubMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 488 of file newmat4.cpp.

29.171.3.2 GeneralMatrix * GetSubMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 341 of file newmat5.cpp.

29.171.3.3 void GetSubMatrix::Inject (const GeneralMatrix & *gmx*)

Definition at line 272 of file submat.cpp.

29.171.3.4 void GetSubMatrix::operator*= (Real *r*)

Definition at line 396 of file submat.cpp.

29.171.3.5 void NEWMAT::GetSubMatrix::operator+= (const BaseMatrix &)

29.171.3.6 void NEWMAT::GetSubMatrix::operator+= (Real)

29.171.3.7 void NEWMAT::GetSubMatrix::operator-= (const BaseMatrix &)

29.171.3.8 void NEWMAT::GetSubMatrix::operator-= (Real *r*) [inline]

Definition at line 1518 of file newmat.h.

29.171.3.9 void NEWMAT::GetSubMatrix::operator/= (Real *r*) [inline]

Definition at line 1520 of file newmat.h.

29.171.3.10 void NEWMAT::GetSubMatrix::operator<< (const BaseMatrix &)

29.171.3.11 void NEWMAT::GetSubMatrix::operator<< (const Real *)

29.171.3.12 MatrixInput NEWMAT::GetSubMatrix::operator<< (Real)

29.171.3.13 MatrixInput NEWMAT::GetSubMatrix::operator<< (int *f*) [inline]

Definition at line 1786 of file newmat.h.

29.171.3.14 void NEWMAT::GetSubMatrix::operator= (const BaseMatrix &)

29.171.3.15 void NEWMAT::GetSubMatrix::operator= (const GetSubMatrix & *m*) [inline]

Definition at line 1511 of file newmat.h.

29.171.3.16 void NEWMAT::GetSubMatrix::operator= (Real)

29.171.4 Friends And Related Function Documentation

29.171.4.1 friend class BaseMatrix [friend]

Definition at line 1501 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp
- newmat/src/submat.cpp

29.172 Go::go_iterator_traits< Iterator > Struct Template Reference

`#include <Utils.h>`

Public Types

- typedef Iterator::value_type value_type
- typedef Iterator::difference_type difference_type
- typedef Iterator::pointer pointer
- typedef Iterator::reference reference

29.172.1 Detailed Description

template<class Iterator>
struct Go::go_iterator_traits< Iterator >

Iterator traits classes are provided for the Go namespace, so that we won't need to include

`<iterator>`

or similar headers.

Definition at line 59 of file Utils.h.

29.172.2 Member Typedef Documentation

29.172.2.1 template<class Iterator> typedef Iterator::difference_type Go::go_iterator_traits< Iterator >::difference_type

Definition at line 61 of file Utils.h.

29.172.2.2 template<class Iterator> typedef Iterator::pointer Go::go_iterator_traits< Iterator >::pointer

Definition at line 62 of file Utils.h.

29.172.2.3 template<class Iterator> typedef Iterator::reference Go::go_iterator_traits< Iterator >::reference

Definition at line 63 of file Utils.h.

29.172.2.4 template<class Iterator> typedef Iterator::value_type Go::go_iterator_traits< Iterator >::value_type

Definition at line 60 of file Utils.h.

The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/geometry/Utils.h

29.173 Go::go_iterator_traits< const T * > Struct Template Reference

`#include <Utils.h>`

Public Types

- typedef T value_type
- typedef int difference_type
- typedef const T * pointer
- typedef const T & reference

29.173.1 Detailed Description

template<class T>
struct Go::go_iterator_traits< const T * >

Definition at line 76 of file Utils.h.

29.173.2 Member Typedef Documentation

29.173.2.1 template<class T > typedef int Go::go_iterator_traits< const T * >::difference_type

Definition at line 78 of file Utils.h.

29.173.2.2 template<class T > typedef const T* Go::go_iterator_traits< const T * >::pointer

Definition at line 79 of file Utils.h.

29.173.2.3 template<class T > typedef const T& Go::go_iterator_traits< const T * >::reference

Definition at line 80 of file Utils.h.

29.173.2.4 template<class T > typedef T Go::go_iterator_traits< const T * >::value_type

Definition at line 77 of file Utils.h.

The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/geometry/Utils.h

29.174 Go::go_iterator_traits< T * > Struct Template Reference

`#include <Utils.h>`

Public Types

- typedef T value_type
- typedef int difference_type
- typedef T * pointer
- typedef T & reference

29.174.1 Detailed Description

template<class T>
struct Go::go_iterator_traits< T * >

Definition at line 67 of file Utils.h.

29.174.2 Member Typedef Documentation

29.174.2.1 template<class T > typedef int Go::go_iterator_traits< T * >::difference_type

Definition at line 69 of file Utils.h.

29.174.2.2 template<class T > typedef T* Go::go_iterator_traits< T * >::pointer

Definition at line 70 of file Utils.h.

29.174.2.3 template<class T > typedef T& Go::go_iterator_traits< T * >::reference

Definition at line 71 of file Utils.h.

29.174.2.4 template<class T > typedef T Go::go_iterator_traits< T * >::value_type

Definition at line 68 of file Utils.h.

The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/geometry/Utils.h

29.175 Go::GoTools Class Reference

Class containing some service functions for the GoTools "system".

```
#include <GoTools.h>
```

Public Member Functions

- GoTools ()
- virtual ~GoTools ()

Static Public Member Functions

- static void init ()
- static std::string className (ClassType class_type)
- static double spaceEpsilon ()

  Get geometry tolerance.
- static void setSpaceEpsilon (double space_epsilon)

  Set geometry tolerance.
- static double parameterEpsilon ()

  Get parameter tolerance.
- static void setParameterEpsilon (double parameter_epsilon)

  Set parameter tolerance.
- static double knotEpsilon ()

  Get knot tolerance.
- static void setKnotEpsilon (double knot_epsilon)

  Set knot tolerance.

29.175.1 Detailed Description

Class containing some service functions for the GoTools "system".

Definition at line 76 of file GoTools.h.

29.175.2 Constructor & Destructor Documentation

29.175.2.1 Go::GoTools::GoTools ( )

29.175.2.2 virtual Go::GoTools::~GoTools ( ) [virtual]

29.175.3 Member Function Documentation

29.175.3.1 static std::string Go::GoTools::className (ClassType *class_type*) [static]

Conversion function that returns a std::string with the class name corresponding to ClassType class_type.

29.175.3.2 static void Go::GoTools::init ( ) [static]

This functions sets up the factories for constructing GeomObjects at run-time (i.e. Registrator instantiations). If you need to construct GeomObjects at run-time, such as when reading from a file, then call this function early in the code.

29.175.3.3 static double Go::GoTools::knotEpsilon ( ) [static]

Get knot tolerance.

29.175.3.4 static double Go::GoTools::parameterEpsilon ( ) [static]

Get parameter tolerance.

29.175.3.5 static void Go::GoTools::setKnotEpsilon (double *knot_epsilon*) [static]

Set knot tolerance.

29.175.3.6 static void Go::GoTools::setParameterEpsilon (double *parameter_epsilon*) [static]

Set parameter tolerance.

29.175.3.7 static void Go::GoTools::setSpaceEpsilon (double *space_epsilon*) [static]

Set geometry tolerance.

29.175.3.8 static double Go::GoTools::spaceEpsilon ( ) [static]

Get geometry tolerance.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/GoTools.h

29.176 Go::GPos Struct Reference

`#include <Mesh2D.h>`

Public Member Functions

- GPos (int i, int m)
- GPos ()

Public Attributes

- int ix
- int mult

29.176.1 Detailed Description

Definition at line 56 of file Mesh2D.h.

29.176.2 Constructor & Destructor Documentation

29.176.2.1 Go::GPos::GPos (int *i*, int *m*) [inline]

Definition at line 59 of file Mesh2D.h.

29.176.2.2 Go::GPos::GPos ( ) [inline]

Definition at line 60 of file Mesh2D.h.

29.176.3 Member Data Documentation

29.176.3.1 int Go::GPos::ix

Definition at line 62 of file Mesh2D.h.

29.176.3.2 int Go::GPos::mult

Definition at line 63 of file Mesh2D.h.

The documentation for this struct was generated from the following file:

- lrsplines2D/include/GoTools/lrsplines2D/Mesh2D.h

29.177 Go::GpuMatrix< T > Class Template Reference

`#include <GpuMatrix.hpp>`

Public Member Functions

- GpuMatrix (int rows, int cols)
- GpuMatrix (int rows, int cols, T *data)
- GpuMatrix (int rows, int cols, T initializer)
- ~GpuMatrix ()
- void upload (T *data)
- void download (T *data)
- int getRows ()
- int getCols ()

Friends

- template<typename U >
  std::ostream & operator<< (std::ostream &os, const GpuMatrix< U > &m)

29.177.1 Detailed Description

template<typename T>
class Go::GpuMatrix< T >

Definition at line 49 of file GpuMatrix.hpp.

29.177.2 Constructor & Destructor Documentation

29.177.2.1 template<typename T > Go::GpuMatrix< T >::GpuMatrix (int *rows*, int *cols*)

Constructs a matrix on the GPU

29.177.2.2 template<typename T > Go::GpuMatrix< T >::GpuMatrix (int *rows*, int *cols*, T * *data*)

Constructs a matrix on the GPU using data as initial values

29.177.2.3 template<typename T > Go::GpuMatrix< T >::GpuMatrix (int *rows*, int *cols*, T *initializer*)

Constructs a matrix on the GPU setting all values to initializer.

29.177.2.4 template<typename T > Go::GpuMatrix< T >::~GpuMatrix ( )

Deletes data allocated on the gpu.

29.177.3 Member Function Documentation

29.177.3.1 template<typename T > void Go::GpuMatrix< T >::download (T * *data*)

Downloads data from gpu memory to cpu memory. Using "pinned memory" will give best performance.

29.177.3.2 template<typename T > int Go::GpuMatrix< T >::getCols ( )

29.177.3.3 template<typename T > int Go::GpuMatrix< T >::getRows ( )

29.177.3.4 template<typename T > void Go::GpuMatrix< T >::upload (T * *data*)

Uploads data from cpu memory to gpu memory. Using "pinned memory" will give best performance.

29.177.4 Friends And Related Function Documentation

29.177.4.1 template<typename T > template<typename U > std::ostream& operator<< (std::ostream & *os*, const GpuMatrix< U > & *m*) [friend]

Prints out the contents of the matrix m.

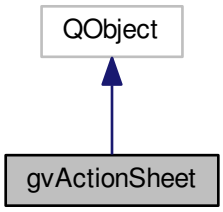
The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/GpuMatrix.hpp

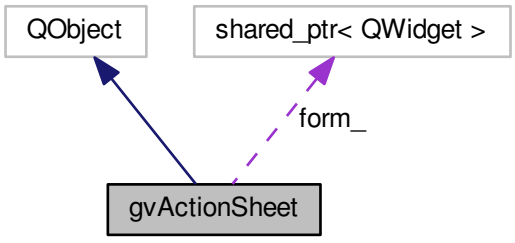
29.178 gvActionSheet Class Reference

`#include <gvActionSheet.h>`

Inheritance diagram for gvActionSheet:



Collaboration diagram for gvActionSheet:



Public Member Functions

- virtual ~gvActionSheet ()
- virtual void showDialog (gvObserver *observer)=0

Protected Attributes

- shared_ptr< QWidget > form_

29.178.1 Detailed Description

gvActionSheet:

Definition at line 52 of file gvActionSheet.h.

29.178.2 Constructor & Destructor Documentation

29.178.2.1 virtual gvActionSheet::~gvActionSheet ( ) [inline], [virtual]

Definition at line 58 of file gvActionSheet.h.

29.178.3 Member Function Documentation

29.178.3.1 virtual void gvActionSheet::showDialog (gvObserver * *observer*) [pure virtual]

29.178.4 Member Data Documentation

29.178.4.1 shared_ptr<QWidget> gvActionSheet::form_ [protected]

Definition at line 63 of file gvActionSheet.h.

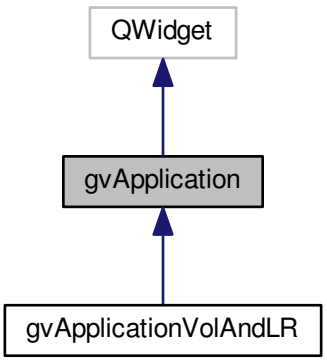
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvActionSheet.h

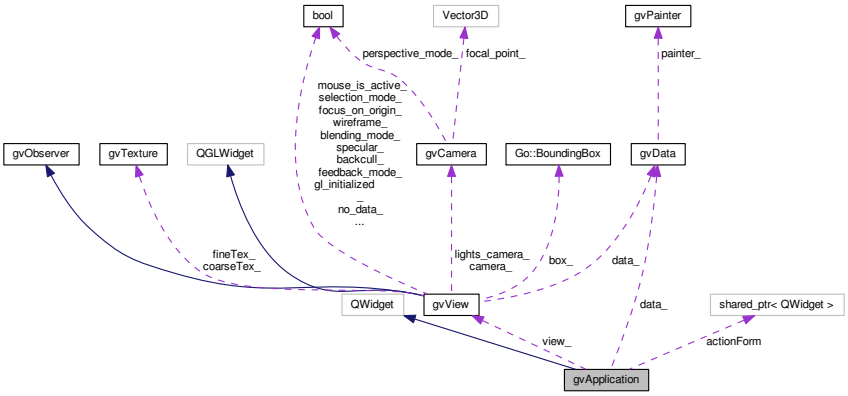
29.179 gvApplication Class Reference

`#include <gvApplication.h>`

Inheritance diagram for gvApplication:



Collaboration diagram for gvApplication:



Public Slots

- void open ()
- void reload_last_opened_file ()
- void save_selection_as ()
- void close_document ()
- void quit ()
- void about ()
- virtual void view_reset ()
- void view_reset_visible ()
- void view_wireframe ()
- void view_axis ()
- void view_cull ()
- void view_specular ()
- void view_orthographic ()
- void toggle_blending_mode ()
- void view_focus_point ()
- void view_focus_point_cb (int x, int y)
- void display_object_properties ()
- void assign_texture ()
- void set_curve_resolutions ()
- virtual void set_surface_resolutions ()
- void enable_objects ()
- void disable_objects ()
- void toggle_enable ()
- void select_all ()
- void select_none ()
- void select_inverse ()
- void select_all_surfaces ()
- void select_all_curves ()
- void select_all_visible ()
- void toggle_selection_mode ()
- void toggle_select_object (unsigned int name)
- void toggle_multiselect_object (unsigned int ∗names, int numnames)
- void group_selected ()

  Put selected objects in a group (user required to name group).
- virtual void dismiss_selections ()
- void show_control_nets ()
- void set_random_color ()

Public Member Functions

- gvApplication (std::auto_ptr< DataHandler > dh, QWidget *parent=0, const char *name=0, Qt::WFlags f=0)

  Constructor.
- virtual ~gvApplication ()

  The destructor.
- virtual QSize sizeHint () const

Protected Slots

- void changeCurveResolutions (int new_res)
- virtual void changeSurfaceResolutions (int new_u_res, int new_v_res)
- virtual void add_group (std::vector< int > &members, QString name)
- void add_objects (ObjContainer &new_objs, ColContainer &new_colors)

Protected Member Functions

- void buildGUI ()
- Q3ButtonGroup * createObjectToggleBox ()
- void getSelectedObjects (std::vector< shared_ptr< Go::GeomObject > > &sel_objs, std::vector< shared_ptr< Go::GeomObject > > &not_sel_objs)

Protected Attributes

- gvData data_
- gvView * view_
- QString curr_file_type_
- QString last_file_name_
- QString app_name_
- QMenuBar * menu_
- QMenu * view_menu_
- QMenu * select_menu_
- QMenu * group_menu_
- QMenu * object_menu_
- shared_ptr< QWidget > actionForm

29.179.1 Detailed Description

Definition at line 72 of file gvApplication.h.

29.179.2 Constructor & Destructor Documentation

29.179.2.1 gvApplication::gvApplication (std::auto_ptr< DataHandler > *dh*, QWidget * *parent* = 0, const char * *name* = 0, Qt::WFlags *f* = 0)

Constructor.

29.179.2.2 virtual gvApplication::~gvApplication ( ) [virtual]

The destructor.

29.179.3 Member Function Documentation

29.179.3.1 void gvApplication::about ( ) [slot]

29.179.3.2 virtual void gvApplication::add_group (std::vector< int > & *members,* QString *name*) [protected], [virtual], [slot]

29.179.3.3 void gvApplication::add_objects (**ObjContainer** & *new_objs,* **ColContainer** & *new_colors*) [protected], [slot]

29.179.3.4 void gvApplication::assign_texture ( ) [slot]

29.179.3.5 void gvApplication::buildGUI ( ) [protected]

29.179.3.6 void gvApplication::changeCurveResolutions (int *new_res*) [protected], [slot]

29.179.3.7 virtual void gvApplication::changeSurfaceResolutions (int *new_u_res,* int *new_v_res*) [protected], [virtual], [slot]

29.179.3.8 void gvApplication::close_document ( ) [slot]

29.179.3.9 Q3ButtonGroup* gvApplication::createObjectToggleBox ( ) [protected]

29.179.3.10 void gvApplication::disable_objects ( ) [slot]

29.179.3.11 virtual void gvApplication::dismiss_selections ( ) [virtual], [slot]

29.179.3.12 void gvApplication::display_object_properties ( ) [slot]

29.179.3.13 void gvApplication::enable_objects ( ) [slot]

29.179.3.14 void gvApplication::getSelectedObjects (std::vector< shared_ptr< **Go::GeomObject** > > & *sel_objs,* std::vector< shared_ptr< **Go::GeomObject** > > & *not_sel_objs*) [protected]

29.179.3.15 void gvApplication::group_selected ( ) [slot]

Put selected objects in a group (user required to name group).

29.179.3.16 **void gvApplication::open ( ) [slot]**

29.179.3.17 **void gvApplication::quit ( ) [slot]**

29.179.3.18 **void gvApplication::reload_last_opened_file ( ) [slot]**

29.179.3.19 **void gvApplication::save_selection_as ( ) [slot]**

29.179.3.20 **void gvApplication::select_all ( ) [slot]**

29.179.3.21 **void gvApplication::select_all_curves ( ) [slot]**

29.179.3.22 **void gvApplication::select_all_surfaces ( ) [slot]**

29.179.3.23 **void gvApplication::select_all_visible ( ) [slot]**

29.179.3.24 **void gvApplication::select_inverse ( ) [slot]**

29.179.3.25 **void gvApplication::select_none ( ) [slot]**

29.179.3.26 **void gvApplication::set_curve_resolutions ( ) [slot]**

29.179.3.27 **void gvApplication::set_random_color ( ) [slot]**

29.179.3.28 **virtual void gvApplication::set_surface_resolutions ( ) [virtual], [slot]**

29.179.3.29 **void gvApplication::show_control_nets ( ) [slot]**

29.179.3.30 **virtual QSize gvApplication::sizeHint ( ) const [virtual]**

29.179.3.31 **void gvApplication::toggle_blending_mode ( ) [slot]**

29.179.3.32 **void gvApplication::toggle_enable ( ) [slot]**

29.179.3.33 **void gvApplication::toggle_multiselect_object (unsigned int * *names*, int *numnames*) [slot]**

29.179.3.34 **void gvApplication::toggle_select_object (unsigned int *name*) [slot]**

29.179.3.35 **void gvApplication::toggle_selection_mode ( ) [slot]**

29.179.3.36 **void gvApplication::view_axis ( ) [slot]**

29.179.3.37 **void gvApplication::view_cull ( ) [slot]**

29.179.3.38 **void gvApplication::view_focus_point ( ) [slot]**

29.179.3.39 void gvApplication::view_focus_point_cb (int *x*, int *y*) [slot]

29.179.3.40 void gvApplication::view_orthographic ( ) [slot]

29.179.3.41 virtual void gvApplication::view_reset ( ) [virtual], [slot]

29.179.3.42 void gvApplication::view_reset_visible ( ) [slot]

29.179.3.43 void gvApplication::view_specular ( ) [slot]

29.179.3.44 void gvApplication::view_wireframe ( ) [slot]

29.179.4 Member Data Documentation

29.179.4.1 shared_ptr<QWidget> gvApplication::actionForm [protected]

Definition at line 164 of file gvApplication.h.

29.179.4.2 QString gvApplication::app_name_ [protected]

Definition at line 153 of file gvApplication.h.

29.179.4.3 QString gvApplication::curr_file_type_ [protected]

Definition at line 151 of file gvApplication.h.

29.179.4.4 gvData gvApplication::data_ [protected]

Definition at line 149 of file gvApplication.h.

29.179.4.5 QMenu* gvApplication::group_menu_ [protected]

Definition at line 159 of file gvApplication.h.

29.179.4.6 QString gvApplication::last_file_name_ [protected]

Definition at line 152 of file gvApplication.h.

29.179.4.7 QMenuBar* gvApplication::menu_ [protected]

Definition at line 155 of file gvApplication.h.

29.179.4.8 QMenu* gvApplication::object_menu_ [protected]

Definition at line 160 of file gvApplication.h.

29.179.4.9 QMenu* gvApplication::select_menu_ [protected]

Definition at line 158 of file gvApplication.h.

29.179.4.10 gvView* gvApplication::view_ [protected]

Definition at line 150 of file gvApplication.h.

29.179.4.11 QMenu* gvApplication::view_menu_ [protected]

Definition at line 157 of file gvApplication.h.

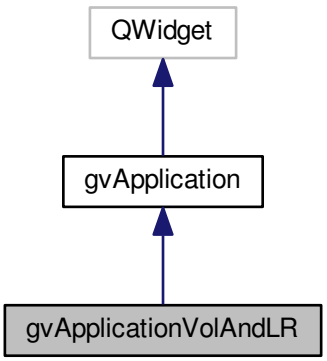
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvApplication.h

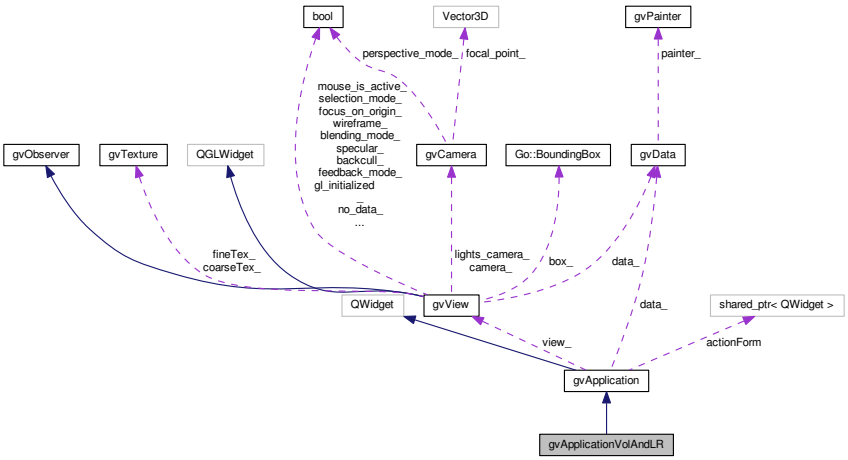
29.180 gvApplicationVolAndLR Class Reference

`#include <gvApplicationVolAndLR.h>`

Inheritance diagram for gvApplicationVolAndLR:



Collaboration diagram for gvApplicationVolAndLR:



Public Slots

- virtual void view_reset ()
- void translate_to_origin ()
- void move_vertices_to_origin ()

Public Member Functions

- gvApplicationVolAndLR (std::auto_ptr< DataHandler > dh, QWidget *parent=0, const char *name=0, Qt::↩ WFlags f=0)
- virtual ~gvApplicationVolAndLR ()

Protected Member Functions

- void buildExtraGUI ()

Additional Inherited Members

29.180.1 Detailed Description

Definition at line 48 of file gvApplicationVolAndLR.h.

29.180.2 Constructor & Destructor Documentation

29.180.2.1 gvApplicationVolAndLR::gvApplicationVolAndLR (std::auto_ptr< DataHandler > *dh*, QWidget * *parent* = 0, const char * *name* = 0, Qt::WFlags *f* = 0)

29.180.2.2 virtual gvApplicationVolAndLR::~gvApplicationVolAndLR ( ) [virtual]

29.180.3 Member Function Documentation

29.180.3.1 void gvApplicationVolAndLR::buildExtraGUI ( ) [protected]

29.180.3.2 void gvApplicationVolAndLR::move_vertices_to_origin ( ) [slot]

29.180.3.3 void gvApplicationVolAndLR::translate_to_origin ( ) [slot]

29.180.3.4 virtual void gvApplicationVolAndLR::view_reset ( ) [virtual], [slot]

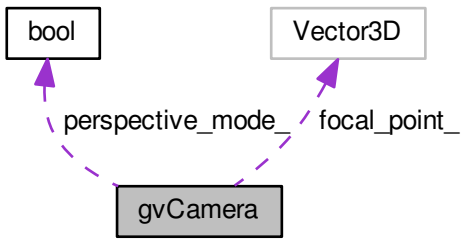
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/vol_and_lr/gvApplicationVolAndLR.h

29.181 gvCamera Class Reference

`#include <gvCamera.h>`

Collaboration diagram for gvCamera:



Public Member Functions

- gvCamera (const Vector3D &fpoint, int x, int y, int w, int h)
- ~gvCamera ()
- void initializeGL ()
- void use () const
- void useModelView () const

  Sets up the modelview only.
- void pick (int x, int y, int w, int h) const

  Sets up the projection, viewport and modelview, for picking.
- void setFocalPoint (const Vector3D &fpoint)
- void getFocalPoint (Vector3D &fpoint) const

  Gets the current focal point.
- void setDistance (double d)
- void getDistance (double &d) const

  Gets the current distance.
- void setAxisSize (double size)
- void getAxisSize (double &size) const

  Gets the current axissize.
- Vector3D getWorldRay () const
- Vector3D getWorldUp () const
- Vector3D getWorldSide () const
- void rotate (double axisx, double axisy, double angle)
- void rotateTransversal (double angle)
- void resetRotation ()
- void moveFocalPointRelative (const Vector3D &eyeptrel)

  Moves the focal point relative to screen coordinates.
- Vector3D eyeCoordsToObjectCoords (const Vector3D &eyept) const
- Vector3D objectCoordsToWindowCoords (const Vector3D &pt) const
- void setViewPort (int x, int y, int w, int h)
- void getViewPort (int &x, int &y, int &w, int &h) const

  Gets the viewport.
- void setPerspectiveMode (bool perspective_mode)
- bool getPerspectiveMode () const

  Gets the current perspective mode.

Protected Member Functions

- void computeWinz ()

Protected Attributes

- Vector3D focal_point_
- double distance_
- double mv_ [16]

  mv_ is the rotation matrix
- double axissize_
- int viewx_
- int viewy_
- int viewwidth_
- int viewheight_
- double viewfield_
- double winz_
- bool perspective_mode_

29.181.1 Detailed Description

gvCamera deals with perspective and modelview transformations, with GL viewports, and with drawing 3D axes.

Definition at line 52 of file gvCamera.h.

29.181.2 Constructor & Destructor Documentation

29.181.2.1 gvCamera::gvCamera (const Vector3D & *fpoint,* int *x,* int *y,* int *w,* int *h*)

This constructor takes the initial focus point and the viewport as parameters. Default distance (from camera to focal point) is 10.0. Default axissize is zero.

29.181.2.2 gvCamera::~gvCamera ( )

29.181.3 Member Function Documentation

29.181.3.1 void gvCamera::computeWinz ( ) [protected]

29.181.3.2 Vector3D gvCamera::eyeCoordsToObjectCoords (const Vector3D & *eyept*) const

Computes a ray in the model space corresponding to the screen point indicated.

29.181.3.3 void gvCamera::getAxisSize (double & *size*) const [inline]

Gets the current axissize.

Definition at line 99 of file gvCamera.h.

29.181.3.4 void gvCamera::getDistance (double & *d*) const [inline]

Gets the current distance.

Definition at line 91 of file gvCamera.h.

29.181.3.5 void gvCamera::getFocalPoint (Vector3D & *fpoint*) const [inline]

Gets the current focal point.

Definition at line 82 of file gvCamera.h.

29.181.3.6 bool gvCamera::getPerspectiveMode ( ) const [inline]

Gets the current perspective mode.

Definition at line 140 of file gvCamera.h.

29.181.3.7 void gvCamera::getViewPort (int & *x,* int & *y,* int & *w,* int & *h*) const [inline]

Gets the viewport.

Definition at line 132 of file gvCamera.h.

29.181.3.8 Vector3D gvCamera::getWorldRay ( ) const

29.181.3.9 Vector3D gvCamera::getWorldSide ( ) const

29.181.3.10 Vector3D gvCamera::getWorldUp ( ) const

29.181.3.11 void gvCamera::initializeGL ( )

This is called to initialize the camera. You need a valid OpenGL context to call this.

29.181.3.12 void gvCamera::moveFocalPointRelative (const Vector3D & *eyeptrel*)

Moves the focal point relative to screen coordinates.

29.181.3.13 Vector3D gvCamera::objectCoordsToWindowCoords (const Vector3D & *pt*) const

29.181.3.14 void gvCamera::pick (int *x,* int *y,* int *w,* int *h*) const

Sets up the projection, viewport and modelview, for picking.

29.181.3.15 void gvCamera::resetRotation ( )

Sets the internal modelview matrix to identity. The effect will be visible the next time use() is called.

29.181.3.16 void gvCamera::rotate (double *axisx,* double *axisy,* double *angle*)

The axis of rotation is in screen coordinates, and will be translated to the correct coordinate system by the function. To give an example, if you detect a mouse drag in the direction (mx, my) you may want to rotate like this: camera.↩ rotate(-my, mx, 0.1∗sqrt(mx∗mx + my∗my));

29.181.3.17 void gvCamera::rotateTransversal (double *angle*)

Rotates the camera about the current (screen coordinate) z-axis.

29.181.3.18 void gvCamera::setAxisSize (double *size*) [inline]

Sets the size (in modelspace units) of the axis. Setting the size to zero turns off the axis.

Definition at line 96 of file gvCamera.h.

29.181.3.19 void gvCamera::setDistance (double *d*) [inline]

Sets the distance. The distance is the modelspace distance from the camera to the focal point.

Definition at line 88 of file gvCamera.h.

29.181.3.20 void gvCamera::setFocalPoint (const Vector3D & *fpoint*) [inline]

Sets the focal point. The focal point is the point towards which the camera is looking. Also, the rotate() call rotates the camera about this point.

Definition at line 79 of file gvCamera.h.

29.181.3.21 void gvCamera::setPerspectiveMode (bool *perspective_mode*) [inline]

Sets perspective mode. True means perspective, false means orthographic projection mode.

Definition at line 137 of file gvCamera.h.

29.181.3.22 void gvCamera::setViewPort (int *x*, int *y*, int *w*, int *h*) [inline]

Sets the viewport. The viewport should be set whenever the window size changes.

Definition at line 129 of file gvCamera.h.

29.181.3.23 void gvCamera::use ( ) const

Sets up the projection, viewport and modelview. Draws axis if axissize is nonzero.

29.181.3.24 void gvCamera::useModelView ( ) const

Sets up the modelview only.

29.181.4 Member Data Documentation

29.181.4.1 double gvCamera::axissize_ [protected]

Definition at line 152 of file gvCamera.h.

29.181.4.2 double gvCamera::distance_ [protected]

Definition at line 147 of file gvCamera.h.

29.181.4.3 Vector3D gvCamera::focal_point_ [protected]

Definition at line 146 of file gvCamera.h.

29.181.4.4 double gvCamera::mv_[16] [protected]

mv_ is the rotation matrix

Definition at line 150 of file gvCamera.h.

29.181.4.5 bool gvCamera::perspective_mode_ [protected]

Definition at line 163 of file gvCamera.h.

29.181.4.6 double gvCamera::viewfield_ [protected]

Definition at line 159 of file gvCamera.h.

29.181.4.7 int gvCamera::viewheight_ [protected]

Definition at line 157 of file gvCamera.h.

29.181.4.8 int gvCamera::viewwidth_ [protected]

Definition at line 156 of file gvCamera.h.

29.181.4.9 int gvCamera::viewx_ [protected]

Definition at line 154 of file gvCamera.h.

29.181.4.10 int gvCamera::viewy_ [protected]

Definition at line 155 of file gvCamera.h.

29.181.4.11 double gvCamera::winz_ [protected]

Definition at line 161 of file gvCamera.h.

The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvCamera.h

29.182 gvColor Struct Reference

Represents a color by four floats, like in OpenGL.

`#include <gvColor.h>`

Public Member Functions

- gvColor ()
  Default color is white.
- template<typename NumericType >
  gvColor (NumericType r, NumericType g, NumericType b)
- template<typename NumericType >
  gvColor (NumericType r, NumericType g, NumericType b, NumericType alpha)
- gvColor (const gvColor &other)
- gvColor & operator= (const gvColor &other)

Static Public Member Functions

- template<typename NumericType >
  static gvColor hsva (NumericType h, NumericType s, NumericType v, NumericType alpha)

Public Attributes

- float rgba [4]

29.182.1 Detailed Description

Represents a color by four floats, like in OpenGL.

Definition at line 49 of file gvColor.h.

29.182.2 Constructor & Destructor Documentation

29.182.2.1 gvColor::gvColor ( ) [inline]

Default color is white.

Definition at line 53 of file gvColor.h.

29.182.2.2 template<typename NumericType > gvColor::gvColor (NumericType *r*, NumericType *g*, NumericType *b*) [inline]

Definition at line 58 of file gvColor.h.

29.182.2.3 template<typename NumericType > gvColor::gvColor (NumericType *r,* NumericType *g,* NumericType *b,* NumericType *alpha*) [inline]

Definition at line 64 of file gvColor.h.

29.182.2.4 gvColor::gvColor (const gvColor & *other*) [inline]

Definition at line 103 of file gvColor.h.

29.182.3 Member Function Documentation

29.182.3.1 template<typename NumericType > static gvColor gvColor::hsva (NumericType *h,* NumericType *s,* NumericType *v,* NumericType *alpha*) [inline], [static]

Definition at line 72 of file gvColor.h.

29.182.3.2 gvColor& gvColor::operator= (const gvColor & *other*) [inline]

Definition at line 110 of file gvColor.h.

29.182.4 Member Data Documentation

29.182.4.1 float gvColor::rgba[4]

Definition at line 51 of file gvColor.h.

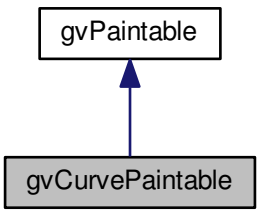
The documentation for this struct was generated from the following file:

- viewlib/include/GoTools/viewlib/gvColor.h

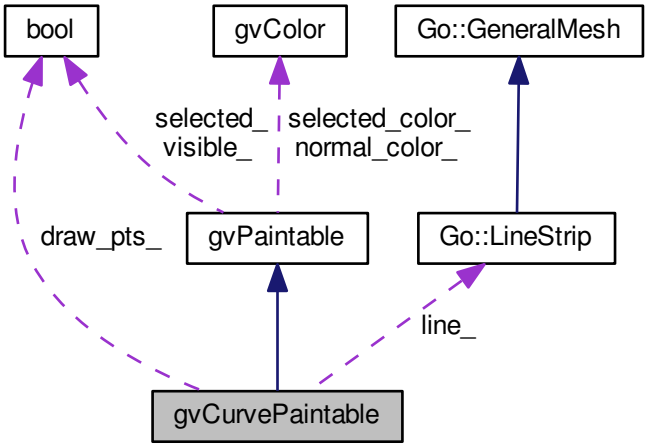
29.183 gvCurvePaintable Class Reference

`#include <gvCurvePaintable.h>`

Inheritance diagram for gvCurvePaintable:



Collaboration diagram for gvCurvePaintable:



Public Member Functions

- gvCurvePaintable (Go::LineStrip &line, const gvColor &ncolor, const gvColor &scolor, int id)
- gvCurvePaintable (Go::LineStrip &line, const gvColor &ncolor, int id)
- virtual ~gvCurvePaintable ()
- virtual void paint (gvTexture *texture)
- void setDrawPoints (bool dp)
- bool drawPoints ()

Protected Attributes

- Go::LineStrip & line_
- bool draw_pts_

29.183.1 Detailed Description

OpenGL calls for a parametric curve (represented by a LineStrip).

Definition at line 53 of file gvCurvePaintable.h.

29.183.2 Constructor & Destructor Documentation

29.183.2.1 gvCurvePaintable::gvCurvePaintable (Go::LineStrip & *line*, const gvColor & *ncolor*, const gvColor & *scolor*, int *id*) [inline]

Definition at line 56 of file gvCurvePaintable.h.

29.183.2.2 gvCurvePaintable::gvCurvePaintable (Go::LineStrip & *line,* const gvColor & *ncolor,* int *id*) [inline]

Definition at line 63 of file gvCurvePaintable.h.

29.183.2.3 virtual gvCurvePaintable::~gvCurvePaintable ( ) [virtual]

29.183.3 Member Function Documentation

29.183.3.1 bool gvCurvePaintable::drawPoints ( ) [inline]

Definition at line 77 of file gvCurvePaintable.h.

29.183.3.2 virtual void gvCurvePaintable::paint (gvTexture * *texture*) [virtual]

The function that does the painting. Must be overridden by all subclasses. If your subclass does not use textures, just ignore the texture argument.

Implements gvPaintable.

29.183.3.3 void gvCurvePaintable::setDrawPoints (bool *dp*) [inline]

Definition at line 73 of file gvCurvePaintable.h.

29.183.4 Member Data Documentation

29.183.4.1 bool gvCurvePaintable::draw_pts_ [protected]

Definition at line 85 of file gvCurvePaintable.h.

29.183.4.2 Go::LineStrip& gvCurvePaintable::line_ [protected]

Definition at line 84 of file gvCurvePaintable.h.

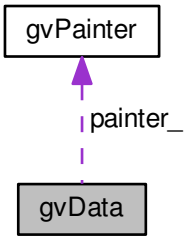
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvCurvePaintable.h

29.184 gvData Class Reference

`#include <gvData.h>`

Collaboration diagram for gvData:



Public Member Functions

- gvData (std::auto_ptr< DataHandler > datahandler)
- virtual ~gvData ()
- void readIges (std::istream &is)
- void readSislSrfs (std::istream &is)
- void readSislCrvs (std::istream &is)
- void readGo (std::istream &is)
- void readGo (const std::vector< shared_ptr< Go::GeomObject > > &new_objects, std::vector< shared_ptr< gvColor > > &new_colors)
- void writeSelectedGo (std::ostream &os)
- void writeSelectedIges (std::ostream &os)
- void setTexture (int index, shared_ptr< gvTexture > tex)
- shared_ptr< gvTexture > getTexture (int index)
- int numObjects () const
- shared_ptr< Go::GeomObject > object (int i)
- shared_ptr< const Go::GeomObject > object (int i) const
- shared_ptr< gvColor > color (int i)
- shared_ptr< gvPropertySheet > propertySheet (int i)
- shared_ptr< Go::Tesselator > tesselator (int index)
- void addGroup (gvGroup group)
- int nmbGroups () const
- std::vector< gvGroup > objectGroups () const
- gvGroup getGroup (int index) const
- void clearGroup ()
- gvPainter & painter ()
- void registerObserver (gvObserver *obs)
- const Go::BoundingBox & boundingBox ()
- Go::BoundingBox boundingBox (const std::vector< int > &objs) const
- void extractSelectedObjects (std::vector< shared_ptr< Go::GeomObject > > &sel_objs)
- void setSelectedStateObject (int id, bool state)
- void setVisibleStateObject (int id, bool state)

- bool getSelectedStateObject (int id)
- bool getVisibleStateObject (int id)
- void disableUpdates ()
- void enableUpdates ()
- void updateObservers ()
- void clear ()
- void deleteObj (int obj)
- void clearLast ()

  Removes pointers for last object only.
- void recreateDataStructure (int nmb_new_objs)

  Not always any need to retesselate all objects.

Protected Attributes

- std::vector< shared_ptr< Go::GeomObject > > objects_
- std::vector< shared_ptr< gvColor > > object_colors_
- gvPainter painter_

29.184.1 Detailed Description

gvData reads and stores the geometric data.

Definition at line 65 of file gvData.h.

29.184.2 Constructor & Destructor Documentation

29.184.2.1 gvData::gvData (std::auto_ptr< DataHandler > *datahandler*) [inline]

Definition at line 68 of file gvData.h.

29.184.2.2 virtual gvData::~gvData ( ) [inline], [virtual]

Definition at line 73 of file gvData.h.

29.184.3 Member Function Documentation

29.184.3.1 void gvData::addGroup (gvGroup *group*) [inline]

Definition at line 117 of file gvData.h.

29.184.3.2 const Go::BoundingBox& gvData::boundingBox ( ) [inline]

Definition at line 134 of file gvData.h.

29.184.3.3 **Go::BoundingBox gvData::boundingBox (const std::vector< int > & *objs*) const**

29.184.3.4 **void gvData::clear ( )**

29.184.3.5 **void gvData::clearGroup ( )** [inline]

Definition at line 125 of file gvData.h.

29.184.3.6 **void gvData::clearLast ( )**

Removes pointers for last object only.

29.184.3.7 **shared_ptr<gvColor> gvData::color (int *i*)** [inline]

Definition at line 109 of file gvData.h.

29.184.3.8 **void gvData::deleteObj (int *obj*)**

29.184.3.9 **void gvData::disableUpdates ( )** [inline]

Definition at line 148 of file gvData.h.

29.184.3.10 **void gvData::enableUpdates ( )** [inline]

Definition at line 150 of file gvData.h.

29.184.3.11 **void gvData::extractSelectedObjects (std::vector< shared_ptr< Go::GeomObject > > & *sel_objs*)**

29.184.3.12 **gvGroup gvData::getGroup (int *index*) const** [inline]

Definition at line 123 of file gvData.h.

29.184.3.13 **bool gvData::getSelectedStateObject (int *id*)**

29.184.3.14 **shared_ptr<gvTexture> gvData::getTexture (int *index*)** [inline]

Definition at line 94 of file gvData.h.

29.184.3.15 **bool gvData::getVisibleStateObject (int *id*)**

29.184.3.16 **int gvData::nmbGroups ( ) const** [inline]

Definition at line 119 of file gvData.h.

29.184.3.17 int gvData::numObjects ( ) const [inline]

Definition at line 97 of file gvData.h.

29.184.3.18 shared_ptr<Go::GeomObject> gvData::object (int *i*) [inline]

Definition at line 99 of file gvData.h.

29.184.3.19 shared_ptr<const Go::GeomObject> gvData::object (int *i*) const [inline]

Definition at line 107 of file gvData.h.

29.184.3.20 std::vector<gvGroup> gvData::objectGroups ( ) const [inline]

Definition at line 121 of file gvData.h.

29.184.3.21 gvPainter& gvData::painter ( ) [inline]

Definition at line 128 of file gvData.h.

29.184.3.22 shared_ptr<gvPropertySheet> gvData::propertySheet (int *i*) [inline]

Definition at line 111 of file gvData.h.

29.184.3.23 void gvData::readGo (std::istream & *is*)

29.184.3.24 void gvData::readGo (const std::vector< shared_ptr< Go::GeomObject > > & *new_objects*, std::vector< shared_ptr< gvColor > > & *new_colors*)

29.184.3.25 void gvData::readIges (std::istream & *is*)

29.184.3.26 void gvData::readSislCrvs (std::istream & *is*)

29.184.3.27 void gvData::readSislSrfs (std::istream & *is*)

29.184.3.28 void gvData::recreateDataStructure (int *nmb_new_objs*)

Not always any need to retesselate all objects.

29.184.3.29 void gvData::registerObserver (gvObserver * *obs*) [inline]

Definition at line 131 of file gvData.h.

29.184.3.30 void gvData::setSelectedStateObject (int *id,* bool *state*)

29.184.3.31 void gvData::setTexture (int *index,* shared_ptr< gvTexture > *tex*) [inline]

Definition at line 91 of file gvData.h.

29.184.3.32 void gvData::setVisibleStateObject (int *id,* bool *state*)

29.184.3.33 shared_ptr<Go::Tesselator> gvData::tesselator (int *index*) [inline]

Definition at line 113 of file gvData.h.

29.184.3.34 void gvData::updateObservers ( )

29.184.3.35 void gvData::writeSelectedGo (std::ostream & *os*)

29.184.3.36 void gvData::writeSelectedIges (std::ostream & *os*)

29.184.4 Member Data Documentation

29.184.4.1 std::vector< shared_ptr<gvColor> > gvData::object_colors_ [protected]

Definition at line 165 of file gvData.h.

29.184.4.2 std::vector< shared_ptr<Go::GeomObject> > gvData::objects_ [protected]

Definition at line 164 of file gvData.h.

29.184.4.3 gvPainter gvData::painter_ [protected]

Definition at line 166 of file gvData.h.

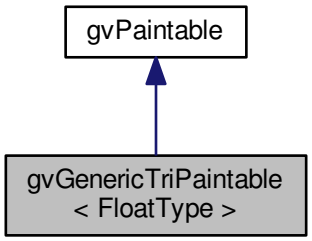
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvData.h

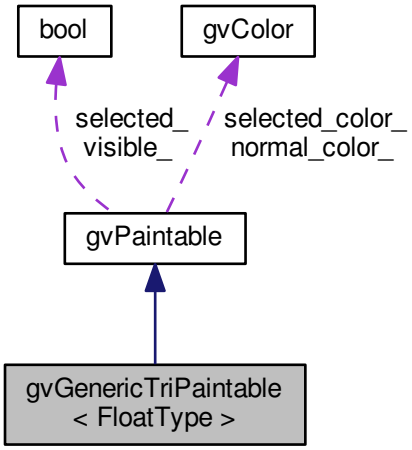
29.185 gvGenericTriPaintable< FloatType > Class Template Reference

`#include <gvGenericTriPaintable.h>`

Inheritance diagram for gvGenericTriPaintable< FloatType >:



Collaboration diagram for gvGenericTriPaintable< FloatType >:



Public Member Functions

- gvGenericTriPaintable (GenericTriMesh< FloatType > &tri, const gvColor &ncolor, const gvColor &scolor, int id)
- gvGenericTriPaintable (GenericTriMesh< FloatType > &tri, const gvColor &ncolor, int id)
- virtual ~gvGenericTriPaintable ()
- virtual void paint (gvTexture *)

Protected Attributes

- GenericTriMesh< FloatType > & tri_

29.185.1 Detailed Description

template<typename FloatType>
class gvGenericTriPaintable< FloatType >

Documentation ... etc

Definition at line 70 of file gvGenericTriPaintable.h.

29.185.2 Constructor & Destructor Documentation

29.185.2.1 template<typename FloatType > gvGenericTriPaintable< FloatType >::gvGenericTriPaintable (GenericTriMesh< FloatType > & *tri,* const gvColor & *ncolor,* const gvColor & *scolor,* int *id*) [inline]

Definition at line 73 of file gvGenericTriPaintable.h.

29.185.2.2 template<typename FloatType > gvGenericTriPaintable< FloatType >::gvGenericTriPaintable (GenericTriMesh< FloatType > & *tri,* const gvColor & *ncolor,* int *id*) [inline]

Definition at line 80 of file gvGenericTriPaintable.h.

29.185.2.3 template<typename FloatType > virtual gvGenericTriPaintable< FloatType >::~gvGenericTriPaintable ( ) [inline], [virtual]

Definition at line 86 of file gvGenericTriPaintable.h.

29.185.3 Member Function Documentation

29.185.3.1 template<typename FloatType > virtual void gvGenericTriPaintable< FloatType >::paint (gvTexture * *texture*) [inline], [virtual]

The function that does the painting. Must be overridden by all subclasses. If your subclass does not use textures, just ignore the texture argument. Set up the vertex arrays

Set up the normal arrays

Draw the triangles

Implements gvPaintable.

Definition at line 89 of file gvGenericTriPaintable.h.

29.185.4 Member Data Documentation

29.185.4.1 template<typename FloatType > GenericTriMesh<FloatType>& gvGenericTriPaintable< FloatType >::tri_ [protected]

Definition at line 133 of file gvGenericTriPaintable.h.

The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvGenericTriPaintable.h

29.186 gvGenericTriQuadMesh< FloatType > Class Template Reference

`#include <gvGenericTriQuadMesh.h>`

Public Member Functions

- gvGenericTriQuadMesh (int num_vert, int num_tri, int num_quads, bool use_normals=true, bool use_↩ texcoords=false)
- bool useNormals ()
- bool useTexCoords ()
- int numTriangles ()

  The total number of triangles.
- int numQuads ()

  The total number of quads.
- int numVertices ()
- void resize (int num_vert, int num_tri, int num_quads)
- FloatType * vertexArray ()
- FloatType * normalArray ()
- FloatType * texcoordArray ()
- int * triangleIndexArray ()
- int * quadIndexArray ()

29.186.1 Detailed Description

template<typename FloatType>
class gvGenericTriQuadMesh< FloatType >

Structure for ...

Definition at line 51 of file gvGenericTriQuadMesh.h.

29.186.2 Constructor & Destructor Documentation

29.186.2.1 template<typename FloatType> gvGenericTriQuadMesh< FloatType >::gvGenericTriQuadMesh (int *num_vert*, int *num_tri*, int *num_quads*, bool *use_normals* = true, bool *use_texcoords* = false) [inline]

Definition at line 54 of file gvGenericTriQuadMesh.h.

29.186.3 Member Function Documentation

29.186.3.1 template<typename FloatType> FloatType* gvGenericTriQuadMesh< FloatType >::normalArray ( ) [inline]

Definition at line 91 of file gvGenericTriQuadMesh.h.

29.186.3.2 template<typename FloatType> int gvGenericTriQuadMesh< FloatType >::numQuads ( ) [inline]

The total number of quads.

Definition at line 73 of file gvGenericTriQuadMesh.h.

29.186.3.3 template<typename FloatType> int gvGenericTriQuadMesh< FloatType >::numTriangles ( ) [inline]

The total number of triangles.

Definition at line 70 of file gvGenericTriQuadMesh.h.

29.186.3.4 template<typename FloatType> int gvGenericTriQuadMesh< FloatType >::numVertices ( ) [inline]

Definition at line 76 of file gvGenericTriQuadMesh.h.

29.186.3.5 template<typename FloatType> int* gvGenericTriQuadMesh< FloatType >::quadIndexArray ( ) [inline]

Definition at line 94 of file gvGenericTriQuadMesh.h.

29.186.3.6 template<typename FloatType> void gvGenericTriQuadMesh< FloatType >::resize (int *num_vert,* int *num_tri,* int *num_quads*) [inline]

Definition at line 79 of file gvGenericTriQuadMesh.h.

29.186.3.7 template<typename FloatType> FloatType* gvGenericTriQuadMesh< FloatType >::texcoordArray ( ) [inline]

Definition at line 92 of file gvGenericTriQuadMesh.h.

29.186.3.8 template<typename FloatType> int* gvGenericTriQuadMesh< FloatType >::triangleIndexArray ( ) [inline]

Definition at line 93 of file gvGenericTriQuadMesh.h.

29.186.3.9 template<typename FloatType> bool gvGenericTriQuadMesh< FloatType >::useNormals ( ) [inline]

Definition at line 63 of file gvGenericTriQuadMesh.h.

29.186.3.10 template<typename FloatType> bool gvGenericTriQuadMesh< FloatType >::useTexCoords ( ) [inline]

Definition at line 66 of file gvGenericTriQuadMesh.h.

29.186.3.11 template<typename FloatType> FloatType* gvGenericTriQuadMesh< FloatType >::vertexArray ( ) [inline]

Definition at line 90 of file gvGenericTriQuadMesh.h.

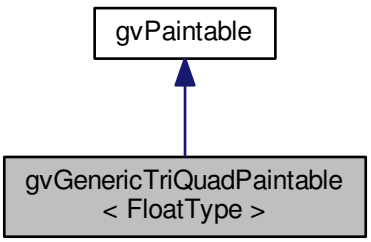
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvGenericTriQuadMesh.h

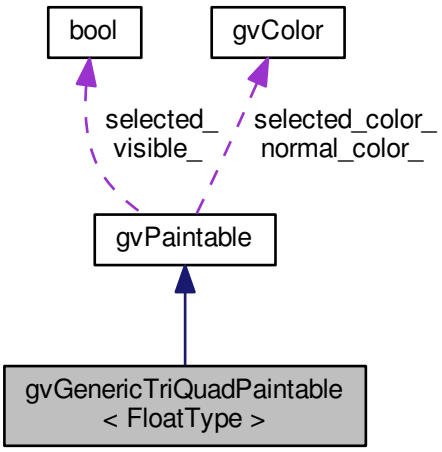
29.187 gvGenericTriQuadPaintable< FloatType > Class Template Reference

`#include <gvGenericTriQuadPaintable.h>`

Inheritance diagram for gvGenericTriQuadPaintable< FloatType >:



Collaboration diagram for gvGenericTriQuadPaintable< FloatType >:



Public Member Functions

- gvGenericTriQuadPaintable (gvGenericTriQuadMesh< FloatType > &mesh, const gvColor &ncolor, const gvColor &scolor, int id)
- gvGenericTriQuadPaintable (gvGenericTriQuadMesh< FloatType > &mesh, const gvColor &ncolor, int id)
- virtual ~gvGenericTriQuadPaintable ()
- virtual void paint ()

Protected Attributes

- gvGenericTriQuadMesh< FloatType > & mesh_

29.187.1 Detailed Description

template<typename FloatType>
class gvGenericTriQuadPaintable< FloatType >

Documentation ... etc

Definition at line 58 of file gvGenericTriQuadPaintable.h.

29.187.2 Constructor & Destructor Documentation

29.187.2.1 template<typename FloatType > gvGenericTriQuadPaintable< FloatType >::gvGenericTriQuadPaintable (gvGenericTriQuadMesh< FloatType > & *mesh,* const gvColor & *ncolor,* const gvColor & *scolor,* int *id*) [inline]

Definition at line 61 of file gvGenericTriQuadPaintable.h.

29.187.2.2 template<typename FloatType > gvGenericTriQuadPaintable< FloatType >::gvGenericTriQuad↩ Paintable (gvGenericTriQuadMesh< FloatType > & *mesh,* const gvColor & *ncolor,* int *id*) [inline]

Definition at line 68 of file gvGenericTriQuadPaintable.h.

29.187.2.3 template<typename FloatType > virtual gvGenericTriQuadPaintable< FloatType >::~gvGenericTriQuadPaintable ( ) [inline], [virtual]

Definition at line 74 of file gvGenericTriQuadPaintable.h.

29.187.3 Member Function Documentation

29.187.3.1 template<typename FloatType > virtual void gvGenericTriQuadPaintable< FloatType >::paint ( ) [inline], [virtual]

Definition at line 77 of file gvGenericTriQuadPaintable.h.

29.187.4 Member Data Documentation

29.187.4.1 template<typename FloatType > gvGenericTriQuadMesh<FloatType>& gvGenericTriQuadPaintable< FloatType >::mesh_ [protected]

Definition at line 122 of file gvGenericTriQuadPaintable.h.

The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvGenericTriQuadPaintable.h

29.188 gvGroup Class Reference

Structure used to store name and index of members of a group of objects.

`#include <gvGroup.h>`

Public Member Functions

- gvGroup (std::vector< int > &members, QString name)
- ~gvGroup ()
- QString name () const
- int size () const
- int operator[ ] (int index) const

29.188.1 Detailed Description

Structure used to store name and index of members of a group of objects.

Definition at line 47 of file gvGroup.h.

29.188.2 Constructor & Destructor Documentation

29.188.2.1 gvGroup::gvGroup (std::vector< int > & *members*, QString *name*)

29.188.2.2 gvGroup::~gvGroup ( )

29.188.3 Member Function Documentation

29.188.3.1 QString gvGroup::name ( ) const

29.188.3.2 int gvGroup::operator[ ] (int *index*) const

29.188.3.3 int gvGroup::size ( ) const

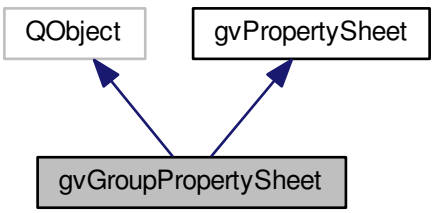
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvGroup.h

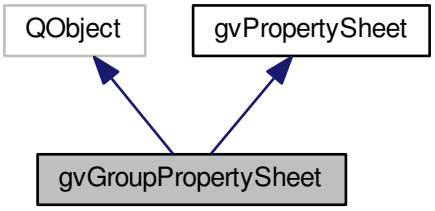
29.189 gvGroupPropertySheet Class Reference

`#include <gvGroupPropertySheet.h>`

Inheritance diagram for gvGroupPropertySheet:



Collaboration diagram for gvGroupPropertySheet:



Public Slots

- void accept ()

Signals

- void value_changed (std::vector< int > &members, QString name)

Public Member Functions

- gvGroupPropertySheet (std::vector< int > &members, QString &def_name)
- virtual void createSheet (QWidget *parent, gvObserver *obs)
- std::vector< int > getMembers ()

29.189.1 Detailed Description

Representation of several objects connected into one logical group.

Definition at line 63 of file gvGroupPropertySheet.h.

29.189.2 Constructor & Destructor Documentation

29.189.2.1 gvGroupPropertySheet::gvGroupPropertySheet (std::vector< int > & *members*, QString & *def_name*)

29.189.3 Member Function Documentation

29.189.3.1 void gvGroupPropertySheet::accept ( ) [slot]

29.189.3.2 virtual void gvGroupPropertySheet::createSheet (QWidget * *parent*, gvObserver * *obs*) [virtual]

Implements gvPropertySheet.

29.189.3.3 std::vector<int> gvGroupPropertySheet::getMembers ( )

29.189.3.4 void gvGroupPropertySheet::value_changed (std::vector< int > & *members*, QString *name*) [signal]

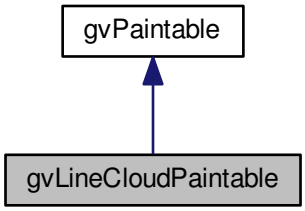
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvGroupPropertySheet.h

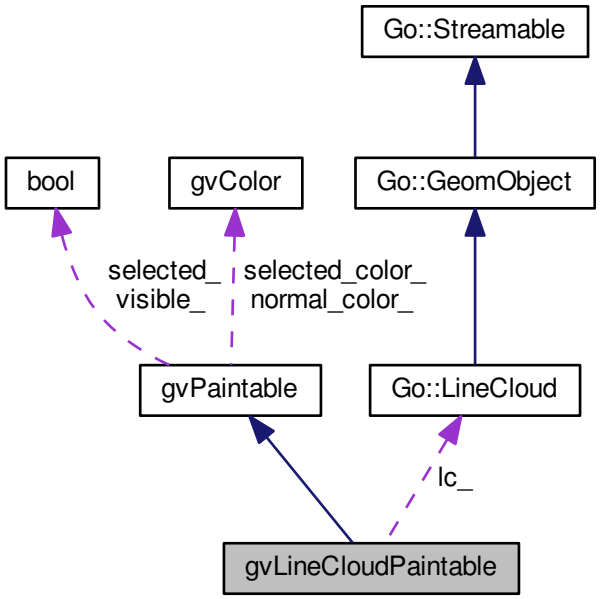
29.190 gvLineCloudPaintable Class Reference

`#include <gvLineCloudPaintable.h>`

Inheritance diagram for gvLineCloudPaintable:



Collaboration diagram for gvLineCloudPaintable:



Public Member Functions

- gvLineCloudPaintable (const Go::LineCloud &lc, const gvColor &ncolor, const gvColor &scolor, int id)
- gvLineCloudPaintable (const Go::LineCloud &lc, const gvColor &ncolor, int id)
- virtual ~gvLineCloudPaintable ()
- virtual void paint (gvTexture *)
- void setFractionRendered (double f)
- double fractionRendered ()

Protected Attributes

- const Go::LineCloud & lc_
- double fractionrendered_

29.190.1 Detailed Description

Documentation ... etc

Definition at line 64 of file gvLineCloudPaintable.h.

29.190.2 Constructor & Destructor Documentation

29.190.2.1 gvLineCloudPaintable::gvLineCloudPaintable (const Go::LineCloud & *lc,* const gvColor & *ncolor,* const gvColor & *scolor,* int *id*) [inline]

Definition at line 67 of file gvLineCloudPaintable.h.

29.190.2.2 gvLineCloudPaintable::gvLineCloudPaintable (const Go::LineCloud & *lc,* const gvColor & *ncolor,* int *id*) [inline]

Definition at line 74 of file gvLineCloudPaintable.h.

29.190.2.3 virtual gvLineCloudPaintable::~gvLineCloudPaintable ( ) [inline], [virtual]

Definition at line 80 of file gvLineCloudPaintable.h.

29.190.3 Member Function Documentation

29.190.3.1 double gvLineCloudPaintable::fractionRendered ( ) [inline]

Definition at line 105 of file gvLineCloudPaintable.h.

29.190.3.2 virtual void gvLineCloudPaintable::paint (gvTexture * *texture*) [inline], [virtual]

The function that does the painting. Must be overridden by all subclasses. If your subclass does not use textures, just ignore the texture argument.

Implements gvPaintable.

Definition at line 83 of file gvLineCloudPaintable.h.

29.190.3.3 void gvLineCloudPaintable::setFractionRendered (double *f*) [inline]

Definition at line 100 of file gvLineCloudPaintable.h.

29.190.4 Member Data Documentation

29.190.4.1 double gvLineCloudPaintable::fractionrendered_ [protected]

Definition at line 112 of file gvLineCloudPaintable.h.

29.190.4.2 const Go::LineCloud& gvLineCloudPaintable::lc_ [protected]

Definition at line 111 of file gvLineCloudPaintable.h.

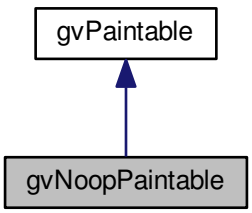
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvLineCloudPaintable.h

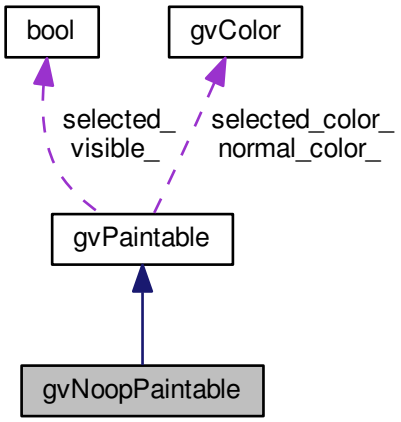
29.191 gvNoopPaintable Class Reference

`#include <gvNoopPaintable.h>`

Inheritance diagram for gvNoopPaintable:



Collaboration diagram for gvNoopPaintable:



Public Member Functions

- gvNoopPaintable (const gvColor &ncolor, const gvColor &scolor, int id)
- gvNoopPaintable (const gvColor &ncolor, int id)
- virtual ~gvNoopPaintable ()
- virtual void paint (gvTexture *texture)

Additional Inherited Members

29.191.1 Detailed Description

Documentation ...

Definition at line 51 of file gvNoopPaintable.h.

29.191.2 Constructor & Destructor Documentation

29.191.2.1 gvNoopPaintable::gvNoopPaintable (const gvColor & *ncolor,* const gvColor & *scolor,* int *id*) [inline]

Definition at line 54 of file gvNoopPaintable.h.

29.191.2.2 gvNoopPaintable::gvNoopPaintable (const gvColor & *ncolor,* int *id*) [inline]

Definition at line 59 of file gvNoopPaintable.h.

29.191.2.3 virtual gvNoopPaintable::~gvNoopPaintable ( ) [virtual]

29.191.3 Member Function Documentation

29.191.3.1 virtual void gvNoopPaintable::paint (gvTexture * *texture*) [virtual]

The function that does the painting. Must be overridden by all subclasses. If your subclass does not use textures, just ignore the texture argument.

Implements gvPaintable.

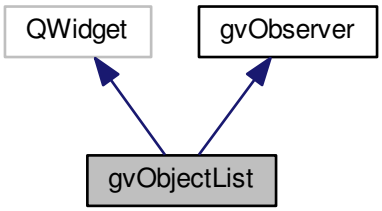
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvNoopPaintable.h

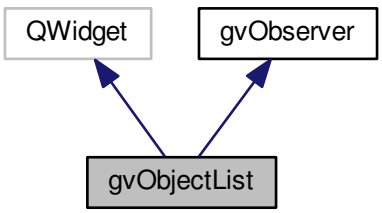
29.192 gvObjectList Class Reference

`#include <gvObjectList.h>`

Inheritance diagram for gvObjectList:



Collaboration diagram for gvObjectList:



Public Member Functions

- gvObjectList (gvData &data, QWidget *parent=0, const char *name=0, Qt::WFlags f=0)
- virtual ~gvObjectList ()
- virtual void observedChanged ()
- void buildGUI ()

Protected Slots

- void clicked (int id)

29.192.1 Detailed Description

Documentation ... etc

Definition at line 60 of file gvObjectList.h.

29.192.2 Constructor & Destructor Documentation

29.192.2.1 gvObjectList::gvObjectList (gvData & *data*, QWidget * *parent* = `0`, const char * *name* = `0`, Qt::WFlags *f* = `0`)

29.192.2.2 virtual gvObjectList::~gvObjectList ( ) [virtual]

29.192.3 Member Function Documentation

29.192.3.1 void gvObjectList::buildGUI ( )

29.192.3.2 void gvObjectList::clicked (int *id*) [protected], [slot]

29.192.3.3 virtual void gvObjectList::observedChanged ( ) [virtual]

Implements gvObserver.

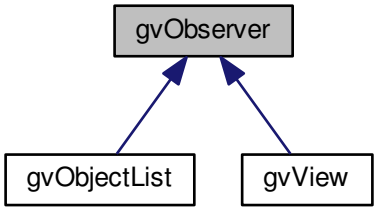
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvObjectList.h

29.193 gvObserver Class Reference

`#include <gvObserver.h>`

Inheritance diagram for gvObserver:



Public Member Functions

- virtual ~gvObserver ()
- virtual void observedChanged ()=0

29.193.1 Detailed Description

Documentation ... etc

Definition at line 47 of file gvObserver.h.

29.193.2 Constructor & Destructor Documentation

29.193.2.1 virtual gvObserver::~gvObserver ( ) [virtual]

29.193.3 Member Function Documentation

29.193.3.1 virtual void gvObserver::observedChanged ( ) [pure virtual]

Implemented in gvView, and gvObjectList.

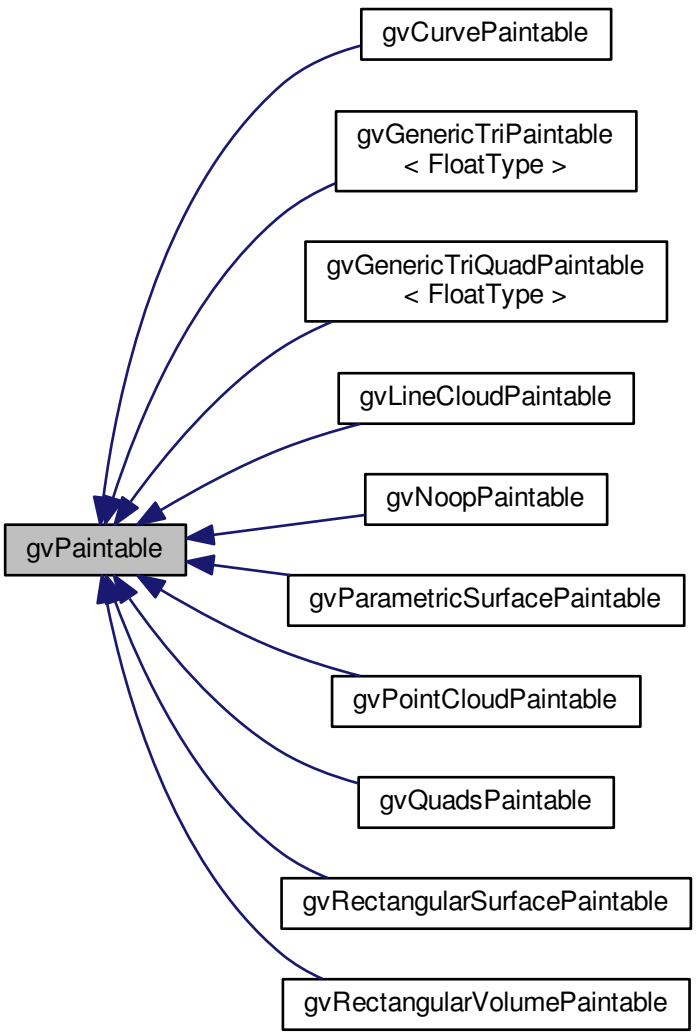
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvObserver.h

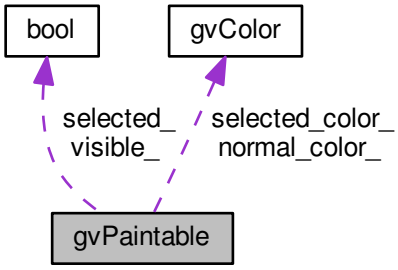
29.194 gvPaintable Class Reference

`#include <gvPaintable.h>`

Inheritance diagram for gvPaintable:



Collaboration diagram for gvPaintable:



Public Member Functions

- gvPaintable (const gvColor &ncolor, const gvColor &scolor, int id)
- gvPaintable (const gvColor &ncolor, int id)
- virtual ~gvPaintable ()
- virtual void paint (gvTexture *texture)=0
- virtual void paintGL (QGLWidget *w, gvTexture *texture)
- void setVisible (bool state)
- bool visible () const
- void setSelected (bool state)
- bool selected () const
- void setColor (const gvColor &ncolor, const gvColor &scolor)
- void setColor (const gvColor &ncolor)
- gvColor getNormalColor ()
- int id () const
- void setId (int id)

Protected Attributes

- bool visible_
- bool selected_
- gvColor normal_color_
- gvColor selected_color_
- int id_

29.194.1 Detailed Description

gvPaintable: Super class for OpenGL calls to geometric objects.

Definition at line 52 of file gvPaintable.h.

29.194.2 Constructor & Destructor Documentation

29.194.2.1 gvPaintable::gvPaintable (const gvColor & *ncolor,* const gvColor & *scolor,* int *id*) [inline]

The arguments of this constructor (which will be called only by subclasses) are the colors to use in normal and selected states.

Definition at line 58 of file gvPaintable.h.

29.194.2.2 gvPaintable::gvPaintable (const gvColor & *ncolor,* int *id*) [inline]

If the selected-mode color is not specifyed, a lighter shade of the normal color will be used.

Definition at line 68 of file gvPaintable.h.

29.194.2.3 virtual gvPaintable::~gvPaintable ( ) [virtual]

29.194.3 Member Function Documentation

29.194.3.1 gvColor gvPaintable::getNormalColor ( ) [inline]

Definition at line 125 of file gvPaintable.h.

29.194.3.2 int gvPaintable::id ( ) const [inline]

Definition at line 129 of file gvPaintable.h.

29.194.3.3 virtual void gvPaintable::paint (gvTexture * *texture*) [pure virtual]

The function that does the painting. Must be overridden by all subclasses. If your subclass does not use textures, just ignore the texture argument.

Implemented in gvParametricSurfacePaintable, gvGenericTriPaintable< FloatType >, gvPointCloudPaintable, gvLineCloudPaintable, gvCurvePaintable, gvRectangularVolumePaintable, gvQuadsPaintable, gvRectangular↩SurfacePaintable, and gvNoopPaintable.

29.194.3.4 virtual void gvPaintable::paintGL (QGLWidget * *w,* gvTexture * *texture*) [inline], [virtual]

Reimplemented in gvPointCloudPaintable.

Definition at line 88 of file gvPaintable.h.

29.194.3.5 bool gvPaintable::selected ( ) const [inline]

Definition at line 105 of file gvPaintable.h.

29.194.3.6 void gvPaintable::setColor (const gvColor & *ncolor,* const gvColor & *scolor*) [inline]

Definition at line 109 of file gvPaintable.h.

29.194.3.7 void gvPaintable::setColor (const gvColor & *ncolor*) [inline]

Definition at line 115 of file gvPaintable.h.

29.194.3.8 void gvPaintable::setId (int *id*) [inline]

Definition at line 133 of file gvPaintable.h.

29.194.3.9 void gvPaintable::setSelected (bool *state*) [inline]

Definition at line 101 of file gvPaintable.h.

29.194.3.10 void gvPaintable::setVisible (bool *state*) [inline]

Definition at line 93 of file gvPaintable.h.

29.194.3.11 bool gvPaintable::visible ( ) const [inline]

Definition at line 97 of file gvPaintable.h.

29.194.4 Member Data Documentation

29.194.4.1 int gvPaintable::id_ [protected]

Definition at line 143 of file gvPaintable.h.

29.194.4.2 gvColor gvPaintable::normal_color_ [protected]

Definition at line 141 of file gvPaintable.h.

29.194.4.3 bool gvPaintable::selected_ [protected]

Definition at line 140 of file gvPaintable.h.

29.194.4.4 gvColor gvPaintable::selected_color_ [protected]

Definition at line 142 of file gvPaintable.h.

29.194.4.5 bool gvPaintable::visible_ [protected]

Definition at line 139 of file gvPaintable.h.

The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvPaintable.h

29.195 gvPainter Class Reference

The gvPainter is responsible for painting the 3D scene.

`#include <gvPainter.h>`

Public Member Functions

- gvPainter ()
- virtual ~gvPainter ()
- virtual void drawScene (QGLWidget *w=NULL)
- void addPaintable (shared_ptr< gvPaintable > pa)
- void removeAllPaintables ()
- void removePaintable (int id)
- void removeLastPaintable ()
- gvPaintable & getPaintable (int index)
- void setTexture (int index, shared_ptr< gvTexture > tex)
- shared_ptr< gvTexture > getTexture (int index)
- shared_ptr< const gvTexture > setTexture (int index)

Protected Attributes

- std::vector< shared_ptr< gvPaintable > > paintables_
- std::vector< shared_ptr< gvTexture > > textures_

29.195.1 Detailed Description

The gvPainter is responsible for painting the 3D scene.

Definition at line 53 of file gvPainter.h.

29.195.2 Constructor & Destructor Documentation

29.195.2.1 gvPainter::gvPainter ( ) [inline]

Definition at line 56 of file gvPainter.h.

29.195.2.2 virtual gvPainter::~gvPainter ( ) [virtual]

29.195.3 Member Function Documentation

29.195.3.1 void gvPainter::addPaintable (shared_ptr< gvPaintable > *pa*) [inline]

Add a new paintable. gvPaintable is the abstract bas class of all paintables.

Definition at line 66 of file gvPainter.h.

29.195.3.2 virtual void gvPainter::drawScene (QGLWidget * *w* = NULL) [virtual]

Draws the 3D scene by calling the paint() virtual method of all its contained gvPaintables.

29.195.3.3 gvPaintable& gvPainter::getPaintable (int *index*) [inline]

Call this to access the individual paintables, in order to manipulate selection state, visibility state or color.

Definition at line 98 of file gvPainter.h.

29.195.3.4 shared_ptr<gvTexture> gvPainter::getTexture (int *index*) [inline]

Definition at line 109 of file gvPainter.h.

29.195.3.5 void gvPainter::removeAllPaintables ( ) [inline]

Removes all paintables, if you want to paint something you have to addPaintable() again.

Definition at line 79 of file gvPainter.h.

29.195.3.6 void gvPainter::removeLastPaintable ( ) [inline]

Definition at line 91 of file gvPainter.h.

29.195.3.7 void gvPainter::removePaintable (int *id*) [inline]

Definition at line 85 of file gvPainter.h.

29.195.3.8 void gvPainter::setTexture (int *index*, shared_ptr< gvTexture > *tex*) [inline]

Definition at line 103 of file gvPainter.h.

29.195.3.9 shared_ptr<const gvTexture> gvPainter::setTexture (int *index*) [inline]

Definition at line 115 of file gvPainter.h.

29.195.4 Member Data Documentation

29.195.4.1 std::vector< shared_ptr<gvPaintable> > gvPainter::paintables_ [protected]

Definition at line 122 of file gvPainter.h.

29.195.4.2 std::vector< shared_ptr<gvTexture> > gvPainter::textures_ [protected]

Definition at line 123 of file gvPainter.h.

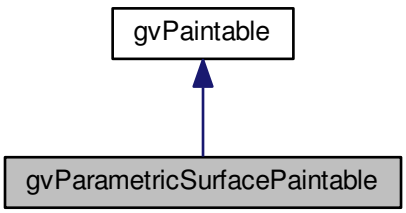
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvPainter.h

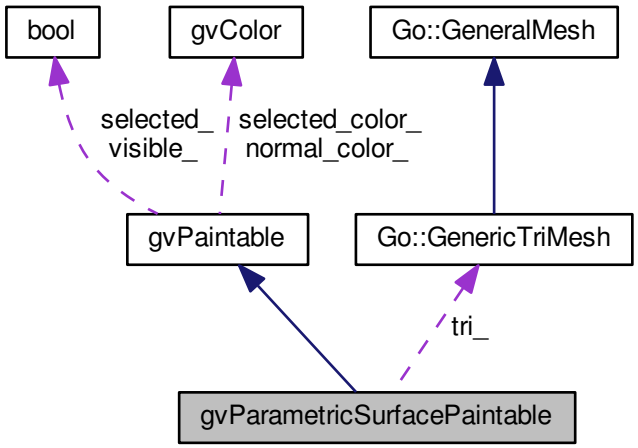
29.196 gvParametricSurfacePaintable Class Reference

```
#include <gvParametricSurfacePaintable.h>
```

Inheritance diagram for gvParametricSurfacePaintable:



Collaboration diagram for gvParametricSurfacePaintable:



Public Member Functions

- gvParametricSurfacePaintable (genMesh &tri, const gvColor &ncolor, const gvColor &scolor, int id)
- gvParametricSurfacePaintable (genMesh &tri, const gvColor &ncolor, int id)
- virtual ~gvParametricSurfacePaintable ()
- virtual void paint (gvTexture *texture)

Protected Member Functions

- void createSurface ()
- void drawSurface ()

Protected Attributes

- genMesh & tri_

29.196.1 Detailed Description

gvParametricSurfacePaintable: OpenGL calls for a parametric surface.

Definition at line 63 of file gvParametricSurfacePaintable.h.

29.196.2 Constructor & Destructor Documentation

29.196.2.1 gvParametricSurfacePaintable::gvParametricSurfacePaintable (genMesh & *tri,* const gvColor & *ncolor,* const gvColor & *scolor,* int *id*) [inline]

Definition at line 66 of file gvParametricSurfacePaintable.h.

29.196.2.2 gvParametricSurfacePaintable::gvParametricSurfacePaintable (genMesh & *tri,* const gvColor & *ncolor,* int *id*) [inline]

Definition at line 73 of file gvParametricSurfacePaintable.h.

29.196.2.3 virtual gvParametricSurfacePaintable::~gvParametricSurfacePaintable ( ) [virtual]

29.196.3 Member Function Documentation

29.196.3.1 void gvParametricSurfacePaintable::createSurface ( ) [protected]

29.196.3.2 void gvParametricSurfacePaintable::drawSurface ( ) [protected]

29.196.3.3 virtual void gvParametricSurfacePaintable::paint (gvTexture * *texture*) [virtual]

The function that does the painting. Must be overridden by all subclasses. If your subclass does not use textures, just ignore the texture argument.

Implements gvPaintable.

29.196.4 Member Data Documentation

29.196.4.1 genMesh& gvParametricSurfacePaintable::tri_ [protected]

Definition at line 94 of file gvParametricSurfacePaintable.h.

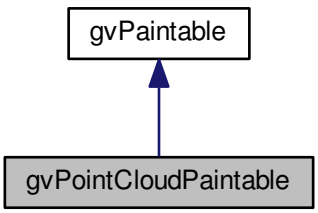
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvParametricSurfacePaintable.h

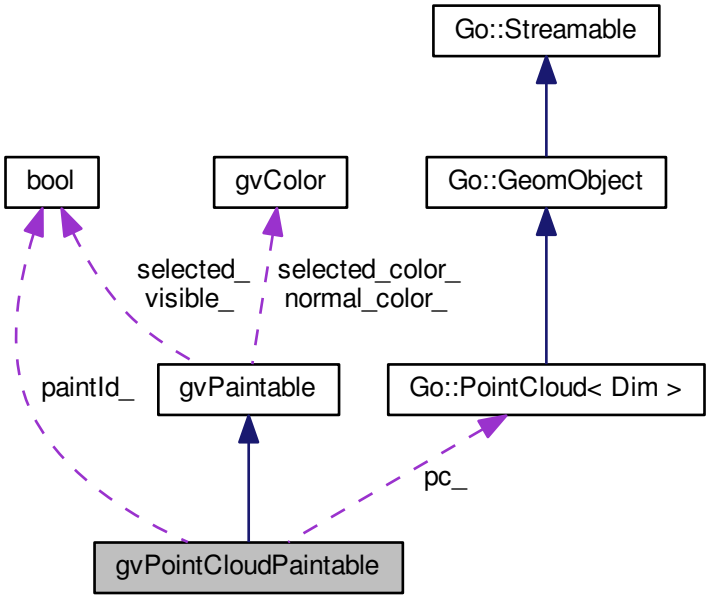
29.197 gvPointCloudPaintable Class Reference

`#include <gvPointCloudPaintable.h>`

Inheritance diagram for gvPointCloudPaintable:



Collaboration diagram for gvPointCloudPaintable:



Public Member Functions

- gvPointCloudPaintable (const Go::PointCloud3D &pc, const gvColor &ncolor, const gvColor &scolor, int id, bool paintId=false)
- gvPointCloudPaintable (const Go::PointCloud3D &pc, const gvColor &ncolor, int id, bool paintId=false)
- virtual ~gvPointCloudPaintable ()
- virtual void paint (gvTexture *)
- virtual void paintGL (QGLWidget *w, gvTexture *texture)
- void setFractionRendered (double f)
- double fractionRendered ()
- void setPointSize (double sz)
- double pointSize ()
- bool getPaintId () const
- void setPaintId (bool paintId)
- void translate (const std::vector< double > &vert_translation)

  Translate all vertices by vert_translation, wrt the geometry, discarding any previus translation.

Protected Attributes

- const Go::PointCloud3D & pc_
- double fractionrendered_
- double pointsize_
- bool paintId_
- std::vector< double > vert_translation_

  The 3D-translation wrt the geometry.

29.197.1 Detailed Description

Documentation ... etc

Definition at line 68 of file gvPointCloudPaintable.h.

29.197.2 Constructor & Destructor Documentation

29.197.2.1 gvPointCloudPaintable::gvPointCloudPaintable (const Go::PointCloud3D & *pc,* const gvColor & *ncolor,* const gvColor & *scolor,* int *id,* bool *paintId* = false) [inline]

Definition at line 71 of file gvPointCloudPaintable.h.

29.197.2.2 gvPointCloudPaintable::gvPointCloudPaintable (const Go::PointCloud3D & *pc,* const gvColor & *ncolor,* int *id,* bool *paintId* = false) [inline]

Definition at line 79 of file gvPointCloudPaintable.h.

29.197.2.3 virtual gvPointCloudPaintable::~gvPointCloudPaintable ( ) [inline], [virtual]

Definition at line 86 of file gvPointCloudPaintable.h.

29.197.3 Member Function Documentation

29.197.3.1 double gvPointCloudPaintable::fractionRendered ( ) [inline]

Definition at line 142 of file gvPointCloudPaintable.h.

29.197.3.2 bool gvPointCloudPaintable::getPaintId ( ) const [inline]

Definition at line 157 of file gvPointCloudPaintable.h.

29.197.3.3 virtual void gvPointCloudPaintable::paint (gvTexture * *texture*) [inline], [virtual]

The function that does the painting. Must be overridden by all subclasses. If your subclass does not use textures, just ignore the texture argument.

Implements gvPaintable.

Definition at line 89 of file gvPointCloudPaintable.h.

29.197.3.4 virtual void gvPointCloudPaintable::paintGL (QGLWidget * *w,* gvTexture * *texture*) [inline], [virtual]

Reimplemented from gvPaintable.

Definition at line 112 of file gvPointCloudPaintable.h.

29.197.3.5 double gvPointCloudPaintable::pointSize ( ) [inline]

Definition at line 152 of file gvPointCloudPaintable.h.

29.197.3.6 void gvPointCloudPaintable::setFractionRendered (double *f*) [inline]

Definition at line 137 of file gvPointCloudPaintable.h.

29.197.3.7 void gvPointCloudPaintable::setPaintId (bool *paintId*) [inline]

Definition at line 162 of file gvPointCloudPaintable.h.

29.197.3.8 void gvPointCloudPaintable::setPointSize (double *sz*) [inline]

Definition at line 147 of file gvPointCloudPaintable.h.

29.197.3.9 void gvPointCloudPaintable::translate (const std::vector< double > & *vert_translation*) [inline]

Translate all vertices by vert_translation, wrt the geometry, discarding any previus translation.

Definition at line 168 of file gvPointCloudPaintable.h.

29.197.4 Member Data Documentation

29.197.4.1 double gvPointCloudPaintable::fractionrendered_ [protected]

Definition at line 175 of file gvPointCloudPaintable.h.

29.197.4.2 bool gvPointCloudPaintable::paintId_ [protected]

Definition at line 177 of file gvPointCloudPaintable.h.

29.197.4.3 const Go::PointCloud3D& gvPointCloudPaintable::pc_ [protected]

Definition at line 174 of file gvPointCloudPaintable.h.

29.197.4.4 double gvPointCloudPaintable::pointsize_ [protected]

Definition at line 176 of file gvPointCloudPaintable.h.

29.197.4.5 std::vector<double> gvPointCloudPaintable::vert_translation_ [protected]

The 3D-translation wrt the geometry.

Definition at line 180 of file gvPointCloudPaintable.h.

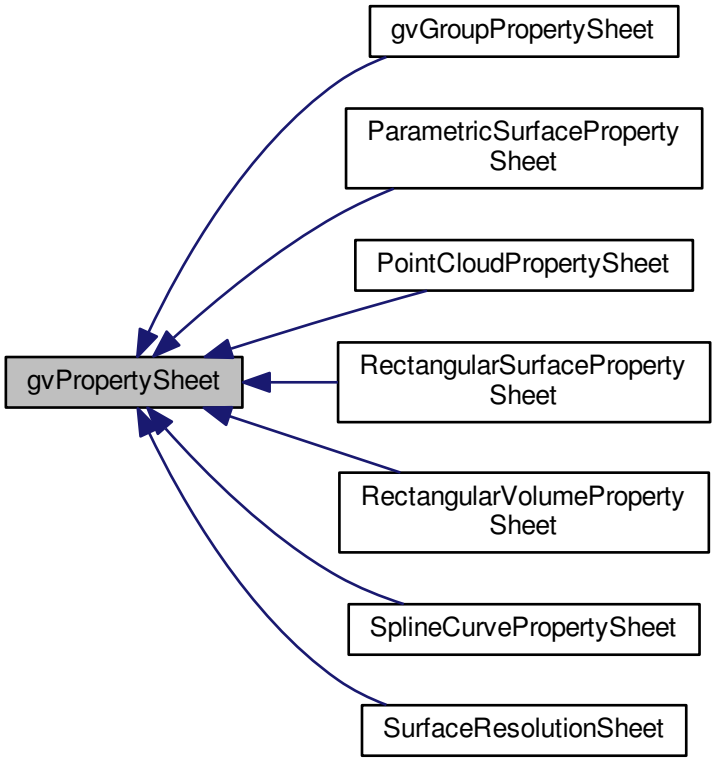
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvPointCloudPaintable.h

29.198 gvPropertySheet Class Reference

`#include <gvPropertySheet.h>`

Inheritance diagram for gvPropertySheet:



Public Member Functions

- virtual ~gvPropertySheet ()
- virtual void createSheet (QWidget *parent, gvObserver *observer)=0

29.198.1 Detailed Description

Documentation ... etc

Definition at line 50 of file gvPropertySheet.h.

29.198.2 Constructor & Destructor Documentation

29.198.2.1 virtual gvPropertySheet::~gvPropertySheet ( ) [virtual]

29.198.3 Member Function Documentation

29.198.3.1 virtual void gvPropertySheet::createSheet (QWidget * *parent,* gvObserver * *observer*) [pure virtual]

Implemented in ParametricSurfacePropertySheet, RectangularVolumePropertySheet, RectangularSurface↩PropertySheet, gvGroupPropertySheet, SurfaceResolutionSheet, SplineCurvePropertySheet, and PointCloud↩PropertySheet.

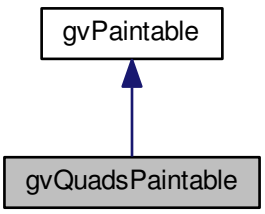
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvPropertySheet.h

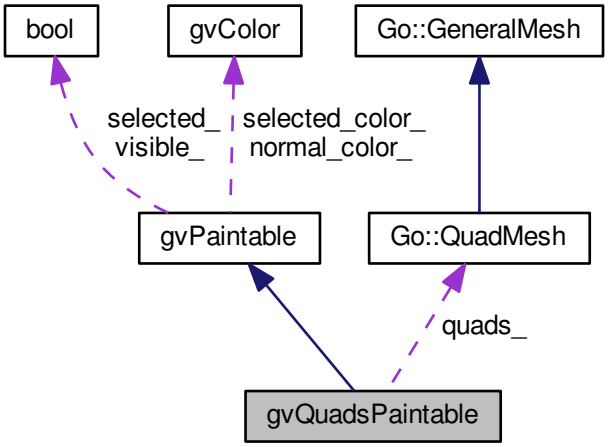
29.199 gvQuadsPaintable Class Reference

`#include <gvQuadsPaintable.h>`

Inheritance diagram for gvQuadsPaintable:



Collaboration diagram for gvQuadsPaintable:



Public Member Functions

- gvQuadsPaintable (Go::QuadMesh &quads, const gvColor &ncolor, const gvColor &scolor, int id)
- gvQuadsPaintable (Go::QuadMesh &quads, const gvColor &ncolor, int id)
- virtual ~gvQuadsPaintable ()
- virtual void paint (gvTexture *texture)

Protected Attributes

- Go::QuadMesh & quads_

29.199.1 Detailed Description

Brief description. Detailed description.

Definition at line 52 of file gvQuadsPaintable.h.

29.199.2 Constructor & Destructor Documentation

29.199.2.1 gvQuadsPaintable::gvQuadsPaintable (Go::QuadMesh & *quads*, const gvColor & *ncolor*, const gvColor & *scolor*, int *id*) [inline]

Definition at line 55 of file gvQuadsPaintable.h.

29.199.2.2 gvQuadsPaintable::gvQuadsPaintable (Go::QuadMesh & *quads,* const gvColor & *ncolor,* int *id*) [inline]

Definition at line 62 of file gvQuadsPaintable.h.

29.199.2.3 virtual gvQuadsPaintable::~gvQuadsPaintable ( ) [virtual]

29.199.3 Member Function Documentation

29.199.3.1 virtual void gvQuadsPaintable::paint (gvTexture * *texture*) [virtual]

The function that does the painting. Must be overridden by all subclasses. If your subclass does not use textures, just ignore the texture argument.

Implements gvPaintable.

29.199.4 Member Data Documentation

29.199.4.1 Go::QuadMesh& gvQuadsPaintable::quads_ [protected]

Definition at line 74 of file gvQuadsPaintable.h.

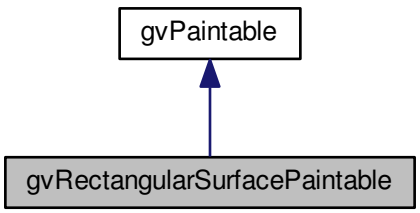
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvQuadsPaintable.h

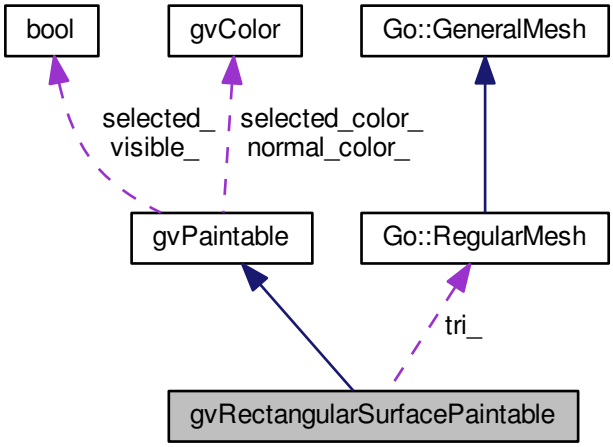
29.200 gvRectangularSurfacePaintable Class Reference

`#include <gvRectangularSurfacePaintable.h>`

Inheritance diagram for gvRectangularSurfacePaintable:



Collaboration diagram for gvRectangularSurfacePaintable:



Public Member Functions

- gvRectangularSurfacePaintable (Go::RegularMesh &tri, const gvColor &ncolor, const gvColor &scolor, int id)
- gvRectangularSurfacePaintable (Go::RegularMesh &tri, const gvColor &ncolor, int id)
- virtual ~gvRectangularSurfacePaintable ()
- virtual void paint (gvTexture *texture)

Protected Attributes

- Go::RegularMesh & tri_

29.200.1 Detailed Description

gvRectangularSurfacePaintable: OpenGL calls for a parametric surface on a rectangular domain.

Definition at line 52 of file gvRectangularSurfacePaintable.h.

29.200.2 Constructor & Destructor Documentation

29.200.2.1 gvRectangularSurfacePaintable::gvRectangularSurfacePaintable (Go::RegularMesh & *tri,* const gvColor & *ncolor,* const gvColor & *scolor,* int *id*) [inline]

Definition at line 55 of file gvRectangularSurfacePaintable.h.

29.200.2.2 gvRectangularSurfacePaintable::gvRectangularSurfacePaintable (Go::RegularMesh & *tri,* const gvColor & *ncolor,* int *id*) [inline]

Definition at line 62 of file gvRectangularSurfacePaintable.h.

29.200.2.3 virtual gvRectangularSurfacePaintable::~gvRectangularSurfacePaintable ( ) [virtual]

29.200.3 Member Function Documentation

29.200.3.1 virtual void gvRectangularSurfacePaintable::paint (gvTexture * *texture*) [virtual]

The function that does the painting. Must be overridden by all subclasses. If your subclass does not use textures, just ignore the texture argument.

Implements gvPaintable.

29.200.4 Member Data Documentation

29.200.4.1 Go::RegularMesh& gvRectangularSurfacePaintable::tri_ [protected]

Definition at line 74 of file gvRectangularSurfacePaintable.h.

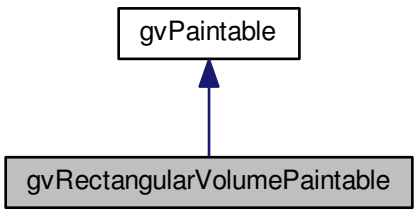
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvRectangularSurfacePaintable.h

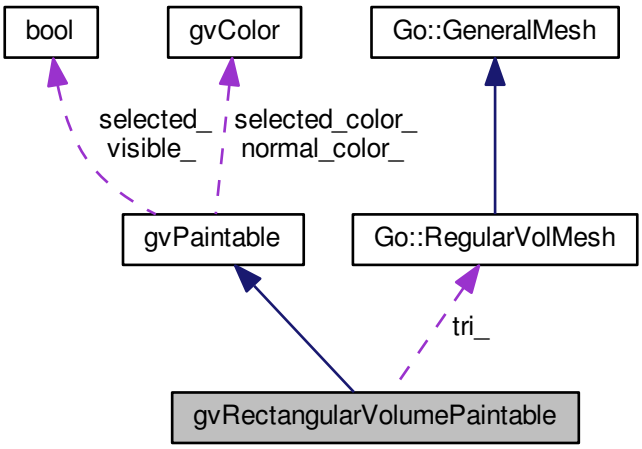
29.201 gvRectangularVolumePaintable Class Reference

`#include <gvRectangularVolumePaintable.h>`

Inheritance diagram for gvRectangularVolumePaintable:



Collaboration diagram for gvRectangularVolumePaintable:



Public Member Functions

- gvRectangularVolumePaintable (Go::RegularVolMesh &tri, const gvColor &ncolor, const gvColor &scolor, int id)
- gvRectangularVolumePaintable (Go::RegularVolMesh &tri, const gvColor &ncolor, int id)
- virtual ~gvRectangularVolumePaintable ()
- virtual void paint (gvTexture *texture)

Protected Attributes

- Go::RegularVolMesh & tri_

29.201.1 Detailed Description

gvRectangularSurfacePaintable: OpenGL calls for a parametric surface on a rectangular domain.

Definition at line 53 of file gvRectangularVolumePaintable.h.

29.201.2 Constructor & Destructor Documentation

29.201.2.1 gvRectangularVolumePaintable::gvRectangularVolumePaintable (Go::RegularVolMesh & *tri,* const gvColor & *ncolor,* const gvColor & *scolor,* int *id*) [inline]

Definition at line 56 of file gvRectangularVolumePaintable.h.

29.201.2.2 gvRectangularVolumePaintable::gvRectangularVolumePaintable (Go::RegularVolMesh & *tri,* const gvColor & *ncolor,* int *id*) [inline]

Definition at line 63 of file gvRectangularVolumePaintable.h.

29.201.2.3 virtual gvRectangularVolumePaintable::~gvRectangularVolumePaintable ( ) [virtual]

29.201.3 Member Function Documentation

29.201.3.1 virtual void gvRectangularVolumePaintable::paint (gvTexture * *texture*) [virtual]

The function that does the painting. Must be overridden by all subclasses. If your subclass does not use textures, just ignore the texture argument.

Implements gvPaintable.

29.201.4 Member Data Documentation

29.201.4.1 Go::RegularVolMesh& gvRectangularVolumePaintable::tri_ [protected]

Definition at line 75 of file gvRectangularVolumePaintable.h.

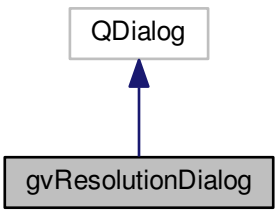
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/vol_and_lr/gvRectangularVolumePaintable.h

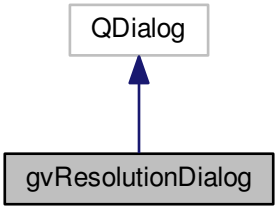
29.202 gvResolutionDialog Class Reference

`#include <gvResolutionDialog.h>`

Inheritance diagram for gvResolutionDialog:



Collaboration diagram for gvResolutionDialog:



Signals

- void valuesChanged (int, int)

Public Member Functions

- gvResolutionDialog (int current_res_u, int current_res_v, int minimum_res, int maximum_res, QWidget *parent=0, const char *name=0, bool modal=FALSE, Qt::WFlags f=0)
- virtual ~gvResolutionDialog ()

Protected Slots

- void apply ()
- virtual void accept ()

Protected Attributes

- int ures_
- int vres_
- QSlider * uslide_
- QSlider * vslide_

29.202.1 Detailed Description

Documentation ... etc

Definition at line 51 of file gvResolutionDialog.h.

29.202.2 Constructor & Destructor Documentation

29.202.2.1 gvResolutionDialog::gvResolutionDialog (int *current_res_u*, int *current_res_v*, int *minimum_res*, int *maximum_res*, QWidget * *parent* = 0, const char * *name* = 0, bool *modal* = FALSE, Qt::WFlags *f* = 0)

29.202.2.2 virtual gvResolutionDialog::~gvResolutionDialog ( ) [virtual]

29.202.3 Member Function Documentation

29.202.3.1 virtual void gvResolutionDialog::accept ( ) [protected], [virtual], [slot]

29.202.3.2 void gvResolutionDialog::apply ( ) [protected], [slot]

29.202.3.3 void gvResolutionDialog::valuesChanged (int , int) [signal]

29.202.4 Member Data Documentation

29.202.4.1 int gvResolutionDialog::ures_ [protected]

Definition at line 74 of file gvResolutionDialog.h.

29.202.4.2 QSlider* gvResolutionDialog::uslide_ [protected]

Definition at line 76 of file gvResolutionDialog.h.

29.202.4.3 int gvResolutionDialog::vres_ [protected]

Definition at line 75 of file gvResolutionDialog.h.

29.202.4.4 QSlider* gvResolutionDialog::vslide_ [protected]

Definition at line 77 of file gvResolutionDialog.h.

The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvResolutionDialog.h

29.203 gvStandardMouseHandler Class Reference

```
#include <gvStandardMouseHandler.h>
```

Public Member Functions

- gvStandardMouseHandler ()
- virtual ~gvStandardMouseHandler ()

29.203.1 Detailed Description

Documentation ... etc

Definition at line 66 of file gvStandardMouseHandler.h.

29.203.2 Constructor & Destructor Documentation

29.203.2.1 gvStandardMouseHandler::gvStandardMouseHandler ( )

29.203.2.2 virtual gvStandardMouseHandler::~gvStandardMouseHandler ( ) [virtual]

The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvStandardMouseHandler.h

29.204 gvTexture Class Reference

```
#include <gvTexture.h>
```

Public Member Functions

- gvTexture (bool mipmapped=false)
- gvTexture (const gvTexture &other)
- gvTexture & operator= (const gvTexture &other)
- gvTexture (int height, int width, unsigned char *pixels, bool mipmapped=false)
- gvTexture (std::string filename, bool mipmapped=false)
- virtual void readFile (std::string filename)
- virtual ~gvTexture ()
- bool genTexture () const
- bool bind () const
- void getQImage (QImage &res, bool withAlpha=false) const
- int height () const
- int width () const
- void setAlphaValue (int val)
- void setTextureMatrix (const double tm[ ])
- void setIdentMatrix ()
- void setMinFilter (MinFilterSet filter, bool flush=true)
- void setMagFilter (MagFilterSet filter, bool flush=true)
- void setEnvMode (EnvModeSet mode, bool flush=true)
- void setWrapMode (WrapModeSet mode, bool flush=true)
- MinFilterSet getMinFilter ()
- MagFilterSet getMagFilter ()
- EnvModeSet getEnvMode ()
- void setCenterEdgeTexels (bool enable)

29.204.1 Detailed Description

Documentation ... etc

Definition at line 66 of file gvTexture.h.

29.204.2 Constructor & Destructor Documentation

29.204.2.1 gvTexture::gvTexture (bool *mipmapped* = false)

29.204.2.2 gvTexture::gvTexture (const gvTexture & *other*)

29.204.2.3 gvTexture::gvTexture (int *height*, int *width*, unsigned char * *pixels*, bool *mipmapped* = false)

the size of the pixels array should be height∗width∗4 in RGBA format

29.204.2.4 gvTexture::gvTexture (std::string *filename*, bool *mipmapped* = false)

29.204.2.5 virtual gvTexture::~gvTexture ( ) [virtual]

29.204.3 Member Function Documentation

29.204.3.1 bool gvTexture::bind ( ) const

29.204.3.2 bool gvTexture::genTexture ( ) const

29.204.3.3 EnvModeSet gvTexture::getEnvMode ( )

29.204.3.4 MagFilterSet gvTexture::getMagFilter ( )

29.204.3.5 MinFilterSet gvTexture::getMinFilter ( )

29.204.3.6 void gvTexture::getQImage (QImage & *res*, bool *withAlpha* = false) const

29.204.3.7 int gvTexture::height ( ) const [inline]

Definition at line 85 of file gvTexture.h.

29.204.3.8 gvTexture& gvTexture::operator= (const gvTexture & *other*)

29.204.3.9 virtual void gvTexture::readFile (std::string *filename*) [virtual]

29.204.3.10 void gvTexture::setAlphaValue (int *val*)

29.204.3.11 void gvTexture::setCenterEdgeTexels (bool *enable*) [inline]

Definition at line 107 of file gvTexture.h.

29.204.3.12 void gvTexture::setEnvMode (EnvModeSet *mode,* bool *flush* = true)

29.204.3.13 void gvTexture::setIdentMatrix ( )

29.204.3.14 void gvTexture::setMagFilter (MagFilterSet *filter,* bool *flush* = true)

29.204.3.15 void gvTexture::setMinFilter (MinFilterSet *filter,* bool *flush* = true)

29.204.3.16 void gvTexture::setTextureMatrix (const double *tm[ ]*)

29.204.3.17 void gvTexture::setWrapMode (WrapModeSet *mode,* bool *flush* = true)

29.204.3.18 int gvTexture::width ( ) const [inline]

Definition at line 86 of file gvTexture.h.

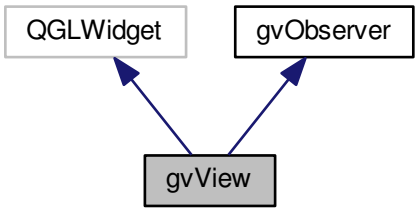
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvTexture.h

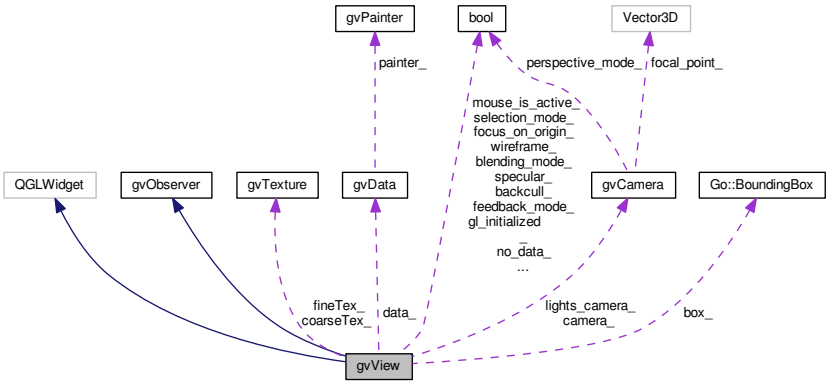
29.205 gvView Class Reference

`#include <gvView.h>`

Inheritance diagram for gvView:



Collaboration diagram for gvView:



Public Slots

- void setWireframe (bool mode)

  Set wireframe state.
- void setSelectionmode (bool mode)

  Set selection mode.
- void setAxis (bool mode)

  Set paint-axis state.
- void setBackCull (bool mode)

  Set backface-culling state.
- void setSpecular (bool mode)

  Set specular highlighting state.
- void setPerspective (bool mode)

  Set perspective projection state.
- void setFeedbackmode (bool mode)

  Set feedback state.
- void setBlendingmode (bool mode)

  Set blending state.
- void setGetClickmode (bool mode)

  Set get click mode.
- void setCenter (int x, int y)

  Centers view on point at x,y in back buffer.

Signals

- void objectPicked (unsigned int name)

  An object has been picked.
- void objectsPicked (unsigned int *names, int numnames)

  An object has been picked.
- void feedback (int xrel, int yrel)

Public Member Functions

- gvView (gvData &data, QWidget *parent=0, const char *name=0, const QGLWidget *shareWidget=0, Qt::↩ WFlags f=0)
- virtual ~gvView ()
- virtual void paintGL ()
- virtual void saveSnapshot (int w, int h, const QString &filename)
- virtual void initializeGL ()

  Initialize GL state (shademodel, lights, etc.)
- virtual void resizeGL (int w, int h)
- virtual void getObjAndParam (int mousex, int mousey, shared_ptr< const Go::ParamSurface > &obj, double &tex_u, double &tex_v)

  Searching among visible and selected objects.
- void pick (int mousex, int mousey)

  Pick the geometrical object at a mouse coordinate.
- void pickRegion (int mousex, int mousey, int w, int h)

  Pick the geometrical objects in a region of the window.
- void getWindowCoords (const Vector3D &pt, int &mousex, int &mousey) const
- virtual QSize sizeHint () const

@ Not sure if I need this

- virtual void observedChanged ()
- void focusOnBox ()
- void focusOnVisible ()
- bool wireframe ()

  Are we in wireframe mode?
- bool selectionmode ()

  Are we in selection mode?
- bool axis ()

  Are we in paint-axis mode?
- bool backCull ()

  Are we in bacface-culling mode?
- bool specular ()

  Are we in specular highlight mode?
- bool perspective ()

  Are we in perspective projection mode?
- bool feedbackmode () const

  Are we in feedback mode?
- bool blendingmode () const

  Should the alpha value be used for blending?
- void setOriginFocalPoint (bool origin)

  Let the camera focus on the origin. Vertices are then translated towards the origin.
- virtual QSize minimumSizeHint () const

Protected Member Functions

- gvView (const QGLFormat &format, gvData &data, QWidget ∗parent, const char ∗name, const QGLWidget ∗shareWidget, Qt::WFlags f)
- virtual void mousePressEvent (QMouseEvent ∗e)
- virtual void mouseReleaseEvent (QMouseEvent ∗e)
- virtual void mouseMoveEvent (QMouseEvent ∗e)
- virtual bool get3Dpoint (int mousex, int mousey, Vector3D &objpt)
- void drawOverlay ()
- gvTexture ∗ makeFineCheckImage ()
- gvTexture ∗ makeCoarseCheckImage ()

Static Protected Member Functions

- static void texCoordInt (int num_objs, int ind, double &min_s, double &max_s, double &min_t, double &max↩ _t)

Protected Attributes

- bool gl_initialized_
- bool no_data_
- bool selection_mode_
- bool selecting_
- bool feedback_mode_
- bool get_click_mode_
- bool mouse_is_active_

True if mouse was pressed in widget area and is not yet released.

- bool blending_mode_
- gvData & data_
- Go::BoundingBox box_
- gvCamera camera_
- gvCamera lights_camera_
- double base_axis_size_
- Qt::MouseButton mouse_button_
- QPoint last_mouse_pos_
- QPoint starting_mouse_pos_
- double draglength_
- double unitx_
- double unity_
- bool wireframe_
- bool axis_
- bool backcull_
- bool specular_
- gvTexture * coarseTex_
- gvTexture * fineTex_
- QPainter * painter_
- bool focus_on_origin_

29.205.1 Detailed Description

Documentation ... etc

Definition at line 68 of file gvView.h.

29.205.2 Constructor & Destructor Documentation

29.205.2.1 gvView::gvView (gvData & *data*, QWidget * *parent* = 0, const char * *name* = 0, const QGLWidget * *shareWidget* = 0, Qt::WFlags *f* = 0)

The gvData& argument is the gvData object this object should observe. The other arguments are standard arguments for the QGlWidget superclass.

29.205.2.2 virtual gvView::~gvView ( ) [virtual]

29.205.2.3 gvView::gvView (const QGLFormat & *format*, gvData & *data*, QWidget * *parent*, const char * *name*, const QGLWidget * *shareWidget*, Qt::WFlags *f*) [protected]

29.205.3 Member Function Documentation

29.205.3.1 bool gvView::axis ( ) [inline]

Are we in paint-axis mode?

Definition at line 127 of file gvView.h.

29.205.3.2 bool gvView::backCull ( ) [inline]

Are we in bacface-culling mode?

Definition at line 129 of file gvView.h.

29.205.3.3 bool gvView::blendingmode ( ) const [inline]

Should the alpha value be used for blending?

Definition at line 137 of file gvView.h.

29.205.3.4 void gvView::drawOverlay ( ) [protected]

29.205.3.5 void gvView::feedback (int *xrel,* int *yrel*) [signal]

In feedback mode, indicates mouse position relative to start of drag.

29.205.3.6 bool gvView::feedbackmode ( ) const [inline]

Are we in feedback mode?

Definition at line 135 of file gvView.h.

29.205.3.7 void gvView::focusOnBox ( )

Put the center of the bounding box of the model in the middle of the screen, at a (hopefully) useful distance from the camera.

29.205.3.8 void gvView::focusOnVisible ( )

29.205.3.9 virtual bool gvView::get3Dpoint (int *mousex,* int *mousey,* Vector3D & *objpt*) [protected], [virtual]

29.205.3.10 virtual void gvView::getObjAndParam (int *mousex,* int *mousey,* shared_ptr< const Go::ParamSurface > & *obj,* double & *tex_u,* double & *tex_v*) [virtual]

Searching among visible and selected objects.

29.205.3.11 void gvView::getWindowCoords (const Vector3D & *pt,* int & *mousex,* int & *mousey*) const

29.205.3.12 virtual void gvView::initializeGL ( ) [virtual]

Initialize GL state (shademodel, lights, etc.)

29.205.3.13 gvTexture* gvView::makeCoarseCheckImage ( ) [protected]

29.205.3.14 gvTexture* gvView::makeFineCheckImage ( ) [protected]

29.205.3.15 virtual QSize gvView::minimumSizeHint ( ) const [inline], [virtual]

Definition at line 142 of file gvView.h.

29.205.3.16 virtual void gvView::mouseMoveEvent (QMouseEvent * *e*) [protected], [virtual]

Overridden in order to make mouse moves translate, zoom and rotate the camera.

29.205.3.17 virtual void gvView::mousePressEvent (QMouseEvent * *e*) [protected], [virtual]

Overridden in order to make mouse moves translate, zoom and rotate the camera.

29.205.3.18 virtual void gvView::mouseReleaseEvent (QMouseEvent * *e*) [protected], [virtual]

Overridden in order to make mouse moves translate, zoom and rotate the camera.

29.205.3.19 void gvView::objectPicked (unsigned int *name*) [signal]

An object has been picked.

29.205.3.20 void gvView::objectsPicked (unsigned int * *names*, int *numnames*) [signal]

An object has been picked.

29.205.3.21 virtual void gvView::observedChanged ( ) [virtual]

This function is called whenever the observed gvData object is changed.

Implements gvObserver.

29.205.3.22 virtual void gvView::paintGL ( ) [virtual]

This function does the actual drawing into the widget's area. After clearing the area, it will call use() on the camera, and ask the gvPainter owned by the observed gvData object to do a repaint.

29.205.3.23 bool gvView::perspective ( ) [inline]

Are we in perspective projection mode?

Definition at line 133 of file gvView.h.

29.205.3.24 void gvView::pick (int *mousex,* int *mousey*)

Pick the geometrical object at a mouse coordinate.

29.205.3.25 void gvView::pickRegion (int *mousex,* int *mousey,* int *w,* int *h*)

Pick the geometrical objects in a region of the window.

29.205.3.26 virtual void gvView::resizeGL (int *w,* int *h*) [virtual]

Called when the widget is resized. It will set the viewport of the camera and then do a repaint.

29.205.3.27 virtual void gvView::saveSnapshot (int *w,* int *h,* const QString & *filename*) [virtual]

29.205.3.28 bool gvView::selectionmode ( ) [inline]

Are we in selection mode?

Definition at line 125 of file gvView.h.

29.205.3.29 void gvView::setAxis (bool *mode*) [slot]

Set paint-axis state.

29.205.3.30 void gvView::setBackCull (bool *mode*) [slot]

Set backface-culling state.

29.205.3.31 void gvView::setBlendingmode (bool *mode*) [slot]

Set blending state.

29.205.3.32 void gvView::setCenter (int *x,* int *y*) [slot]

Centers view on point at x,y in back buffer.

29.205.3.33 void gvView::setFeedbackmode (bool *mode*) [slot]

Set feedback state.

29.205.3.34 void gvView::setGetClickmode (bool *mode*) [slot]

Set get click mode.

29.205.3.35 void gvView::setOriginFocalPoint (bool *origin*)

Let the camera focus on the origin. Vertices are then translated towards the origin.

29.205.3.36 void gvView::setPerspective (bool *mode*) [slot]

Set perspective projection state.

29.205.3.37 void gvView::setSelectionmode (bool *mode*) [slot]

Set selection mode.

29.205.3.38 void gvView::setSpecular (bool *mode*) [slot]

Set specular highlighting state.

29.205.3.39 void gvView::setWireframe (bool *mode*) [slot]

Set wireframe state.

29.205.3.40 virtual QSize gvView::sizeHint ( ) const [virtual]

@ Not sure if I need this

29.205.3.41 bool gvView::specular ( ) [inline]

Are we in specular highlight mode?

Definition at line 131 of file gvView.h.

29.205.3.42 static void gvView::texCoordInt (int *num_objs,* int *ind,* double & *min_s,* double & *max_s,* double & *min_t,* double & *max_t*) [static], [protected]

29.205.3.43 bool gvView::wireframe ( ) [inline]

Are we in wireframe mode?

Definition at line 123 of file gvView.h.

29.205.4 Member Data Documentation

29.205.4.1 bool gvView::axis_ [protected]

Definition at line 238 of file gvView.h.

29.205.4.2 bool gvView::backcull_ [protected]

Definition at line 239 of file gvView.h.

29.205.4.3 double gvView::base_axis_size_ [protected]

Definition at line 225 of file gvView.h.

29.205.4.4 bool gvView::blending_mode_ [protected]

Definition at line 218 of file gvView.h.

29.205.4.5 Go::BoundingBox gvView::box_ [protected]

Definition at line 222 of file gvView.h.

29.205.4.6 gvCamera gvView::camera_ [protected]

Definition at line 223 of file gvView.h.

29.205.4.7 gvTexture* gvView::coarseTex_ [protected]

Definition at line 241 of file gvView.h.

29.205.4.8 gvData& gvView::data_ [protected]

Definition at line 220 of file gvView.h.

29.205.4.9 double gvView::draglength_ [protected]

Definition at line 233 of file gvView.h.

29.205.4.10 bool gvView::feedback_mode_ [protected]

Definition at line 213 of file gvView.h.

29.205.4.11 gvTexture* gvView::fineTex_ [protected]

Definition at line 242 of file gvView.h.

29.205.4.12 bool gvView::focus_on_origin_ [protected]

Definition at line 246 of file gvView.h.

29.205.4.13 bool gvView::get_click_mode_ [protected]

Definition at line 214 of file gvView.h.

29.205.4.14 bool gvView::gl_initialized_ [protected]

Definition at line 209 of file gvView.h.

29.205.4.15 QPoint gvView::last_mouse_pos_ [protected]

Definition at line 231 of file gvView.h.

29.205.4.16 gvCamera gvView::lights_camera_ [protected]

Definition at line 224 of file gvView.h.

29.205.4.17 Qt::MouseButton gvView::mouse_button_ [protected]

Definition at line 228 of file gvView.h.

29.205.4.18 bool gvView::mouse_is_active_ [protected]

True if mouse was pressed in widget area and is not yet released.

Definition at line 216 of file gvView.h.

29.205.4.19 bool gvView::no_data_ [protected]

Definition at line 210 of file gvView.h.

29.205.4.20 QPainter* gvView::painter_ [protected]

Definition at line 244 of file gvView.h.

29.205.4.21 bool gvView::selecting_ [protected]

Definition at line 212 of file gvView.h.

29.205.4.22 bool gvView::selection_mode_ [protected]

Definition at line 211 of file gvView.h.

29.205.4.23 bool gvView::specular_ [protected]

Definition at line 240 of file gvView.h.

29.205.4.24 QPoint gvView::starting_mouse_pos_ [protected]

Definition at line 232 of file gvView.h.

29.205.4.25 double gvView::unitx_ [protected]

Definition at line 234 of file gvView.h.

29.205.4.26 double gvView::unity_ [protected]

Definition at line 235 of file gvView.h.

29.205.4.27 bool gvView::wireframe_ [protected]

Definition at line 237 of file gvView.h.

The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/gvView.h

29.206 Handle< T > Class Template Reference

Template class for smart pointers. The actual class must inherit from HandleId.

`#include <Handle.h>`

Public Member Functions

- Handle ()
- Handle (const T &ref)
- Handle (T *p)
- Handle (const Handle< T > &ref)
- ~Handle ()
- void rebind (const T *pc)
- void rebind (const T &p)
- const T * operator-> () const
- T * operator-> ()
- const T & operator() () const
- T & operator() ()
- const T & operator* () const
- T & operator* ()
- const T * getPtr () const
- T * getPtr ()
- const T & getRef () const
- T & getRef ()
- void operator= (const Handle< T > &h)
- void operator= (const T *p)
- void operator= (const T &p)
- bool operator== (const Handle< T > &h) const
- bool operator!= (const Handle< T > &h) const
- bool operator< (const Handle< T > &h) const
- bool operator> (const Handle< T > &h) const

Protected Attributes

- T * classptr

29.206.1 Detailed Description

template<class T>
class Handle< T >

Template class for smart pointers. The actual class must inherit from HandleId.

Definition at line 57 of file Handle.h.

29.206.2 Constructor & Destructor Documentation

29.206.2.1 template<class T> Handle< T >::Handle ( ) [inline]

Definition at line 63 of file Handle.h.

29.206.2.2 template<class T> Handle< T >::Handle (const T & *ref*) [inline]

Definition at line 65 of file Handle.h.

29.206.2.3 template<class T> Handle< T >::Handle (T * p) [inline]

Definition at line 70 of file Handle.h.

29.206.2.4 template<class T> Handle< T >::Handle (const Handle< T > & ref) [inline]

Definition at line 75 of file Handle.h.

29.206.2.5 template<class T> Handle< T >::~Handle ( ) [inline]

Definition at line 81 of file Handle.h.

29.206.3 Member Function Documentation

29.206.3.1 template<class T> const T* Handle< T >::getPtr ( ) const [inline]

Definition at line 115 of file Handle.h.

29.206.3.2 template<class T> T* Handle< T >::getPtr ( ) [inline]

Definition at line 116 of file Handle.h.

29.206.3.3 template<class T> const T& Handle< T >::getRef ( ) const [inline]

Definition at line 117 of file Handle.h.

29.206.3.4 template<class T> T& Handle< T >::getRef ( ) [inline]

Definition at line 118 of file Handle.h.

29.206.3.5 template<class T> bool Handle< T >::operator!= (const Handle< T > & h) const [inline]

Definition at line 125 of file Handle.h.

29.206.3.6 template<class T> const T& Handle< T >::operator() ( ) const [inline]

Definition at line 111 of file Handle.h.

29.206.3.7 template<class T> T& Handle< T >::operator() ( ) [inline]

Definition at line 112 of file Handle.h.

29.206.3.8 template<class T> const T& Handle< T >::operator*( ) const [inline]

Definition at line 113 of file Handle.h.

29.206.3.9 template<class T> T& Handle< T >::operator*( ) [inline]

Definition at line 114 of file Handle.h.

29.206.3.10 template<class T> const T* Handle< T >::operator->( ) const [inline]

Definition at line 109 of file Handle.h.

29.206.3.11 template<class T> T* Handle< T >::operator->( ) [inline]

Definition at line 110 of file Handle.h.

29.206.3.12 template<class T> bool Handle< T >::operator<(const Handle< T > & *h*) const [inline]

Definition at line 126 of file Handle.h.

29.206.3.13 template<class T> void Handle< T >::operator=(const Handle< T > & *h*) [inline]

Definition at line 120 of file Handle.h.

29.206.3.14 template<class T> void Handle< T >::operator=(const T * *p*) [inline]

Definition at line 121 of file Handle.h.

29.206.3.15 template<class T> void Handle< T >::operator=(const T & *p*) [inline]

Definition at line 122 of file Handle.h.

29.206.3.16 template<class T> bool Handle< T >::operator==(const Handle< T > & *h*) const [inline]

Definition at line 124 of file Handle.h.

29.206.3.17 template<class T> bool Handle< T >::operator>(const Handle< T > & *h*) const [inline]

Definition at line 127 of file Handle.h.

29.206.3.18 template<class T> void Handle< T >::rebind (const T * *pc*) [inline]

Definition at line 92 of file Handle.h.

29.206.3.19 template<class T> void Handle< T >::rebind (const T & *p*) [inline]

Definition at line 107 of file Handle.h.

29.206.4 Member Data Documentation

29.206.4.1 template<class T> T* Handle< T >::classptr [protected]

Definition at line 60 of file Handle.h.

The documentation for this class was generated from the following file:

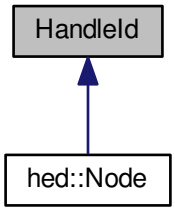
- ttl/include/ttl/utils/Handle.h

29.207 HandleId Class Reference

Base class with reference counting for smart pointers.

`#include <HandleId.h>`

Inheritance diagram for HandleId:



Public Member Functions

- HandleId ()
- virtual ~HandleId ()
- bool isReferenced () const
- int getNoRefs () const
- bool dynamicObj () const
- void increment ()
- void decrement ()
- void * operator new (size_t t)
- void * operator new (size_t t, int, const char *file, int line)
- void operator delete (void *v)

Protected Attributes

- int refcount
- char dynamic_object

29.207.1 Detailed Description

Base class with reference counting for smart pointers.

Definition at line 55 of file HandleId.h.

29.207.2 Constructor & Destructor Documentation

29.207.2.1 HandleId::HandleId ( )

Definition at line 54 of file HandleId.cpp.

29.207.2.2 virtual HandleId::~HandleId ( ) [inline], [virtual]

Definition at line 63 of file HandleId.h.

29.207.3 Member Function Documentation

29.207.3.1 void HandleId::decrement ( ) [inline]

Definition at line 70 of file HandleId.h.

29.207.3.2 bool HandleId::dynamicObj ( ) const [inline]

Definition at line 67 of file HandleId.h.

29.207.3.3 int HandleId::getNoRefs ( ) const [inline]

Definition at line 66 of file HandleId.h.

29.207.3.4 void HandleId::increment ( ) [inline]

Definition at line 69 of file HandleId.h.

29.207.3.5 bool HandleId::isReferenced ( ) const [inline]

Definition at line 65 of file HandleId.h.

29.207.3.6 void HandleId::operator delete (void * *v*)

Definition at line 87 of file HandleId.cpp.

29.207.3.7 void * HandleId::operator new (size_t *t*)

Definition at line 62 of file HandleId.cpp.

29.207.3.8 void * HandleId::operator new (size_t *t*, int *n*, const char * *file*, int *line*)

Definition at line 68 of file HandleId.cpp.

29.207.4 Member Data Documentation

29.207.4.1 char HandleId::dynamic_object [protected]

Definition at line 59 of file HandleId.h.

29.207.4.2 int HandleId::refcount [protected]

Definition at line 58 of file HandleId.h.

The documentation for this class was generated from the following files:

- ttl/include/ttl/utils/HandleId.h
- ttl/src/utils/HandleId.cpp

29.208 HeapNode Class Reference

`#include <PrDijkstra.h>`

Public Member Functions

- HeapNode ()
  Constructor.
- HeapNode (int idx, double key)
  Constructor.
- ~HeapNode ()
  Destructor.
- bool operator> (const HeapNode &x) const
- bool operator>= (const HeapNode &x) const

Public Attributes

- int idx_
- double key_

29.208.1 Detailed Description

Definition at line 53 of file PrDijkstra.h.

29.208.2 Constructor & Destructor Documentation

29.208.2.1 HeapNode::HeapNode ( ) [inline]

Constructor.

Definition at line 60 of file PrDijkstra.h.

29.208.2.2 HeapNode::HeapNode (int *idx*, double *key*) [inline]

Constructor.

Definition at line 62 of file PrDijkstra.h.

29.208.2.3 HeapNode::~HeapNode ( ) [inline]

Destructor.

Definition at line 64 of file PrDijkstra.h.

29.208.3 Member Function Documentation

29.208.3.1 bool HeapNode::operator> (const HeapNode & *x*) const [inline]

Definition at line 66 of file PrDijkstra.h.

29.208.3.2 bool HeapNode::operator>= (const HeapNode & *x*) const [inline]

Definition at line 67 of file PrDijkstra.h.

29.208.4 Member Data Documentation

29.208.4.1 int HeapNode::idx_

Definition at line 56 of file PrDijkstra.h.

29.208.4.2 double HeapNode::key_

Definition at line 57 of file PrDijkstra.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrDijkstra.h

29.209 HeapNode2 Class Reference

`#include <PrMultiDijkstra.h>`

Public Member Functions

- HeapNode2 ()
- HeapNode2 (int idx, double key)
- ~HeapNode2 ()
- bool operator> (const HeapNode2 &x) const
- bool operator>= (const HeapNode2 &x) const

Public Attributes

- int idx_
- double key_

29.209.1 Detailed Description

HeapNode2 - Short description. Detailed description.

Definition at line 56 of file PrMultiDijkstra.h.

29.209.2 Constructor & Destructor Documentation

29.209.2.1 HeapNode2::HeapNode2 ( ) [inline]

Definition at line 62 of file PrMultiDijkstra.h.

29.209.2.2 HeapNode2::HeapNode2 (int *idx*, double *key*) [inline]

Definition at line 63 of file PrMultiDijkstra.h.

29.209.2.3 HeapNode2::~HeapNode2 ( ) [inline]

Definition at line 64 of file PrMultiDijkstra.h.

29.209.3 Member Function Documentation

29.209.3.1 bool HeapNode2::operator> (const HeapNode2 & *x*) const [inline]

Definition at line 66 of file PrMultiDijkstra.h.

29.209.3.2 bool HeapNode2::operator>= (const HeapNode2 & *x*) const [inline]

Definition at line 67 of file PrMultiDijkstra.h.

29.209.4 Member Data Documentation

29.209.4.1 int HeapNode2::idx_

Definition at line 59 of file PrMultiDijkstra.h.

29.209.4.2 double HeapNode2::key_

Definition at line 60 of file PrMultiDijkstra.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrMultiDijkstra.h

29.210 Go::HermiteAppC Class Reference

`#include <HermiteAppC.h>`

Public Member Functions

- HermiteAppC (EvalCurve *crv, double tolerance1, double tolerance2)
- HermiteAppC (EvalCurve *crv, double initpars[], int n, double tolerance1, double tolerance2)
- ~HermiteAppC ()

  Empty destructor.
- void refineApproximation ()
- shared_ptr< SplineCurve > getCurve ()

29.210.1 Detailed Description

This class is used to generate a SplineCurve from a EvalCurve using Hermite interpolation. The generated curve will approximate the EvalCurve within specified tolerances.

Definition at line 55 of file HermiteAppC.h.

29.210.2 Constructor & Destructor Documentation

29.210.2.1 Go::HermiteAppC::HermiteAppC (EvalCurve * *crv*, double *tolerance1*, double *tolerance2*)

Constructor where the tolerances and the curve to approximate are specified.

Parameters

crv	the curve that we want to generate a Hermite approximation of. The curve is *not* copied, only pointed to by the HermiteAppC.
tolerance1	the required geometrical accuracy of approximation
tolerance2	another tolerance, used for some kinds of EvalCurves

29.210.2.2 Go::HermiteAppC::HermiteAppC (EvalCurve * *crv*, double *initpars[]*, int *n*, double *tolerance1*, double *tolerance2*)

Constructor where the tolerances and the curve to approximate are specified, as well as the parameters for which we will sample the input curve before starting the approximating process.

Parameters

crv	the curve that we want to generate a Hermite approximation of. The curve is *not* copied, only pointed to by the HermiteAppC.
initpars	pointer to the array of parameter values for which we will sample the input curve.
n	number of parameter values in the array 'initpars'.
tolerance1	the required geometrical accuracy of approximation
tolerance2	another tolerance, used for some kinds of EvalCurves

29.210.2.3 Go::HermiteAppC::~HermiteAppC ( ) [inline]

Empty destructor.

Definition at line 80 of file HermiteAppC.h.

29.210.3 Member Function Documentation

29.210.3.1 shared_ptr<SplineCurve> Go::HermiteAppC::getCurve ( )

Return the cubic spline curve Hermite interpolating the grid.

Returns

the cubic spline curve that Hermite interpolates the sampled points of the EvalCurve specified in the constructor.

29.210.3.2 void Go::HermiteAppC::refineApproximation ( )

Refine the internal sampling of the curve to approximate such that the Hermite interpolated curve of this sampling approximates parametrically the original curve within the specified tolerance.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/HermiteAppC.h

29.211 Go::HermiteApprEvalSurf Class Reference

`#include <HermiteApprEvalSurf.h>`

Public Member Functions

- HermiteApprEvalSurf (EvalSurface *sf, double tolerance1, double tolerance2)
- HermiteApprEvalSurf (EvalSurface *sf, double initpars_u[ ], int mm, double initpars_v[ ], int nn, double tolerance1, double tolerance2)
- ~HermiteApprEvalSurf ()

  Empty destructor.
- void refineApproximation ()
- shared_ptr< SplineSurface > getSurface (bool &method_failed)
- const HermiteGrid2D & getGrid () const
- void removeGridLines (const std::vector< double > &grid_lines_u, const std::vector< double > &grid_lines_v)
- void setNoSplit (const std::vector< shared_ptr< SplineCurve > > &no_split_cvs_2d, double no_split_dist_2d)

29.211.1 Detailed Description

This class is used to generate a SplineSurface from a EvalSurface using Hermite interpolation. The generated surface will approximate the EvalSurface within specified tolerances.

Definition at line 57 of file HermiteApprEvalSurf.h.

29.211.2 Constructor & Destructor Documentation

29.211.2.1 Go::HermiteApprEvalSurf::HermiteApprEvalSurf (EvalSurface * *sf*, double *tolerance1*, double *tolerance2*)

Constructor where the tolerances and the surface to approximate are specified.

Parameters

sf	the surface that we want to generate a Hermite approximation of. The surface is *not* copied, only pointed to by the HermiteApprEvalSurf.
tolerance1	the required geometrical accuracy of approximation
tolerance2	another tolerance, used for some kinds of EvalSurfaces

29.211.2.2 Go::HermiteApprEvalSurf::HermiteApprEvalSurf (EvalSurface * *sf*, double *initpars_u[ ]*, int *mm*, double *initpars_v[ ]*, int *nn*, double *tolerance1*, double *tolerance2*)

Constructor where the tolerances and the surface to approximate are specified, as well as the parameters for which we will sample the input surface before starting the approximating process.

Parameters

sf	the surface that we want to generate a Hermite approximation of. The surface is *not* copied, only pointed to by the HermiteApprEvalSurf.
initpars	pointer to the array of parameter values for which we will sample the input surface.
n	number of parameter values in the array 'initpars'.
tolerance1	the required geometrical accuracy of approximation
tolerance2	another tolerance, used for some kinds of EvalSurfaces

29.211.2.3 Go::HermiteApprEvalSurf::~HermiteApprEvalSurf ( ) [inline]

Empty destructor.

Definition at line 86 of file HermiteApprEvalSurf.h.

29.211.3 Member Function Documentation

29.211.3.1 const HermiteGrid2D& Go::HermiteApprEvalSurf::getGrid ( ) const

29.211.3.2 shared_ptr<SplineSurface> Go::HermiteApprEvalSurf::getSurface (bool & *method_failed*)

Return the cubic spline surface Hermite interpolating the grid.

Returns

the cubic spline surface that Hermite interpolates the sampled points of the EvalSurface specified in the constructor.

29.211.3.3 void Go::HermiteApprEvalSurf::refineApproximation ( )

Refine the internal sampling of the surface to approximate such that the Hermite interpolated surface of this sampling approximates parametrically the original surface within the specified tolerance.

29.211.3.4 void Go::HermiteApprEvalSurf::removeGridLines (const std::vector< double > & *grid_lines_u,* const std::vector< double > & *grid_lines_v*)

29.211.3.5 void Go::HermiteApprEvalSurf::setNoSplit (const std::vector< shared_ptr< SplineCurve > > & *no_split_cvs_2d,* double *no_split_dist_2d*)

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/HermiteApprEvalSurf.h

29.212 Go::HermiteAppS Class Reference

`#include <HermiteAppS.h>`

Public Member Functions

- HermiteAppS (EvalCurveSet *surface, double tolerance1, double tolerance2, std::vector< int > dims)
- HermiteAppS (EvalCurveSet *surface, double initpars[], int n, double tolerance1, double tolerance2, std::vector< int > dims)
- ~HermiteAppS ()

  Empty destructor.
- void refineApproximation ()
- std::vector< shared_ptr< SplineCurve > > getCurves ()

29.212.1 Detailed Description

This class is used to generate a set of SplineCurves from a EvalCurveSet (which itself represents a set of related curves) using Hermite interpolation. The generated curves will approximate those defined by the EvalCurveSet within specified tolerances. This class is really a generalization of HermiteAppC.

Definition at line 56 of file HermiteAppS.h.

29.212.2 Constructor & Destructor Documentation

29.212.2.1 Go::HermiteAppS::HermiteAppS (EvalCurveSet * *surface*, double *tolerance1*, double *tolerance2*, std::vector< int > *dims*)

Constructor where the tolerances and the curves to approximate are specified.

Parameters

surface	the curve set that we want to approximate by Hermite interpolation of sampled values.
tolerance1	the required geometrical accuracy of approximation
tolerance2	another tolerance, used for some kinds of EvalCurveSets.
dims	vector that specifies the spatial dimensions of the curves contained in the EvalCurveSet. The size of the vector should be equal to the total number of curves in 'surf', ie. the return value of its EvalCurveSet::nmbCvs() function.

29.212.2.2 Go::HermiteAppS::HermiteAppS (EvalCurveSet * *surface*, double *initpars[]*, int *n*, double *tolerance1*, double *tolerance2*, std::vector< int > *dims*)

Constructor where the tolerances and the curve set to approximate are specified, as well as the parameters where they should be sampled prior to the Hermite interpolation.

Parameters

surface	the curve set that we want to approximate by Hermite interpolation of sampled values.

Parameters

initpars	pointer to the array of parameter values for which we will sample the input curves.
n	number of parameter values in the array 'initpars[]'.
tolerance1	the required geometrical accuracy of approximation
tolerance2	another tolerance, used for some kinds of EvalCurveSets.
dims	vector that specifies the spatial dimensions of the curves contained in the EvalCurveSet. The size of the vector should be equal to the total number of curves in 'surf', ie. the return value of its EvalCurveSet::nmbCvs() function.

29.212.2.3 Go::HermiteAppS::~HermiteAppS ( ) [inline]

Empty destructor.

Definition at line 92 of file HermiteAppS.h.

29.212.3 Member Function Documentation

29.212.3.1 std::vector<shared_ptr<SplineCurve> > Go::HermiteAppS::getCurves ( )

Return the cubic spline curves intepolating the grid (ie. approximating the original curve set).

Returns

a vector containing shared pointers to the newly created spline curves that Hermite interpolate the sampled points of the EvalCurveSet (curve set) specified in the constructor.

29.212.3.2 void Go::HermiteAppS::refineApproximation ( )

Refine the internal sampling of the curves such that the Hermite interpolated curves parametrically approximates the original curve within a specified tolerance.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/HermiteAppS.h

29.213 Go::HermiteGrid1D Class Reference

`#include <HermiteGrid1D.h>`

Public Member Functions

- HermiteGrid1D (const EvalCurve &crv, double start, double end)
- HermiteGrid1D (const EvalCurve &crv, double param[ ], int n)
- ~HermiteGrid1D ()

  Default destructor.
- int addKnot (const EvalCurve &crv, double knot)
- void getSegment (int left, int right, double &spar, double &epar, Point bezcoef[4])
- std::vector< double > getKnots ()

  Return the grid parameters.
- std::vector< Point > getData ()

  Return the sample values (positions and first derivatives)
- int dim ()

  Return the spatial dimension.
- int size ()

  Return the number of samples in the grid.

29.213.1 Detailed Description

The type "GoHemiteGrid1D" holds a one dimensional grid containing sampled points and derivatives from a curve. It can be used to generate bezier curve segments obtained by Hermite interpolation of intervals between the sampled parameter values.

Definition at line 56 of file HermiteGrid1D.h.

29.213.2 Constructor & Destructor Documentation

29.213.2.1 Go::HermiteGrid1D::HermiteGrid1D (const EvalCurve & *crv*, double *start*, double *end*)

Construct a HermiteGrid1D from a curve and a given interval. The grid will only contain the sampled values (position, derivative) for the first and last value of the interval.

Parameters

crv	curve to sample
start	start of interval
end	end of interval

29.213.2.2 Go::HermiteGrid1D::HermiteGrid1D (const EvalCurve & *crv*, double *param[ ]*, int *n*)

Construct a HermiteGrid1D from a curve and a set of parameter values.

Parameters

crv	curve to sample
param	array of strictly increasing parameters contained in the parameter domain of 'crv'.
n	number of elements in 'param[]'.

29.213.2.3 Go::HermiteGrid1D::∼HermiteGrid1D ( )

Default destructor.

29.213.3 Member Function Documentation

29.213.3.1 int Go::HermiteGrid1D::addKnot (const EvalCurve & *crv,* double *knot*)

Add another sample (parameter, position, tangent) to the grid. Returns the index of the new knot (parameter value) in the sorted knot vector after insertion.

Parameters

crv	curve to evaluate
knot	the new sample value (parameter value, knot)

29.213.3.2 int Go::HermiteGrid1D::dim ( ) [inline]

Return the spatial dimension.

Definition at line 104 of file HermiteGrid1D.h.

29.213.3.3 std::vector<Point> Go::HermiteGrid1D::getData ( ) [inline]

Return the sample values (positions and first derivatives)

Definition at line 101 of file HermiteGrid1D.h.

29.213.3.4 std::vector<double> Go::HermiteGrid1D::getKnots ( ) [inline]

Return the grid parameters.

Definition at line 98 of file HermiteGrid1D.h.

29.213.3.5 void Go::HermiteGrid1D::getSegment (int *left,* int *right,* double & *spar,* double & *epar,* Point *bezcoef[4]*)

Calculate Bezier coefficients of the cubic curve interpolating the point and tangent values at grid nodes with indices "left" and "right".

Parameters

left	indicating grid node for start of curve segment
right	indicating grid node for end of curve segment
spar	start parameter of segment
epar	end parameter of segment
bezcoef	array of cubic Bezier coefficients

29.213.3.6 int Go::HermiteGrid1D::size ( ) [inline]

Return the number of samples in the grid.

Definition at line 107 of file HermiteGrid1D.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/HermiteGrid1D.h

29.214 Go::HermiteGrid1DMulti Class Reference

`#include <HermiteGrid1DMulti.h>`

Public Member Functions

- HermiteGrid1DMulti (EvalCurveSet &surf, double start, double end, std::vector< int > dims)
- HermiteGrid1DMulti (EvalCurveSet &surf, double param[ ], int n, std::vector< int > dims)
- ~HermiteGrid1DMulti ()

  Default destructor.
- int addKnot (EvalCurveSet &surf, double knot)
- void getSegment (int left, int right, double &spar, double &epar, std::vector< std::vector< Point > > &bezcoef)
- std::vector< double > getKnots ()

  Return the grid parameters.
- std::vector< std::vector< Point > > getData ()

  Return the sample values (positions and first derivatives)
- int dims (int ki)

  Return the spatial dimension of each of the curves.
- int size ()

  Return the number of samples in the grid.

29.214.1 Detailed Description

The type "GoHemiteGrid1DMulti" holds a one dimensional grid containing sampled points and derivatives from a set of curves, as represented by a EvalCurveSet. It can be used to generate bezier curve segments obtained by Hermite interpolation of intervals between the sampled parameter values.

Definition at line 56 of file HermiteGrid1DMulti.h.

29.214.2 Constructor & Destructor Documentation

29.214.2.1 Go::HermiteGrid1DMulti::HermiteGrid1DMulti (EvalCurveSet & *surf*, double *start*, double *end*, std::vector< int > *dims*)

Construct a HermiteGrid1DMulti from a set of related curves (represented by a EvalCurveSet) and a given interval.

Parameters

surf	the curve collection to sample from
start	start of parameter interval
end	end of parameter interval
dims	vector that specifies the dimensions of the curves contained in the EvalCurveSet. The size of the vector should be equal to the total number of curves in 'surf', ie. the return value of its EvalCurveSet::nmbCvs() function.

29.214.2.2 Go::HermiteGrid1DMulti::HermiteGrid1DMulti (EvalCurveSet & *surf,* double *param[ ],* int *n,* std::vector< int > *dims*)

Construct a HermiteGrid1DMulti from a set of related curves (represented by a EvalCurveSet) and a set of parameter values.

Parameters

surf	the curve collection to sample from
param	array of strictly increasing parameters contained in the parameter domain of 'surf'.
n	number of elements in 'param[]'
dims	vector that specifies the dimensions of the curves contained in the EvalCurveSet. The size of the vector should be equal to the total number of curves in 'surf', ie. the return value of its EvalCurveSet::nmbCvs() function.

29.214.2.3 Go::HermiteGrid1DMulti::~HermiteGrid1DMulti ( )

Default destructor.

29.214.3 Member Function Documentation

29.214.3.1 int Go::HermiteGrid1DMulti::addKnot (EvalCurveSet & *surf,* double *knot*)

Add another sample (parameter, positions, tangents) to the grid. Returns the index of the new knot (parameter value) in the sorted knot vector after insertion.

Parameters

surf	the curve collection to sample from
knot	the new sample value (parameter value, knot)

29.214.3.2 int Go::HermiteGrid1DMulti::dims (int *ki*) [inline]

Return the spatial dimension of each of the curves.

Definition at line 114 of file HermiteGrid1DMulti.h.

29.214.3.3 std::vector<std::vector<Point> > Go::HermiteGrid1DMulti::getData ( ) [inline]

Return the sample values (positions and first derivatives)

Definition at line 111 of file HermiteGrid1DMulti.h.

29.214.3.4 std::vector<double> Go::HermiteGrid1DMulti::getKnots ( ) [inline]

Return the grid parameters.

Definition at line 107 of file HermiteGrid1DMulti.h.

29.214.3.5 void Go::HermiteGrid1DMulti::getSegment (int *left,* int *right,* double & *spar,* double & *epar,* std::vector< std::vector< Point > > & *bezcoef*)

Calculate Bezier coefficients of the cubic curves interpolating the points and tangents at the grid nodes with indices 'left' and 'right'.

Parameters

left	indicating grid node for start of curve segment
right	indicating grid node for end of curve segment
spar	start parameter of segment
epar	end parameter of segment
bezcoef	a vector containing arrays of cubic Bezier coefficients. There are as many vector entries as there are curves, and each entry contains the Bezier coefficients for that curve.

29.214.3.6 int Go::HermiteGrid1DMulti::size ( ) [inline]

Return the number of samples in the grid.

Definition at line 117 of file HermiteGrid1DMulti.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/HermiteGrid1DMulti.h

29.215 Go::HermiteGrid2D Class Reference

`#include <HermiteGrid2D.h>`

Public Member Functions

- HermiteGrid2D (const EvalSurface &sf, double u1, double u2, double v1, double v2)
- HermiteGrid2D (const EvalSurface &sf, double param_u[ ], double param_v[ ], int mm, int nn)
- ~HermiteGrid2D ()

  Default destructor.
- int addKnot (const EvalSurface &sf, double knot, bool dir_is_u)
- void getSegment (int left1, int right1, int left2, int right2, double &spar1, double &epar1, double &spar2, double &epar2, Point bezcoef[4])
- std::vector< double > getKnots (bool dir_is_u) const

  Return the grid parameters.
- std::vector< Point > getData () const

  Return the sample values (positions and first derivatives)
- int dim () const

  Return the spatial dimension.
- int size1 () const

  Return the number of samples in the grid.
- int size2 () const
- void removeGridLines (const std::vector< int > &grid_lines_u, const std::vector< int > &grid_lines_v)
- int getNoSplitStatus (int ind_u, int ind_v)
- void setNoSplitStatus (int ind_u, int ind_v, int no_split_status)

29.215.1 Detailed Description

The type "GoHemiteGrid1D" holds a one dimensional grid containing sampled points and derivatives from a curve. It can be used to generate bezier curve segments obtained by Hermite interpolation of intervals between the sampled parameter values.

Definition at line 57 of file HermiteGrid2D.h.

29.215.2 Constructor & Destructor Documentation

29.215.2.1 Go::HermiteGrid2D::HermiteGrid2D (const EvalSurface & *sf*, double *u1*, double *u2*, double *v1*, double *v2*)

Construct a HermiteGrid1D from a curve and a given interval. The grid will only contain the sampled values (position, derivative) for the first and last value of the interval.

Parameters

crv	curve to sample
start	start of interval
end	end of interval

29.215.2.2 Go::HermiteGrid2D::HermiteGrid2D (const EvalSurface & *sf*, double *param_u[ ]*, double *param_v[ ]*, int *mm*, int *nn*)

Construct a HermiteGrid1D from a curve and a set of parameter values.

Parameters

crv	curve to sample
param	array of strictly increasing parameters contained in the parameter domain of 'crv'.
n	number of elements in 'param[]'.

29.215.2.3 Go::HermiteGrid2D::∼HermiteGrid2D ( )

Default destructor.

29.215.3 Member Function Documentation

29.215.3.1 int Go::HermiteGrid2D::addKnot (const EvalSurface & *sf,* double *knot,* bool *dir_is_u*)

Add another sample (parameter, position, tangent) to the grid. Returns the index of the new knot (parameter value) in the sorted knot vector after insertion.

Parameters

crv	curve to evaluate
knot	the new sample value (parameter value, knot)

29.215.3.2 int Go::HermiteGrid2D::dim ( ) const [inline]

Return the spatial dimension.

Definition at line 110 of file HermiteGrid2D.h.

29.215.3.3 std::vector<Point> Go::HermiteGrid2D::getData ( ) const [inline]

Return the sample values (positions and first derivatives)

Definition at line 107 of file HermiteGrid2D.h.

29.215.3.4 std::vector<double> Go::HermiteGrid2D::getKnots (bool *dir_is_u*) const [inline]

Return the grid parameters.

Definition at line 104 of file HermiteGrid2D.h.

29.215.3.5 int Go::HermiteGrid2D::getNoSplitStatus (int *ind_u,* int *ind_v*)

29.215.3.6 void Go::HermiteGrid2D::getSegment (int *left1,* int *right1,* int *left2,* int *right2,* double & *spar1,* double & *epar1,* double & *spar2,* double & *epar2,* Point *bezcoef[4]*)

Calculate Bezier coefficients of the cubic curve interpolating the point and tangent values at grid nodes with indices "left" and "right".

Parameters

left	indicating grid node for start of curve segment
right	indicating grid node for end of curve segment
spar	start parameter of segment
epar	end parameter of segment
bezcoef	array of cubic Bezier coefficients

29.215.3.7 void Go::HermiteGrid2D::removeGridLines (const std::vector< int > & *grid_lines_u,* const std::vector< int > & *grid_lines_v*)

29.215.3.8 void Go::HermiteGrid2D::setNoSplitStatus (int *ind_u,* int *ind_v,* int *no_split_status*)

29.215.3.9 int Go::HermiteGrid2D::size1 ( ) const [inline]

Return the number of samples in the grid.

Definition at line 113 of file HermiteGrid2D.h.

29.215.3.10 int Go::HermiteGrid2D::size2 ( ) const [inline]

Definition at line 115 of file HermiteGrid2D.h.

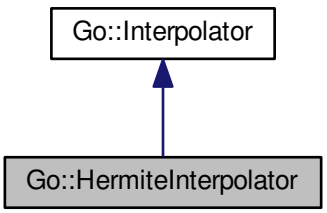
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/HermiteGrid2D.h

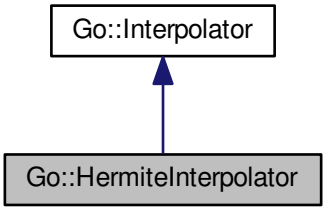
29.216 Go::HermiteInterpolator Class Reference

`#include <HermiteInterpolator.h>`

Inheritance diagram for Go::HermiteInterpolator:



Collaboration diagram for Go::HermiteInterpolator:



Public Member Functions

- HermiteInterpolator ()

  Constructor takes no arguments.
- virtual ∼HermiteInterpolator ()

  Virtual destructor enables safe inheritance.
- virtual const BsplineBasis & basis ()
- virtual void interpolate (int num_points, int dimension, const double ∗param_start, const double ∗data_start, std::vector< double > &coefs)
- void interpolate (const std::vector< Point > &data, const std::vector< double > &param, std::vector< double > &coefs)

29.216.1 Detailed Description

An Interpolator that generates a hermite spline curve through given points and tangents.

Definition at line 55 of file HermiteInterpolator.h.

29.216.2 Constructor & Destructor Documentation

29.216.2.1 Go::HermiteInterpolator::HermiteInterpolator ( ) [inline]

Constructor takes no arguments.

Definition at line 59 of file HermiteInterpolator.h.

29.216.2.2 virtual Go::HermiteInterpolator::∼HermiteInterpolator ( ) [virtual]

Virtual destructor enables safe inheritance.

29.216.3 Member Function Documentation

29.216.3.1 virtual const BsplineBasis& Go::HermiteInterpolator::basis ( ) [virtual]

after the function interpolate() has been successfully run, this function can be called to get the BsplineBasis of the generated curve.

Returns

a constant reference to the BsplineBasis of the curve previously generated by interpolate().

Implements Go::Interpolator.

29.216.3.2 virtual void Go::HermiteInterpolator::interpolate (int *num_points*, int *dimension*, const double * *param_start*, const double * *data_start*, std::vector< double > & *coefs*) [virtual]

Hermite interpolation of a sequence of points with associated tangents and parameter values

Parameters

num_points	number of points to interpolate
dimension	dimension of points to interpolate (2D, 3D, etc..)
param_start	pointer to the start of the array where the parameter values of the points are stored. This should be a strictly increasing sequence of 'num_points' values.
data_start	pointer to the start of the array where the points and tangents to be interpolated are stored. Each point and tangent consist of 'dimension' coordinates, and each tangent is stored immediately after its corresponding point.

Return values

coefs	The control points of the computed hermite interpolation curve will be returned in this vector. (Use the basis() function to get the associated b-spline basis).

Implements Go::Interpolator.

29.216.3.3 void Go::HermiteInterpolator::interpolate (const std::vector< Point > & *data*, const std::vector< double > & *param*, std::vector< double > & *coefs*)

Hermite interpolation of a sequence of points with associated tangents and parameter values.

Parameters

data	This vector contains the set of points and tangents to be interpolated. The size of the vector is twice the total number of points. Each entry on the form [2i] represents a point, and the entry [2i+1] represents the associated tangent.
param	This vector represent the parameterization of the points, and should have one entry per point. (Making it half the size of the 'data' vector). The parameter sequence must be strictly increaing.

Return values

coefs	The control points of the computed hermite interpolation curve will be returned in this vector. (Use the basis() function to get the associated b-spline basis.

The documentation for this class was generated from the following file:

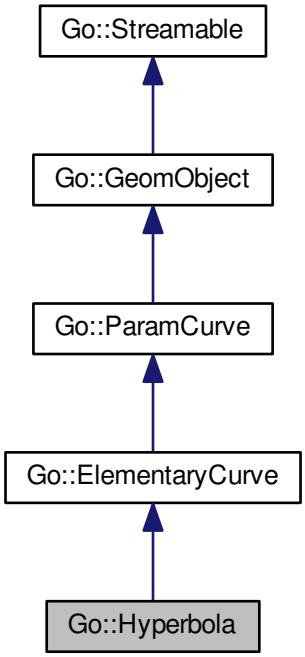
- gotools-core/include/GoTools/geometry/HermiteInterpolator.h

29.217 Go::Hyperbola Class Reference

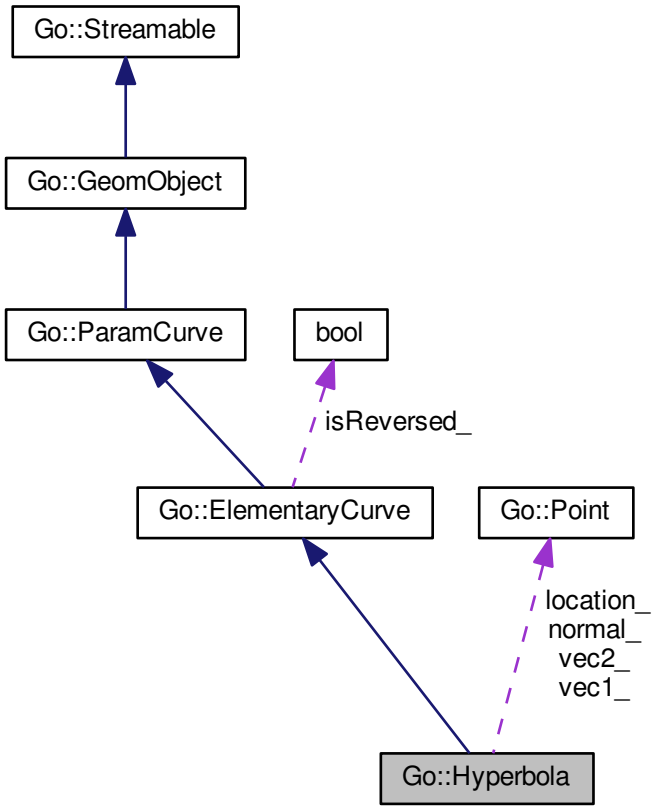
Class that represents a hyperbola. It is a subclass of ElementaryCurve and thus has a parametrization.

```
#include <Hyperbola.h>
```

Inheritance diagram for Go::Hyperbola:



Collaboration diagram for Go::Hyperbola:



Public Member Functions

- Hyperbola ()
- Hyperbola (Point location, Point direction, Point normal, double r1, double r2, bool isReversed=false)
- virtual ~Hyperbola ()

  virtual destructor - ensures safe inheritance
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual Hyperbola * clone () const
- virtual void point (Point &pt, double tpar) const
- virtual void point (std::vector< Point > &pts, double tpar, int derivs, bool from_right=true) const
- virtual double startparam () const
- virtual double endparam () const

- virtual void setParameterInterval (double t1, double t2)

  Limit the curve by limiting the parameter interval.
- virtual SplineCurve * geometryCurve ()
- virtual SplineCurve * createSplineCurve () const

  Fetch spline representation of curve.
- virtual bool isDegenerate (double degenerate_epsilon)
- virtual Hyperbola * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMETER_E↩ PSILON) const
- virtual DirectionCone directionCone () const
- virtual void appendCurve (ParamCurve *cv, bool reparam=true)
- virtual void appendCurve (ParamCurve *cv, int continuity, double &dist, bool reparam=true)
- virtual void closestPoint (const Point &pt, double tmin, double tmax, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const
- virtual double length (double tol)
- virtual void setParamBounds (double startpar, double endpar)
- virtual void translateCurve (const Point &dir)
- bool isBounded () const
- virtual void swapParameters2D ()
- virtual bool isInPlane (const Point &norm, double eps, Point &pos) const

  Check if the hyperbola lies in a plane with a given normal.

Static Public Member Functions

- static ClassType classType ()

Protected Member Functions

- void setSpanningVectors ()

Protected Attributes

- Point location_
- Point vec1_
- Point vec2_
- Point normal_
- double r1_
- double r2_
- double startparam_
- double endparam_

29.217.1 Detailed Description

Class that represents a hyperbola. It is a subclass of ElementaryCurve and thus has a parametrization.

A hyperbola has a natural parametrization in terms of its values: f(t) = C + (R_1 * cosh(t))*x + (R_2 * sinh(t)) * y. This parametrization is ubounded: - $\infty < t < \infty$.

Definition at line 59 of file Hyperbola.h.

29.217.2 Constructor & Destructor Documentation

29.217.2.1 Go::Hyperbola::Hyperbola ( ) [inline]

Default constructor. Constructs an uninitialized Hyperbola which can only be assigned to or read into.

Definition at line 64 of file Hyperbola.h.

29.217.2.2 Go::Hyperbola::Hyperbola (Point *location*, Point *direction*, Point *normal*, double *r1*, double *r2*, bool *isReversed* = false)

Constructor. Input is location, direction (x-axis), normal and the two semi-axes. The default hyperbola is unbounded in its parametrization. To bound it, use setParamBounds().

29.217.2.3 virtual Go::Hyperbola::~Hyperbola ( ) [virtual]

virtual destructor - ensures safe inheritance

29.217.3 Member Function Documentation

29.217.3.1 virtual void Go::Hyperbola::appendCurve (ParamCurve * *cv*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparametrization NB: This virtual member function currently only works for SplineCurves and CurveOnSurfaces. Moreover, 'this' curve and the 'cv' curve must be of the same type.

Parameters

cv	the curve to append to 'this' curve.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.217.3.2 virtual void Go::Hyperbola::appendCurve (ParamCurve * *cv*, int *continuity*, double & *dist*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparmetrization

Parameters

cv	the curve to append to 'this' curve.
continuity	the required continuity at the transition. Can be G^(-1) and upwards.
dist	a measure of the local distorsion around the transition in order to achieve the specified continuity.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.217.3.3 virtual BoundingBox Go::Hyperbola::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.217.3.4 static ClassType Go::Hyperbola::classType ( ) [static]

29.217.3.5 virtual Hyperbola* Go::Hyperbola::clone ( ) const [virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::ElementaryCurve.

29.217.3.6 virtual void Go::Hyperbola::closestPoint (const Point & *pt*, double *tmin*, double *tmax*, double & *clo_t*, Point & *clo_pt*, double & *clo_dist*, double const * *seed* = 0) const [virtual]

Compute the closest point from an interval of this curve to a specified point.

Parameters

pt	point we want to find the closest point to
tmin	start parameter of search interval
tmax	end parameter of search interval
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.
seed	pointer to initial guess value, provided by the user (can be 0, for which the algorithm will determine a (hopefully) reasonable choice).

Implements Go::ParamCurve.

29.217.3.7 virtual SplineCurve* Go::Hyperbola::createSplineCurve ( ) const [virtual]

Fetch spline representation of curve.

Implements Go::ElementaryCurve.

29.217.3.8 virtual int Go::Hyperbola::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.217.3.9 virtual DirectionCone Go::Hyperbola::directionCone ( ) const [virtual]

Creates a DirectionCone which covers all tangent directions of this curve.

Returns

the smallest DirectionCone containing all tangent directions of this curve.

Implements Go::ParamCurve.

29.217.3.10 virtual double Go::Hyperbola::endparam ( ) const [virtual]

Query the end parameter of the curve

Returns

the curve's end parameter

Implements Go::ParamCurve.

29.217.3.11 virtual SplineCurve* Go::Hyperbola::geometryCurve ( ) [virtual]

If the definition of this ParamCurve contains a SplineCurve describing its spatial shape, then this function will return a pointer to this SplineCurve. Otherwise it will return a null pointer. The returned curve is NEWed, so the user is responsible for deleting it. This function may have side-effects.

Returns

a pointer to a SplineCurve representation of the ParamCurve, if it exists. Null pointer otherwise.

Implements Go::ParamCurve.

29.217.3.12 virtual ClassType Go::Hyperbola::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.217.3.13 bool Go::Hyperbola::isBounded ( ) const

Query if parametrization is bounded. Both upper and lower parameter bounds must be finite for this to be true.

Returns

true if bounded, *false* otherwise

29.217.3.14 virtual bool Go::Hyperbola::isDegenerate (double *degenerate_epsilon*) [virtual]

Query whether the curve is degenerate (collapsed into a single point).

Parameters

degenerate_epsilon	the tolerance used in determine whether the curve is degenerate. A curve is considered degenerate if its total length is shorter than this value.

Returns

`true` if the curve is degenerate, `false` otherwise.

Implements Go::ParamCurve.

29.217.3.15 virtual bool Go::Hyperbola::isInPlane (const Point & *norm*, double *eps*, Point & *pos*) const [virtual]

Check if the hyperbola lies in a plane with a given normal.

Reimplemented from Go::ParamCurve.

29.217.3.16 virtual double Go::Hyperbola::length (double *tol*) [virtual]

Compute the total length of this curve up to some tolerance

Parameters

tol	the relative tolerance when approximating the length, i.e. stop iteration when error becomes smaller than tol/(curve length)

Returns

the length calculated

Implements Go::ParamCurve.

29.217.3.17 virtual void Go::Hyperbola::point (Point & *pt*, double *tpar*) const [virtual]

Evaluate the curve's position at a given parameter

Parameters

pt	the evaluated position will be written to this Point
tpar	the parameter for which we wish to evaluate the curve

Implements Go::ParamCurve.

29.217.3.18 virtual void Go::Hyperbola::point (std::vector< Point > & *pts*, double *tpar*, int *derivs*, bool *from_right* = true) const [virtual]

Evaluate the curve's position and a certain number of derivatives at a given parameter.

Parameters

pts	the evaluated position and derivatives (tangent, curvature vector, etc.) will be written to this vector. The first entry will be the position, the second entry will be the first derivative, etc. The size of this vector must be set to 'derivs'+ 1 prior to calling this function.
tpar	the parameter for which we want to evaluate the curve
derivs	the number of derivatives we want to have calculated
from_right	specify whether we should calculate derivatives 'from the right' or 'from the left' (default is from the right). This matters only when the curve presents discontinuities in its derivatives.

Implements Go::ParamCurve.

29.217.3.19 virtual void Go::Hyperbola::read (std::istream & *is*) [virtual]

Read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.217.3.20 virtual void Go::Hyperbola::setParamBounds (double *startpar*, double *endpar*) [virtual]

Set bounds for the parametrization of the Hyperbola.

Parameters

startpar	start parameter
endpar	end parameter

Implements Go::ElementaryCurve.

29.217.3.21 virtual void Go::Hyperbola::setParameterInterval (double *t1*, double *t2*) [virtual]

Limit the curve by limiting the parameter interval.

Implements Go::ParamCurve.

29.217.3.22 void Go::Hyperbola::setSpanningVectors ( ) [protected]

29.217.3.23 virtual double Go::Hyperbola::startparam ( ) const [virtual]

Query the start parameter of the curve

Returns

the curve's start parameter

Implements Go::ParamCurve.

29.217.3.24 virtual Hyperbola* Go::Hyperbola::subCurve (double *from_par*, double *to_par*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implements Go::ElementaryCurve.

29.217.3.25 virtual void Go::Hyperbola::swapParameters2D ( ) [virtual]

If the curve is 2 dimensional, x and y coordinates will be swapped. Used when curve is a parameter curve.

Implements Go::ElementaryCurve.

29.217.3.26 virtual void Go::Hyperbola::translateCurve (const Point & *dir*) [virtual]

Implements Go::ElementaryCurve.

29.217.3.27 virtual void Go::Hyperbola::write (std::ostream & *os*) const [virtual]

Write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.217.4 Member Data Documentation

29.217.4.1 double Go::Hyperbola::endparam_ [protected]

Definition at line 175 of file Hyperbola.h.

29.217.4.2 Point Go::Hyperbola::location_ [protected]

Definition at line 166 of file Hyperbola.h.

29.217.4.3 Point Go::Hyperbola::normal_ [protected]

Definition at line 169 of file Hyperbola.h.

29.217.4.4 double Go::Hyperbola::r1_ [protected]

Definition at line 171 of file Hyperbola.h.

29.217.4.5 double Go::Hyperbola::r2_ [protected]

Definition at line 172 of file Hyperbola.h.

29.217.4.6 double Go::Hyperbola::startparam_ [protected]

Definition at line 174 of file Hyperbola.h.

29.217.4.7 Point Go::Hyperbola::vec1_ [protected]

Definition at line 167 of file Hyperbola.h.

29.217.4.8 Point Go::Hyperbola::vec2_ [protected]

Definition at line 168 of file Hyperbola.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Hyperbola.h

29.218 Go::Identity Class Reference

Check coincidence.

`#include <Identity.h>`

Public Member Functions

- int identicalSfs (shared_ptr< ParamSurface > sf1, shared_ptr< ParamSurface > sf2, double tol)
- int identicalCvs (shared_ptr< ParamCurve > cv1, double start1, double end1, shared_ptr< ParamCurve > cv2, double start2, double end2, double tol)

29.218.1 Detailed Description

Check coincidence.

Definition at line 58 of file Identity.h.

29.218.2 Member Function Documentation

29.218.2.1 int Go::Identity::identicalCvs (shared_ptr< ParamCurve > *cv1,* double *start1,* double *end1,* shared_ptr< ParamCurve > *cv2,* double *start2,* double *end2,* double *tol*)

Return value = 0 : Not coincident = 1 : Coincident curves = 2 : Curve one is embedded in curve two = 3 : Curve two is embedded in curve one

29.218.2.2 int Go::Identity::identicalSfs (shared_ptr< ParamSurface > *sf1,* shared_ptr< ParamSurface > *sf2,* double *tol*)

Return value = 0 : Not coincident = 1 : Coincident surfaces = 2 : Surface one is embedded in surface two = 3 : Surface two is embedded in surface one

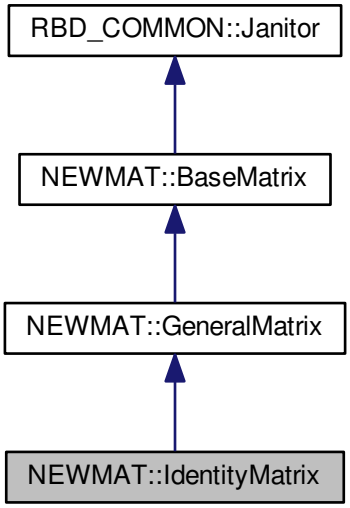
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Identity.h

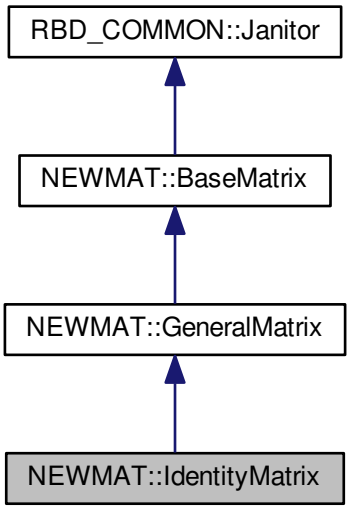
29.219 NEWMAT::IdentityMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::IdentityMatrix:



Collaboration diagram for NEWMAT::IdentityMatrix:



Public Member Functions

- IdentityMatrix ()
- ~IdentityMatrix ()
- IdentityMatrix (ArrayLengthSpecifier n)
- IdentityMatrix (const IdentityMatrix &gm)
- IdentityMatrix (const BaseMatrix &)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- MatrixType Type () const
- LogAndSign LogDeterminant () const
- Real Trace () const
- Real SumSquare () const
- Real SumAbsoluteValue () const
- Real Sum () const
- void GetRow (MatrixRowCol &)
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &)
- void NextRow (MatrixRowCol &)
- void NextCol (MatrixRowCol &)
- void NextCol (MatrixColX &)
- GeneralMatrix * MakeSolver ()
- void Solver (MatrixColX &, const MatrixColX &)
- GeneralMatrix * Transpose (TransposedMatrix *, MatrixType)
- void ReSize (int n)
- void ReSize (const GeneralMatrix &A)
- MatrixBandWidth BandWidth () const

Additional Inherited Members

29.219.1 Detailed Description

Definition at line 1101 of file newmat.h.

29.219.2 Constructor & Destructor Documentation

29.219.2.1 NEWMAT::IdentityMatrix::IdentityMatrix ( ) [inline]

Definition at line 1105 of file newmat.h.

29.219.2.2 NEWMAT::IdentityMatrix::~IdentityMatrix ( ) [inline]

Definition at line 1106 of file newmat.h.

29.219.2.3 NEWMAT::IdentityMatrix::IdentityMatrix (ArrayLengthSpecifier *n*) [inline]

Definition at line 1107 of file newmat.h.

29.219.2.4 NEWMAT::IdentityMatrix::IdentityMatrix (const IdentityMatrix & *gm*) [inline]

Definition at line 1109 of file newmat.h.

29.219.2.5 NEWMAT::IdentityMatrix::IdentityMatrix (const BaseMatrix &)

29.219.3 Member Function Documentation

29.219.3.1 MatrixBandWidth IdentityMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 404 of file newmat4.cpp.

29.219.3.2 void NEWMAT::IdentityMatrix::GetCol (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.219.3.3 void NEWMAT::IdentityMatrix::GetCol (MatrixColX &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.219.3.4 void IdentityMatrix::GetRow (MatrixRowCol & *mrc*) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 784 of file newmat3.cpp.

29.219.3.5 LogAndSign IdentityMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 672 of file newmat8.cpp.

29.219.3.6 GeneralMatrix* NEWMAT::IdentityMatrix::MakeSolver ( ) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 1126 of file newmat.h.

29.219.3.7 void NEWMAT::IdentityMatrix::NextCol (MatrixRowCol &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

29.219.3.8 void NEWMAT::IdentityMatrix::NextCol (MatrixColX &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

29.219.3.9 void IdentityMatrix::NextRow (MatrixRowCol & *mrc*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 806 of file newmat3.cpp.

29.219.3.10 void NEWMAT::IdentityMatrix::operator= (const BaseMatrix &)

29.219.3.11 void NEWMAT::IdentityMatrix::operator= (Real *f*) [inline]

Definition at line 1112 of file newmat.h.

29.219.3.12 void NEWMAT::IdentityMatrix::ReSize (int *n*)

29.219.3.13 void IdentityMatrix::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 327 of file newmat4.cpp.

29.219.3.14 void IdentityMatrix::Solver (MatrixColX & *mrc,* const MatrixColX & *mrc1*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 512 of file newmat2.cpp.

29.219.3.15 Real NEWMAT::IdentityMatrix::Sum ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 1119 of file newmat.h.

29.219.3.16 Real IdentityMatrix::SumAbsoluteValue ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 408 of file newmat8.cpp.

29.219.3.17 Real IdentityMatrix::SumSquare ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 424 of file newmat8.cpp.

29.219.3.18 Real IdentityMatrix::Trace ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 600 of file newmat8.cpp.

29.219.3.19 GeneralMatrix * IdentityMatrix::Transpose (TransposedMatrix *, MatrixType *mt*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 76 of file newmat5.cpp.

29.219.3.20 MatrixType IdentityMatrix::Type ( ) const [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 398 of file newmat4.cpp.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat2.cpp
- newmat/src/newmat3.cpp
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp
- newmat/src/newmat8.cpp

29.220 Go::IGESconverter Class Reference

```
#include <IGESconverter.h>
```

Public Member Functions

- IGESconverter ()
  Default constructor.
- IGESconverter (std::istream &is, FileFormat from_type, std::ostream &os, FileFormat to_type)
  This constructor calls the appropriate read and write members.
- ~IGESconverter ()
  Destructure.
- void readgo (std::istream &is)
  Read a g2-file.
- void readsislsrfs (std::istream &is)
  Read a number of sisl surfaces.
- void readsislcrvs (std::istream &is)
  Read a number of sisl curves.
- void readdisp (std::istream &is)
- void readIGES (std::istream &is)
  Read an IGES file.
- void writego (std::ostream &os)
  Write the content of this converter to a g2-file.
- void writedisp (std::ostream &os)
- void writeIGES (std::ostream &os)
  Write the content of this converter to an IGES-file.
- void addGeom (shared_ptr< Go::GeomObject > sp)
  Add one more geometry object to this converter.
- const std::vector< shared_ptr< Go::GeomObject > > & getGoGeom ()
  Get all geometry objects stored in this converter.
- const std::vector< double > & getColour (int i)
  Get the colour of entity number i.
- const std::vector< ftGroupGeom > & getGroup ()
  Get group information given in the IGES file (specified by form number)
- double minResolution () const
  Fetch the geometry tolerance given in an IGES file.
- int num_geom ()
  Number of geometric entities.
- int num_group ()
  Number of groups of entities.
- IGESheader & header ()
  Gives dangerous but necessary direct access to header info.

29.220.1 Detailed Description

The converter between the IGES fileformat, the file format used in GoTools, a file format used for SISL. The disp file format is outdated.

Definition at line 215 of file IGESconverter.h.

29.220.2 Constructor & Destructor Documentation

29.220.2.1 Go::IGESconverter::IGESconverter ( )

Default constructor.

29.220.2.2 Go::IGESconverter::IGESconverter (std::istream & *is,* FileFormat *from_type,* std::ostream & *os,* FileFormat *to_type*)

This constructor calls the appropriate read and write members.

29.220.2.3 Go::IGESconverter::~IGESconverter ( )

Destructure.

29.220.3 Member Function Documentation

29.220.3.1 void Go::IGESconverter::addGeom (shared_ptr< Go::GeomObject > *sp*)

Add one more geometry object to this converter.

29.220.3.2 const std::vector<double>& Go::IGESconverter::getColour (int *i*) [inline]

Get the colour of entity number i.

Definition at line 252 of file IGESconverter.h.

29.220.3.3 const std::vector<shared_ptr<Go::GeomObject> >& Go::IGESconverter::getGoGeom ( ) [inline]

Get all geometry objects stored in this converter.

Definition at line 248 of file IGESconverter.h.

29.220.3.4 const std::vector<ftGroupGeom>& Go::IGESconverter::getGroup ( ) [inline]

Get group information given in the IGES file (specified by form number)

Definition at line 256 of file IGESconverter.h.

29.220.3.5 IGESheader& Go::IGESconverter::header ( ) [inline]

Gives dangerous but necessary direct access to header info.

Definition at line 268 of file IGESconverter.h.

29.220.3.6 double Go::IGESconverter::minResolution ( ) const [inline]

Fetch the geometry tolerance given in an IGES file.

Definition at line 260 of file IGESconverter.h.

29.220.3.7 int Go::IGESconverter::num_geom ( ) [inline]

Number of geometric entities.

Definition at line 264 of file IGESconverter.h.

29.220.3.8 int Go::IGESconverter::num_group ( ) [inline]

Number of groups of entities.

Definition at line 266 of file IGESconverter.h.

29.220.3.9 void Go::IGESconverter::readdisp (std::istream & *is*)

29.220.3.10 void Go::IGESconverter::readgo (std::istream & *is*)

Read a g2-file.

29.220.3.11 void Go::IGESconverter::readIGES (std::istream & *is*)

Read an IGES file.

29.220.3.12 void Go::IGESconverter::readsislcrvs (std::istream & *is*)

Read a number of sisl curves.

29.220.3.13 void Go::IGESconverter::readsislsrfs (std::istream & *is*)

Read a number of sisl surfaces.

29.220.3.14 void Go::IGESconverter::writedisp (std::ostream & *os*)

29.220.3.15 void Go::IGESconverter::writego (std::ostream & *os*)

Write the content of this converter to a g2-file.

29.220.3.16 void Go::IGESconverter::writeIGES (std::ostream & *os*)

Write the content of this converter to an IGES-file.

The documentation for this class was generated from the following file:

- igeslib/include/GoTools/igeslib/IGESconverter.h

29.221 Go::IGESdirentry Struct Reference

Storage of all data contained in an IGES directory entity.

`#include <IGESconverter.h>`

Public Attributes

- int entity_type_number
- int param_data_start
- int structure
- int line_font_pattern
- int level
- int view
- int trans_matrix
- int label_display
- std::string status
- double line_weight
- int color
- int line_count
- int form
- std::string entity_label
- int entity_number

29.221.1 Detailed Description

Storage of all data contained in an IGES directory entity.

Definition at line 191 of file IGESconverter.h.

29.221.2 Member Data Documentation

29.221.2.1 int Go::IGESdirentry::color

Definition at line 204 of file IGESconverter.h.

29.221.2.2 std::string Go::IGESdirentry::entity_label

Definition at line 207 of file IGESconverter.h.

29.221.2.3 int Go::IGESdirentry::entity_number

Definition at line 208 of file IGESconverter.h.

29.221.2.4 int Go::IGESdirentry::entity_type_number

Definition at line 194 of file IGESconverter.h.

29.221.2.5 int Go::IGESdirentry::form

Definition at line 206 of file IGESconverter.h.

29.221.2.6 int Go::IGESdirentry::label_display

Definition at line 201 of file IGESconverter.h.

29.221.2.7 int Go::IGESdirentry::level

Definition at line 198 of file IGESconverter.h.

29.221.2.8 int Go::IGESdirentry::line_count

Definition at line 205 of file IGESconverter.h.

29.221.2.9 int Go::IGESdirentry::line_font_pattern

Definition at line 197 of file IGESconverter.h.

29.221.2.10 double Go::IGESdirentry::line_weight

Definition at line 203 of file IGESconverter.h.

29.221.2.11 int Go::IGESdirentry::param_data_start

Definition at line 195 of file IGESconverter.h.

29.221.2.12 std::string Go::IGESdirentry::status

Definition at line 202 of file IGESconverter.h.

29.221.2.13 int Go::IGESdirentry::structure

Definition at line 196 of file IGESconverter.h.

29.221.2.14 int Go::IGESdirentry::trans_matrix

Definition at line 200 of file IGESconverter.h.

29.221.2.15 int Go::IGESdirentry::view

Definition at line 199 of file IGESconverter.h.

The documentation for this struct was generated from the following file:

- igeslib/include/GoTools/igeslib/IGESconverter.h

29.222 Go::IGESheader Struct Reference

Storage of all data contained in the IGES header.

`#include <IGESconverter.h>`

Public Member Functions

- IGESheader ()

  Constructor. Needed to handle write to file.

Public Attributes

- char pardel
- char recdel
- std::string sending_system_prodid
- std::string original_filename
- std::string creator_system_prodid
- std::string preprocessor_version_number
- int integer_bits
- int single_prec_magn
- int single_prec_sign
- int double_prec_magn
- int double_prec_sign
- std::string receiving_system_prodid
- double model_space_scale
- int unit_flag
- std::string unit_description
- int max_weight_grads
- double max_line_width
- std::string timestamp_file_changed
- double min_resolution
- double max_coordinate
- std::string author
- std::string organisation
- int IGES_version
- int drafting_standard
- std::string timestamp_model_changed
- std::string application_protocol_description
- int num_parameters

29.222.1 Detailed Description

Storage of all data contained in the IGES header.

Definition at line 80 of file IGESconverter.h.

29.222.2 Constructor & Destructor Documentation

29.222.2.1 Go::IGESheader::IGESheader ( )

Constructor. Needed to handle write to file.

29.222.3 Member Data Documentation

29.222.3.1 std::string Go::IGESheader::application_protocol_description

Definition at line 111 of file IGESconverter.h.

29.222.3.2 std::string Go::IGESheader::author

Definition at line 106 of file IGESconverter.h.

29.222.3.3 std::string Go::IGESheader::creator_system_prodid

Definition at line 90 of file IGESconverter.h.

29.222.3.4 int Go::IGESheader::double_prec_magn

Definition at line 95 of file IGESconverter.h.

29.222.3.5 int Go::IGESheader::double_prec_sign

Definition at line 96 of file IGESconverter.h.

29.222.3.6 int Go::IGESheader::drafting_standard

Definition at line 109 of file IGESconverter.h.

29.222.3.7 int Go::IGESheader::IGES_version

Definition at line 108 of file IGESconverter.h.

29.222.3.8 int Go::IGESheader::integer_bits

Definition at line 92 of file IGESconverter.h.

29.222.3.9 double Go::IGESheader::max_coordinate

Definition at line 105 of file IGESconverter.h.

29.222.3.10 double Go::IGESheader::max_line_width

Definition at line 102 of file IGESconverter.h.

29.222.3.11 int Go::IGESheader::max_weight_grads

Definition at line 101 of file IGESconverter.h.

29.222.3.12 double Go::IGESheader::min_resolution

Definition at line 104 of file IGESconverter.h.

29.222.3.13 double Go::IGESheader::model_space_scale

Definition at line 98 of file IGESconverter.h.

29.222.3.14 int Go::IGESheader::num_parameters

Definition at line 113 of file IGESconverter.h.

29.222.3.15 std::string Go::IGESheader::organisation

Definition at line 107 of file IGESconverter.h.

29.222.3.16 std::string Go::IGESheader::original_filename

Definition at line 89 of file IGESconverter.h.

29.222.3.17 char Go::IGESheader::pardel

Definition at line 86 of file IGESconverter.h.

29.222.3.18 std::string Go::IGESheader::preprocessor_version_number

Definition at line 91 of file IGESconverter.h.

29.222.3.19 char Go::IGESheader::recdel

Definition at line 87 of file IGESconverter.h.

29.222.3.20 std::string Go::IGESheader::receiving_system_prodid

Definition at line 97 of file IGESconverter.h.

29.222.3.21 std::string Go::IGESheader::sending_system_prodid

Definition at line 88 of file IGESconverter.h.

29.222.3.22 int Go::IGESheader::single_prec_magn

Definition at line 93 of file IGESconverter.h.

29.222.3.23 int Go::IGESheader::single_prec_sign

Definition at line 94 of file IGESconverter.h.

29.222.3.24 std::string Go::IGESheader::timestamp_file_changed

Definition at line 103 of file IGESconverter.h.

29.222.3.25 std::string Go::IGESheader::timestamp_model_changed

Definition at line 110 of file IGESconverter.h.

29.222.3.26 std::string Go::IGESheader::unit_description

Definition at line 100 of file IGESconverter.h.

29.222.3.27 int Go::IGESheader::unit_flag

Definition at line 99 of file IGESconverter.h.

The documentation for this struct was generated from the following file:

- igeslib/include/GoTools/igeslib/IGESconverter.h

29.223 Go::ImplicitizeCurveAlgo Class Reference

`#include <ImplicitizeCurveAlgo.h>`

Public Member Functions

- ImplicitizeCurveAlgo ()
  Default constructor.
- ImplicitizeCurveAlgo (int deg)
- ImplicitizeCurveAlgo (const SplineCurve &curve, int deg)
- void useSplineCurve (const SplineCurve &curve)
- void setDegree (int deg)
- void setTolerance (double tol)
- void perform ()
- void getResultData (BernsteinTriangularPoly &implicit, BaryCoordSystem2D &bc, double &sigma_min)

29.223.1 Detailed Description

Class that implements an implicitization algorithm for spline curves.

Input: A curve of type SplineCurve, and the degree that is chosen for the implicit representation.

Output: A barycentric coordinate system, and the Bernstein polynomial that represents the implicit curve.

The algorithm first defines a barycentric coordinate system in terms of a triangle that is slightly larger than the bounding box of the spline curve. It then computes the Bernstein polynomial representing the implicit curve. If the chosen degree is too low to produce the exact result, an approximate implicit curve is produced. If the degree is too high, the resulting polynomial will be reducible and contain the exact implicitization as a factor. If the input curve consists of multiple segments, the output polynomial will be a product of the separate implicit curves, or an approximation of it.

Definition at line 73 of file ImplicitizeCurveAlgo.h.

29.223.2 Constructor & Destructor Documentation

29.223.2.1 Go::ImplicitizeCurveAlgo::ImplicitizeCurveAlgo ( ) [inline]

Default constructor.

Definition at line 76 of file ImplicitizeCurveAlgo.h.

29.223.2.2 Go::ImplicitizeCurveAlgo::ImplicitizeCurveAlgo (int *deg*) [inline], [explicit]

Constructor

Parameters

deg	degree of the implicit representation

Definition at line 79 of file ImplicitizeCurveAlgo.h.

29.223.2.3 Go::ImplicitizeCurveAlgo::ImplicitizeCurveAlgo (const SplineCurve & *curve,* int *deg*) [inline]

Constructor

Parameters

curve	spline curve to be implicitized
deg	degree of the implicit representation

Definition at line 83 of file ImplicitizeCurveAlgo.h.

29.223.3 Member Function Documentation

29.223.3.1 void Go::ImplicitizeCurveAlgo::getResultData (BernsteinTriangularPoly & *implicit,* BaryCoordSystem2D & *bc,* double & *sigma_min*) [inline]

Get the result of the implicitization

Return values

implicit	a BernsteinTriangularPoly representing the implicit curve
bc	the barycentric coordinate system in which the BernsteinTriangularPoly is defined

Definition at line 110 of file ImplicitizeCurveAlgo.h.

29.223.3.2 void Go::ImplicitizeCurveAlgo::perform ( )

Perform the implicitization. This function runs the implicitization algorithm.

29.223.3.3 void Go::ImplicitizeCurveAlgo::setDegree (int *deg*) [inline]

Choose the degree of the implicit representation

Parameters

deg	degree

Definition at line 93 of file ImplicitizeCurveAlgo.h.

29.223.3.4 void Go::ImplicitizeCurveAlgo::setTolerance (double *tol*) [inline]

Set the tolerance

Parameters

tol	tolerance; default value is 3.0e-15

Definition at line 98 of file ImplicitizeCurveAlgo.h.

29.223.3.5 void Go::ImplicitizeCurveAlgo::useSplineCurve (const SplineCurve & *curve*) [inline]

Load the spline curve to be implicitized

Parameters

curve	curve on SplineCurve form

Definition at line 88 of file ImplicitizeCurveAlgo.h.

The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/ImplicitizeCurveAlgo.h

29.224 Go::ImplicitizeCurveAndVectorAlgo Class Reference

`#include <ImplicitizeCurveAndVectorAlgo.h>`

Public Member Functions

- ImplicitizeCurveAndVectorAlgo ()
  Default constructor.
- ImplicitizeCurveAndVectorAlgo (int deg)
- ImplicitizeCurveAndVectorAlgo (const SplineCurve &crv, const Point &pt, int deg)
- void useSplineCurve (const SplineCurve &crv)
- void useVector (const Point &pt)
- void setDegree (int deg)
- void setTolerance (double tol)
- int perform ()
- void getResultData (BernsteinTetrahedralPoly &implicit, BaryCoordSystem3D &bc, double &sigma_min)

29.224.1 Detailed Description

Class that implements an algorithm for finding an implicit ruled surface defined by a curve and a vector.

Input: A curve of type SplineCurve, a vector of type Point, and the degree that is chosen for the implicit surface.

Output: A barycentric coordinate system, and the Bernstein polynomial that represents the implicit surface.

The algorithm first defines a barycentric coordinate system in terms of a tetrahedron that is slightly larger than the bounding box of the spline curve. It then computes the Bernstein polynomial representing the implicit ruled surface defined by the spline curve and vector. If the chosen degree is too low to produce the exact result, an approximate implicit surface is produced. If the degree is too high, the resulting polynomial will be reducible and contain the exact implicitization as a factor. If the input curve consists of multiple segments, the output polynomial will be a product of the separate implicit surfaces, or an approximation of it.

Definition at line 75 of file ImplicitizeCurveAndVectorAlgo.h.

29.224.2 Constructor & Destructor Documentation

29.224.2.1 Go::ImplicitizeCurveAndVectorAlgo::ImplicitizeCurveAndVectorAlgo ( ) [inline]

Default constructor.

Definition at line 78 of file ImplicitizeCurveAndVectorAlgo.h.

29.224.2.2 Go::ImplicitizeCurveAndVectorAlgo::ImplicitizeCurveAndVectorAlgo (int *deg*) [inline], [explicit]

Constructor

Parameters

deg	degree of the implicit representation

Definition at line 81 of file ImplicitizeCurveAndVectorAlgo.h.

29.224.2.3 Go::ImplicitizeCurveAndVectorAlgo::ImplicitizeCurveAndVectorAlgo (const SplineCurve & *crv,* const Point & *pt,* int *deg*) [inline]

Constructor

Parameters

crv	3D spline curve defining the implicit surface
pt	3D vector defining the implicit surface
deg	degree of the implicit surface

Definition at line 87 of file ImplicitizeCurveAndVectorAlgo.h.

29.224.3 Member Function Documentation

29.224.3.1 void Go::ImplicitizeCurveAndVectorAlgo::getResultData (BernsteinTetrahedralPoly & *implicit,* BaryCoordSystem3D & *bc,* double & *sigma_min*) [inline]

Get the result of the implicitization.

Return values

implicit	a BernsteinTetrahedralPoly representing the implicit surface
bc	the barycentric coordinate system in which the BernsteinTetrahedralPoly is defined

Definition at line 120 of file ImplicitizeCurveAndVectorAlgo.h.

29.224.3.2 int Go::ImplicitizeCurveAndVectorAlgo::perform ( )

Perform the implicitization. This function runs the implicitization algorithm.

29.224.3.3 void Go::ImplicitizeCurveAndVectorAlgo::setDegree (int *deg*) [inline]

Choose the degree of the implicit representation.

Parameters

deg	degree

Definition at line 103 of file ImplicitizeCurveAndVectorAlgo.h.

29.224.3.4 void Go::ImplicitizeCurveAndVectorAlgo::setTolerance (double *tol*) [inline]

Set the tolerance.

Parameters

tol	tolerance; default value is 3.0e-15

Definition at line 108 of file ImplicitizeCurveAndVectorAlgo.h.

29.224.3.5 void Go::ImplicitizeCurveAndVectorAlgo::useSplineCurve (const SplineCurve & *crv*) [inline]

Load the spline curve for the implicitization

Parameters

crv	curve on SplineCurve form

Definition at line 93 of file ImplicitizeCurveAndVectorAlgo.h.

29.224.3.6 void Go::ImplicitizeCurveAndVectorAlgo::useVector (const Point & *pt*) [inline]

Load the vector for the implicitization.

Parameters

pt	vector of type Point

Definition at line 98 of file ImplicitizeCurveAndVectorAlgo.h.

The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/ImplicitizeCurveAndVectorAlgo.h

29.225 Go::ImplicitizePointCloudAlgo Class Reference

`#include <ImplicitizePointCloudAlgo.h>`

Public Member Functions

- ImplicitizePointCloudAlgo ()
  Default constructor.
- ImplicitizePointCloudAlgo (int deg)
- ImplicitizePointCloudAlgo (const PointCloud3D &cloud, int deg)
- void usePointCloud (const PointCloud3D &cloud)
- void setDegree (int deg)
- void setTolerance (double tol)
- void perform ()
- void getResultData (BernsteinTetrahedralPoly &implicit, BaryCoordSystem3D &bc, double &sigma_min)

29.225.1 Detailed Description

Class that implements an algorithm for finding an implicit surface from a 3D point cloud.

Input: A point cloud of type PointCloud3D, and the degree that is chosen for the implicit representation.

Output: A barycentric coordinate system, and the Bernstein polynomial that represents the implicit surface.

The algorithm first defines a barycentric coordinate system in terms of a tetrahedron that is slightly larger than the bounding box of the point cloud. It then computes the Bernstein polynomial representing the implicit surface. If the chosen degree is too low to produce the exact result, an approximate implicit surface is produced. If the degree is too high, the resulting polynomial will be reducible and contain the exact implicitization as a factor.

Definition at line 71 of file ImplicitizePointCloudAlgo.h.

29.225.2 Constructor & Destructor Documentation

29.225.2.1 Go::ImplicitizePointCloudAlgo::ImplicitizePointCloudAlgo ( ) [inline]

Default constructor.

Definition at line 74 of file ImplicitizePointCloudAlgo.h.

29.225.2.2 Go::ImplicitizePointCloudAlgo::ImplicitizePointCloudAlgo (int *deg*) [inline], [explicit]

Constructor.

Parameters

deg	degree of the implicit representation

Definition at line 77 of file ImplicitizePointCloudAlgo.h.

29.225.2.3 Go::ImplicitizePointCloudAlgo::ImplicitizePointCloudAlgo (const PointCloud3D & *cloud,* int *deg*) [inline]

Constructor.

Parameters

cloud	point cloud to be implicitized
deg	degree of the implicit representation

Definition at line 82 of file ImplicitizePointCloudAlgo.h.

29.225.3 Member Function Documentation

29.225.3.1 void Go::ImplicitizePointCloudAlgo::getResultData (BernsteinTetrahedralPoly & *implicit,* BaryCoordSystem3D & *bc,* double & *sigma_min*) [inline]

Get the result of the implicitization.

Return values

implicit	a BernsteinTetrahedralPoly representing the implicit surface
bc	the barycentric coordinate system in which the BernsteinTetrahedralPoly is defined

Definition at line 109 of file ImplicitizePointCloudAlgo.h.

29.225.3.2 void Go::ImplicitizePointCloudAlgo::perform ( )

Perform the implicitization. This function runs the implicitization algorithm.

29.225.3.3 void Go::ImplicitizePointCloudAlgo::setDegree (int *deg*) [inline]

Choose the degree of the implicit representation.

Parameters

deg	degree

Definition at line 92 of file ImplicitizePointCloudAlgo.h.

29.225.3.4 void Go::ImplicitizePointCloudAlgo::setTolerance (double *tol*) [inline]

Set the tolerance.

Parameters

tol	tolerance; default value is 3.0e-15

Definition at line 97 of file ImplicitizePointCloudAlgo.h.

29.225.3.5 void Go::ImplicitizePointCloudAlgo::usePointCloud (const PointCloud3D & *cloud*) [inline]

Load the point cloud to be implicitized.

Parameters

cloud	point cloud on PointCloud3D form

Definition at line 87 of file ImplicitizePointCloudAlgo.h.

The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/ImplicitizePointCloudAlgo.h

29.226 Go::ImplicitizeSurfaceAlgo Class Reference

`#include <ImplicitizeSurfaceAlgo.h>`

Public Member Functions

- ImplicitizeSurfaceAlgo ()
  Default constructor.
- ImplicitizeSurfaceAlgo (int deg)
- ImplicitizeSurfaceAlgo (const SplineSurface &surf, int deg)
- void useSplineSurface (const SplineSurface &surf)
- void setDegree (int deg)
- void setTolerance (double tol)
- void perform ()
- void getResultData (BernsteinTetrahedralPoly &implicit, BaryCoordSystem3D &bc, double &sigma_min)

29.226.1 Detailed Description

Class that implements an implicitization algorithm for spline surfaces

Input: A surface of type SplineSurface, and the degree that is chosen for the implicitization.

Output: A barycentric coordinate system, and the Bernstein polynomial that represents the implicit surface.

The algorithm first defines a barycentric coordinate system in terms of a tetrahedron that is slightly larger than the bounding box of the spline surface. It then computes the Bernstein polynomial representing the implicit surface. If the chosen degree is too low to produce the exact result, an approximate implicit surface is produced. If the degree is too high, the resulting polynomial will be reducible and contain the exact implicitization as a factor. If the input surface consists of multiple patches, the output polynomial will be a product of the separate implicit surfaces, or an approximation of it.

Definition at line 74 of file ImplicitizeSurfaceAlgo.h.

29.226.2 Constructor & Destructor Documentation

29.226.2.1 Go::ImplicitizeSurfaceAlgo::ImplicitizeSurfaceAlgo ( ) [inline]

Default constructor.

Definition at line 77 of file ImplicitizeSurfaceAlgo.h.

29.226.2.2 Go::ImplicitizeSurfaceAlgo::ImplicitizeSurfaceAlgo (int *deg*) [inline], [explicit]

Constructor.

Parameters

deg	degree of the implicit representation

Definition at line 80 of file ImplicitizeSurfaceAlgo.h.

29.226.2.3 Go::ImplicitizeSurfaceAlgo::ImplicitizeSurfaceAlgo (const SplineSurface & *surf*, int *deg*) [inline]

Constructor.

Parameters

surf	spline surface to be implicitized
deg	degree of the implicit representation

Definition at line 84 of file ImplicitizeSurfaceAlgo.h.

29.226.3 Member Function Documentation

29.226.3.1 void Go::ImplicitizeSurfaceAlgo::getResultData (BernsteinTetrahedralPoly & *implicit*, BaryCoordSystem3D & *bc*, double & *sigma_min*) [inline]

Get the result of the implicitization.

Return values

implicit	a BernsteinTetrahedralPoly representing the implicit surface
bc	the barycentric coordinate system in which the BernsteinTetrahedralPoly is defined

Definition at line 111 of file ImplicitizeSurfaceAlgo.h.

29.226.3.2 void Go::ImplicitizeSurfaceAlgo::perform ( )

Perform the implicitization. This function runs the implicitization algorithm.

29.226.3.3 void Go::ImplicitizeSurfaceAlgo::setDegree (int *deg*) [inline]

Choose the degree of the implicit representation.

Parameters

deg	degree

Definition at line 94 of file ImplicitizeSurfaceAlgo.h.

29.226.3.4 void Go::ImplicitizeSurfaceAlgo::setTolerance (double *tol*) [inline]

Set the tolerance.

Parameters

tol	tolerance; default value is 3.0e-15

Definition at line 99 of file ImplicitizeSurfaceAlgo.h.

29.226.3.5 void Go::ImplicitizeSurfaceAlgo::useSplineSurface (const SplineSurface & *surf*) [inline]

Load the spline surface to be implicitized.

Parameters

surf	surfaceon SplineSurface form

Definition at line 89 of file ImplicitizeSurfaceAlgo.h.

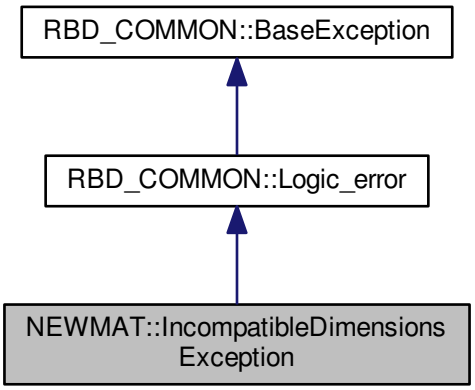
The documentation for this class was generated from the following file:

- implicitization/include/GoTools/implicitization/ImplicitizeSurfaceAlgo.h

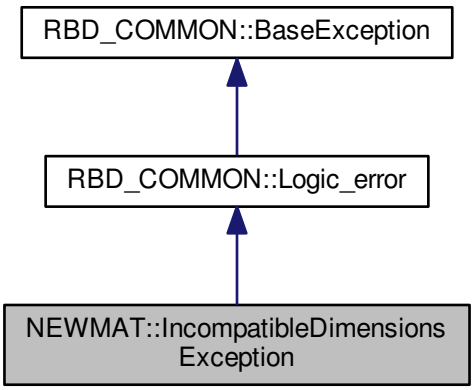
29.227 NEWMAT::IncompatibleDimensionsException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::IncompatibleDimensionsException:



Collaboration diagram for NEWMAT::IncompatibleDimensionsException:



Public Member Functions

- IncompatibleDimensionsException ()
- IncompatibleDimensionsException (const GeneralMatrix &, const GeneralMatrix &)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.227.1 Detailed Description

Definition at line 1669 of file newmat.h.

29.227.2 Constructor & Destructor Documentation

29.227.2.1 IncompatibleDimensionsException::IncompatibleDimensionsException ( )

Definition at line 160 of file newmatex.cpp.

29.227.2.2 NEWMAT::IncompatibleDimensionsException::IncompatibleDimensionsException (const GeneralMatrix &, const GeneralMatrix &)

29.227.3 Member Data Documentation

29.227.3.1 unsigned long IncompatibleDimensionsException::Select [static]

Definition at line 1672 of file newmat.h.

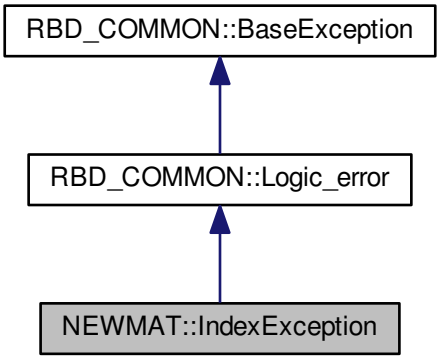
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

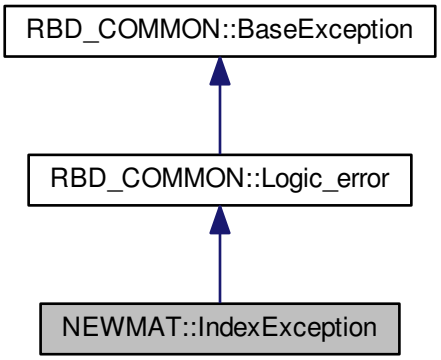
29.228 NEWMAT::IndexException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::IndexException:



Collaboration diagram for NEWMAT::IndexException:



Public Member Functions

- IndexException (int i, const GeneralMatrix &A)
- IndexException (int i, int j, const GeneralMatrix &A)
- IndexException (int i, const GeneralMatrix &A, bool)
- IndexException (int i, int j, const GeneralMatrix &A, bool)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.228.1 Detailed Description

Definition at line 1636 of file newmat.h.

29.228.2 Constructor & Destructor Documentation

29.228.2.1 IndexException::IndexException (int *i*, const GeneralMatrix & *A*)

Definition at line 199 of file newmatex.cpp.

29.228.2.2 IndexException::IndexException (int *i*, int *j*, const GeneralMatrix & *A*)

Definition at line 209 of file newmatex.cpp.

29.228.2.3 IndexException::IndexException (int *i*, const GeneralMatrix & *A*, bool)

Definition at line 221 of file newmatex.cpp.

29.228.2.4 IndexException::IndexException (int *i*, int *j*, const GeneralMatrix & *A*, bool)

Definition at line 232 of file newmatex.cpp.

29.228.3 Member Data Documentation

29.228.3.1 unsigned long IndexException::Select [static]

Definition at line 1639 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

29.229 Go::IndexMesh2DIterator Class Reference

`#include <IndexMesh2DIterator.h>`

Public Member Functions

- IndexMesh2DIterator (const Mesh2D &m, int kind_u=0, int kmul_u=1, int kind_v=0, int kmul_v=1)
- IndexMesh2DIterator & operator++ ()
- bool operator== (const IndexMesh2DIterator &rhs) const
- bool operator!= (const IndexMesh2DIterator &rhs) const
- const std::array< int, 8 > & operator* () const

29.229.1 Detailed Description

Definition at line 50 of file IndexMesh2DIterator.h.

29.229.2 Constructor & Destructor Documentation

29.229.2.1 Go::IndexMesh2DIterator::IndexMesh2DIterator (const Mesh2D & *m*, int *kind_u* = 0, int *kmul_u* = 1, int *kind_v* = 0, int *kmul_v* = 1)

29.229.3 Member Function Documentation

29.229.3.1 bool Go::IndexMesh2DIterator::operator!= (const IndexMesh2DIterator & *rhs*) const [inline]

Definition at line 77 of file IndexMesh2DIterator.h.

29.229.3.2 const std::array<int,8>& Go::IndexMesh2DIterator::operator* ( ) const [inline]

Definition at line 98 of file IndexMesh2DIterator.h.

29.229.3.3 IndexMesh2DIterator& Go::IndexMesh2DIterator::operator++ ( )

29.229.3.4 bool Go::IndexMesh2DIterator::operator== (const IndexMesh2DIterator & *rhs*) const [inline]

Definition at line 71 of file IndexMesh2DIterator.h.

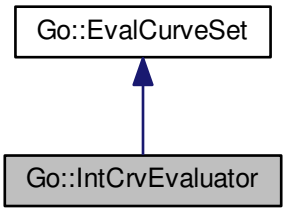
The documentation for this class was generated from the following file:

- lrsplines2D/include/GoTools/lrsplines2D/IndexMesh2DIterator.h

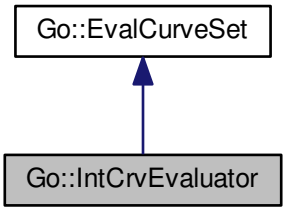
29.230 Go::IntCrvEvaluator Class Reference

`#include <IntCrvEvaluator.h>`

Inheritance diagram for Go::IntCrvEvaluator:



Collaboration diagram for Go::IntCrvEvaluator:



Public Member Functions

- IntCrvEvaluator (shared_ptr< CurveOnSurface > sfcv1, double start1, double end1, shared_ptr< Curve↩ OnSurface > sfcv2, double start2, double end2, bool same_orientation, int keep_crv=0)

  Constructor.
- virtual ~IntCrvEvaluator ()

  Destructor.
- virtual std::vector< Point > eval (double t)
- virtual void eval (double t, int n, std::vector< std::vector< Point > > &der)
- virtual double start ()
- virtual double end ()
- virtual int dim ()
- virtual bool approximationOK (double par, const std::vector< Point > &approxpos, double tol1, double tol2)
- virtual int nmbCvs ()
- virtual void resetErr ()

  Reset intermediate error. New iterationa.
- double getMaxErr ()

  Get maximum approximation error.

29.230.1 Detailed Description

This class represents an intersection curve approximated by two curve on surface instances

Definition at line 51 of file IntCrvEvaluator.h.

29.230.2 Constructor & Destructor Documentation

29.230.2.1 Go::IntCrvEvaluator::IntCrvEvaluator (shared_ptr< CurveOnSurface > *sfcv1,* double *start1,* double *end1,* shared_ptr< CurveOnSurface > *sfcv2,* double *start2,* double *end2,* bool *same_orientation,* int *keep_crv* = 0)

Constructor.

29.230.2.2 virtual Go::IntCrvEvaluator::~IntCrvEvaluator ( ) [virtual]

Destructor.

29.230.3 Member Function Documentation

29.230.3.1 virtual bool Go::IntCrvEvaluator::approximationOK (double *par,* const std::vector< Point > & *approxpos,* double *tol1,* double *tol2*) [virtual]

Whether the approximation is within tolerances in input parameter.

Parameters

par	parameter in which to evaluate.
approxpos	whether the input points are within tolerance from the evaluated points (as given by eval()).
tol1	tolerance used to decide approximation accuracy.
tol2	tolerance used to decide approximation accuracy.

Returns

whether the approximation is within tolerances in input parameter.

Implements Go::EvalCurveSet.

29.230.3.2 virtual int Go::IntCrvEvaluator::dim ( ) [virtual]

The geometric dimension of the spline curves.

Returns

geometric dimension of the total space.

Implements Go::EvalCurveSet.

29.230.3.3 virtual double Go::IntCrvEvaluator::end ( ) [virtual]

End parameter of domain.

Returns

end parameter of the spline space.

Implements Go::EvalCurveSet.

29.230.3.4 virtual std::vector<Point> Go::IntCrvEvaluator::eval (double *t*) [virtual]

Evaluate the curves.

Parameters

t	parameter in which to evaluate.

Returns

the evaluated points for the curve set.

Implements Go::EvalCurveSet.

29.230.3.5 virtual void Go::IntCrvEvaluator::eval (double *t*, int *n*, std::vector< std::vector< Point > > & *der*) [virtual]

Evaluate the curve derivatives.

Parameters

t	parameter in which to evaluate.
n	number of derivatives to compute.
der	the evaluated points up to the n'th derivative for the curve set.

Implements Go::EvalCurveSet.

29.230.3.6 double Go::IntCrvEvaluator::getMaxErr ( ) [inline]

Get maximum approximation error.

Definition at line 109 of file IntCrvEvaluator.h.

29.230.3.7 virtual int Go::IntCrvEvaluator::nmbCvs ( ) [virtual]

The number of curves in the curve set.

Returns

the number of curves in the curve set.

Implements Go::EvalCurveSet.

29.230.3.8 virtual void Go::IntCrvEvaluator::resetErr ( ) [inline], [virtual]

Reset intermediate error. New iterationa.

Reimplemented from Go::EvalCurveSet.

Definition at line 103 of file IntCrvEvaluator.h.

29.230.3.9 virtual double Go::IntCrvEvaluator::start ( ) [virtual]

Start parameter of domain.

Returns

start parameter of the spline space.

Implements Go::EvalCurveSet.

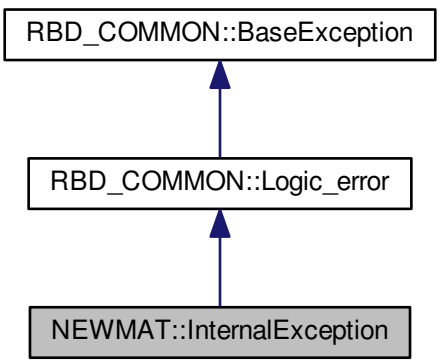
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/IntCrvEvaluator.h

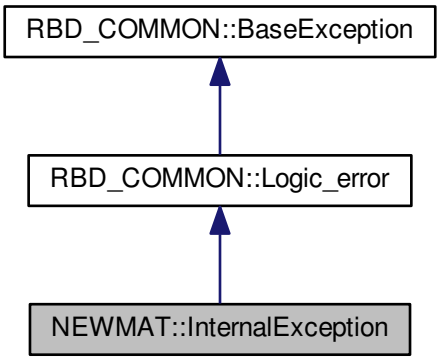
29.231 NEWMAT::InternalException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::InternalException:



Collaboration diagram for NEWMAT::InternalException:



Public Member Functions

- InternalException (const char *c)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.231.1 Detailed Description

Definition at line 1692 of file newmat.h.

29.231.2 Constructor & Destructor Documentation

29.231.2.1 InternalException::InternalException (const char * c)

Definition at line 244 of file newmatex.cpp.

29.231.3 Member Data Documentation

29.231.3.1 unsigned long InternalException::Select [static]

Definition at line 1695 of file newmat.h.

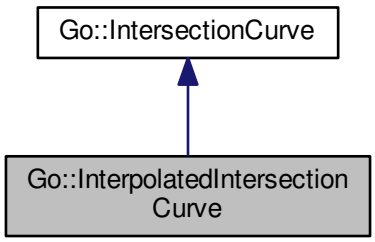
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

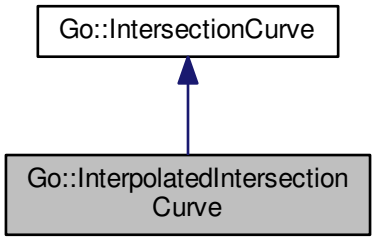
29.232 Go::InterpolatedIntersectionCurve Class Reference

`#include <IntersectionCurve.h>`

Inheritance diagram for Go::InterpolatedIntersectionCurve:



Collaboration diagram for Go::InterpolatedIntersectionCurve:



Public Member Functions

- virtual ~InterpolatedIntersectionCurve ()
- virtual void refine (const double &pos_tol, const double &angle_tol)
- virtual shared_ptr< ParamCurve > getCurve () const
- virtual shared_ptr< ParamCurve > getParamCurve (int obj_nmb) const
- virtual bool isIsocurve () const
- virtual bool isDegenerated () const
- virtual void getParamSpan (double &start, double &end) const
- virtual void evaluateAt (double pval, Point &pos, Point &tan)
- virtual bool getGuidePointTangent (shared_ptr< IntersectionPoint > pt, Point &tan, int type) const
- void write (std::ostream &os) const
- void read (std::istream &is) const

Friends

- template<class iterator >
  shared_ptr< IntersectionCurve > constructIntersectionCurve (const iterator begin, const iterator end)

Additional Inherited Members

29.232.1 Detailed Description

IntersectionCurve that is defined by Hermite interpolation of a number of guidepoints.

Definition at line 393 of file IntersectionCurve.h.

29.232.2 Constructor & Destructor Documentation

29.232.2.1 virtual Go::InterpolatedIntersectionCurve::~InterpolatedIntersectionCurve ( ) [inline], [virtual]

Definition at line 397 of file IntersectionCurve.h.

29.232.3 Member Function Documentation

29.232.3.1 virtual void Go::InterpolatedIntersectionCurve::evaluateAt (double *pval*, Point & *pos*, Point & *tan*) [virtual]

Evaluate the IntersectionCurve at parameter value *pval*. Its position at this parameter value will be returned in *pos* and its tangent direction will be returned in *tan*.

Parameters

pval	the parameter value for which to evaluate the IntersectionCurve. It should be within the parametric span (which can be obtained from GetParamSpan().

Return values

pos	the calculated position of the point on the curve at parameter *pval*.

Parameters

tan	the calculated tangent of the curve at parameter *pval*.

Implements Go::IntersectionCurve.

29.232.3.2 virtual shared_ptr<ParamCurve> Go::InterpolatedIntersectionCurve::getCurve ( ) const [virtual]

Get out a (shared) pointer to a parametric curve that approximates this IntersectionCurve.

Implements Go::IntersectionCurve.

29.232.3.3 virtual bool Go::InterpolatedIntersectionCurve::getGuidePointTangent (shared_ptr< IntersectionPoint > *pt*, Point & *tan*, int *type*) const [virtual]

Get the tangent of a guidepoint that we know lies on the curve (just using the getTangent() function of the guidepoint can be deceiving, as it is not necessarily unique).

Parameters

pt	shared pointer to the guidepoint. It is supposed to be part of the definition of the curve.
type	specifies what kind of tangent the user wants. '1' means the parameter plane tangent for the first object. '2' means the parameter plane tangent for the second object. Other values of 'type' means the tangent in 3D space.

Return values

tan	the requested tangent

Returns

'true' if a tangent was found (i.e. *pt* was indeed a guidepoint of the IntersectionCurve). In the opposite case, 'false' is returned.

Reimplemented from Go::IntersectionCurve.

29.232.3.4 virtual shared_ptr<ParamCurve> Go::InterpolatedIntersectionCurve::getParamCurve (int *obj_nmb*) const [virtual]

Get out a (shared) pointer to the curve in the parametric plane of the first or second object. Should only be called when the concerned object is 2-parametric.

Parameters

obj_nmb	should be either 1 or 2, depending on whether you want to get the parametric curve in object 1 or object 2.

Returns

a shared pointer to a curve that approximates the intersection curve in the parametric domain of the specified object.

Implements Go::IntersectionCurve.

29.232.3.5 virtual void Go::InterpolatedIntersectionCurve::getParamSpan (double & *start*, double & *end*) const [inline], [virtual]

Get the start and end value for the parametric span of the IntersectionCurve.

Return values

start	upon function return this variable will contain the start value of the parametric span.
end	upon function return this variable will contain the end value of the parametric span.

Implements Go::IntersectionCurve.

Definition at line 411 of file IntersectionCurve.h.

29.232.3.6 virtual bool Go::InterpolatedIntersectionCurve::isDegenerated ( ) const [inline], [virtual]

Determine if the IntersectionCurve is in fact a degenerated curve (a single point in space).

Returns

'true' if the IntersectionCurve is degenerated. 'false' otherwise.

Implements Go::IntersectionCurve.

Definition at line 408 of file IntersectionCurve.h.

29.232.3.7 virtual bool Go::InterpolatedIntersectionCurve::isIsocurve ( ) const [inline], [virtual]

Determine if the IntersectionCurve is in fact representing an isoparametric intersection.

Returns

'true' if the IntersectionCurve is part of an isocurve for one of the objects, 'false' otherwise.

Implements Go::IntersectionCurve.

Definition at line 405 of file IntersectionCurve.h.

29.232.3.8 void Go::InterpolatedIntersectionCurve::read (std::istream & *is*) const

29.232.3.9 virtual void Go::InterpolatedIntersectionCurve::refine (const double & *pos_tol*, const double & *angle_tol*) [virtual]

Refine the curve (which means to increase the number of IntersectionPoint s defining it), so that the curve matches a specific positional and angle tolerance.

Parameters

pos_tol	the positional tolerance that the curve should match after refinement.
angle_tol	the angular tolerance that the tangent of the curve should match after refinement.

Implements Go::IntersectionCurve.

29.232.3.10 void Go::InterpolatedIntersectionCurve::write (std::ostream & *os*) const

29.232.4 Friends And Related Function Documentation

29.232.4.1 template<class iterator > shared_ptr<IntersectionCurve> constructIntersectionCurve (const iterator *begin*, const iterator *end*) [friend]

Definition at line 601 of file IntersectionCurve.h.

The documentation for this class was generated from the following file:

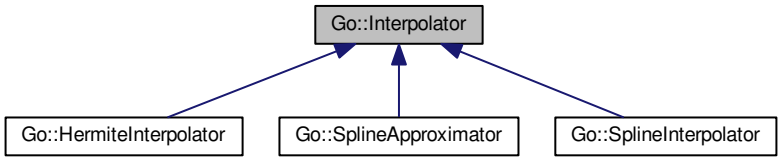
- intersections/include/GoTools/intersections/IntersectionCurve.h

29.233 Go::Interpolator Class Reference

Base class for spline interpolators or approximators.

`#include <Interpolator.h>`

Inheritance diagram for Go::Interpolator:



Public Member Functions

- virtual ~Interpolator ()

  virtual desctructor assures safe inheritance
- virtual void interpolate (int num_points, int dimension, const double *param_start, const double *data_start, std::vector< double > &coefs)=0
- virtual const BsplineBasis & basis ()=0

29.233.1 Detailed Description

Base class for spline interpolators or approximators.

Definition at line 52 of file Interpolator.h.

29.233.2 Constructor & Destructor Documentation

29.233.2.1 virtual Go::Interpolator::~Interpolator ( ) [virtual]

virtual desctructor assures safe inheritance

29.233.3 Member Function Documentation

29.233.3.1 virtual const BsplineBasis& Go::Interpolator::basis ( ) [pure virtual]

after the function interpolate() has been successfully run, this function can be called to get the BsplineBasis of the generated curve.

Returns

a constant reference to the BsplineBasis of the curve previously generated by interpolate().

Implemented in Go::SplineInterpolator, Go::SplineApproximator, and Go::HermiteInterpolator.

29.233.3.2 virtual void Go::Interpolator::interpolate (int *num_points*, int *dimension*, const double * *param_start*, const double * *data_start*, std::vector< double > & *coefs*) [pure virtual]

Interpolate or approximate a set of point data by a spline

Parameters

num_points	the number of data points to approximate
dimension	the dimension of each data point
param_start	pointer to the array where the points' parameters are consecutively stored
data_start	pointer to the array where the points are consecutively stored
coefs	upon function completion, this vector will contain the control points of the interpolating (or approximating spline). (In order to get access to the associated BsplineBasis, use the function basis().

Implemented in Go::SplineInterpolator, Go::HermiteInterpolator, and Go::SplineApproximator.

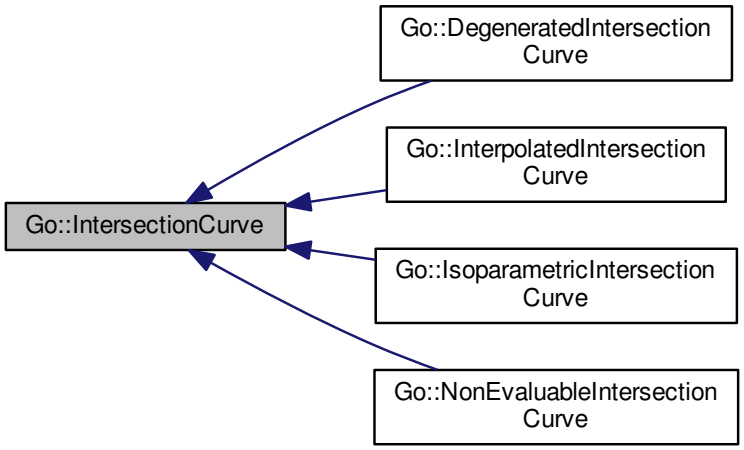
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Interpolator.h

29.234 Go::IntersectionCurve Class Reference

```
#include <IntersectionCurve.h>
```

Inheritance diagram for Go::IntersectionCurve:



Public Member Functions

- virtual ~IntersectionCurve ()
  Virtual destructor.
- virtual shared_ptr< ParamCurve > getCurve () const =0
- virtual shared_ptr< ParamCurve > getParamCurve (int obj_nmb) const =0
- virtual void getParamSpan (double &start, double &end) const =0
- virtual void evaluateAt (double pval, Point &pos, Point &tan)=0
- virtual void refine (const double &pos_tol, const double &angle_tol)=0
- virtual bool isIsocurve () const =0
- virtual bool isDegenerated () const =0
- shared_ptr< IntersectionPoint > getGuidePoint (int index) const
- virtual bool getGuidePointTangent (shared_ptr< IntersectionPoint > pt, Point &tan, int type=0) const
- int numGuidePoints () const
- void writeIPointsToStream (std::ostream &os) const

Protected Member Functions

- template<class iterator >
  IntersectionCurve (iterator begin, iterator end)

Protected Attributes

- std::list< shared_ptr< IntersectionPoint > > ipoints_

Friends

- template<class iterator >
  shared_ptr< IntersectionCurve > constructIntersectionCurve (const iterator begin, const iterator end)

29.234.1 Detailed Description

Object describing the curve that results from an intersection of two geometrical objects.

Definition at line 96 of file IntersectionCurve.h.

29.234.2 Constructor & Destructor Documentation

29.234.2.1 virtual Go::IntersectionCurve::~IntersectionCurve ( ) [inline], [virtual]

Virtual destructor.

Definition at line 100 of file IntersectionCurve.h.

29.234.2.2 template<class iterator > Go::IntersectionCurve::IntersectionCurve (iterator *begin*, iterator *end*) [inline], [protected]

Definition at line 200 of file IntersectionCurve.h.

29.234.3 Member Function Documentation

29.234.3.1 virtual void Go::IntersectionCurve::evaluateAt (double *pval*, Point & *pos*, Point & *tan*) [pure virtual]

Evaluate the IntersectionCurve at parameter value *pval*. Its position at this parameter value will be returned in *pos* and its tangent direction will be returned in *tan*.

Parameters

pval	the parameter value for which to evaluate the IntersectionCurve. It should be within the parametric span (which can be obtained from GetParamSpan().

Return values

pos	the calculated position of the point on the curve at parameter *pval*.

Parameters

tan	the calculated tangent of the curve at parameter *pval*.

Implemented in Go::InterpolatedIntersectionCurve, Go::IsoparametricIntersectionCurve, Go::NonEvaluable↩IntersectionCurve, and Go::DegeneratedIntersectionCurve.

29.234.3.2 virtual shared_ptr<ParamCurve> Go::IntersectionCurve::getCurve ( ) const [pure virtual]

Get out a (shared) pointer to a parametric curve that approximates this IntersectionCurve.

Implemented in Go::InterpolatedIntersectionCurve, Go::IsoparametricIntersectionCurve, Go::NonEvaluable↩IntersectionCurve, and Go::DegeneratedIntersectionCurve.

29.234.3.3 shared_ptr<IntersectionPoint> Go::IntersectionCurve::getGuidePoint (int *index*) const

Get one of the specific guidepoints (IntersectionPoint) that define the curve.

Parameters

index	the index of the requested IntersectionPoint(from 0 and up to the number of defining IntersectionPoint s - 1). To find out how many IntersectionPoint s participate in the definition of the curve, use the numGuidePoints() function.

Returns

a shared pointer to the requested IntersectionPoint.

29.234.3.4 virtual bool Go::IntersectionCurve::getGuidePointTangent (shared_ptr< IntersectionPoint > *pt,* Point & *tan,* int *type* = 0) const [virtual]

Get the tangent of a guidepoint that we know lies on the curve (just using the getTangent() function of the guidepoint can be deceiving, as it is not necessarily unique).

Parameters

pt	shared pointer to the guidepoint. It is supposed to be part of the definition of the curve.
type	specifies what kind of tangent the user wants. '1' means the parameter plane tangent for the first object. '2' means the parameter plane tangent for the second object. Other values of 'type' means the tangent in 3D space.

Return values

tan	the requested tangent

Returns

'true' if a tangent was found (i.e. *pt* was indeed a guidepoint of the IntersectionCurve). In the opposite case, 'false' is returned.

Reimplemented in Go::InterpolatedIntersectionCurve.

29.234.3.5 virtual shared_ptr<ParamCurve> Go::IntersectionCurve::getParamCurve (int *obj_nmb*) const [pure virtual]

Get out a (shared) pointer to the curve in the parametric plane of the first or second object. Should only be called when the concerned object is 2-parametric.

Parameters

obj_nmb	should be either 1 or 2, depending on whether you want to get the parametric curve in object 1 or object 2.

Returns

a shared pointer to a curve that approximates the intersection curve in the parametric domain of the specified object.

Implemented in Go::InterpolatedIntersectionCurve, Go::IsoparametricIntersectionCurve, Go::NonEvaluable↩IntersectionCurve, and Go::DegeneratedIntersectionCurve.

29.234.3.6 virtual void Go::IntersectionCurve::getParamSpan (double & *start*, double & *end*) const [pure virtual]

Get the start and end value for the parametric span of the IntersectionCurve.

Return values

start	upon function return this variable will contain the start value of the parametric span.
end	upon function return this variable will contain the end value of the parametric span.

Implemented in Go::InterpolatedIntersectionCurve, Go::IsoparametricIntersectionCurve, Go::NonEvaluable↩IntersectionCurve, and Go::DegeneratedIntersectionCurve.

29.234.3.7 virtual bool Go::IntersectionCurve::isDegenerated ( ) const [pure virtual]

Determine if the IntersectionCurve is in fact a degenerated curve (a single point in space).

Returns

'true' if the IntersectionCurve is degenerated. 'false' otherwise.

Implemented in Go::InterpolatedIntersectionCurve, Go::IsoparametricIntersectionCurve, Go::NonEvaluable↩IntersectionCurve, and Go::DegeneratedIntersectionCurve.

29.234.3.8 virtual bool Go::IntersectionCurve::isIsocurve ( ) const [pure virtual]

Determine if the IntersectionCurve is in fact representing an isoparametric intersection.

Returns

'true' if the IntersectionCurve is part of an isocurve for one of the objects, 'false' otherwise.

Implemented in Go::InterpolatedIntersectionCurve, Go::IsoparametricIntersectionCurve, Go::NonEvaluable↩IntersectionCurve, and Go::DegeneratedIntersectionCurve.

29.234.3.9 int Go::IntersectionCurve::numGuidePoints ( ) const [inline]

Get number of guide points defining the curve.

Returns

the number of guide points currently defining the curve (may increase if the 'refine()' function is run).

Definition at line 190 of file IntersectionCurve.h.

29.234.3.10 virtual void Go::IntersectionCurve::refine (const double & *pos_tol*, const double & *angle_tol*) [pure virtual]

Refine the curve (which means to increase the number of IntersectionPoint s defining it), so that the curve matches a specific positional and angle tolerance.

Parameters

pos_tol	the positional tolerance that the curve should match after refinement.
angle_tol	the angular tolerance that the tangent of the curve should match after refinement.

Implemented in Go::InterpolatedIntersectionCurve, Go::IsoparametricIntersectionCurve, Go::NonEvaluable↩IntersectionCurve, and Go::DegeneratedIntersectionCurve.

29.234.3.11 void Go::IntersectionCurve::writeIPointsToStream (std::ostream & *os*) const

Write the IntersectionPoints defining this IntersectionCurve to stream

Parameters

os	output stream

29.234.4 Friends And Related Function Documentation

29.234.4.1 template<class iterator > shared_ptr<IntersectionCurve> constructIntersectionCurve (const iterator *begin*, const iterator *end*) [friend]

Definition at line 601 of file IntersectionCurve.h.

29.234.5 Member Data Documentation

29.234.5.1 std::list<shared_ptr<IntersectionPoint> > Go::IntersectionCurve::ipoints_ [protected]

Definition at line 204 of file IntersectionCurve.h.

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionCurve.h

29.235 Go::IntersectionLink Class Reference

`#include <IntersectionLink.h>`

Public Member Functions

- IntersectionLink (IntersectionPoint *p1, IntersectionPoint *p2)
  Constructor.
- void getIntersectionPoints (IntersectionPoint *&p1, IntersectionPoint *&p2)
- void getIntersectionPoints (const IntersectionPoint *&p1, const IntersectionPoint *&p2) const
- IntersectionPoint * getOtherPoint (const IntersectionPoint *p1)
- bool isAttachedTo (const IntersectionPoint *ip)
  Returns true if the link is attached to the input point.
- void copyMetaInformation (const IntersectionLink &rhs)
- bool delimitsPAC () const
- void setPAC (bool value)
- void setIsoparametricIn (int dir, bool iso)
- bool isIsoparametricIn (int dir) const
- bool isIsoparametric () const
- int numParams () const
- int crosses (const shared_ptr< IntersectionLink > &link) const
  Test for crossing between 'this' and 'link'.
- const LinkType & linkType () const
- LinkType & linkType ()
- void writeInfo () const
  Writes info about the link to standard output.
- void dumpToStream (std::ostream &os)

29.235.1 Detailed Description

This class represents a link between two intersection points. It is owned by both of the points in question, and can therefore refer to them only by means of ordinary pointers (no shared_ptr stuff here...)

Definition at line 59 of file IntersectionLink.h.

29.235.2 Constructor & Destructor Documentation

29.235.2.1 Go::IntersectionLink::IntersectionLink (IntersectionPoint * *p1*, IntersectionPoint * *p2*) [inline]

Constructor.

Definition at line 62 of file IntersectionLink.h.

29.235.3 Member Function Documentation

29.235.3.1 void Go::IntersectionLink::copyMetaInformation (const IntersectionLink & *rhs*) [inline]

Set all meta-information (all private info except IntersectionPoint-pointers) equal to the one in 'rhs'

Definition at line 104 of file IntersectionLink.h.

29.235.3.2 int Go::IntersectionLink::crosses (const shared_ptr< IntersectionLink > & *link*) const [inline]

Test for crossing between 'this' and 'link'.

Definition at line 164 of file IntersectionLink.h.

29.235.3.3 bool Go::IntersectionLink::delimitsPAC ( ) const [inline]

Find out whether this link is participating in defining a partial coincidence area

Definition at line 114 of file IntersectionLink.h.

29.235.3.4 void Go::IntersectionLink::dumpToStream (std::ostream & *os*) [inline]

Definition at line 320 of file IntersectionLink.h.

29.235.3.5 void Go::IntersectionLink::getIntersectionPoints (IntersectionPoint *& *p1*, IntersectionPoint *& *p2*) [inline]

This function will set the 'p1' and 'p2' to point to the IntersectionPoints participating in this link.

Definition at line 73 of file IntersectionLink.h.

29.235.3.6 void Go::IntersectionLink::getIntersectionPoints (const IntersectionPoint *& *p1*, const IntersectionPoint *& *p2*) const [inline]

This function will set the 'p1' and 'p2' to point to the IntersectionPoints participating in this link.

Definition at line 82 of file IntersectionLink.h.

29.235.3.7 IntersectionPoint* Go::IntersectionLink::getOtherPoint (const IntersectionPoint * *p1*) [inline]

When one of the two points in the link is input, this function returns the other point.

Definition at line 91 of file IntersectionLink.h.

29.235.3.8 bool Go::IntersectionLink::isAttachedTo (const IntersectionPoint * *ip*) [inline]

Returns true if the link is attached to the input point.

Definition at line 97 of file IntersectionLink.h.

29.235.3.9 bool Go::IntersectionLink::isIsoparametric ( ) const [inline]

Definition at line 147 of file IntersectionLink.h.

29.235.3.10 bool Go::IntersectionLink::isIsoparametricIn (int *dir*) const [inline]

Definition at line 141 of file IntersectionLink.h.

29.235.3.11 const LinkType& Go::IntersectionLink::linkType ( ) const [inline]

Returns the link type of the link

Return values

a	LinkType enum

Definition at line 253 of file IntersectionLink.h.

29.235.3.12 LinkType& Go::IntersectionLink::linkType ( ) [inline]

Returns the link type of the link

Return values

a	LinkType enum

Definition at line 258 of file IntersectionLink.h.

29.235.3.13 int Go::IntersectionLink::numParams ( ) const [inline]

Definition at line 158 of file IntersectionLink.h.

29.235.3.14 void Go::IntersectionLink::setIsoparametricIn (int *dir,* bool *iso*) [inline]

Definition at line 124 of file IntersectionLink.h.

29.235.3.15 void Go::IntersectionLink::setPAC (bool *value*) [inline]

Definition at line 119 of file IntersectionLink.h.

29.235.3.16 void Go::IntersectionLink::writeInfo ( ) const [inline]

Writes info about the link to standard output.

Definition at line 262 of file IntersectionLink.h.

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionLink.h

29.236 Go::IntersectionPoint Class Reference

`#include <IntersectionPoint.h>`

Public Member Functions

- IntersectionPoint (const ParamObjectInt *obj1, const ParamObjectInt *obj2, const shared_ptr< GeoTol > epsge, const double *obj1_params, const double *obj2_params)
- IntersectionPoint (const ParamObjectInt *obj1, const ParamObjectInt *obj2, const shared_ptr< IntersectionPoint > ip, int missing_param)
- ~IntersectionPoint ()

  Destructor.
- IntersectionPoint ()

  Default constructor.
- void write (std::ostream &os) const
- void read (std::istream &is)
- void writeParams (std::ostream &os) const
- void writeInfo () const
- void replaceParameter (double *param)
- Point getPoint () const
- Point getPoint1 () const
- Point getPoint2 () const
- void projectToParamPlanes (const Point &dir, Point &par_1_dir, Point &par_2_dir) const
- bool hasUniqueTangentDirection () const
- bool tangentIsOriented () const
- double getDist () const
- const std::vector< double > & getPar () const
- double getPar (int idx) const
- const double * getPar1 () const
- const double * getPar2 () const
- Point getPar1Point () const
- Point getPar2Point () const
- int numParams1 () const

  Get number of parameter values in object number 1.
- int numParams2 () const

  Get number of parameter values in object number 2.
- Point getTangent (bool second_branch=false) const
- Point getPar1Dir (bool second_branch=false) const
- Point getPar2Dir (bool second_branch=false) const
- const ParamObjectInt * getObj1 () const

  Get pointer to first object.
- const ParamObjectInt * getObj2 () const

  Get pointer to second object.
- double startParam (int pardir)
- double endParam (int pardir)
- bool pointIsSingular () const
- bool isNearSingular () const
- double parameterTolerance (int pardir)
- void fixTangentOrientation (bool flip)
- void isBoundaryPoint (bool &first, bool &second) const
- void tangentPointingInwards (bool &first, bool &second, bool &first_along_boundary, bool &second_along↩ _boundary) const
- bool isConnectedTo (shared_ptr< IntersectionPoint > p) const

  Check if this point is topologically connected with another IntersectionPoint (i.e. that there is an IntersectionLink between them).
- bool isConnectedTo (const IntersectionPoint *point) const

  Check if this point is topologically connected with another IntersectionPoint (i.e. that there is an IntersectionLink between them).

- shared_ptr< IntersectionLink > connectTo (IntersectionPoint *const point, LinkType type, shared_ptr< IntersectionLink > model_link=shared_ptr< IntersectionLink >(), int added_parameter_dir=-1)
- shared_ptr< IntersectionLink > connectTo (shared_ptr< IntersectionPoint > point, LinkType type, shared_ptr< IntersectionLink > model_link=shared_ptr< IntersectionLink >(), int added_parameter_dir=-1)
- void disconnectFrom (IntersectionPoint *point)
- int numBranches () const
- IntPtClassification getClassification (const ParamSurface *surf1, const ParamSurface *surf2, int branch_num=0) const
- IntPtClassification getClassification (const ParamSurface *par_func, double C, int branch_num=0) const
- SingularityType getSingularityType () const

  Get the SingularityType of this IntersectionPoint.
- shared_ptr< GeoTol > getTolerance ()
- shared_ptr< const GeoTol > getTolerance () const
- shared_ptr< IntersectionPoint > parentPoint ()
- void setParentPoint (shared_ptr< IntersectionPoint > p)
- bool hasParentPoint ()
- void flipObjects ()
- double getInfluenceArea (int dir, bool forward, bool first_outside, double aeps=0.0) const
- int inInfluenceArea (int pardir, double par, bool first_outside) const
- void shareInfluenceAreaWith (shared_ptr< IntersectionPoint > other_pt, int pardir)
- bool inInfluenceAreaBracket (int pardir, double parval)
- shared_ptr< IntersectionLink > getIntersectionLink (const IntersectionPoint *point)
- void getNeighbours (std::vector< IntersectionPoint * > &pnts) const
- void getNeighbourLinks (std::vector< shared_ptr< IntersectionLink > > &links) const
- int numNeighbours () const
- template<class bool_iterator >
  void setDifferentiateFromLeft (bool_iterator it) const
- bool differentiatesFromLeft (int pardir) const
- int hasIsoLinks (int *const iso_par_dirs) const
- int commonIsoLinks (int *const iso_par_dirs) const
- bool containsG2Discontinuity () const
- bool isDegenerate () const
- bool isSamePoint (const IntersectionPoint *point) const
- bool checkIntersectionPoint (IntPtInfo &int_pt_info) const
- bool isInDomain (double *frompar, double *topar) const

Static Public Attributes

- static const double tangent_tol

29.236.1 Detailed Description

Object describing a point located on the intersection of two geometrical objects.

Definition at line 65 of file IntersectionPoint.h.

29.236.2 Constructor & Destructor Documentation

29.236.2.1 Go::IntersectionPoint::IntersectionPoint (const ParamObjectInt * *obj1*, const ParamObjectInt * *obj2*, const shared_ptr< GeoTol > *epsge*, const double * *obj1_params*, const double * *obj2_params*)

Constructor. This constructor specifies an IntersectionPoint from all its defining components.

Parameters

obj1	the first of the two intersecting objects on which the IntersectionPoint lies.
obj2	the second of the two intersecting objects on which the IntersectionPoint lies.
epsge	an object defining various tolerances
obj_1_params	parameters of the intersection point for the first object
obj_2_params	parameters of the intersection point for the second object

29.236.2.2 Go::IntersectionPoint::IntersectionPoint (const ParamObjectInt * *obj1*, const ParamObjectInt * *obj2*, const shared_ptr< IntersectionPoint > *ip*, int *missing_param*)

Constructor. This constructor is for creating an IntersectionPoint that is a replica of an existing one, but where one of the objects has one parameter less (i.e. is 'picked' from one of the objects of the existing IntersectionPoint by fixing one of its parameters).

Parameters

obj1	the first of the two intersecting objects on which the IntersectionPoint lies. It is either the same as the first object defining the point *ip*, or picked from it (one parameter less).
obj2	the second of the two intersecting objects on which the IntersectionPoint lies. It is either the same as the second object defining the point *ip*, or picked from it (one parameter less).
ip	The already-existing IntersectionPoint that 'this' IntersectionPoint will represent.
missing_param	indicates which parameter of the point *ip* is 'missing' for 'this' IntersectionPoint. (Parameters are numbered from 0 and up to the total number of parameters in 'obj1' and 'obj2').

29.236.2.3 Go::IntersectionPoint::~IntersectionPoint ( )

Destructor.

29.236.2.4 Go::IntersectionPoint::IntersectionPoint ( ) [inline]

Default constructor.

Definition at line 112 of file IntersectionPoint.h.

29.236.3 Member Function Documentation

29.236.3.1 bool Go::IntersectionPoint::checkIntersectionPoint (IntPtInfo & *int_pt_info*) const

Check if the intersection point is OK, and get some info about the point.

Parameters

int_pt_info	struct of type IntPtInfo with info about the point. Indicates if the point is ok, the number of neighbours, the singularity type, and the location of the point is the parameter domains of the objects

Returns

'true' if the intersection points is OK, 'false' otherwise

29.236.3.2 int Go::IntersectionPoint::commonIsoLinks (int *const *const *iso_par_dirs*) const

Returns the number of parameter directions for which all IntersectionLink s of this IntersectionPoint are isoparametric. The indices of these parameter directions are written to the array pointed to by 'iso_par_dirs' (allocated by the user).

Parameters

iso_par_dirs	pointer to the array where the indices will be written.

Returns

the number of parameter directions for which all IntersectionLink s of this IntersectionPoint are isoparametric.

29.236.3.3 shared_ptr<IntersectionLink> Go::IntersectionPoint::connectTo (IntersectionPoint *const *point,* LinkType *type,* shared_ptr< IntersectionLink > *model_link* = `shared_ptr< IntersectionLink >()`, int *added_parameter_dir* = `-1`)

This function topologically "connects" this point with another IntersectionPoint. It generates a new IntersectionLink combining these points. This IntersectionLink can inherit the meta-information from *model_link*. This is typically useful when an IntersectionPoint is "inserted" between two already-connected points, and the two new links should contain the same information as the older, split-up link. Another example where information from *model_link* needs to be copied is when parents of two connected points needs to be connected. In that case, it is important that we know which parameter direction has been introduced when moving to the parent, so that we can "shift" the meta-information pertaining to individiual parameters accordingly. If no new parameter information has been introduced, *added_parameter_dir* should be left at its default value of -1.

Parameters

point	the IntersectionPoint we want to connect to `this` point
type	the type of the link in terms of a LinkType
model_link	if this parameter is specified, the information associated with *model_link* will be copied by the newly created IntersectionLink.
added_parameter_dir	relevant parameter when *model_link* contains one parameter direction less than the new IntersectionLink does. In this case, *added_parameter_dir* will specify the index of the parameter that is lacking.

Returns

shared pointer to the generated link

29.236.3.4 shared_ptr<IntersectionLink> Go::IntersectionPoint::connectTo (shared_ptr< IntersectionPoint > *point*, LinkType *type*, shared_ptr< IntersectionLink > *model_link* = shared_ptr<IntersectionLink>(), int *added_parameter_dir* = -1) [inline]

This function topologically "connects" this point with another IntersectionPoint. It generates a new IntersectionLink combining these points. This IntersectionLink can inherit the meta-information from *model_link*. This is typically useful when an IntersectionPoint is "inserted" between two already-connected points, and the two new links should contain the same information as the older, split-up link. Another example where information from *model_link* needs to be copied is when parents of two connected points needs to be connected. In that case, it is important that we know which parameter direction has been introduced when moving to the parent, so that we can "shift" the meta-information pertaining to individiual parameters accordingly. If no new parameter information has been introduced, *added_parameter_dir* should be left at its default value of -1.

Parameters

point	the IntersectionPoint we want to connect to this point
type	the type of the link in terms of a LinkType
model_link	if this parameter is specified, the information associated with *model_link* will be copied by the newly created IntersectionLink.
added_parameter_dir	relevant parameter when *model_link* contains one parameter direction less than the new IntersectionLink does. In this case, *added_parameter_dir* will specify the index of the parameter that is lacking.

Returns

shared pointer to the generated link

Definition at line 457 of file IntersectionPoint.h.

29.236.3.5 bool Go::IntersectionPoint::containsG2Discontinuity ( ) const [inline]

Check if there is a G2-discontinuity for one of the parameters at this IntersectionPoint.

Returns

'true' if at least one G2-discontinuity was found, 'false' otherwise.

Definition at line 702 of file IntersectionPoint.h.

29.236.3.6 bool Go::IntersectionPoint::differentiatesFromLeft (int *pardir*) const [inline]

Returns whether the internal state for parameter 'pardir' is set so that it differentiates from left.

Parameters

pardir	the concerned parameter direction

Returns

'true' if differentiation is set to be carried out 'from the left' for this parameter, 'false' otherwise.

Definition at line 669 of file IntersectionPoint.h.

29.236.3.7 void Go::IntersectionPoint::disconnectFrom (IntersectionPoint * *point*)

Topologically disconnect 'this' IntersectionPoint from another IntersectionPoint (which means removing whatever IntersectionLink there might be between them).

Parameters

point	the IntersectionPoint we want to disconnect from 'this' IntersectionPoint.

29.236.3.8 double Go::IntersectionPoint::endParam (int *pardir*)

Get the end value of the parameter interval for the specified parameter.

Parameters

pardir	the parameter for which we seek the end value.

Returns

the end value of the parameter interval for the parameter 'pardir'.

29.236.3.9 void Go::IntersectionPoint::fixTangentOrientation (bool *flip*)

If the tangent is not oriented (because of singular intersection), it can be set manually with this command. If the argument is "true", the tangent's orientation will be flipped. In the opposite case, it will be kept as it is. Subsequent calls to the tangentIsOriented() function will now report that the tangent is oriented. Not to be called for an ORD↩ INARY_POINT (which should have been handled already). See SingularityType for a definition of what ORDINA↩ RY_POINT means.

Parameters

flip	if 'true', then the tangent's orientation will be flipped, otherwise it will be kept as it is. In any case, the IntersectionPoint will now consider the orientation of its tangent to be 'fixed'.

29.236.3.10 void Go::IntersectionPoint::flipObjects ( )

Flip the two intersecting objects (useful sometimes for self-intersections, should be avoided otherwise).

29.236.3.11 IntPtClassification Go::IntersectionPoint::getClassification (const ParamSurface * *surf1*, const ParamSurface * *surf2*, int *branch_num* = 0) const

Classifies an IntersectionPoint according to the direction of the corresponding intersection curve with respect to the parameter domain of two surfaces. *branch_num* indicates which tangential branch to use (usually there's just one (*branch_num* should be 0), but for branchpoints there are two (*branch_num* can be 0 or 1).

Parameters

surf1	the first surface
surf2	the second surface
branch_num	indicates which tangential branch to use

Returns

the classification of this IntersectionPoint according to the domain of the given surfaces. See also IntPt↩ Classification.

29.236.3.12 IntPtClassification Go::IntersectionPoint::getClassification (const ParamSurface * *par_func*, double *C*, int *branch_num* = 0) const

Classifies an IntersectionPoint according to the direction of the corresponding intersection curve with respect to the parameter domain of a *function*. *branch_num* indicates which tangential branch to use (usually there's just one (*branch_num* should be 0), but for branchpoints there are two (*branch_num* can be 0 or 1).

Parameters

par_func	the function, expressed as a 1D ParamSurface
C	the iso-value that defines the intersection on this function.
branch_num	indicates which tangential branch to use

Returns

the classification of this IntersectionPoint according to the domain of the given function. See also IntPt↩ Classification.

29.236.3.13 double Go::IntersectionPoint::getDist ( ) const [inline]

Distance between the position of the IntersectionPoint as described in the first object and as described in the second object.

Returns

the distance between the two points describing the IntersectionPoint in each of the objects.

Definition at line 203 of file IntersectionPoint.h.

29.236.3.14 double Go::IntersectionPoint::getInfluenceArea (int *dir*, bool *forward*, bool *first_outside*, double *aeps* = 0.0) const

Returns the parameter value corresponding to the influence area of the intersection point in a specified direction and orientation. Since the bounds of the influence area are bracketed, we do not have the exact value of its limits. If 'first_outside' is 'true', we will return the first parameter value detected outside the influence area. Otherwise, we will return the last parameter detected inside the influence area.

Parameters

dir	the parameter direction for which we seek the influence area.
forward	'true' if we want to locate the upper end of the point's influence area, 'false' if we want to locate the lower end.
first_outside	'true' if we want the returned value to be the first parameter value *outside* the influence area that was found by the function. 'false' if we seek the last detected value *inside* the influence area.

Returns

a value that (according to the function arguments) either represents the last found parameter value *inside* or first found parameter value *outside* the influence area of this IntersectionPoint along the specified parameter direction.

29.236.3.15 shared_ptr<IntersectionLink> Go::IntersectionPoint::getIntersectionLink (const IntersectionPoint * *point*)

Return the intersection link connecting `this` point with *point*. If no such link exists, a null pointer will be returned.

Parameters

point	the point for which we seek the IntersectionLink to this point.

Returns

the IntersectionLink in question.

29.236.3.16 void Go::IntersectionPoint::getNeighbourLinks (std::vector< shared_ptr< IntersectionLink > > & *links*) const

Get a vector containing all the IntersectionLinks that defines connections from `this` IntersectionPoint.

Return values

links	upon function return, this will be the vector sought for.

29.236.3.17 void Go::IntersectionPoint::getNeighbours (std::vector< IntersectionPoint * > & *pnts*) const

Get a vector containing pointers ot all IntersectionPoints topologically connected with `this` IntersectionPoint. IntersectionPoints are topologically connected if they share an IntersectionLink.

Return values

pnts	upon function return, this will be the vector sought for.

29.236.3.18 const ParamObjectInt* Go::IntersectionPoint::getObj1 ( ) const [inline]

Get pointer to first object.

Definition at line 287 of file IntersectionPoint.h.

29.236.3.19 const ParamObjectInt* Go::IntersectionPoint::getObj2 ( ) const [inline]

Get pointer to second object.

Definition at line 291 of file IntersectionPoint.h.

29.236.3.20 const std::vector<double>& Go::IntersectionPoint::getPar ( ) const [inline]

Get a vector containing the IntersectionPoint's parameter values.

Definition at line 208 of file IntersectionPoint.h.

29.236.3.21 double Go::IntersectionPoint::getPar (int *idx*) const [inline]

Get a specified parameter value of the IntersectionPoint

Parameters

idx	the number of ther parameter for which we seek the value

Returns

the specified parameter value

Definition at line 215 of file IntersectionPoint.h.

29.236.3.22 const double* Go::IntersectionPoint::getPar1 ( ) const

Get a pointer to the parameter values in the first object

Returns

a pointer to the array where the parameter values for the first object are (consecutively) stored.

29.236.3.23 Point Go::IntersectionPoint::getPar1Dir (bool *second_branch* = false) const

Get the parameter direction along intersection in first object at this IntersectionPoint. If this point is a branch point (several intersection curves meet at this point), then the user has to specify the branch that she wants the tangent to.

Parameters

second_branch	usually set to 'false' (default). If the IntersectionPoint lies at a branchpoint, then the user can set this parameter to 'true' in order to get the parameter direction for the *second* of the two branches that supposedly meet in this point. However, setting this parameter to 'true' *will* cause an error if the IntersectionPoint is *not* a branch point.

Returns

the parameter direction along the intersection in the first object at this point.

29.236.3.24 Point Go::IntersectionPoint::getPar1Point ( ) const

Get a Point representing the IntersectionPoint in the parameter domain of the first object

29.236.3.25 const double* Go::IntersectionPoint::getPar2 ( ) const

Get a pointer to the parameter values in the second object

Returns

a pointer to the array where the parameter values for the second object are (consecutively) stored.

29.236.3.26 Point Go::IntersectionPoint::getPar2Dir (bool *second_branch* = false) const

Get the parameter direction along intersection in second object at this IntersectionPoint. If this point is a branch point (several intersection curves meet at this point), then the user has to specify the branch that she wants the tangent to.

Parameters

second_branch	usually set to 'false' (default). If the IntersectionPoint lies at a branchpoint, then the user can set this parameter to 'true' in order to get the parameter direction for the *second* of the two branches that supposedly meet in this point. However, setting this parameter to 'true' *will* cause an error if the IntersectionPoint is *not* a branch point.

Returns

the parameter direction along the intersection in the second object at this point.

29.236.3.27 Point Go::IntersectionPoint::getPar2Point ( ) const

Get a Point representing the IntersectionPoint in the parameter domain of the second object

29.236.3.28 Point Go::IntersectionPoint::getPoint ( ) const

Get average of the IntersectionPoint's position in space as evaluated in the two underlying objects.

Returns

the position of the IntersectionPoint in space

29.236.3.29 Point Go::IntersectionPoint::getPoint1 ( ) const [inline]

Get the IntersectionPoint's position in space as evaluated in the first underlying object.

Returns

the position of the IntersectionPoint in space

Definition at line 153 of file IntersectionPoint.h.

29.236.3.30 Point Go::IntersectionPoint::getPoint2 ( ) const [inline]

Get the IntersectionPoint's position in space as evaluated in the second underlying object.

Returns

the position of the IntersectionPoint in space

Definition at line 159 of file IntersectionPoint.h.

29.236.3.31 SingularityType Go::IntersectionPoint::getSingularityType ( ) const

Get the SingularityType of this IntersectionPoint.

29.236.3.32 Point Go::IntersectionPoint::getTangent (bool *second_branch* = false) const

Get the tangent of the intersection at the point. If the point is a branch point (several intersection curves meet at this point), then the user has to specify the branch that she wants the tangent to.

Parameters

second_branch	usually set to 'false' (default). If the IntersectionPoint lies at a branchpoint, then the user can set this parameter to 'true' in order to get the tangent of the *second* of the two branches that supposedly meet in this point. However, setting this parameter to 'true' *will* cause an error if the IntersectionPoint is *not* a branch point.

Returns

the tangent of intersection curve at this point.

29.236.3.33 shared_ptr<GeoTol> Go::IntersectionPoint::getTolerance ( ) [inline]

Get the object containing the *tolerances* used by this IntersectionPoint

Definition at line 516 of file IntersectionPoint.h.

29.236.3.34 shared_ptr<const GeoTol> Go::IntersectionPoint::getTolerance ( ) const [inline]

Get the object containing the *tolerances* used by this IntersectionPoint

Definition at line 521 of file IntersectionPoint.h.

29.236.3.35 int Go::IntersectionPoint::hasIsoLinks (int *const *const *iso_par_dirs*) const

Returns the number of parameter directions for which this point is connected with links that are isoparametric. The indices of the isoparametric parameter directions are written to an array pointed to by 'iso_par_dirs' (allocated by the user).

Parameters

iso_par_dirs	pointer to the array where the indices will be written.

Returns

the number of parameter directions for which this point is connected with links that are isoparametric.

29.236.3.36 bool Go::IntersectionPoint::hasParentPoint ( ) [inline]

Definition at line 540 of file IntersectionPoint.h.

29.236.3.37 bool Go::IntersectionPoint::hasUniqueTangentDirection ( ) const

Check if there is a unique tangent direction for the intersection at the position of this IntersectionPoint. This is the case for ORDINARY_POINTs and TANGENTIAL_POINTs, and false in all other cases (see SingularityType). See also tangentIsOriented().

Returns

'true' if the IntersectionPoint has a unique tangent direction (not necessarily uniquely oriented). 'false' otherwise.

29.236.3.38 int Go::IntersectionPoint::inInfluenceArea (int *pardir,* double *par,* bool *first_outside*) const

Returns 0 if the given parameter value *par* was not in the point's influence area for the point's parameter *pardir*. Returns 1 if it is inside the point's influence area, but not exactly on the point. Returns 2 if it is exactly on the point. Since the bounds of the influence area are bracketed, we do not have the exact value of its limits. If *first_outside* is 'true', we will check against the first parameter value detected outside the influence area. Otherwise, we will check against the last parameter detected inside the influence area.

Parameters

pardir	the concerned parameter directon
par	the concerned parameter value
first_outside	specify whether we want to check against the first detected value *outside* the influence area ('true'), or the last detected value *inside* it ('false').

Returns

0, 1 or 2, according to the above description.

29.236.3.39 bool Go::IntersectionPoint::inInfluenceAreaBracket (int *pardir,* double *parval*) [inline]

This function is not properly defined at the moment.

Parameters

pardir	the concerned parameter directon
parval	the concerned parameter value

Definition at line 609 of file IntersectionPoint.h.

29.236.3.40 void Go::IntersectionPoint::isBoundaryPoint (bool & *first,* bool & *second*) const

The first and second argument are set to 'true' or 'false' according to whether the point is lying on the boundary of respectively the first and second object.

Return values

first	'true' if this IntersectionPoint is located on the boundary of the first object, 'false' otherwise.
second	'true' if this IntersectionPoint is located on the boundary of the second object, 'false' otherwise.

29.236.3.41 bool Go::IntersectionPoint::isConnectedTo (shared_ptr< IntersectionPoint > *p*) const [inline]

Check if this point is topologically connected with another IntersectionPoint (i.e. that there is an IntersectionLink between them).

Parameters

p	a shared pointer to the point we are checking against.

Returns

'true' if there is an IntersectionLink between 'this' point and *p*. 'false' otherwise.

Definition at line 385 of file IntersectionPoint.h.

29.236.3.42 bool Go::IntersectionPoint::isConnectedTo (const IntersectionPoint * *point*) const

Check if this point is topologically connected with another IntersectionPoint (i.e. that there is an IntersectionLink between them).

Parameters

point	a pointer to the point we are checking against.

Returns

'true' if there is an IntersectionLink between 'this' point and *point*. 'false' otherwise.

29.236.3.43 bool Go::IntersectionPoint::isDegenerate ( ) const

Check if the point lies on a degenerate edge (or other degenerate part) of the surface.

Returns

'true' if degenerate, 'false' otherwise.

29.236.3.44 bool Go::IntersectionPoint::isInDomain (double * *frompar*, double * *topar*) const

Check if the point is in the domain specified by a parameter box.

Parameters

frompar	the array of parameters defining the lower corner of the box in question.
topar	the array of parameters defining the upper corner of the box in question.

Return values

29.236.3.45 bool Go::IntersectionPoint::isNearSingular ( ) const

Return 'true' if the point was found to be near-singular, that is, the tangent calculated in this point is very small.

29.236.3.46 bool Go::IntersectionPoint::isSamePoint (const IntersectionPoint * *point*) const

Check if the given intersection point represents the same point as 'this' point within the tolerance.

Parameters

point	pointer to the intersection point we wish to test on

Return values

'true'	if the points are the same, 'false' otherwise

29.236.3.47 int Go::IntersectionPoint::numBranches ( ) const

Returns how many 'tangential branches' emanates from this point (usually 1, but 2 for branch points, and 0 for isolated- or higher-order points). See SingularityType for a classification of IntersectionPoint s.

29.236.3.48 int Go::IntersectionPoint::numNeighbours ( ) const [inline]

Query the number of IntersectionPoints ('neighbours') that are connected to `this` IntersectionPoint via an IntersectionLink.

Definition at line 638 of file IntersectionPoint.h.

29.236.3.49 int Go::IntersectionPoint::numParams1 ( ) const

Get number of parameter values in object number 1.

29.236.3.50 int Go::IntersectionPoint::numParams2 ( ) const

Get number of parameter values in object number 2.

29.236.3.51 double Go::IntersectionPoint::parameterTolerance (int *pardir*)

Return the tolerance for the parameter in the direction 'pardir'. This is equal to GeoTol::rel_par_res_ multiplied by the span of the parameter.

Parameters

pardir	the parameter for which we want to find the parameter tolerance

Returns

the tolerance for the specified parameter.

29.236.3.52 shared_ptr<IntersectionPoint> Go::IntersectionPoint::parentPoint ( ) [inline]

Get a shared pointer to the parent point of this IntersectionPoint. If it has no parent, the shared pointer will be a null-pointer.

Definition at line 527 of file IntersectionPoint.h.

29.236.3.53 bool Go::IntersectionPoint::pointIsSingular ( ) const [inline]

Return 'true' if the point was found to be singular, ie. not on a normal, transversal intersection (see SingularityType).

Definition at line 311 of file IntersectionPoint.h.

29.236.3.54 void Go::IntersectionPoint::projectToParamPlanes (const Point & *dir*, Point & *par_1_dir*, Point & *par_2_dir*) const

This function currently only works (and makes sense) for 3D geometrical objects (not functions). Given a vector 'dir', it projects this vector onto the two objects at the IntersectionPoint, and calculates this direction in the two parameter spaces. These normalized directions are returned in 'par_1_dir' and 'par_2_dir'.

Parameters

dir	the direction vector that the user wants to project on the objects

Return values

par_1_dir	the direction of the projected vector in the parameter space of the first object.
par_2_dir	the direction of the projected vector in the parameter space of the second object.

29.236.3.55 void Go::IntersectionPoint::read (std::istream & *is*)

Read IntersectionPoint from stream (NB: no topological or parent information)

Parameters

is	input stream

29.236.3.56 void Go::IntersectionPoint::replaceParameter (double * *param*)

Replace the parameters defining this IntersectionPoint and recalculate internal information (the underlying geometric objects are kept).

Parameters

param	pointer to an array of `double` s, defining the new values for the point's parameters. The array should of course have length equal to the total number of parameters defining this IntersectionPoint.

29.236.3.57 template<class bool_iterator > void Go::IntersectionPoint::setDifferentiateFromLeft (bool_iterator *it*) const [inline]

it should point to a p-array of `bool`, where *p* is the total number of parameters for this IntersectionPoint. The value at *it*[i] determines whether second-order differentiation for the parameter *i* should be carried out from the left, rather than from the right (default). This sets an internal state variable that will not be changed until the next call of setDifferentiateFromLeft(). (The reason a template was used here is to be able to use iterators to vectors of bool, which are special in that they cannot be accessed in the usual pointer way).

Parameters

it	an iterator (pointer, etc.) to the aforementioned array of `bool`.

Definition at line 653 of file IntersectionPoint.h.

29.236.3.58 void Go::IntersectionPoint::setParentPoint (shared_ptr< IntersectionPoint > *p*) [inline]

Set a given IntersectionPoint to be the parent point of this IntersectionPoint.

Parameters

p	the point that shall be the parent point of this IntersectionPoint.

Definition at line 534 of file IntersectionPoint.h.

29.236.3.59 void Go::IntersectionPoint::shareInfluenceAreaWith (shared_ptr< IntersectionPoint > *other_pt,* int *pardir*)

This function is mostly for optimizing reasons. This point is supposed to lie inside the influence area of *other_pt*, and by this function, this influence interval is split up and shared between this point and the other point. By deducing this interval directly from *other_pt*, we avoid having to march it out again. The concerned parameter direction is *pardir*.

Parameters

other_pt	refers to the IntersectionPoint that we assume share influence area with `this` IntersectionPoint.
pardir	the concerned parameter directon

29.236.3.60 double Go::IntersectionPoint::startParam (int *pardir*)

Get the start value of the parameter interval for the specified parameter.

Parameters

pardir	the parameter for which we seek the start value.

Returns

the start value of the parameter interval for the parameter 'pardir'.

29.236.3.61 bool Go::IntersectionPoint::tangentIsOriented ( ) const

Returns true if this IntersectionPoint is sure about the orientation of its tangent. It is sure about the orientation if the intersection is transversal, or if the intersection is singular and the orientation has been set manually through the fixTangentOrientation() command. See also hasUniqueTangentDirection().

Returns

'true' if the *tangent orientation* is clear (a prerequisite is of course that the *tangent direction* is clear). 'false' otherwise.

29.236.3.62 void Go::IntersectionPoint::tangentPointingInwards (bool & *first*, bool & *second*, bool & *first_along_boundary*, bool & *second_along_boundary*) const

The first and second argument are set to 'true' or 'false' according to whether the tangent direction in this point is clearly oriented toward the inside of the domain for respectively the ffirst and second surface. It can only be pointing outwards if the point is lying on the boundary. If the point is on the boundary and its tangent is close to parallel with the boundary, 'first_along_boundary' and/or 'second_along_boundary' will be set to true, otherwise they are false. Of course, points whose tangents are directed along the boundary will return 'first' and/or 'second' false.

Return values

first	'true' if the tangent direction of the intersection at this point is clearly oriented toward the inside of the domain of the first object. 'false' if not.
second	'true' if the tangent direction of the intersection at this point is clearly oriented toward the inside of the domain of the second object. 'false' if not.
first_along_boundary	'true' if the point is on the boundary of the first object, and with a tangent that is close to parallel with the boundary. 'false' otherwise.
second_along_boundary	'true' if the point is on the boundary of the second object, and with at tangent that is close to parallel with the boundary. 'false' otherwise.

29.236.3.63 void Go::IntersectionPoint::write (std::ostream & *os*) const

Write IntersectionPoint to stream (NB: topological and parent information will be lost)

Parameters

os	output stream

29.236.3.64 void Go::IntersectionPoint::writeInfo ( ) const

Write available info about an IntersectionPoint to standard output. Makes use of the struct IntPtInfo.

29.236.3.65 void Go::IntersectionPoint::writeParams (std::ostream & *os*) const

Write the parameters of the intersection point to stream

Parameters

os	output stream

29.236.4 Member Data Documentation

29.236.4.1 const double Go::IntersectionPoint::tangent_tol [static]

Global tolerance for tangent length (considered singular if length is less than this value.

Definition at line 744 of file IntersectionPoint.h.

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionPoint.h

29.237 Go::IntersectionPool Class Reference

`#include <IntersectionPool.h>`

Public Member Functions

- IntersectionPool (shared_ptr< ParamObjectInt > obj1, shared_ptr< ParamObjectInt > obj2, shared_ptr< IntersectionPool > parent=shared_ptr< IntersectionPool >(), int missing_dir=-1, double missing_value=0)
- virtual ~IntersectionPool ()

  Destructor.
- void addParamPoints (int nmb_int_pts, double *pointpar1, double *pointpar2, shared_ptr< GeoTol > epsge)
- template<class ip_iterator >
  void addCurves (int nmb_int_cvs, ip_iterator *start_iterators, ip_iterator *end_iterators)
- template<class ip_iterator >
  void addCurve (ip_iterator start, ip_iterator end)
- void getBoundaryIntersections (std::vector< shared_ptr< IntersectionPoint > > &bd_ints)

- bool checkIfBothPointsLieOnOneEndpointAndNotOfTheSameCurve ()
- void getSortedIntersections (std::vector< shared_ptr< IntersectionPoint > > &int_pts)
- std::vector< double > getSortedInnerInts (int pardir)
- void getSortedBdInts (const Point &vec, std::vector< shared_ptr< IntersectionPoint > > &result, int obj_↩ nmb=-1)
- bool checkSortingDir (Point &vec, int sorting_obj)
- void getSortedInts (std::vector< shared_ptr< IntersectionPoint > > &result)
- void getAllIntersections (std::vector< shared_ptr< IntersectionPoint > > &result)
- void getBranchPoints (std::vector< shared_ptr< IntersectionPoint > > &pts)
- void getMidParameter (double *mid)
- shared_ptr< IntersectionPoint > addIntersectionPoint (shared_ptr< ParamObjectInt > obj_int1_, shared_↩ ptr< ParamObjectInt > obj_int2_, shared_ptr< GeoTol > epsge, double *par1, double *par2)
- void includeReducedInts (shared_ptr< IntersectionPool > lower_order_pool)
- void selfIntersectParamReorganise (shared_ptr< IntersectionPool > sub_pool)
- void mirrorIntersectionPoints (size_t first)
- bool hasPointsInInner (int pardir)
- bool hasIntersectionPoints () const
- int numIntersectionPoints () const
- int numSingularIntersectionPoints ()

  Get the number of IntersectionPoints in this pool who are not classified as ORDINARY_POINTs (see SingularityType for more info), i.e. points that lie on non-transversal intersections.
- bool isInDomain (IntersectionPoint *pnt) const
- bool closestInDomain (double param[ ], shared_ptr< IntersectionPoint > &pnt) const
- bool closestInDomain (const double param[ ], shared_ptr< IntersectionPoint > &pnt) const
- bool existIntersectionPoint (int dir, double par)
- int inInfluenceArea (int pardir, double par, bool first_outside=true)
- int inInfluenceArea (int pardir, double par, std::vector< shared_ptr< IntersectionPoint > > &int_pts, bool first_outside=true)
- void getIntersectionPoints (std::vector< shared_ptr< IntersectionPoint > > &int_pts) const
- void getIntersectionCurves (std::vector< shared_ptr< IntersectionCurve > > &int_curves) const
- std::vector< shared_ptr< IntersectionPoint > > & getIntersectionPoints ()
- const std::vector< shared_ptr< IntersectionPoint > > & getIntersectionPoints () const
- const std::vector< shared_ptr< IntersectionCurve > > & getIntersectionCurves () const
- void getIntersectionPoints (int dir, double par, std::vector< shared_ptr< IntersectionPoint > > &result) const
- bool hasIntersectionPoints (int dir, double par) const
- bool checkIntersectionPoints (std::vector< IntPtInfo > &int_pt_info) const
- bool checkIntersectionLinks () const
- void removeDoublePoints ()
- void removeLooseEnds ()
- void removeFalseCorners ()
- void removeDefectLinks ()
- void getAllLinks (std::set< shared_ptr< IntersectionLink > > &links)
- void getResult (std::vector< shared_ptr< IntersectionPoint > > &int_points, std::vector< shared_ptr< IntersectionCurve > > &int_curves)
- int lackingParameter () const
- double lackingParameterValue () const
- bool atSameBoundary (shared_ptr< IntersectionPoint > pt1, shared_ptr< IntersectionPoint > pt2)
- bool atDifferentBoundary (shared_ptr< IntersectionPoint > pt1, shared_ptr< IntersectionPoint > pt2)
- bool isBoundaryIntersection (shared_ptr< IntersectionPoint > pt1, shared_ptr< IntersectionPoint > pt2)
- bool isBoundaryPoint (shared_ptr< IntersectionPoint > pt1)

  Check if a point lies at a boundary in the current domain(s)
- bool isBoundaryPoint (IntersectionPoint *pt1)
- bool fetchLoops (std::vector< std::vector< shared_ptr< IntersectionPoint > > > &loop_ints)
- bool isPAC (std::vector< shared_ptr< IntersectionPoint > > &int_loop)
- void setCoincidence (std::vector< shared_ptr< IntersectionPoint > > &int_loop)

- bool isConnectedInside (shared_ptr< IntersectionPoint > pt1, shared_ptr< IntersectionPoint > pt2)
- void makeIntersectionCurves ()
- void getOrigPoints (std::vector< shared_ptr< IntersectionPoint > > &int_pts) const
- void writeDebug (int singular=0)
- void splitIntersectionLinks (int fixed_dir, double fixed_val)
- int numParams () const
- double startParam (int dir) const
- double endParam (int dir) const
- void includeCoveredNeighbourPoints ()
- void insertInInfluenceInterval (shared_ptr< IntersectionPoint > pt_in_pool, double *parvals, int pardir)
- void synchronizePool ()
- void cleanUpPool (int first_idx=0, double epsge=1.0e-15)
- void removeIntPoint (shared_ptr< IntersectionPoint > int_point)
- void removeIntPoint2 (shared_ptr< IntersectionPoint > int_point)
- void removeIntPoints (double *frompar, double *topar, bool only_inner=false)
- void intersectAlongCommonBoundary (double frac, std::vector< BoundaryIntersectionData > &isects)

  Check if two surfaces intersect along a common boundary (i.e. a linked intersection list exist along one boundary in both objects).
- void removeBoundaryIntersections (bool single_pt=true)
- bool verifyIntersectionLink (const shared_ptr< IntersectionLink > &link, int recursion_limit=10) const
- bool checkIntersectionChain (IntersectionPoint *pnt, IntersectionPoint *first, IntersectionPoint *prev=0)
- bool validate () const
- void weedOutClutterPoints ()
- void writeIntersectionPoints () const
- void writeIntersectionLinks () const

Friends

- class SfSfIntersector

29.237.1 Detailed Description

Class providing access to the intersection points and surfaces related to a particular subproblem.

Definition at line 64 of file IntersectionPool.h.

29.237.2 Constructor & Destructor Documentation

29.237.2.1 Go::IntersectionPool::IntersectionPool (shared_ptr< ParamObjectInt > *obj1*, shared_ptr< ParamObjectInt > *obj2*, shared_ptr< IntersectionPool > *parent* = `shared_ptr< IntersectionPool >()`, int *missing_dir* = `-1`, double *missing_value* = `0`)

Constructor

Parameters

obj1	the first object of the (possible) intersection
obj2	the second object of the (possible) intersection
parent	pointer to parent pool (null pointer if no parent)
missing_dir	index of the missing parameter (negative if no missing parameter)
missing_value	value of the missing parameter

29.237.2.2 virtual Go::IntersectionPool::~IntersectionPool ( ) [inline], [virtual]

Destructor.

Definition at line 83 of file IntersectionPool.h.

29.237.3 Member Function Documentation

29.237.3.1 template<class ip_iterator > void Go::IntersectionPool::addCurve (ip_iterator *start*, ip_iterator *end*) [inline]

Add one IntersectionCurve to the pool, by specifying a range of IntersectionPoints that make up the curve.

Parameters

start	iterator to the start of the range of IntersectionPoints.
end	iterator to the end of the range of IntersectionPoints.

Definition at line 940 of file IntersectionPool.h.

29.237.3.2 template<class ip_iterator > void Go::IntersectionPool::addCurves (int *nmb_int_cvs*, ip_iterator * *start_iterators*, ip_iterator * *end_iterators*) [inline]

Add a number of IntersectionCurves to the pool by specifying iterators to the IntersectionPoint making up the curves.

Parameters

nmb_int_cvs	number of curves to add
start_iterators	pointer to a range of iterators to IntersectionPoint. The range should have length equal to the number of curves to add. Each iterator represents the start of a range of IntersectionPoints that defines an IntersectionCurve to add to the pool. (The corresponding end of the range is specified by the corresponding iterator in *end_iterators*.
end_iterators	pointer to a range of iterators to IntersectionPoint. The range should have length equal to the number of curves to add. Each iterator represents the one-past-end of a range of IntersectionPoint s that defines an IntersectionCurve to add to the pool. (The corresponding start of the range is specified by the corresponding iterator in *start_iterators*)

Definition at line 927 of file IntersectionPool.h.

29.237.3.3 shared_ptr<IntersectionPoint> Go::IntersectionPool::addIntersectionPoint (shared_ptr< ParamObjectInt > *obj_int1_*, shared_ptr< ParamObjectInt > *obj_int2_*, shared_ptr< GeoTol > *epsge*, double * *par1*, double * *par2*)

Construct a new IntersectionPoint and add it to this pool, as well as the pool's parents (and older ancestors). NB: The objects given as input should be equal to - or sub-objects of the objects that are already pointed to by this pool.

Parameters

*obj_↩ int1_*	The first of the intersecting objects of the new IntersectionPoint
*obj_↩ int2_*	The second of the intersecting objects of the new IntersectionPoint
epsge	the tolerances used for the new IntesectionPoint
par1	pointer to the IntersectionPoint's parameters in the first object
par2	pointer to the IntersectionPoint's parameters in the second object

29.237.3.4 void Go::IntersectionPool::addParamPoints (int *nmb_int_pts*, double * *pointpar1*, double * *pointpar2*, shared_ptr< GeoTol > *epsge*)

Add a number of IntersectionPoint s to the pool by specifying their parameter values.

Parameters

nmb_int_pts	the number of IntersectionPoint s that shall be added to the pool.
pointpar1	pointer to an array containing the consecutive parameter values in the first object for the IntersectionPoint s to add.
pointpar2	pointer to an array containing the consecutive parameter values in the second object for the IntersectionPoint s to add.
epsge	shared pointer to the object specifying the tolerances to use for the added IntersectionPoint s.

29.237.3.5 bool Go::IntersectionPool::atDifferentBoundary (shared_ptr< IntersectionPoint > *pt1*, shared_ptr< IntersectionPoint > *pt2*)

Check if two IntersectionPoints can be found on two different boundaries of the parametric domain of this IntersectionPools objects (*obj1_* and *obj2_*)

Parameters

pt1	the first IntersectionPoint
pt2	the second IntersectionPoint

Returns

'true' if *pt1* and *pt2* could be found to lie on two distinct borders (i.e. *pt1* lay on one border and *pt2* lay on another).

29.237.3.6 bool Go::IntersectionPool::atSameBoundary (shared_ptr< IntersectionPoint > *pt1*, shared_ptr< IntersectionPoint > *pt2*)

Check if two IntersectionPoints lie on the same boundary of the parametric domain of this IntersectionPools objects (*obj1_* and *obj2_*).

Parameters

pt1	the first IntersectionPoint
pt2	the second IntersectionPoint

Returns

'true' if *pt1* and *pt2* both were found to lie on the same (parametric) boundary. 'false' otherwise.

29.237.3.7 bool Go::IntersectionPool::checkIfBothPointsLieOnOneEndpointAndNotOfTheSameCurve ( )

29.237.3.8 bool Go::IntersectionPool::checkIntersectionChain (IntersectionPoint * *pnt*, IntersectionPoint * *first*, IntersectionPoint * *prev* = 0)

Check consistence of chain of intersection links with respect to number of neighbours

29.237.3.9 bool Go::IntersectionPool::checkIntersectionLinks ( ) const

Check if the intersection links are OK. If they are not, give further diagnostics.

29.237.3.10 bool Go::IntersectionPool::checkIntersectionPoints (std::vector< IntPtInfo > & *int_pt_info*) const

Check if the intersection points are OK. If they are not, give further diagnostics.

Parameters

int_pt_info	vector with information about the intersection points. This information has the type of struct IntPtInfo, which indicates if the point is ok, the number of neighbours, the singularity type, and the location of the point is the parameter domains of the objects

Returns

'true' if all intersection points are OK, 'false' if at least one point is not OK

29.237.3.11 bool Go::IntersectionPool::checkSortingDir (Point & *vec*, int *sorting_obj*)

Check the consistency between the direction of the intersection curve indicated by vec and the direction computed in the existing intersection points. Turn the direction of vec if necessary.

Parameters

vec	the direction of the intersection curve. This mey be turned if necessary.
sorting_obj	the object - 0 or 1 - used for sorting

Return values

'true'	if ???, 'false' if ???

29.237.3.12 void Go::IntersectionPool::cleanUpPool (int *first_idx* = `0`, double *epsge* = `1.0e-15`)

Remove redundant IntersectionPoints from the pool, starting from the point indexed *first_idx* and upwards. An IntersectionPoint is considered redundant if:

- it has exactly two neighbours *AND*
- it lies on an isoparametric intersection curve *AND*
- both of its (two) neighbours are in the pool

Parameters

first_idx	index of the first point

29.237.3.13 bool Go::IntersectionPool::closestInDomain (double *param[ ]*, shared_ptr< IntersectionPoint > & *pnt*) const

Locate the IntersectionPoint in this IntersectionPool whose parameter values are closest (in the Euclidean norm on the parameter space) to a given set of parameters.

Parameters

param[ ]	pointer to an array containing the parameter values that we want to find the closest IntersectionPoint to.

Return values

pnt	upon function return, if a closest IntersectionPoint was found, *pnt* will be set to that IntersectionPoint.

Returns

'true' if a closest IntersectionPoint was found, 'false' otherwise.

29.237.3.14 bool Go::IntersectionPool::closestInDomain (const double *param[ ]*, shared_ptr< IntersectionPoint > & *pnt*) const

Locate the IntersectionPoint in this IntersectionPool whose parameter values are closest (in the Euclidean norm on the parameter space) to a given set of parameters.

Parameters

param[ ]	pointer to an array containing the parameter values that we want to find the closest IntersectionPoint to.

Return values

pnt	upon function return, if a closest IntersectionPoint was found, *pnt* will be set to that IntersectionPoint.

Returns

'true' if a closest IntersectionPoint was found, 'false' otherwise.

29.237.3.15 double Go::IntersectionPool::endParam (int *dir*) const

Get the end of the parameter interval for the specified parameter direction

Parameters

dir	the specified parameter direction

Returns

the end of the parameter interval for the specified parameter direction.

29.237.3.16 bool Go::IntersectionPool::existIntersectionPoint (int *dir,* double *par*)

Checks the existence of any intersection points with the given parameter in the given direction.

Parameters

dir	specifies the concerned parameter direction.
par	specifies the value of this parameter.

Returns

'true' if the pool contains an IntersectionPoint whose parameter *dir* is approximately equal to *par*.

29.237.3.17 bool Go::IntersectionPool::fetchLoops (std::vector< std::vector< shared_ptr< IntersectionPoint > > > & *loop_ints*)

Get all the intersection loops contained in this IntersectionPool. This function assumes that the topologies of the loops in this pool are not too 'warped'. Notably, it might fail if two loops share some edges, since in that case there will be ambiguous choices for what constitutes the loops. (This is a fact from graph theory, and if we want to work around it, we might have to consider additional information of a non-topological nature, like looking at the geometric/parametric position of the points).

Return values

loop_ints	upon function return, this vector will contain all the loops that were found in this IntersectionPool (each loop is represented as a vector of IntersectionPoints).

Returns

'true' if at least one loop was found. 'false' otherwise.

29.237.3.18 void Go::IntersectionPool::getAllIntersections (std::vector< shared_ptr< IntersectionPoint > > & *result*) [inline]

Definition at line 194 of file IntersectionPool.h.

29.237.3.19 void Go::IntersectionPool::getAllLinks (std::set< shared_ptr< IntersectionLink > > & *links*)

29.237.3.20 void Go::IntersectionPool::getBoundaryIntersections (std::vector< shared_ptr< IntersectionPoint > > & *bd_ints*)

Get a vector containing shared pointers to all IntersectionPoints in the pool that is located on the boundary of one of the pool's objects.

Return values

bd_ints	vector of shared pointers to boundary intersection points

29.237.3.21 void Go::IntersectionPool::getBranchPoints (std::vector< shared_ptr< IntersectionPoint > > & *pts*)

Get a vector containing all those IntersectionPoints in the pool that are branchpoints.

Return values

pts	vector of shared pointers to IntersectionPointss

29.237.3.22 void Go::IntersectionPool::getIntersectionCurves (std::vector< shared_ptr< IntersectionCurve > > & *int_curves*) const [inline]

Fill the argument vector with shared pointers to all the IntersectionCurves in 'this' IntersectionPool.

Parameters

int_curves	vector of shared pointers to all of the pool's IntersectionCurves.

Definition at line 891 of file IntersectionPool.h.

29.237.3.23 const std::vector< shared_ptr< IntersectionCurve > > & Go::IntersectionPool::getIntersectionCurves ( ) const [inline]

Get a reference to the vector containing (shared pointers to) 'this' IntersectionPools IntersectionCurves.

Return values

reference	to vector of shared pointers to IntersectionCurves

Definition at line 918 of file IntersectionPool.h.

29.237.3.24 void Go::IntersectionPool::getIntersectionPoints (std::vector< shared_ptr< IntersectionPoint > > & *int_pts*) const [inline]

Fill the vector given as argument with shared pointers to all the IntersectionPoints in 'this' IntersectionPool.

Return values

int_pts	vector of shared pointers to all of the pool's IntersectionPoints.

Definition at line 881 of file IntersectionPool.h.

29.237.3.25 std::vector< shared_ptr< IntersectionPoint > > & Go::IntersectionPool::getIntersectionPoints ( ) [inline]

Get a reference to the vector containing (shared pointers to) 'this' IntersectionPool's IntersectionPoints.

Return values

reference	to vector of shared pointers to IntersectionPoints

Definition at line 900 of file IntersectionPool.h.

29.237.3.26 const std::vector< shared_ptr< IntersectionPoint > > & Go::IntersectionPool::getIntersectionPoints ( ) const [inline]

Get a reference to the vector containing (shared pointers to) 'this' IntersectionPools IntersectionPoint s.

Return values

reference	to vector of shared pointers to IntersectionPoints

Definition at line 909 of file IntersectionPool.h.

29.237.3.27 void Go::IntersectionPool::getIntersectionPoints (int *dir*, double *par*, std::vector< shared_ptr< IntersectionPoint > > & *result*) const

Fetch the IntersectionPoints with a specified parameter value in a specified direction

Parameters

dir	the specified parameter direction
par	the specified parameter value

Return values

result	the vector containing those of the pool's IntersectionPoints that (approximately) had the specified parameter value in the specified parameter direction.

29.237.3.28 void Go::IntersectionPool::getMidParameter (double * *mid*)

Compute the middle parameter value of all intersection points of this intersection pool

Return values

mid	points to an array of `doubles` where the result will be written. The number of elements in the array is equal to the total number of parameter directions for this pool.

29.237.3.29 void Go::IntersectionPool::getOrigPoints (std::vector< shared_ptr< IntersectionPoint > > & *int_pts*) const

Get the "original" intersection points of this intersection pool. If this pool has no parents with the same number of parameters as itself, then return the IntersectionPoints of this pool. Otherwise, return the IntersectionPoints of the parent pool.

Return values

int_pts	the returned IntersectionPoints.

29.237.3.30 void Go::IntersectionPool::getResult (std::vector< shared_ptr< IntersectionPoint > > & *int_points*, std::vector< shared_ptr< IntersectionCurve > > & *int_curves*)

Get all isolated IntersectionPoints in the pool (those with no neighbours), as well as all IntersectionCurves.

Return values

int_points	upon function return, this vector will contain shared pointers to all the IntersectionPoints in this pool that had no neighbours.
int_curves	upon function return, this vector will contain shared pointers to all the IntersectionCurves contained in this pool.

29.237.3.31 void Go::IntersectionPool::getSortedBdInts (const Point & *vec,* std::vector< shared_ptr< IntersectionPoint > > & *result,* int *obj_nmb* = -1)

Get a vector containing shared pointers to the pool's IntersectionPoints, sorted along a given spatial or parametrical direction. NOTE: The name of this function contains 'Bd' for 'boundary' for historical reasons. In fact, we get *all* intersections.

Parameters

vec	the direction along which to sort the IntersectionPoint. If the number of vector elements is 3, it is interpreted as a 'spatial' vector; otherwise it is interpreted as a vector in the combined parametric domain of the two objects.

Return values

result	vector of shared pointers to IntersectionPoints

29.237.3.32 std::vector<double> Go::IntersectionPool::getSortedInnerInts (int *pardir*)

Get a vector containing the parametric values along a specific parameter direction for all the pool's IntersectionPoints that do not lie 'on' or 'close to' the boundary along this parameter. The returned values will be sorted according to increasing value.

Parameters

pardir	the concerned parameter direction

Returns

the vector containing the requested parameter values.

29.237.3.33 void Go::IntersectionPool::getSortedIntersections (std::vector< shared_ptr< IntersectionPoint > > & *int_pts*)

Get a vector containing shared pointers to all the IntersectionPoints in the pool. The entries in the vector will be sorted according to parameter values.

Return values

int_pts	vector containing the pool's IntersectionPoints in a sorted manned.

29.237.3.34 void Go::IntersectionPool::getSortedInts (std::vector< shared_ptr< IntersectionPoint > > & *result*) [inline]

Definition at line 189 of file IntersectionPool.h.

29.237.3.35 bool Go::IntersectionPool::hasIntersectionPoints ( ) const [inline]

Check if this IntersectionPool contains any IntersectionPoints at all.

Returns

'true' if 'this' pool contains at least one IntersectionPoint.

Definition at line 290 of file IntersectionPool.h.

29.237.3.36 bool Go::IntersectionPool::hasIntersectionPoints (int *dir*, double *par*) const

Check if the IntersectionPool contains at least one IntersectionPoint with the specified parameter value in the specified direction.

Parameters

dir	the specified parameter direction
par	the specified parameter value

Returns

'true' if at least one IntersectionPoint with the specified parameter value in the specified parameter direction was found in the pool. 'false' otherwise.

29.237.3.37 bool Go::IntersectionPool::hasPointsInInner (int *pardir*)

Check if this IntersectionPool contains IntersectionPoints that are not "boundary points" with respect to the parameter *pardir*.

Parameters

pardir	the parameter direction we want to check for

Returns

'true' if there was found at least one IntersectionPoint whose *pardir* parameter did not lie on the extremal values of its interval. 'false' otherwise.

29.237.3.38 void Go::IntersectionPool::includeCoveredNeighbourPoints ( )

Check all the neighbours of the IntersectionPoints in this pool, and add those of them that are not already in the pool, but whose parameters are covered by the pool's parameter domain.

29.237.3.39 void Go::IntersectionPool::includeReducedInts (shared_ptr< IntersectionPool > *lower_order_pool*)

Include the IntersectionPoints in the lower_order_pool into 'this' pool, generating new representations of the points which includes the missing parameter. It is assumed that the IntersectionPoints in *lower_order_pool* have no IntersectionLink with points outside the pool.

Parameters

lower_order_pool	a pointer to the lower-order pool from which we want to include its IntersectionPoints.

29.237.3.40 int Go::IntersectionPool::inInfluenceArea (int *pardir,* double *par,* bool *first_outside* = true)

Check if a given parameter value in a given parameter direction lies in the influence area of any IntersectionPoints in the pool.

Parameters

pardir	the concerned parameter direction
par	the parameter value to check against
first_outside	if this is set to 'true' then the outer brackets of the influence intervals will be used (which in practice means that if the function returns 'false', then *par* is *guaranteed* to be outside the influence area of all points). If this argument is set to 'false', then the inner brackets of the influence interval will be used (which in practice means that if the function returns 'true', then *par* is *guaranteed* to be inside the influence area of at least one point).

Returns

- 0 if no IntersectionPoint with an influence area covering the specified value was found.
- 1 if we found an IntersectionPoint whose influence area covered the specified value, but where the specified value did not hit *exactly* on the IntersectionPoint's own parameter.
- 2 if we found an IntersectionPoint whose parameter value in the specified direction coincide with the specified value.

29.237.3.41 int Go::IntersectionPool::inInfluenceArea (int *pardir,* double *par,* std::vector< shared_ptr< IntersectionPoint > > & *int_pts,* bool *first_outside* = true)

Check if a given parameter value in a given parameter direction lies in the influence area of any IntersectionPoints in the specified vector.

Parameters

pardir	the concerned parameter direction
par	the parameter value to check against
int_pts	the vector of IntersectionPoints to check against.
first_outside	if this is set to 'true' then the outer brackets of the influence intervals will be used (which in practice means that if the function returns 'false', then *par* is *guaranteed* to be outside the influence area of all points). If this argument is set to 'false', then the inner brackets of the influence interval will be used (which in practice means that if the function returns 'true', then *par* is *guaranteed* to be inside the influence area of at least one point).

Returns

- 0 if no IntersectionPoint with an influence area covering the specified value was found.

- 1 if we found an IntersectionPoint whose influence area covered the specified value, but where the specified value did not hit *exactly* on the IntersectionPoint's own parameter.
- 2 if we found an IntersectionPoint whose parameter value in the specified direction coincide with the specified value.

29.237.3.42 void Go::IntersectionPool::insertInInfluenceInterval (shared_ptr< IntersectionPoint > *pt_in_pool*, double * *parvals*, int *pardir*)

Create a new IntersectionPoint and add it to the the IntersectionPool. The new IntersectionPoint (A) will lie inside the influence interval of another of the pool's points; the one (B) indicated by *pt_in_pool* (supposedly in the pool already). The parameter direction in which (A) lies inside the influence interval of (B) is indicated by *pardir*. The parameter values of the new point is pointed to by *parvals* (an array which also contains the parameter value in *pardir*. There will be inserted an IntersectionLink between (A) and (B), which will be isoparametric in the other parameter direction if *pardir* is on a two-parametric object (surface or function).

Parameters

pt_in_pool	the IntersectionPoint (supposedly already in the pool) whose influence area the new IntersectionPoint is going to lie.
parvals	pointer to an array specifying the parameter values for the new IntersectionPoint to create.
pardir	the parameter direction that will be iso-parametric in the newly established IntersectionLink (see above).

29.237.3.43 void Go::IntersectionPool::intersectAlongCommonBoundary (double *frac*, std::vector< BoundaryIntersectionData > & *isects*)

Check if two surfaces intersect along a common boundary (i.e. a linked intersection list exist along one boundary in both objects).

Intersections whose parametric extent is smaller than a specified fraction (*frac*) of the surface's parameter intervals are ignored. The data on the found boundary intersections are returned as entries into a vector of BoundaryIntersectionData.

Parameters

frac	the fraction of a parameter's total span that must be covered in order to consider this intersection "long enough" to be considered. (A value between 0 and 1, typically small).

Return values

isects	vector with objects containing information on the found boundary intersections.

29.237.3.44 bool Go::IntersectionPool::isBoundaryIntersection (shared_ptr< IntersectionPoint > *pt1*, shared_ptr< IntersectionPoint > *pt2*)

Check if the two specified IntersectionPoints represent a boundary intersection in this pool. In order to be interpreted as such, they must both lie on the same (parametric) boundary, and be connected with an iso-parametric IntersectionLink

Parameters

pt1	the first IntersectionPoint
pt2	the second IntersectionPoint

Returns

'true' if *pt1* and *pt2* satisfy the criteria specified above, 'false' otherwise.

29.237.3.45 bool Go::IntersectionPool::isBoundaryPoint (shared_ptr< IntersectionPoint > *pt1*) [inline]

Check if a point lies at a boundary in the current domain(s)

Definition at line 546 of file IntersectionPool.h.

29.237.3.46 bool Go::IntersectionPool::isBoundaryPoint (IntersectionPoint * *pt1*)

29.237.3.47 bool Go::IntersectionPool::isConnectedInside (shared_ptr< IntersectionPoint > *pt1*, shared_ptr< IntersectionPoint > *pt2*)

Checks if there is a path of connected IntersectionPoints going between the two IntersectionPoints specified. The specified points are assumed to be in this IntersectionPool, and all IntersectionPoints of the path must also be in the pool.

Parameters

pt1	the first IntersectionPoint. Must already be in the pool. Otherwise, an error will occur.
pt2	the second IntersectionPoint. Must already be in the pool. Otherwise, an error will occur.

Returns

'true' if a path was found connecting *pt1* with *pt2* using only IntersectionPoints in the pool. 'false' otherwise.

29.237.3.48 bool Go::IntersectionPool::isInDomain (IntersectionPoint * *pnt*) const

Check if a given IntersectionPoint is in this IntersectionPool.

Parameters

pnt	pointer to the IntersectionPoint that we want to check.

Returns

'true' if this IntersectionPoint was found in this IntersectionPool, 'false' otherwise.

29.237.3.49 bool Go::IntersectionPool::isPAC (std::vector< shared_ptr< IntersectionPoint > > & *int_loop*)

Check if a given loop delimits a partial coincidence area (PAC). To determine this the meta-information in the IntersectionLink s is examined.

Parameters

int_loop	the loop to check

Returns

'true' if the loop delimits a PAC, 'false' otherwise.

29.237.3.50 int Go::IntersectionPool::lackingParameter ( ) const [inline]

Get the index of the missing parameter (-1 if none missing)

Returns

the index of the missing parameter

Definition at line 949 of file IntersectionPool.h.

29.237.3.51 double Go::IntersectionPool::lackingParameterValue ( ) const [inline]

Get value of missing parameter (if it exists)

Returns

value of the missing parameter

Definition at line 957 of file IntersectionPool.h.

29.237.3.52 void Go::IntersectionPool::makeIntersectionCurves ( )

Prepare output by making IntersectionCurves. Points that have one or three or more IntersectionLinks are considered endpoints to curves, points with two IntersectionLinks lie in the inner of a curve.

29.237.3.53 void Go::IntersectionPool::mirrorIntersectionPoints (size_t *first*)

29.237.3.54 int Go::IntersectionPool::numIntersectionPoints ( ) const [inline]

Query the number of IntersectionPoints contained in this IntersectionPool.

Returns

the number of IntersectionPoints in this pool.

Definition at line 296 of file IntersectionPool.h.

29.237.3.55 int Go::IntersectionPool::numParams ( ) const [inline]

Get the combined number of parameter directions in the two objects.

Returns

the number of parameters in the first object plus the number of parameters in the second object.

Definition at line 633 of file IntersectionPool.h.

29.237.3.56 int Go::IntersectionPool::numSingularIntersectionPoints ( )

Get the number of IntersectionPoints in this pool who are not classified as ORDINARY_POINTs (see SingularityType for more info), i.e. points that lie on non-transversal intersections.

Returns

number of singular IntersectionPoints.

29.237.3.57 void Go::IntersectionPool::removeBoundaryIntersections (bool *single_pt* = true)

Removes IntersectionLinks positioned along the boundary of both objects, The concerned IntersectionPoints are also removed, except when they also links to points which are NOT on the boundary.

29.237.3.58 void Go::IntersectionPool::removeDefectLinks ( )

Remove defect intersection links. Whether or not a link is defect depends on the return value of verifyIntersection↩ Link().

29.237.3.59 void Go::IntersectionPool::removeDoublePoints ( )

Remove double points by merging into one single point. Double points are points that are the same within the tolerance. The new points that results from this will inherit all the links from the old points.

29.237.3.60 void Go::IntersectionPool::removeFalseCorners ( )

29.237.3.61 void Go::IntersectionPool::removeIntPoint (shared_ptr< IntersectionPoint > *int_point*)

Remove an IntersectionPoint from the pool. Should only be called if the number of neighbours are less than or equal to two.

Parameters

int_point	the IntersectionPoint to remove from the pool and its ancestors (as long as the ancestors have the same number of parameter directions). IntersectionLinks will be broken up and the removed IntersectionPoint's neighbours will be reconnected.
int_point	shared pointer to the IntersectionPoint to remove.

29.237.3.62 void Go::IntersectionPool::removeIntPoint2 (shared_ptr< IntersectionPoint > *int_point*)

Remove an IntersectionPoint from the pool.

Parameters

int_point	the IntersectionPoint to remove from the pool and its ancestors (as long as the ancestors have the same number of parameter directions). IntersectionLinks will be broken up.
int_point	shared pointer to the IntersectionPoint to remove.

29.237.3.63 void Go::IntersectionPool::removeIntPoints (double * *frompar,* double * *topar,* bool *only_inner* = false)

Remove all intersection points from the pool whose parameters lie in the box defined by *frompar* and *topar*. IntersectionLinks will be broken up.

Parameters

frompar	the array of parameters defining the lower corner of the box in question.
topar	the array of parameters defining the upper corner of the box in question.

29.237.3.64 void Go::IntersectionPool::removeLooseEnds ( )

29.237.3.65 void Go::IntersectionPool::selfIntersectParamReorganise (shared_ptr< IntersectionPool > *sub_pool*)

Reorganize self-intersection parameters. A 'twin point' is a concept when working with self-intersection objects. It represent an IntersectionPoint that already exist in the parent pool, but whose ordering of parameters had to be switched in order to conform with its objects (which are really two parts of the same, global surface). If a pool contains twin points, we must assure that the curves where these points are included have a consistent ordering of the parameters. This function takes care of making this ordering consistent. Moreover, since the twin points are really just another representation of an already-existing point, they will go out of scope and disappear when the sub-pool in which they lie is destroyed. Therefore, we must make sure that points linked to by the twin points will now be linked to by the original points that the twin-points are representing.

NB: This is a very special function that is only used with the following preconditions:

- this pool should represent a self-intersection, ie. its first and second object should be the same.
- the 'sub_pool' (given as argument) should be a child of 'this' pool.
- 'this' pool and the one pointed to by *sub_pool* should have the same number of parameters.

Parameters

sub_pool	shared pointer to the sub-pool, as described above.

29.237.3.66 void Go::IntersectionPool::setCoincidence (std::vector< shared_ptr< IntersectionPoint > > & *int_loop*)

Set the specified loop to be a partial coincidence area (PAC). This is written into the loop's IntersectionLinks as meta-information.

Parameters

int_loop	the loop in question

29.237.3.67 void Go::IntersectionPool::splitIntersectionLinks (int *fixed_dir,* double *fixed_val*)

Among all IntersectionLinks between IntersectionPoints in this pool, split those who cross a specified parameter direction at a specified parameter value. Split means to insert a new IntersectionPoint at this place.

Parameters

fixed_dir	the specified parameter direction
fixed_val	the specified parameter value

29.237.3.68 double Go::IntersectionPool::startParam (int *dir*) const

Get the start of the parameter interval for the specified parameter direction

Parameters

dir	the specified parameter direction

Returns

the start of the parameter interval for the *dir* parameter direction.

29.237.3.69 void Go::IntersectionPool::synchronizePool ( )

Synchronize pool with its parent. We check that the pool is "valid" by making sure that the intersection points on the current level is also present at previous levels. If there are intersection points that are redundant in this sense, we remove them. This function us useful when several sibling subintersectors are around, and running compute on one of them has removed intersection points that are also present in someof the others.

29.237.3.70 bool Go::IntersectionPool::validate ( ) const

Checks if the pool is "valid", that is, if the intersection points on the present subdivision level exist also on previous levels.

Returns

true if the pool is valid, *false* otherwise

29.237.3.71 bool Go::IntersectionPool::verifyIntersectionLink (const shared_ptr< IntersectionLink > & *link*, int *recursion_limit* = 10) const

Verify that the given intersection link is in the pool and represents a connected piece of the intersection curve.

Parameters

link	shared pointer to the intersection link we wish to verify

Return values

'true'	if the link represents a connected piece of the intersection curve, 'false' otherwise

29.237.3.72 void Go::IntersectionPool::weedOutClutterPoints ( )

29.237.3.73 void Go::IntersectionPool::writeDebug (int *singular* = 0)

Write various debug information

Parameters

singular	use 1 for singular case, 0 is default

29.237.3.74 void Go::IntersectionPool::writeIntersectionLinks ( ) const

Writes out a list of links beween intersection points in the pool. Writes to cout.

29.237.3.75 void Go::IntersectionPool::writeIntersectionPoints ( ) const

Writes out a list of the current intersection points in the pool. Writes to cout.

29.237.4 Friends And Related Function Documentation

29.237.4.1 friend class SfSfIntersector [friend]

Definition at line 792 of file IntersectionPool.h.

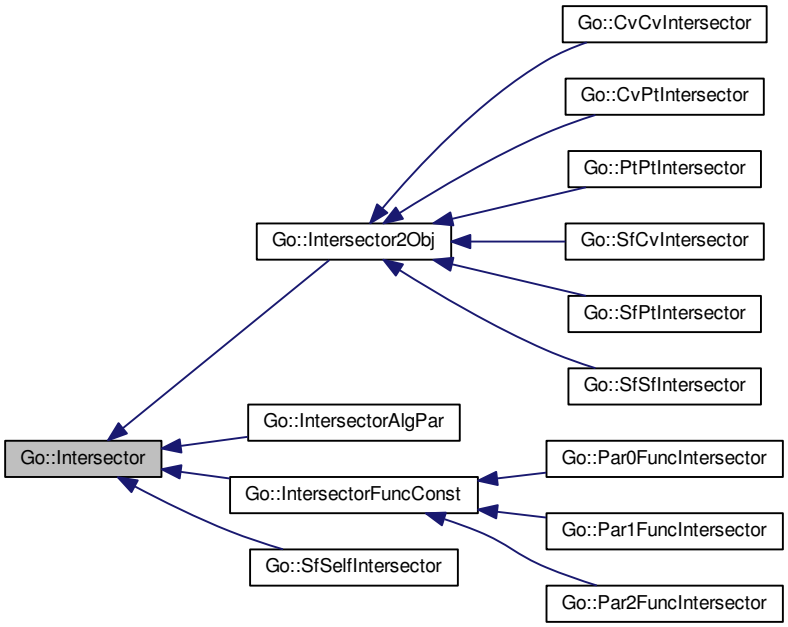
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionPool.h

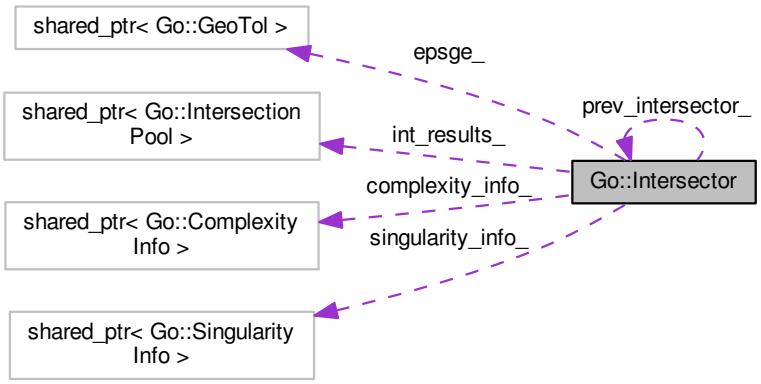
29.238 Go::Intersector Class Reference

`#include <Intersector.h>`

Inheritance diagram for Go::Intersector:



Collaboration diagram for Go::Intersector:



Public Member Functions

- Intersector ()

Default constructor.

- Intersector (double epsge, Intersector *prev=0)
- Intersector (shared_ptr< GeoTol > epsge, Intersector *prev=0)
- virtual ~Intersector ()

  Destructor.
- virtual void compute (bool compute_at_boundary=true)
- virtual void getResult (std::vector< shared_ptr< IntersectionPoint > > &int_points, std::vector< shared_ptr< IntersectionCurve > > &int_curves)
- shared_ptr< IntersectionPool > getIntPool ()
- bool validateSiblingPools ()
- shared_ptr< GeoTol > getTolerance ()
- bool hasSingularityInfo ()
- shared_ptr< SingularityInfo > getSingularityInfo ()
- void setSingularityInfo (shared_ptr< SingularityInfo > previous, int missing_dir)
- void setHighPriSing (double *par)
- bool hasComplexityInfo ()
- shared_ptr< ComplexityInfo > getComplexityInfo ()
- virtual int numParams () const =0
- virtual int nmbBdObj (int idx) const
- virtual BoundaryGeomInt * getBoundaryObject (int idx, int bd_idx) const
- int nmbRecursions ()
- virtual bool isSelfIntersection ()
- virtual int isSelfintCase ()
- virtual void addComplexDomain (RectDomain dom)
- void writeIntersectionPoints () const

  Write diagnostic information about the intersection points.

Protected Member Functions

- virtual void print_objs ()=0
- virtual int getBoundaryIntersections ()=0
- virtual int performInterception ()=0
- virtual int simpleCase ()=0
- virtual bool isLinear ()=0
- virtual bool degTriangleSimple ()
- virtual bool complexityReduced ()=0
- virtual void handleComplexity ()=0
- virtual int checkCoincidence ()=0
- virtual void microCase ()=0
- virtual int updateIntersections ()=0
- virtual int repairIntersections ()=0
- virtual int linearCase ()=0
- virtual int doSubdivide ()=0
- virtual int complexIntercept ()
- virtual int complexSimpleCase ()
- virtual void doPostIterate ()
- virtual void printDebugInfo ()=0

Protected Attributes

- shared_ptr< IntersectionPool > int_results_
- std::vector< shared_ptr< Intersector > > sub_intersectors_
- Intersector * prev_intersector_
- shared_ptr< GeoTol > epsge_
- shared_ptr< SingularityInfo > singularity_info_
- shared_ptr< ComplexityInfo > complexity_info_

Friends

- class SfSfIntersector
- class IntersectionPool

29.238.1 Detailed Description

This class is an abstract class providing an interface to the intersection functionality in GoTools.

Definition at line 67 of file Intersector.h.

29.238.2 Constructor & Destructor Documentation

29.238.2.1 Go::Intersector::Intersector ( ) [inline]

Default constructor.

Definition at line 71 of file Intersector.h.

29.238.2.2 Go::Intersector::Intersector (double *epsge*, Intersector * *prev* = 0)

Constructor.

Parameters

epsge	the geometric tolerance for the intersector.
prev	the previous intersector.

29.238.2.3 Go::Intersector::Intersector (shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0)

Constructor.

Parameters

epsge	the geometric tolerance for the intersector.
prev	the previous intersector.

29.238.2.4 virtual Go::Intersector::~Intersector ( ) [inline], [virtual]

Destructor.

Definition at line 84 of file Intersector.h.

29.238.3 Member Function Documentation

29.238.3.1 virtual void Go::Intersector::addComplexDomain (RectDomain *dom*) [inline], [virtual]

Reimplemented in Go::SfSelfIntersector.

Definition at line 202 of file Intersector.h.

29.238.3.2 virtual int Go::Intersector::checkCoincidence ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::IntersectorAlgPar, Go::SfCvIntersector, Go::SfSf↩Intersector, Go::IntersectorFuncConst, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPtIntersector, Go::Par1↩FuncIntersector, Go::Par2FuncIntersector, Go::Par0FuncIntersector, and Go::SfPtIntersector.

29.238.3.3 virtual int Go::Intersector::complexIntercept ( ) [inline], [protected], [virtual]

Reimplemented in Go::Intersector2Obj.

Definition at line 263 of file Intersector.h.

29.238.3.4 virtual bool Go::Intersector::complexityReduced ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::IntersectorAlgPar, Go::SfSfIntersector, and Go::↩IntersectorFuncConst.

29.238.3.5 virtual int Go::Intersector::complexSimpleCase ( ) [inline], [protected], [virtual]

Reimplemented in Go::Intersector2Obj.

Definition at line 268 of file Intersector.h.

29.238.3.6 virtual void Go::Intersector::compute (bool *compute_at_boundary* = true) [virtual]

Compute the current intersections (topology).

Parameters

compute_at_boundary	if true we will include computation of boundary intersections.

Reimplemented in Go::SfSelfIntersector, and Go::IntersectorAlgPar.

29.238.3.7 virtual bool Go::Intersector::degTriangleSimple ( ) [inline], [protected], [virtual]

Reimplemented in Go::SfSfIntersector.

Definition at line 241 of file Intersector.h.

29.238.3.8 virtual void Go::Intersector::doPostIterate ( ) [inline], [protected], [virtual]

Reimplemented in Go::Intersector2Obj.

Definition at line 273 of file Intersector.h.

29.238.3.9 virtual int Go::Intersector::doSubdivide ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::SfSfIntersector, Go::IntersectorAlgPar, Go::SfCv↩Intersector, Go::IntersectorFuncConst, Go::CvPtIntersector, Go::CvCvIntersector, Go::Par2FuncIntersector, Go::↩PtPtIntersector, Go::Par1FuncIntersector, Go::Par0FuncIntersector, and Go::SfPtIntersector.

29.238.3.10 virtual int Go::Intersector::getBoundaryIntersections ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::IntersectorAlgPar, and Go::IntersectorFuncConst.

29.238.3.11 virtual BoundaryGeomInt* Go::Intersector::getBoundaryObject (int *idx,* int *bd_idx*) const [inline], [virtual]

Get the specified boundary object belonging to the specified ParamGeomInt.

Parameters

idx	refers to obj1 or obj2. Indexing starts at 0.
bd_idx	index of the boundary object in the ParamGeomInt.

Returns

The boundary object.

Reimplemented in Go::Intersector2Obj.

Definition at line 179 of file Intersector.h.

29.238.3.12 shared_ptr<ComplexityInfo> Go::Intersector::getComplexityInfo ( ) [inline]

Get info on the complexity of the problem.

Returns

Info on the complexity of the problem.

Definition at line 158 of file Intersector.h.

29.238.3.13 shared_ptr<IntersectionPool> Go::Intersector::getIntPool ( ) [inline]

Get the IntersectionPool for the intersector.

Returns

The IntersectionPool.

Definition at line 104 of file Intersector.h.

29.238.3.14 virtual void Go::Intersector::getResult (std::vector< shared_ptr< IntersectionPoint > > & *int_points*, std::vector< shared_ptr< IntersectionCurve > > & *int_curves*) [virtual]

Get intersection points and curves. Sends request to IntersectionPool. The intersection points are isolated.

Parameters

int_points	vector of intersection points
int_curves	vector of intersection curves

Reimplemented in Go::IntersectorAlgPar.

29.238.3.15 shared_ptr<SingularityInfo> Go::Intersector::getSingularityInfo ( ) [inline]

Get info regarding singularities.

Returns

The singularify info for the intersector.

Definition at line 125 of file Intersector.h.

29.238.3.16 shared_ptr<GeoTol> Go::Intersector::getTolerance ( ) [inline]

Get the tolerance object used by this Intersector

Returns

The tolerance object for the intersector.

Definition at line 115 of file Intersector.h.

29.238.3.17 virtual void Go::Intersector::handleComplexity ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::IntersectorAlgPar, Go::SfSfIntersector, and Go::IntersectorFuncConst.

29.238.3.18 bool Go::Intersector::hasComplexityInfo ( ) [inline]

Verify whether there has been created info regarding the complexity of the problem.

Returns

True if complexity info has been created.

Definition at line 153 of file Intersector.h.

29.238.3.19 bool Go::Intersector::hasSingularityInfo ( ) [inline]

Verify whether singularities has been set.

Returns

True if info on singularities has been set.

Definition at line 120 of file Intersector.h.

29.238.3.20 virtual bool Go::Intersector::isLinear ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::IntersectorAlgPar, and Go::IntersectorFuncConst.

29.238.3.21 virtual int Go::Intersector::isSelfintCase ( ) [inline], [virtual]

Check if this intersection algorithm is performed in a self-intersection context.

Reimplemented in Go::Intersector2Obj.

Definition at line 199 of file Intersector.h.

29.238.3.22 virtual bool Go::Intersector::isSelfIntersection ( ) [inline], [virtual]

Verify whether the surface is self-intersecting.

Returns

True if the surface is self-intersecting.

Reimplemented in Go::SfSelfIntersector.

Definition at line 194 of file Intersector.h.

29.238.3.23 virtual int Go::Intersector::linearCase ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::SfSfIntersector, Go::IntersectorAlgPar, Go::SfCv↩Intersector, Go::IntersectorFuncConst, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPtIntersector, and Go::↩SfPtIntersector.

29.238.3.24 virtual void Go::Intersector::microCase ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::IntersectorAlgPar, Go::SfCvIntersector, Go::SfSf↩Intersector, Go::IntersectorFuncConst, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPtIntersector, Go::Par1↩FuncIntersector, Go::Par2FuncIntersector, Go::Par0FuncIntersector, and Go::SfPtIntersector.

29.238.3.25 virtual int Go::Intersector::nmbBdObj (int *idx*) const [inline], [virtual]

Count the number of boundary objects belonging to the specified ParamGeomInt.

Parameters

idx	refers to obj1 or obj2. Indexing starts at 0.

Returns

The number of boundary objects.

Reimplemented in Go::Intersector2Obj.

Definition at line 170 of file Intersector.h.

29.238.3.26 int Go::Intersector::nmbRecursions ( ) [inline]

The current recursion level.

Returns

The current recursion level.

Definition at line 184 of file Intersector.h.

29.238.3.27 virtual int Go::Intersector::numParams ( ) const [pure virtual]

Get the number of parameter directions for the intersection.

Returns

The number of parameter directions for the intersection.

Implemented in Go::SfSelfIntersector, Go::CvPtIntersector, Go::SfCvIntersector, Go::IntersectorAlgPar, Go::CvCvIntersector, Go::PtPtIntersector, Go::SfSfIntersector, Go::Par1FuncIntersector, Go::Par2FuncIntersector, Go::Par0FuncIntersector, and Go::SfPtIntersector.

29.238.3.28 virtual int Go::Intersector::performInterception ( ) [protected], [pure virtual]

Implemented in Go::SfSelfIntersector, Go::Intersector2Obj, Go::IntersectorAlgPar, and Go::IntersectorFuncConst.

29.238.3.29 virtual void Go::Intersector::print_objs ( ) [protected], [pure virtual]

Implemented in Go::SfSelfIntersector, Go::Intersector2Obj, Go::IntersectorAlgPar, and Go::IntersectorFuncConst.

29.238.3.30 virtual void Go::Intersector::printDebugInfo ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::IntersectorAlgPar, and Go::IntersectorFuncConst.

29.238.3.31 virtual int Go::Intersector::repairIntersections ( ) [protected], [pure virtual]

Implemented in Go::SfSelfIntersector, Go::IntersectorAlgPar, Go::SfCvIntersector, Go::SfSfIntersector, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPtIntersector, Go::Par1FuncIntersector, Go::Par2FuncIntersector, Go::Par0FuncIntersector, and Go::SfPtIntersector.

29.238.3.32 void Go::Intersector::setHighPriSing (double * *par*)

Instruct the intersector about known singular points.

Parameters

par	the parameter value of the singularity. Size of array should be numParams().

29.238.3.33 void Go::Intersector::setSingularityInfo (shared_ptr< SingularityInfo > *previous*, int *missing_dir*) [inline]

Set info regarding singularities.

Parameters

previous	the singularity info.
missing_dir	if the dimension of the intersection problem has been reduced from previous, the index tells us which parameter direction that was removed. Indexing starts at 0.

Definition at line 134 of file Intersector.h.

29.238.3.34 virtual int Go::Intersector::simpleCase ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::SfCvIntersector, Go::IntersectorAlgPar, and Go::IntersectorFuncConst.

29.238.3.35 virtual int Go::Intersector::updateIntersections ( ) [protected], [pure virtual]

Implemented in Go::Intersector2Obj, Go::SfSelfIntersector, Go::IntersectorAlgPar, Go::SfCvIntersector, Go::SfSfIntersector, Go::IntersectorFuncConst, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPtIntersector, Go::Par1FuncIntersector, Go::Par2FuncIntersector, Go::Par0FuncIntersector, and Go::SfPtIntersector.

29.238.3.36 bool Go::Intersector::validateSiblingPools ( )

Validate this pool and its siblings.

Returns

true if all the sibling pools are valid, *false* otherwise

29.238.3.37 void Go::Intersector::writeIntersectionPoints ( ) const

Write diagnostic information about the intersection points.

29.238.4 Friends And Related Function Documentation

29.238.4.1 friend class IntersectionPool [friend]

Definition at line 209 of file Intersector.h.

29.238.4.2 friend class SfSfIntersector [friend]

Definition at line 208 of file Intersector.h.

29.238.5 Member Data Documentation

29.238.5.1 shared_ptr<ComplexityInfo> Go::Intersector::complexity_info_ [protected]

Definition at line 222 of file Intersector.h.

29.238.5.2 shared_ptr<GeoTol> Go::Intersector::epsge_ [protected]

Definition at line 220 of file Intersector.h.

29.238.5.3 shared_ptr<IntersectionPool> Go::Intersector::int_results_ [protected]

Definition at line 217 of file Intersector.h.

29.238.5.4 Intersector* Go::Intersector::prev_intersector_ [protected]

Definition at line 219 of file Intersector.h.

29.238.5.5 shared_ptr<SingularityInfo> Go::Intersector::singularity_info_ [protected]

Definition at line 221 of file Intersector.h.

29.238.5.6 std::vector<shared_ptr<Intersector> > Go::Intersector::sub_intersectors_ [protected]

Definition at line 218 of file Intersector.h.

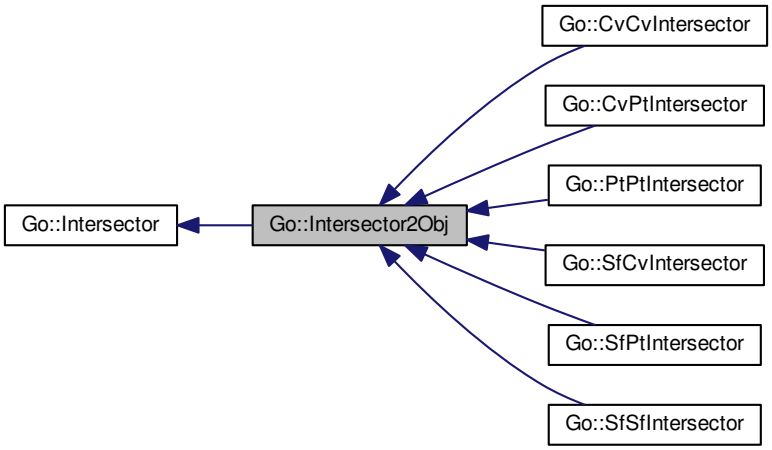
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Intersector.h

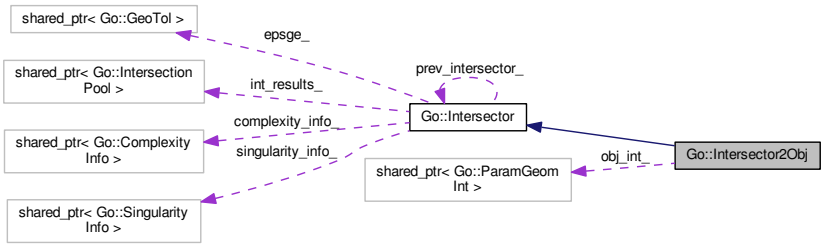
29.239 Go::Intersector2Obj Class Reference

`#include <Intersector2Obj.h>`

Inheritance diagram for Go::Intersector2Obj:



Collaboration diagram for Go::Intersector2Obj:



Public Member Functions

- Intersector2Obj ()

  Default constructor.
- Intersector2Obj (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- Intersector2Obj (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, double epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~Intersector2Obj ()

  Destructor.
- virtual int nmbBdObj (int idx) const
- virtual BoundaryGeomInt * getBoundaryObject (int idx, int bd_idx) const
- void setSelfintCase (int type)
- virtual int isSelfintCase ()

Protected Member Functions

- virtual void print_objs ()
- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)=0
- virtual int getBoundaryIntersections ()
- virtual int performInterception ()
- virtual bool foundIntersectionNearBoundary ()
- virtual int performRotatedBoxTest (double eps1, double eps2)
- virtual int performInterceptionByImplicitization ()
- virtual int interceptionBySeparationSurface ()
- virtual int simpleCase ()
- virtual int simpleCase2 (Point &axis1, Point &axis2)
- virtual int simpleCaseByImplicitization ()
- virtual bool isLinear ()
- virtual bool complexityReduced ()
- virtual void handleComplexity ()
- virtual int checkCoincidence ()=0
- virtual void microCase ()=0
- virtual int updateIntersections ()=0
- virtual int linearCase ()=0
- virtual int doSubdivide ()=0
- virtual int complexIntercept ()
- virtual int complexSimpleCase ()
- virtual void postIterate (int nmb_orig, int dir=-1, bool keep_endpt=true)
- virtual void doPostIterate ()
- virtual void removeDegenerateConnections ()
- void getSeedIteration (double seed[])
- bool atSameBoundary (const double *par1, const double *par2)
- bool atBoundary (const double *par1, std::vector< bool > &boundaries)
- virtual void printDebugInfo ()
- virtual void writeOut ()

Protected Attributes

- shared_ptr< ParamGeomInt > obj_int_ [2]
- int selfint_case_

29.239.1 Detailed Description

This class is an abstract class providing an interface to the intersection functionality in GoTools.

Definition at line 54 of file Intersector2Obj.h.

29.239.2 Constructor & Destructor Documentation

29.239.2.1 Go::Intersector2Obj::Intersector2Obj ( ) [inline]

Default constructor.

Definition at line 58 of file Intersector2Obj.h.

29.239.2.2 Go::Intersector2Obj::Intersector2Obj (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

obj1	object of type ParamSurfaceInt, ParamCurveInt or ParamPointInt.
obj2	object of type ParamSurfaceInt, ParamCurveInt or ParamPointInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.239.2.3 Go::Intersector2Obj::Intersector2Obj (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, double *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

obj1	object of type ParamSurfaceInt, ParamCurveInt or ParamPointInt.
obj2	object of type ParamSurfaceInt, ParamCurveInt or ParamPointInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.239.2.4 virtual Go::Intersector2Obj::~Intersector2Obj ( ) [virtual]

Destructor.

29.239.3 Member Function Documentation

29.239.3.1 bool Go::Intersector2Obj::atBoundary (const double * *par1*, std::vector< bool > & *boundaries*) [protected]

29.239.3.2 bool Go::Intersector2Obj::atSameBoundary (const double * *par1*, const double * *par2*) [protected]

29.239.3.3 virtual int Go::Intersector2Obj::checkCoincidence ( ) [protected], [pure virtual]

Implements Go::Intersector.

Implemented in Go::SfCvIntersector, Go::SfSfIntersector, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPtIntersector, and Go::SfPtIntersector.

29.239.3.4 virtual int Go::Intersector2Obj::complexIntercept ( ) [protected], [virtual]

Reimplemented from Go::Intersector.

29.239.3.5 virtual bool Go::Intersector2Obj::complexityReduced ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Reimplemented in Go::SfSfIntersector.

Definition at line 188 of file Intersector2Obj.h.

29.239.3.6 virtual int Go::Intersector2Obj::complexSimpleCase ( ) [protected], [virtual]

Reimplemented from Go::Intersector.

29.239.3.7 virtual void Go::Intersector2Obj::doPostIterate ( ) [inline], [protected], [virtual]

Reimplemented from Go::Intersector.

Definition at line 216 of file Intersector2Obj.h.

29.239.3.8 virtual int Go::Intersector2Obj::doSubdivide ( ) [protected], [pure virtual]

Implements Go::Intersector.

Implemented in Go::SfSfIntersector, Go::SfCvIntersector, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPt↩Intersector, and Go::SfPtIntersector.

29.239.3.9 virtual bool Go::Intersector2Obj::foundIntersectionNearBoundary ( ) [inline], [protected], [virtual]

Reimplemented in Go::SfCvIntersector, Go::CvCvIntersector, and Go::SfSfIntersector.

Definition at line 159 of file Intersector2Obj.h.

29.239.3.10 virtual int Go::Intersector2Obj::getBoundaryIntersections ( ) [protected], [virtual]

Implements Go::Intersector.

29.239.3.11 virtual BoundaryGeomInt* Go::Intersector2Obj::getBoundaryObject (int *idx*, int *bd_idx*) const [inline], [virtual]

Get the specified boundary object belonging to the specified ParamGeomInt.

Parameters

idx	refers to *obj1* or *obj2* (i.e. 0 or 1).
bd_idx	index of the boundary object in the ParamGeomInt.

Returns

The boundary object.

Reimplemented from Go::Intersector.

Definition at line 121 of file Intersector2Obj.h.

29.239.3.12 void Go::Intersector2Obj::getSeedIteration (double *seed[ ]*) [protected]

29.239.3.13 virtual void Go::Intersector2Obj::handleComplexity ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Reimplemented in Go::SfSfIntersector.

Definition at line 194 of file Intersector2Obj.h.

29.239.3.14 virtual int Go::Intersector2Obj::interceptionBySeparationSurface ( ) [inline], [protected], [virtual]

Reimplemented in Go::SfSfIntersector.

Definition at line 174 of file Intersector2Obj.h.

29.239.3.15 virtual bool Go::Intersector2Obj::isLinear ( ) [protected], [virtual]

Implements Go::Intersector.

29.239.3.16 virtual int Go::Intersector2Obj::isSelfintCase ( ) [inline], [virtual]

Check if this intersection is performed in self-intersection context.

Returns

`true` if this is a self-intersection, `false` otherwise

Reimplemented from Go::Intersector.

Definition at line 134 of file Intersector2Obj.h.

29.239.3.17 virtual int Go::Intersector2Obj::linearCase ( ) [protected], [pure virtual]

Implements Go::Intersector.

Implemented in Go::SfSfIntersector, Go::SfCvIntersector, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPt↩ Intersector, and Go::SfPtIntersector.

29.239.3.18 virtual shared_ptr<Intersector> Go::Intersector2Obj::lowerOrderIntersector (shared_ptr< ParamGeomInt > *obj1,* shared_ptr< ParamGeomInt > *obj2,* Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [pure virtual]

Implemented in Go::SfCvIntersector, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPtIntersector, Go::SfSfIntersector, and Go::SfPtIntersector.

29.239.3.19 virtual void Go::Intersector2Obj::microCase ( ) [protected], [pure virtual]

Implements Go::Intersector.

Implemented in Go::SfCvIntersector, Go::SfSfIntersector, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPtIntersector, and Go::SfPtIntersector.

29.239.3.20 virtual int Go::Intersector2Obj::nmbBdObj (int *idx*) const [inline], [virtual]

Count the number of boundary objects belonging to the specified ParamGeomInt.

Parameters

idx	refers to *obj1* or *obj2* (i.e. 0 or 1).

Returns

The number of boundary objects.

Reimplemented from Go::Intersector.

Definition at line 112 of file Intersector2Obj.h.

29.239.3.21 virtual int Go::Intersector2Obj::performInterception ( ) [protected], [virtual]

Implements Go::Intersector.

29.239.3.22 virtual int Go::Intersector2Obj::performInterceptionByImplicitization ( ) [inline], [protected], [virtual]

Reimplemented in Go::SfSfIntersector.

Definition at line 167 of file Intersector2Obj.h.

29.239.3.23 virtual int Go::Intersector2Obj::performRotatedBoxTest (double *eps1,* double *eps2*) [protected], [virtual]

Reimplemented in Go::SfCvIntersector, Go::CvCvIntersector, Go::SfSfIntersector, and Go::SfPtIntersector.

29.239.3.24 virtual void Go::Intersector2Obj::postIterate (int *nmb_orig,* int *dir* = −1, bool *keep_endpt* = true) [inline], [protected], [virtual]

Reimplemented in Go::SfCvIntersector.

Definition at line 214 of file Intersector2Obj.h.

29.239.3.25 virtual void Go::Intersector2Obj::print_objs ( ) [protected], [virtual]

Implements Go::Intersector.

29.239.3.26 virtual void Go::Intersector2Obj::printDebugInfo ( ) [protected], [virtual]

Implements Go::Intersector.

29.239.3.27 virtual void Go::Intersector2Obj::removeDegenerateConnections ( ) [inline], [protected], [virtual]

Definition at line 221 of file Intersector2Obj.h.

29.239.3.28 void Go::Intersector2Obj::setSelfintCase (int *type*) [inline]

Mark that this intersection is performed in self-intersection context.

Definition at line 127 of file Intersector2Obj.h.

29.239.3.29 virtual int Go::Intersector2Obj::simpleCase ( ) [protected], [virtual]

Implements Go::Intersector.

Reimplemented in Go::SfCvIntersector.

29.239.3.30 virtual int Go::Intersector2Obj::simpleCase2 (Point & *axis1,* Point & *axis2*) [protected], [virtual]

Reimplemented in Go::SfCvIntersector, Go::SfSfIntersector, and Go::CvCvIntersector.

29.239.3.31 virtual int Go::Intersector2Obj::simpleCaseByImplicitization ( ) [inline], [protected], [virtual]

Reimplemented in Go::SfSfIntersector.

Definition at line 183 of file Intersector2Obj.h.

29.239.3.32 virtual int Go::Intersector2Obj::updateIntersections ( ) [protected], [pure virtual]

Implements Go::Intersector.

Implemented in Go::SfCvIntersector, Go::SfSfIntersector, Go::CvPtIntersector, Go::CvCvIntersector, Go::PtPtIntersector, and Go::SfPtIntersector.

29.239.3.33 virtual void Go::Intersector2Obj::writeOut ( ) [inline], [protected], [virtual]

Reimplemented in Go::CvCvIntersector.

Definition at line 231 of file Intersector2Obj.h.

29.239.4 Member Data Documentation

29.239.4.1 shared_ptr<ParamGeomInt> Go::Intersector2Obj::obj_int_[2] [protected]

Definition at line 139 of file Intersector2Obj.h.

29.239.4.2 int Go::Intersector2Obj::selfint_case_ [protected]

Definition at line 140 of file Intersector2Obj.h.

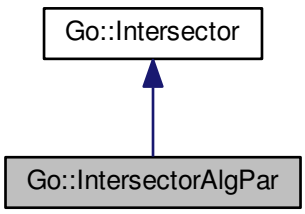
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Intersector2Obj.h

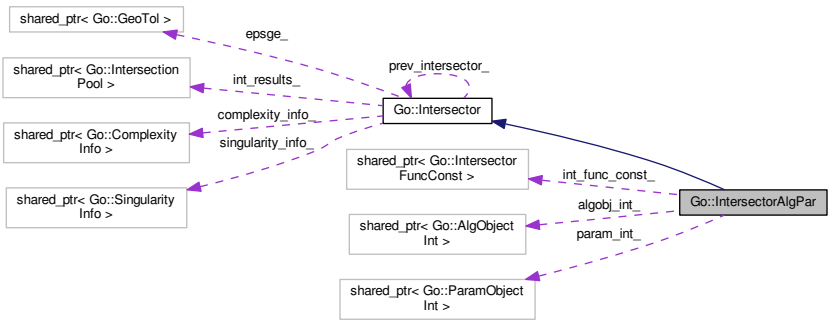
29.240 Go::IntersectorAlgPar Class Reference

`#include <IntersectorAlgPar.h>`

Inheritance diagram for Go::IntersectorAlgPar:



Collaboration diagram for Go::IntersectorAlgPar:



Public Member Functions

- IntersectorAlgPar (shared_ptr< AlgObjectInt > alg_obj, shared_ptr< ParamObjectInt > param_obj, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~IntersectorAlgPar ()

  Destructor.
- virtual void compute (bool compute_at_boundary=true)
- virtual void getResult (std::vector< shared_ptr< IntersectionPoint > > &int_points, std::vector< shared_ptr< IntersectionCurve > > &int_curves)
- virtual int numParams () const

Protected Member Functions

- virtual void print_objs ()
- virtual int getBoundaryIntersections ()
- virtual int performInterception ()
- virtual int simpleCase ()
- virtual bool isLinear ()
- virtual bool complexityReduced ()
- virtual void handleComplexity ()
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- virtual int linearCase ()
- virtual int doSubdivide ()
- virtual void printDebugInfo ()

Protected Attributes

- shared_ptr< ParamObjectInt > param_int_
- shared_ptr< AlgObjectInt > algobj_int_
- shared_ptr< IntersectorFuncConst > int_func_const_

29.240.1 Detailed Description

This class is an interface class used to compute the intersection between an algebraic object and a parametric object. The algebraic object is "plugged" into the parametric object, resulting in a scalar function. We then use the IntersectorFuncConst class to find the intersection.

Definition at line 65 of file IntersectorAlgPar.h.

29.240.2 Constructor & Destructor Documentation

29.240.2.1 Go::IntersectorAlgPar::IntersectorAlgPar (shared_ptr< AlgObjectInt > *alg_obj*, shared_ptr< ParamObjectInt > *param_obj*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

alg_obj	the algebraic object.
param_obj	the parametric object.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.240.2.2 virtual Go::IntersectorAlgPar::~IntersectorAlgPar ( ) [inline], [virtual]

Destructor.

Definition at line 88 of file IntersectorAlgPar.h.

29.240.3 Member Function Documentation

29.240.3.1 virtual int Go::IntersectorAlgPar::checkCoincidence ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.2 virtual bool Go::IntersectorAlgPar::complexityReduced ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.3 virtual void Go::IntersectorAlgPar::compute (bool *compute_at_boundary* = true) [virtual]

Compute the current intersections (topology)

Parameters

compute_at_boundary	flag to indicate that we compute at the boundary

Reimplemented from Go::Intersector.

29.240.3.4 virtual int Go::IntersectorAlgPar::doSubdivide ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.5 virtual int Go::IntersectorAlgPar::getBoundaryIntersections ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.6 virtual void Go::IntersectorAlgPar::getResult (std::vector< shared_ptr< IntersectionPoint > > & *int_points*, std::vector< shared_ptr< IntersectionCurve > > & *int_curves*) [virtual]

Return intersection points and curves.

Parameters

int_points	vector of shared pointers to IntersectionPoints
int_curves	vector of shared pointers to IntersectionCurves

Reimplemented from Go::Intersector.

29.240.3.7 virtual void Go::IntersectorAlgPar::handleComplexity ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.8 virtual bool Go::IntersectorAlgPar::isLinear ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.9 virtual int Go::IntersectorAlgPar::linearCase ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.10 virtual void Go::IntersectorAlgPar::microCase ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.11 virtual int Go::IntersectorAlgPar::numParams ( ) const [virtual]

Return the number of parameter directions for the object.

Returns

thenumber of parameter directions

Implements Go::Intersector.

29.240.3.12 virtual int Go::IntersectorAlgPar::performInterception ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.13 virtual void Go::IntersectorAlgPar::print_objs ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.14 virtual void Go::IntersectorAlgPar::printDebugInfo ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.15 virtual int Go::IntersectorAlgPar::repairIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 141 of file IntersectorAlgPar.h.

29.240.3.16 virtual int Go::IntersectorAlgPar::simpleCase ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.3.17 virtual int Go::IntersectorAlgPar::updateIntersections ( ) [protected], [virtual]

Implements Go::Intersector.

29.240.4 Member Data Documentation

29.240.4.1 shared_ptr<AlgObjectInt> Go::IntersectorAlgPar::algobj_int_ [protected]

Definition at line 113 of file IntersectorAlgPar.h.

29.240.4.2 shared_ptr<IntersectorFuncConst> Go::IntersectorAlgPar::int_func_const_ [protected]

Definition at line 119 of file IntersectorAlgPar.h.

29.240.4.3 shared_ptr<ParamObjectInt> Go::IntersectorAlgPar::param_int_ [protected]

Definition at line 111 of file IntersectorAlgPar.h.

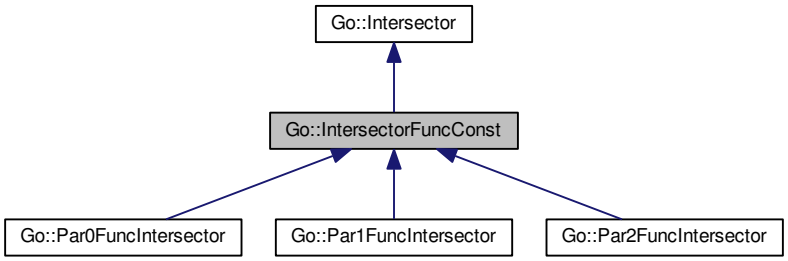
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectorAlgPar.h

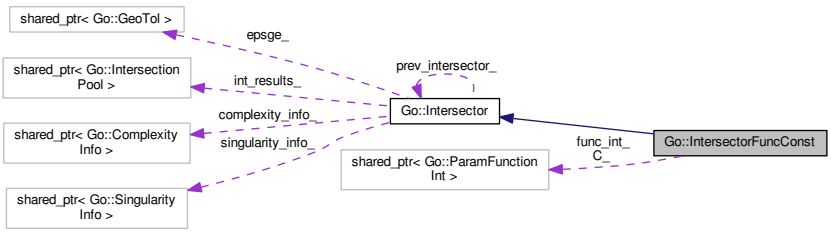
29.241 Go::IntersectorFuncConst Class Reference

`#include <IntersectorFuncConst.h>`

Inheritance diagram for Go::IntersectorFuncConst:



Collaboration diagram for Go::IntersectorFuncConst:



Public Member Functions

- IntersectorFuncConst (shared_ptr< ParamFunctionInt > func, shared_ptr< ParamFunctionInt > C, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~IntersectorFuncConst ()

  Destructor.

Protected Member Functions

- virtual void print_objs ()
- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamFunctionInt > obj1, shared_ptr< ParamFunctionInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)=0
- virtual int getBoundaryIntersections ()
- virtual int performInterception ()
- virtual int simpleCase ()
- virtual bool isLinear ()
- virtual bool complexityReduced ()
- virtual void handleComplexity ()
- virtual int checkCoincidence ()=0
- virtual void microCase ()=0
- virtual int updateIntersections ()=0
- virtual int linearCase ()
- virtual int doSubdivide ()=0
- virtual void printDebugInfo ()

Protected Attributes

- shared_ptr< ParamFunctionInt > func_int_
- shared_ptr< ParamFunctionInt > C_

Friends

- class IntersectorAlgPar

29.241.1 Detailed Description

This class is an interface class for finding the intersection between a parametric function (with range R) and a constant.

Definition at line 56 of file IntersectorFuncConst.h.

29.241.2 Constructor & Destructor Documentation

29.241.2.1 Go::IntersectorFuncConst::IntersectorFuncConst (shared_ptr< ParamFunctionInt > *func*, shared_ptr< ParamFunctionInt > *C*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

func	of type ParamFunctionInt.
C	of type Param0FunctionInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.241.2.2 virtual Go::IntersectorFuncConst::~IntersectorFuncConst ( ) [virtual]

Destructor.

29.241.3 Member Function Documentation

29.241.3.1 virtual int Go::IntersectorFuncConst::checkCoincidence ( ) [protected], [pure virtual]

Implements Go::Intersector.

Implemented in Go::Par1FuncIntersector, Go::Par2FuncIntersector, and Go::Par0FuncIntersector.

29.241.3.2 virtual bool Go::IntersectorFuncConst::complexityReduced ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 116 of file IntersectorFuncConst.h.

29.241.3.3 virtual int Go::IntersectorFuncConst::doSubdivide ( ) [protected], [pure virtual]

Implements Go::Intersector.

Implemented in Go::Par2FuncIntersector, Go::Par1FuncIntersector, and Go::Par0FuncIntersector.

29.241.3.4 virtual int Go::IntersectorFuncConst::getBoundaryIntersections ( ) [protected], [virtual]

Implements Go::Intersector.

29.241.3.5 virtual void Go::IntersectorFuncConst::handleComplexity ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 122 of file IntersectorFuncConst.h.

29.241.3.6 virtual bool Go::IntersectorFuncConst::isLinear ( ) [protected], [virtual]

Implements Go::Intersector.

29.241.3.7 virtual int Go::IntersectorFuncConst::linearCase ( ) [protected], [virtual]

Implements Go::Intersector.

29.241.3.8 virtual shared_ptr<Intersector> Go::IntersectorFuncConst::lowerOrderIntersector (shared_ptr< ParamFunctionInt > *obj1*, shared_ptr< ParamFunctionInt > *obj2*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [pure virtual]

Implemented in Go::Par1FuncIntersector, Go::Par2FuncIntersector, and Go::Par0FuncIntersector.

29.241.3.9 virtual void Go::IntersectorFuncConst::microCase ( ) [protected], [pure virtual]

Implements Go::Intersector.

Implemented in Go::Par1FuncIntersector, Go::Par2FuncIntersector, and Go::Par0FuncIntersector.

29.241.3.10 virtual int Go::IntersectorFuncConst::performInterception ( ) [protected], [virtual]

Implements Go::Intersector.

29.241.3.11 virtual void Go::IntersectorFuncConst::print_objs ( ) [protected], [virtual]

Implements Go::Intersector.

29.241.3.12 virtual void Go::IntersectorFuncConst::printDebugInfo ( ) [protected], [virtual]

Implements Go::Intersector.

29.241.3.13 virtual int Go::IntersectorFuncConst::simpleCase ( ) [protected], [virtual]

Implements Go::Intersector.

29.241.3.14 virtual int Go::IntersectorFuncConst::updateIntersections ( ) [protected], [pure virtual]

Implements Go::Intersector.

Implemented in Go::Par1FuncIntersector, Go::Par2FuncIntersector, and Go::Par0FuncIntersector.

29.241.4 Friends And Related Function Documentation

29.241.4.1 friend class IntersectorAlgPar [friend]

Definition at line 84 of file IntersectorFuncConst.h.

29.241.5 Member Data Documentation

29.241.5.1 shared_ptr<ParamFunctionInt> Go::IntersectorFuncConst::C_ [protected]

Definition at line 89 of file IntersectorFuncConst.h.

29.241.5.2 shared_ptr<ParamFunctionInt> Go::IntersectorFuncConst::func_int_ [protected]

Definition at line 88 of file IntersectorFuncConst.h.

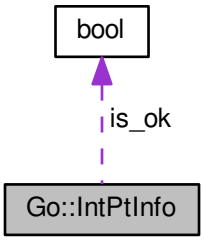
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectorFuncConst.h

29.242 Go::IntPtInfo Struct Reference

`#include <IntersectionPointUtils.h>`

Collaboration diagram for Go::IntPtInfo:



Public Member Functions

- IntPtInfo ()

Public Attributes

- int nneighbours
- SingularityType singularity_type
- IntPtClassification direction
- IntPtLocation location
- bool is_ok

29.242.1 Detailed Description

Struct that holds diagnostic information about an intersection point. Used by IntersectionPool::checkIntersection↩ Points().

Definition at line 108 of file IntersectionPointUtils.h.

29.242.2 Constructor & Destructor Documentation

29.242.2.1 Go::IntPtInfo::IntPtInfo ( ) [inline]

Definition at line 110 of file IntersectionPointUtils.h.

29.242.3 Member Data Documentation

29.242.3.1 IntPtClassification Go::IntPtInfo::direction

Definition at line 114 of file IntersectionPointUtils.h.

29.242.3.2 bool Go::IntPtInfo::is_ok

Definition at line 116 of file IntersectionPointUtils.h.

29.242.3.3 IntPtLocation Go::IntPtInfo::location

Definition at line 115 of file IntersectionPointUtils.h.

29.242.3.4 int Go::IntPtInfo::nneighbours

Definition at line 112 of file IntersectionPointUtils.h.

29.242.3.5 SingularityType Go::IntPtInfo::singularity_type

Definition at line 113 of file IntersectionPointUtils.h.

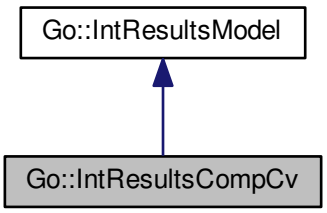
The documentation for this struct was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionPointUtils.h

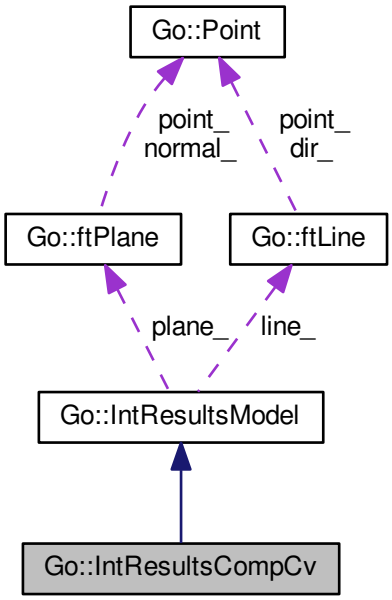
29.243 Go::IntResultsCompCv Class Reference

`#include <IntResultsCompCv.h>`

Inheritance diagram for Go::IntResultsCompCv:



Collaboration diagram for Go::IntResultsCompCv:



Public Member Functions

- IntResultsCompCv (CompositeCurve *compcv, const ftLine &line)

  Constructor.
- IntResultsCompCv (CompositeCurve *compcv, const ftPlane &plane)

Constructor.

- ~IntResultsCompCv ()

  Destructor.
- void addIntPt (shared_ptr< ParamCurve > cv, double *parval)

  Add an intersection point.
- void addIntCv (shared_ptr< ParamCurve > cv, double *startpar, double *endpar)

  Add an intersection curve.
- virtual bool hasIntCurves () const

  Check if any intersection curves are found.
- virtual int nmbCurveSegments () const

  Return the number of intersection curve segments.
- virtual bool hasIntPoints () const

  Check if any intersection point are found.
- virtual int nmbIntPoints () const

  Return the number of intersection points.
- void getIntersectionPoints (std::vector< PointOnCurve > &int_points) const

  Fetch all intersection points.
- void getIntersectionCurves (std::vector< std::pair< PointOnCurve, PointOnCurve > > &int_crvs) const

  Fetch all intersection curves.
- virtual bool hasIntersections () const

  Check if any intersections are found.
- virtual void tesselate (std::vector< shared_ptr< LineStrip > > &meshes, PointCloud3D &points) const
- virtual void tesselate (int resolution, std::vector< shared_ptr< LineStrip > > &meshes, PointCloud3D &points) const
- virtual void tesselate (double density, std::vector< shared_ptr< LineStrip > > &meshes, PointCloud3D &points) const

  Tesselate with respect to a given density.

Additional Inherited Members

29.243.1 Detailed Description

Storage of results from intersection operations related to a CompositeCurve

Definition at line 58 of file IntResultsCompCv.h.

29.243.2 Constructor & Destructor Documentation

29.243.2.1 Go::IntResultsCompCv::IntResultsCompCv (CompositeCurve * *compcv,* const ftLine & *line*)

Constructor.

29.243.2.2 Go::IntResultsCompCv::IntResultsCompCv (CompositeCurve * *compcv,* const ftPlane & *plane*)

Constructor.

29.243.2.3 Go::IntResultsCompCv::~IntResultsCompCv ( )

Destructor.

29.243.3 Member Function Documentation

29.243.3.1 void Go::IntResultsCompCv::addIntCv (shared_ptr< ParamCurve > *cv*, double * *startpar*, double * *endpar*)

Add an intersection curve.

29.243.3.2 void Go::IntResultsCompCv::addIntPt (shared_ptr< ParamCurve > *cv*, double * *parval*)

Add an intersection point.

29.243.3.3 void Go::IntResultsCompCv::getIntersectionCurves (std::vector< std::pair< PointOnCurve, PointOnCurve > > & *int_crvs*) const

Fetch all intersection curves.

29.243.3.4 void Go::IntResultsCompCv::getIntersectionPoints (std::vector< PointOnCurve > & *int_points*) const

Fetch all intersection points.

29.243.3.5 virtual bool Go::IntResultsCompCv::hasIntCurves ( ) const [inline], [virtual]

Check if any intersection curves are found.

Implements Go::IntResultsModel.

Definition at line 80 of file IntResultsCompCv.h.

29.243.3.6 virtual bool Go::IntResultsCompCv::hasIntersections ( ) const [inline], [virtual]

Check if any intersections are found.

Implements Go::IntResultsModel.

Definition at line 111 of file IntResultsCompCv.h.

29.243.3.7 virtual bool Go::IntResultsCompCv::hasIntPoints ( ) const [inline], [virtual]

Check if any intersection point are found.

Implements Go::IntResultsModel.

Definition at line 92 of file IntResultsCompCv.h.

29.243.3.8 virtual int Go::IntResultsCompCv::nmbCurveSegments ( ) const [inline], [virtual]

Return the number of intersection curve segments.

Implements Go::IntResultsModel.

Definition at line 86 of file IntResultsCompCv.h.

29.243.3.9 virtual int Go::IntResultsCompCv::nmbIntPoints ( ) const [inline], [virtual]

Return the number of intersection points.

Implements Go::IntResultsModel.

Definition at line 98 of file IntResultsCompCv.h.

29.243.3.10 virtual void Go::IntResultsCompCv::tesselate (std::vector< shared_ptr< LineStrip > > & *meshes,* PointCloud3D & *points*) const [virtual]

Tesselation Tesselate with respect to a default value

Implements Go::IntResultsModel.

29.243.3.11 virtual void Go::IntResultsCompCv::tesselate (int *resolution,* std::vector< shared_ptr< LineStrip > > & *meshes,* PointCloud3D & *points*) const [virtual]

Tesselate with respect to a given resolution, the same for each intersection curve

Implements Go::IntResultsModel.

29.243.3.12 virtual void Go::IntResultsCompCv::tesselate (double *density,* std::vector< shared_ptr< LineStrip > > & *meshes,* PointCloud3D & *points*) const [virtual]

Tesselate with respect to a given density.

Implements Go::IntResultsModel.

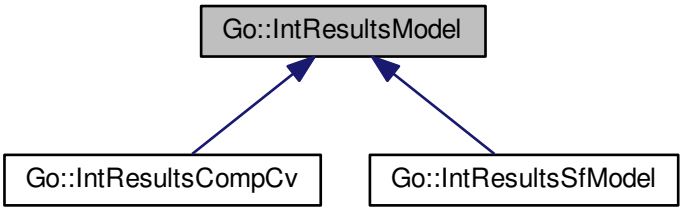
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/IntResultsCompCv.h

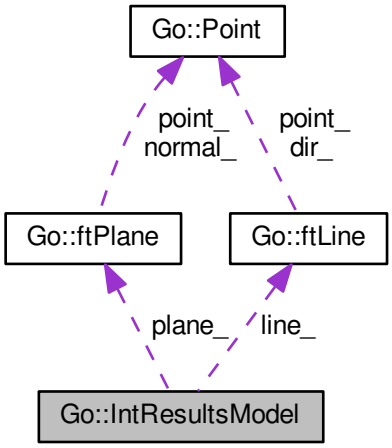
29.244 Go::IntResultsModel Class Reference

`#include <IntResultsModel.h>`

Inheritance diagram for Go::IntResultsModel:



Collaboration diagram for Go::IntResultsModel:



Public Member Functions

- IntResultsModel (IntersectionType type)
  Constructor.
- ~IntResultsModel ()
  Destructor.
- void addPlaneInfo (const ftPlane &plane)
  Plane involved in the intersection.
- void addLineInfo (const ftLine &line)

Line involved in the intersection.

- virtual bool hasIntCurves () const =0

  Check if any intersection curves are found.
- virtual int nmbCurveSegments () const =0

  Return the number of intersection curve segments.
- virtual bool hasIntPoints () const =0

  Check if any intersection point are found.
- virtual int nmbIntPoints () const =0

  Return the number of intersection points.
- virtual bool hasIntersections () const =0

  Check if any intersections are found.
- virtual void tesselate (std::vector< shared_ptr< LineStrip > > &meshes, PointCloud3D &points) const =0
- virtual void tesselate (int resolution, std::vector< shared_ptr< LineStrip > > &meshes, PointCloud3D &points) const =0
- virtual void tesselate (double density, std::vector< shared_ptr< LineStrip > > &meshes, PointCloud3D &points) const =0

  Tesselate with respect to a given density.

Protected Attributes

- IntersectionType type_
- ftLine line_
- ftPlane plane_
- int numpar_

29.244.1 Detailed Description

Storage of results from intersection operations related to a CompositeModel

Definition at line 72 of file IntResultsModel.h.

29.244.2 Constructor & Destructor Documentation

29.244.2.1 Go::IntResultsModel::IntResultsModel (IntersectionType *type*)

Constructor.

29.244.2.2 Go::IntResultsModel::~IntResultsModel ( ) [inline]

Destructor.

Definition at line 80 of file IntResultsModel.h.

29.244.3 Member Function Documentation

29.244.3.1 void Go::IntResultsModel::addLineInfo (const ftLine & *line*) [inline]

Line involved in the intersection.

Definition at line 90 of file IntResultsModel.h.

29.244.3.2 void Go::IntResultsModel::addPlaneInfo (const ftPlane & *plane*) [inline]

Plane involved in the intersection.

Definition at line 84 of file IntResultsModel.h.

29.244.3.3 virtual bool Go::IntResultsModel::hasIntCurves ( ) const [pure virtual]

Check if any intersection curves are found.

Implemented in Go::IntResultsSfModel, and Go::IntResultsCompCv.

29.244.3.4 virtual bool Go::IntResultsModel::hasIntersections ( ) const [pure virtual]

Check if any intersections are found.

Implemented in Go::IntResultsSfModel, and Go::IntResultsCompCv.

29.244.3.5 virtual bool Go::IntResultsModel::hasIntPoints ( ) const [pure virtual]

Check if any intersection point are found.

Implemented in Go::IntResultsSfModel, and Go::IntResultsCompCv.

29.244.3.6 virtual int Go::IntResultsModel::nmbCurveSegments ( ) const [pure virtual]

Return the number of intersection curve segments.

Implemented in Go::IntResultsSfModel, and Go::IntResultsCompCv.

29.244.3.7 virtual int Go::IntResultsModel::nmbIntPoints ( ) const [pure virtual]

Return the number of intersection points.

Implemented in Go::IntResultsSfModel, and Go::IntResultsCompCv.

29.244.3.8 virtual void Go::IntResultsModel::tesselate (std::vector< shared_ptr< LineStrip > > & *meshes*, PointCloud3D & *points*) const [pure virtual]

Tesselation Tesselate with respect to a default value

Implemented in Go::IntResultsSfModel, and Go::IntResultsCompCv.

29.244.3.9 virtual void Go::IntResultsModel::tesselate (int *resolution,* std::vector< shared_ptr< LineStrip > > & *meshes,* PointCloud3D & *points*) const [pure virtual]

Tesselate with respect to a given resolution, the same for each intersection curve

Implemented in Go::IntResultsSfModel, and Go::IntResultsCompCv.

29.244.3.10 virtual void Go::IntResultsModel::tesselate (double *density,* std::vector< shared_ptr< LineStrip > > & *meshes,* PointCloud3D & *points*) const [pure virtual]

Tesselate with respect to a given density.

Implemented in Go::IntResultsSfModel, and Go::IntResultsCompCv.

29.244.4 Member Data Documentation

29.244.4.1 ftLine Go::IntResultsModel::line_ [protected]

Definition at line 128 of file IntResultsModel.h.

29.244.4.2 int Go::IntResultsModel::numpar_ [protected]

Definition at line 130 of file IntResultsModel.h.

29.244.4.3 ftPlane Go::IntResultsModel::plane_ [protected]

Definition at line 129 of file IntResultsModel.h.

29.244.4.4 IntersectionType Go::IntResultsModel::type_ [protected]

Definition at line 127 of file IntResultsModel.h.

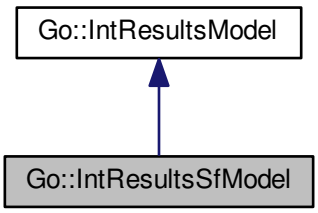
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/IntResultsModel.h

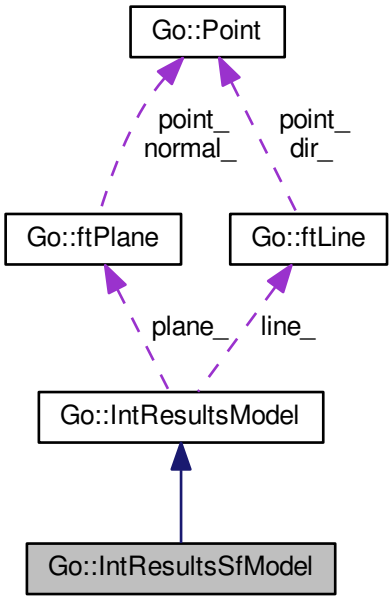
29.245 Go::IntResultsSfModel Class Reference

`#include <IntResultsSfModel.h>`

Inheritance diagram for Go::IntResultsSfModel:



Collaboration diagram for Go::IntResultsSfModel:



Public Member Functions

- IntResultsSfModel (SurfaceModel *sfmodel, const ftLine &line)

  Constructor.
- IntResultsSfModel (SurfaceModel *sfmodel, const ftPlane &plane)

Constructor.

- ~IntResultsSfModel ()

  Destructor.
- void addIntPts (std::vector< ftPoint > &intpts)

  Add an intersection point.
- void addIntCvs (ftCurve &cvs)

  Add an intersection curve.
- virtual bool hasIntCurves () const

  Check if any intersection curves are found.
- virtual int nmbCurveSegments () const

  Return the number of intersection curve segments.
- const ftCurve & getIntersectionCurves ()

  Fetch all intersection curve segments joined in one curve.
- virtual bool hasIntPoints () const

  Check if any intersection points are found.
- int nmbIntPoints () const

  Return the number of intersection points.
- std::vector< ftPoint > & getIntersectionPoints ()

  Fetch all intersection points.
- virtual bool hasIntersections () const

  Check if any intersections are found.
- virtual void tesselate (std::vector< shared_ptr< LineStrip > > &meshes, PointCloud3D &points) const
- virtual void tesselate (int resolution, std::vector< shared_ptr< LineStrip > > &meshes, PointCloud3D &points) const
- virtual void tesselate (double density, std::vector< shared_ptr< LineStrip > > &meshes, PointCloud3D &points) const

  Tesselate with respect to a given density.

Additional Inherited Members

29.245.1 Detailed Description

Storage of results from intersection operations related to a SurfaceModel

Definition at line 59 of file IntResultsSfModel.h.

29.245.2 Constructor & Destructor Documentation

29.245.2.1 Go::IntResultsSfModel::IntResultsSfModel (SurfaceModel * *sfmodel,* const ftLine & *line*)

Constructor.

29.245.2.2 Go::IntResultsSfModel::IntResultsSfModel (SurfaceModel * *sfmodel,* const ftPlane & *plane*)

Constructor.

29.245.2.3 Go::IntResultsSfModel::~IntResultsSfModel ( )

Destructor.

29.245.3 Member Function Documentation

29.245.3.1 void Go::IntResultsSfModel::addIntCvs (ftCurve & *cvs*)

Add an intersection curve.

29.245.3.2 void Go::IntResultsSfModel::addIntPts (std::vector< ftPoint > & *intpts*)

Add an intersection point.

29.245.3.3 const ftCurve& Go::IntResultsSfModel::getIntersectionCurves ( ) [inline]

Fetch all intersection curve segments joined in one curve.

Definition at line 93 of file IntResultsSfModel.h.

29.245.3.4 std::vector<ftPoint>& Go::IntResultsSfModel::getIntersectionPoints ( ) [inline]

Fetch all intersection points.

Definition at line 111 of file IntResultsSfModel.h.

29.245.3.5 virtual bool Go::IntResultsSfModel::hasIntCurves ( ) const [inline], [virtual]

Check if any intersection curves are found.

Implements Go::IntResultsModel.

Definition at line 81 of file IntResultsSfModel.h.

29.245.3.6 virtual bool Go::IntResultsSfModel::hasIntersections ( ) const [inline], [virtual]

Check if any intersections are found.

Implements Go::IntResultsModel.

Definition at line 117 of file IntResultsSfModel.h.

29.245.3.7 virtual bool Go::IntResultsSfModel::hasIntPoints ( ) const [inline], [virtual]

Check if any intersection points are found.

Implements Go::IntResultsModel.

Definition at line 99 of file IntResultsSfModel.h.

29.245.3.8 virtual int Go::IntResultsSfModel::nmbCurveSegments ( ) const [inline], [virtual]

Return the number of intersection curve segments.

Implements Go::IntResultsModel.

Definition at line 87 of file IntResultsSfModel.h.

29.245.3.9 int Go::IntResultsSfModel::nmbIntPoints ( ) const [inline], [virtual]

Return the number of intersection points.

Implements Go::IntResultsModel.

Definition at line 105 of file IntResultsSfModel.h.

29.245.3.10 virtual void Go::IntResultsSfModel::tesselate (std::vector< shared_ptr< LineStrip > > & *meshes*, PointCloud3D & *points*) const [virtual]

Tesselation Tesselate with respect to a default value

Implements Go::IntResultsModel.

29.245.3.11 virtual void Go::IntResultsSfModel::tesselate (int *resolution*, std::vector< shared_ptr< LineStrip > > & *meshes*, PointCloud3D & *points*) const [virtual]

Tesselate with respect to a given resolution, the same for each intersection curve

Implements Go::IntResultsModel.

29.245.3.12 virtual void Go::IntResultsSfModel::tesselate (double *density*, std::vector< shared_ptr< LineStrip > > & *meshes*, PointCloud3D & *points*) const [virtual]

Tesselate with respect to a given density.

Implements Go::IntResultsModel.

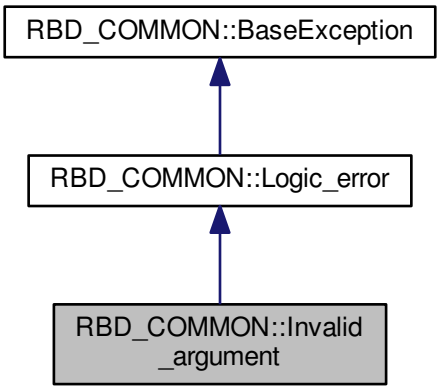
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/IntResultsSfModel.h

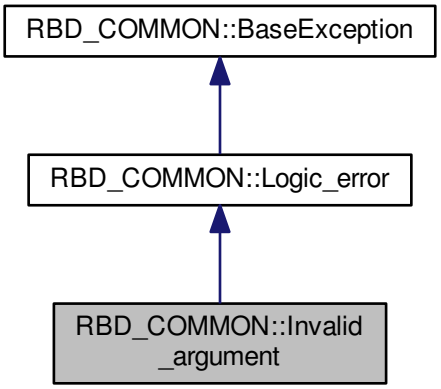
29.246 RBD_COMMON::Invalid_argument Class Reference

`#include <myexcept.h>`

Inheritance diagram for RBD_COMMON::Invalid_argument:



Collaboration diagram for RBD_COMMON::Invalid_argument:



- static unsigned long Select
- Invalid_argument (const char *a_what=0)

Additional Inherited Members

29.246.1 Detailed Description

Definition at line 378 of file myexcept.h.

29.246.2 Constructor & Destructor Documentation

29.246.2.1 Invalid_argument::Invalid_argument (const char * *a_what* = 0)

Definition at line 419 of file myexcept.cpp.

29.246.3 Member Data Documentation

29.246.3.1 unsigned long Invalid_argument::Select [static]

Definition at line 381 of file myexcept.h.

The documentation for this class was generated from the following files:

- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

29.247 Go::InverseFactorial< T, N > Struct Template Reference

`#include <Factorial.h>`

Static Public Member Functions

- static T val ()

29.247.1 Detailed Description

template<typename T, int N>
struct Go::InverseFactorial< T, N >

Compute the inverse of the factorial of a given integer N, where T is typically 'float' or 'double'.

Definition at line 67 of file Factorial.h.

29.247.2 Member Function Documentation

29.247.2.1 template<typename T , int N> static T Go::InverseFactorial< T, N >::val ( ) [inline], [static]

Definition at line 68 of file Factorial.h.

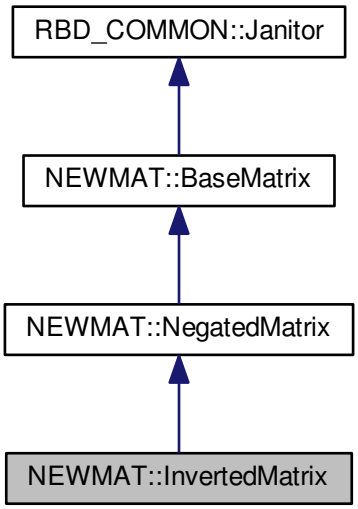
The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/utils/Factorial.h

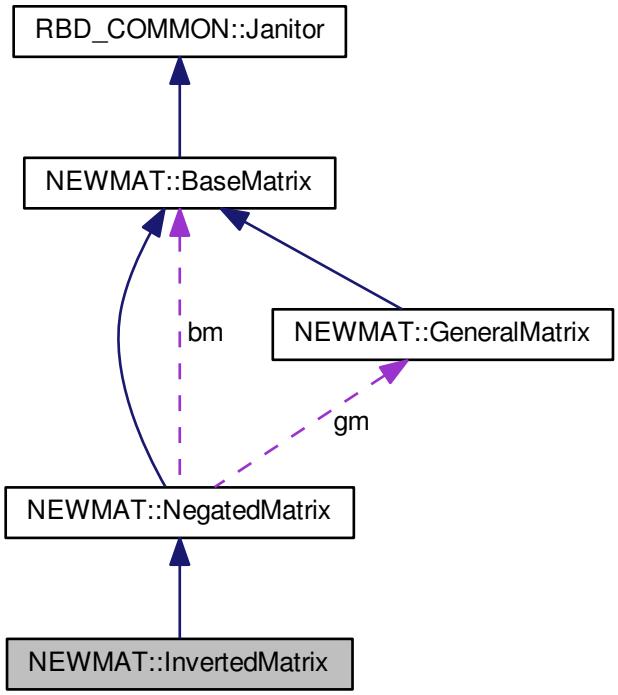
29.248 NEWMAT::InvertedMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::InvertedMatrix:



Collaboration diagram for NEWMAT::InvertedMatrix:



Public Member Functions

- ~InvertedMatrix ()
- SolvedMatrix operator* (const BaseMatrix &) const
- ScaledMatrix operator* (Real t) const
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix

Additional Inherited Members

29.248.1 Detailed Description

Definition at line 1402 of file newmat.h.

29.248.2 Constructor & Destructor Documentation

29.248.2.1 NEWMAT::InvertedMatrix::~InvertedMatrix ( ) [inline]

Definition at line 1406 of file newmat.h.

29.248.3 Member Function Documentation

29.248.3.1 MatrixBandWidth InvertedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 474 of file newmat4.cpp.

29.248.3.2 GeneralMatrix * InvertedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 491 of file newmat7.cpp.

29.248.3.3 SolvedMatrix NEWMAT::InvertedMatrix::operator* (const BaseMatrix &) const

29.248.3.4 ScaledMatrix NEWMAT::InvertedMatrix::operator* (Real *t*) const [inline]

Definition at line 1409 of file newmat.h.

29.248.4 Friends And Related Function Documentation

29.248.4.1 friend class BaseMatrix [friend]

Definition at line 1414 of file newmat.h.

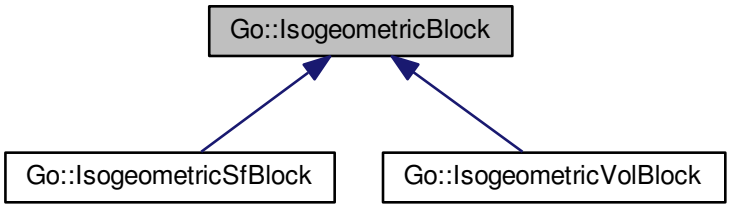
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp

29.249 Go::IsogeometricBlock Class Reference

`#include <IsogeometricBlock.h>`

Inheritance diagram for Go::IsogeometricBlock:



Public Member Functions

- IsogeometricBlock (IsogeometricModel *model)
- virtual ~IsogeometricBlock ()
- virtual IsogeometricModel * model ()
- virtual IsogeometricSfBlock * asIsogeometricSfBlock ()
- virtual IsogeometricVolBlock * asIsogeometricVolBlock ()
- virtual int nmbOfNeighbours () const =0
- virtual IsogeometricBlock * getNeighbour (int bd_nmb) const =0
- virtual bool isNeighbour (IsogeometricBlock *other) const =0
- virtual int nmbCoefs () const =0
- virtual int nmbCoefs (int pardir) const
- virtual int degree (int pardir) const
- virtual std::vector< double > knots (int pardir) const
- virtual std::vector< double > distinctKnots (int pardir) const
- virtual BsplineBasis basis (int pardir) const =0
- virtual void refineGeometry (std::vector< double > newknots, int pardir)=0
- virtual void refineGeometry (const BsplineBasis &other_basis, int pardir)=0
- virtual void increaseGeometryDegree (int new_degree, int pardir)=0
- virtual void erasePreEvaluatedBasisFunctions ()=0
- virtual int getNmbOfBoundaryConditions () const =0
- virtual int getNmbOfPointBdConditions () const =0
- virtual tpTolerances getTolerances () const

29.249.1 Detailed Description

Definition at line 58 of file IsogeometricBlock.h.

29.249.2 Constructor & Destructor Documentation

29.249.2.1 Go::IsogeometricBlock::IsogeometricBlock (IsogeometricModel * *model*) [inline]

Definition at line 62 of file IsogeometricBlock.h.

29.249.2.2 virtual Go::IsogeometricBlock::~IsogeometricBlock ( ) [virtual]

29.249.3 Member Function Documentation

29.249.3.1 virtual IsogeometricSfBlock* Go::IsogeometricBlock::asIsogeometricSfBlock ( ) [virtual]

Reimplemented in Go::IsogeometricSfBlock.

29.249.3.2 virtual IsogeometricVolBlock* Go::IsogeometricBlock::asIsogeometricVolBlock ( ) [virtual]

Reimplemented in Go::IsogeometricVolBlock.

29.249.3.3 virtual BsplineBasis Go::IsogeometricBlock::basis (int *pardir*) const [pure virtual]

Implemented in Go::IsogeometricSfBlock, and Go::IsogeometricVolBlock.

29.249.3.4 virtual int Go::IsogeometricBlock::degree (int *pardir*) const [virtual]

29.249.3.5 virtual std::vector<double> Go::IsogeometricBlock::distinctKnots (int *pardir*) const [virtual]

29.249.3.6 virtual void Go::IsogeometricBlock::erasePreEvaluatedBasisFunctions ( ) [pure virtual]

Implemented in Go::IsogeometricVolBlock, and Go::IsogeometricSfBlock.

29.249.3.7 virtual IsogeometricBlock* Go::IsogeometricBlock::getNeighbour (int *bd_nmb*) const [pure virtual]

Implemented in Go::IsogeometricSfBlock, and Go::IsogeometricVolBlock.

29.249.3.8 virtual int Go::IsogeometricBlock::getNmbOfBoundaryConditions ( ) const [pure virtual]

Implemented in Go::IsogeometricVolBlock, and Go::IsogeometricSfBlock.

29.249.3.9 virtual int Go::IsogeometricBlock::getNmbOfPointBdConditions ( ) const [pure virtual]

Implemented in Go::IsogeometricVolBlock, and Go::IsogeometricSfBlock.

29.249.3.10 virtual tpTolerances Go::IsogeometricBlock::getTolerances ( ) const [virtual]

29.249.3.11 virtual void Go::IsogeometricBlock::increaseGeometryDegree (int *new_degree,* int *pardir*) [pure virtual]

Implemented in Go::IsogeometricVolBlock, and Go::IsogeometricSfBlock.

29.249.3.12 virtual bool Go::IsogeometricBlock::isNeighbour (IsogeometricBlock * *other*) const [pure virtual]

Implemented in Go::IsogeometricSfBlock, and Go::IsogeometricVolBlock.

29.249.3.13 virtual std::vector<double> Go::IsogeometricBlock::knots (int *pardir*) const [virtual]

29.249.3.14 virtual IsogeometricModel* Go::IsogeometricBlock::model ( ) [inline], [virtual]

Definition at line 71 of file IsogeometricBlock.h.

29.249.3.15 virtual int Go::IsogeometricBlock::nmbCoefs ( ) const [pure virtual]

Implemented in Go::IsogeometricSfBlock, and Go::IsogeometricVolBlock.

29.249.3.16 virtual int Go::IsogeometricBlock::nmbCoefs (int *pardir*) const [virtual]

29.249.3.17 virtual int Go::IsogeometricBlock::nmbOfNeighbours ( ) const [pure virtual]

Implemented in Go::IsogeometricSfBlock, and Go::IsogeometricVolBlock.

29.249.3.18 virtual void Go::IsogeometricBlock::refineGeometry (std::vector< double > *newknots,* int *pardir*) [pure virtual]

Implemented in Go::IsogeometricVolBlock, and Go::IsogeometricSfBlock.

29.249.3.19 virtual void Go::IsogeometricBlock::refineGeometry (const BsplineBasis & *other_basis,* int *pardir*) [pure virtual]

Implemented in Go::IsogeometricVolBlock, and Go::IsogeometricSfBlock.

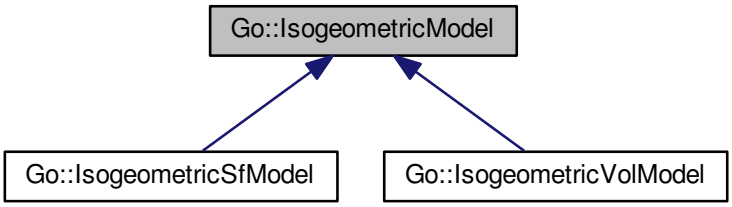
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/IsogeometricBlock.h

29.250 Go::IsogeometricModel Class Reference

`#include <IsogeometricModel.h>`

Inheritance diagram for Go::IsogeometricModel:



Public Member Functions

- IsogeometricModel (tpTolerances toptol)
- virtual ~IsogeometricModel ()
- virtual int getNmbOfBoundaries () const =0
- virtual void setMinimumDegree (int degree, int solutionspace_idx)=0
- virtual void updateSolutionSplineSpace ()=0
- virtual tpTolerances getTolerances () const
- virtual void setTolerances (tpTolerances t)

29.250.1 Detailed Description

Definition at line 51 of file IsogeometricModel.h.

29.250.2 Constructor & Destructor Documentation

29.250.2.1 Go::IsogeometricModel::IsogeometricModel (tpTolerances *toptol*) [inline]

Definition at line 55 of file IsogeometricModel.h.

29.250.2.2 virtual Go::IsogeometricModel::~IsogeometricModel ( ) [virtual]

29.250.3 Member Function Documentation

29.250.3.1 virtual int Go::IsogeometricModel::getNmbOfBoundaries ( ) const [pure virtual]

Implemented in Go::IsogeometricSfModel, and Go::IsogeometricVolModel.

29.250.3.2 virtual tpTolerances Go::IsogeometricModel::getTolerances ( ) const [inline], [virtual]

Definition at line 73 of file IsogeometricModel.h.

29.250.3.3 virtual void Go::IsogeometricModel::setMinimumDegree (int *degree*, int *solutionspace_idx*) [pure virtual]

Implemented in Go::IsogeometricSfModel, and Go::IsogeometricVolModel.

29.250.3.4 virtual void Go::IsogeometricModel::setTolerances (tpTolerances *t*) [inline], [virtual]

Definition at line 77 of file IsogeometricModel.h.

29.250.3.5 virtual void Go::IsogeometricModel::updateSolutionSplineSpace ( ) [pure virtual]

Implemented in Go::IsogeometricSfModel, and Go::IsogeometricVolModel.

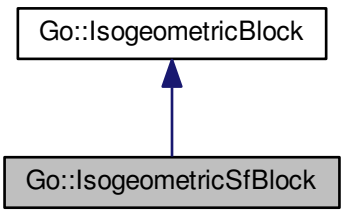
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/IsogeometricModel.h

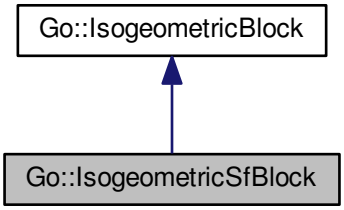
29.251 Go::IsogeometricSfBlock Class Reference

`#include <IsogeometricSfBlock.h>`

Inheritance diagram for Go::IsogeometricSfBlock:



Collaboration diagram for Go::IsogeometricSfBlock:



Public Member Functions

- IsogeometricSfBlock (IsogeometricModel *model, shared_ptr< SplineSurface > geom_sf, std::vector< int > solution_space_dimension, int index)
- virtual ~IsogeometricSfBlock ()
- virtual IsogeometricSfBlock * asIsogeometricSfBlock ()
- void addNeighbour (shared_ptr< IsogeometricSfBlock > neighbour, int edge_nmb_this, int edge_nmb_other, bool equ_orient)
- virtual int nmbOfNeighbours () const
- virtual IsogeometricSfBlock * getNeighbour (int edge_nmb) const
- virtual bool isNeighbour (IsogeometricBlock *other) const
- virtual int nmbCoefs () const
- virtual BsplineBasis basis (int pardir) const
- shared_ptr< SplineCurve > getGeomBoundaryCurve (int edge_number) const
- double getParamOnBdCurve (int edge_number, const Point &position) const
- bool geomIsDegenerate (std::vector< int > &degen_bd, double epsge)
- void getDegenEnumeration (std::vector< int > &degen_bd, std::vector< std::vector< int > > &enumeration, double epsge)
- bool geomIsPeriodic (int per[], double epsge)
- bool getPeriodicEnumeration (int pardir, std::vector< std::pair< int, int > > &enumeration)
- virtual void refineGeometry (std::vector< double > newknots, int pardir)
- virtual void refineGeometry (const BsplineBasis &other_basis, int pardir)
- virtual void increaseGeometryDegree (int new_degree, int pardir)
- void updateGeometry (shared_ptr< SplineCurve > new_boundary, int edge_number)
- virtual void erasePreEvaluatedBasisFunctions ()
- virtual int getNmbOfBoundaryConditions () const
- void getEdgeBoundaryConditions (int edge_number, std::vector< shared_ptr< SfBoundaryCondition > > &bd_cond) const
- virtual int getNmbOfPointBdConditions () const
- void getEdgePointBdConditions (int edge_number, std::vector< shared_ptr< SfPointBdCond > > &bd_cond) const
- shared_ptr< SfSolution > getSolutionSpace (int solution_index)
- shared_ptr< SplineSurface > surface () const
- virtual void setMinimumDegree (int degree, int solutionspace_idx)
- virtual bool updateSolutionSplineSpace (int solutionspace_idx)
- int nmbSolutionSpaces () const
- int getEdgeOrientation (shared_ptr< ParamCurve > crv, double tol)
- void getNeighbourInfo (IsogeometricSfBlock *other, std::vector< int > &edges, std::vector< int > &edges_other, std::vector< bool > &equal_oriented)

29.251.1 Detailed Description

Definition at line 65 of file IsogeometricSfBlock.h.

29.251.2 Constructor & Destructor Documentation

29.251.2.1 Go::IsogeometricSfBlock::IsogeometricSfBlock (**IsogeometricModel** * *model,* shared_ptr< **SplineSurface** > *geom_sf,* std::vector< int > *solution_space_dimension,* int *index*)

29.251.2.2 virtual Go::IsogeometricSfBlock::~IsogeometricSfBlock ( ) [virtual]

29.251.3 Member Function Documentation

29.251.3.1 void Go::IsogeometricSfBlock::addNeighbour (shared_ptr< **IsogeometricSfBlock** > *neighbour,* int *edge_nmb_this,* int *edge_nmb_other,* **bool** *equ_orient*)

29.251.3.2 virtual **IsogeometricSfBlock*** Go::IsogeometricSfBlock::asIsogeometricSfBlock ( ) [virtual]

Reimplemented from Go::IsogeometricBlock.

29.251.3.3 virtual **BsplineBasis** Go::IsogeometricSfBlock::basis (int *pardir*) const [virtual]

Implements Go::IsogeometricBlock.

29.251.3.4 virtual void Go::IsogeometricSfBlock::erasePreEvaluatedBasisFunctions ( ) [virtual]

Implements Go::IsogeometricBlock.

29.251.3.5 **bool** Go::IsogeometricSfBlock::geomIsDegenerate (std::vector< int > & *degen_bd,* **double** *epsge*)

29.251.3.6 **bool** Go::IsogeometricSfBlock::geomIsPeriodic (int *per[ ],* **double** *epsge*)

29.251.3.7 void Go::IsogeometricSfBlock::getDegenEnumeration (std::vector< int > & *degen_bd,* std::vector< std::vector< int > > & *enumeration,* **double** *epsge*)

29.251.3.8 void Go::IsogeometricSfBlock::getEdgeBoundaryConditions (int *edge_number,* std::vector< shared_ptr< **SfBoundaryCondition** > > & *bd_cond*) const

29.251.3.9 int Go::IsogeometricSfBlock::getEdgeOrientation (shared_ptr< **ParamCurve** > *crv,* **double** *tol*)

29.251.3.10 void Go::IsogeometricSfBlock::getEdgePointBdConditions (int *edge_number,* std::vector< shared_ptr< **SfPointBdCond** > > & *bd_cond*) const

29.251.3.11 shared_ptr<**SplineCurve**> Go::IsogeometricSfBlock::getGeomBoundaryCurve (int *edge_number*) const

29.251.3.12 virtual **IsogeometricSfBlock*** Go::IsogeometricSfBlock::getNeighbour (int *edge_nmb*) const [virtual]

Implements Go::IsogeometricBlock.

29.251.3.13 void Go::IsogeometricSfBlock::getNeighbourInfo (IsogeometricSfBlock * *other,* std::vector< int > & *edges,* std::vector< int > & *edges_other,* std::vector< bool > & *equal_oriented*)

29.251.3.14 virtual int Go::IsogeometricSfBlock::getNmbOfBoundaryConditions ( ) const [virtual]

Implements Go::IsogeometricBlock.

29.251.3.15 virtual int Go::IsogeometricSfBlock::getNmbOfPointBdConditions ( ) const [virtual]

Implements Go::IsogeometricBlock.

29.251.3.16 double Go::IsogeometricSfBlock::getParamOnBdCurve (int *edge_number,* const Point & *position*) const

29.251.3.17 bool Go::IsogeometricSfBlock::getPeriodicEnumeration (int *pardir,* std::vector< std::pair< int, int > > & *enumeration*)

29.251.3.18 shared_ptr<SfSolution> Go::IsogeometricSfBlock::getSolutionSpace (int *solution_index*)

29.251.3.19 virtual void Go::IsogeometricSfBlock::increaseGeometryDegree (int *new_degree,* int *pardir*) [virtual]

Implements Go::IsogeometricBlock.

29.251.3.20 virtual bool Go::IsogeometricSfBlock::isNeighbour (IsogeometricBlock * *other*) const [virtual]

Implements Go::IsogeometricBlock.

29.251.3.21 virtual int Go::IsogeometricSfBlock::nmbCoefs ( ) const [virtual]

Implements Go::IsogeometricBlock.

29.251.3.22 virtual int Go::IsogeometricSfBlock::nmbOfNeighbours ( ) const [virtual]

Implements Go::IsogeometricBlock.

29.251.3.23 int Go::IsogeometricSfBlock::nmbSolutionSpaces ( ) const

29.251.3.24 virtual void Go::IsogeometricSfBlock::refineGeometry (std::vector< double > *newknots,* int *pardir*) [virtual]

Implements Go::IsogeometricBlock.

29.251.3.25 virtual void Go::IsogeometricSfBlock::refineGeometry (const BsplineBasis & *other_basis,* int *pardir*) [virtual]

Implements Go::IsogeometricBlock.

29.251.3.26 virtual void Go::IsogeometricSfBlock::setMinimumDegree (int *degree,* int *solutionspace_idx*) [virtual]

29.251.3.27 shared_ptr<SplineSurface> Go::IsogeometricSfBlock::surface ( ) const

29.251.3.28 void Go::IsogeometricSfBlock::updateGeometry (shared_ptr< SplineCurve > *new_boundary,* int *edge_number*)

29.251.3.29 virtual bool Go::IsogeometricSfBlock::updateSolutionSplineSpace (int *solutionspace_idx*) [virtual]

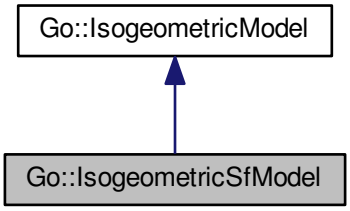
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/IsogeometricSfBlock.h

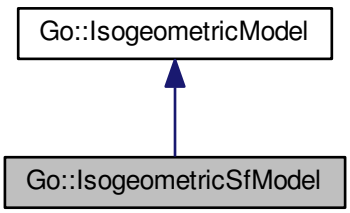
29.252 Go::IsogeometricSfModel Class Reference

`#include <IsogeometricSfModel.h>`

Inheritance diagram for Go::IsogeometricSfModel:



Collaboration diagram for Go::IsogeometricSfModel:



Public Member Functions

- IsogeometricSfModel (shared_ptr< SurfaceModel > sfmodel, std::vector< int > solution_space_dimension)
- virtual ~IsogeometricSfModel ()
- bool addBoundaryCond (int boundary, std::vector< Point > pos, BdConditionType type, BdCondFunctor *fbd, int solutionspace_idx, double *constant_value=0)
- void addDirichletPointBdCond (int boundary, Point &pos, Point &condition_value, int solutionspace_idx)
- virtual int getNmbOfBoundaries () const
- CurveLoop getOuterBoundary () const
- CurveLoop getBoundary (int idx) const
- virtual void setMinimumDegree (int degree, int solutionspace_idx)
- virtual void updateSolutionSplineSpace ()
- virtual void updateSolutionSplineSpace (int solutionspace_idx)
- void getIsogeometricBlocks (std::vector< shared_ptr< IsogeometricSfBlock > > &sfblock)

29.252.1 Detailed Description

Definition at line 63 of file IsogeometricSfModel.h.

29.252.2 Constructor & Destructor Documentation

29.252.2.1 Go::IsogeometricSfModel::IsogeometricSfModel (shared_ptr< SurfaceModel > *sfmodel*, std::vector< int > *solution_space_dimension*)

29.252.2.2 virtual Go::IsogeometricSfModel::~IsogeometricSfModel ( ) [virtual]

29.252.3 Member Function Documentation

29.252.3.1 bool Go::IsogeometricSfModel::addBoundaryCond (int *boundary*, std::vector< Point > *pos*, BdConditionType *type*, BdCondFunctor * *fbd*, int *solutionspace_idx*, double * *constant_value* = 0)

29.252.3.2 void Go::IsogeometricSfModel::addDirichletPointBdCond (int *boundary*, Point & *pos*, Point & *condition_value*, int *solutionspace_idx*)

29.252.3.3 CurveLoop Go::IsogeometricSfModel::getBoundary (int *idx*) const

29.252.3.4 void Go::IsogeometricSfModel::getIsogeometricBlocks (std::vector< shared_ptr< IsogeometricSfBlock > > & *sfblock*)

29.252.3.5 virtual int Go::IsogeometricSfModel::getNmbOfBoundaries ( ) const [virtual]

Implements Go::IsogeometricModel.

29.252.3.6 CurveLoop Go::IsogeometricSfModel::getOuterBoundary ( ) const

29.252.3.7 virtual void Go::IsogeometricSfModel::setMinimumDegree (int *degree*, int *solutionspace_idx*) [virtual]

Implements Go::IsogeometricModel.

29.252.3.8 virtual void Go::IsogeometricSfModel::updateSolutionSplineSpace ( ) [virtual]

Implements Go::IsogeometricModel.

29.252.3.9 virtual void Go::IsogeometricSfModel::updateSolutionSplineSpace (int *solutionspace_idx*) [virtual]

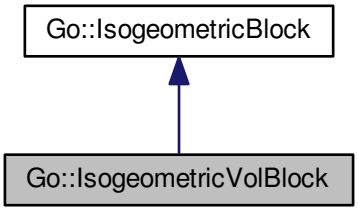
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/IsogeometricSfModel.h

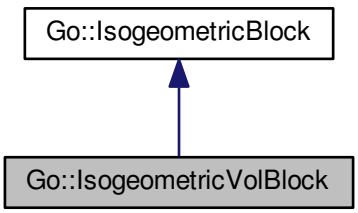
29.253 Go::IsogeometricVolBlock Class Reference

`#include <IsogeometricVolBlock.h>`

Inheritance diagram for Go::IsogeometricVolBlock:



Collaboration diagram for Go::IsogeometricVolBlock:



Public Member Functions

- IsogeometricVolBlock (IsogeometricModel *model, shared_ptr< SplineVolume > geom_vol, std::vector< int > solution_space_dimension, int index)
- virtual ~IsogeometricVolBlock ()
- virtual IsogeometricVolBlock * asIsogeometricVolBlock ()
- void addNeighbour (shared_ptr< IsogeometricVolBlock > neighbour, int face_nmb_this, int face_nmb_other, int orientation, bool same_dir_order)
- virtual int nmbOfNeighbours () const
- IsogeometricVolBlock * getNeighbour (int bd_nmb) const
- virtual bool isNeighbour (IsogeometricBlock *other) const
- virtual int nmbCoefs () const
- virtual BsplineBasis basis (int pardir) const
- shared_ptr< SplineSurface > getGeomBoundarySurface (int face_number) const
- std::vector< double > getParamOnBdSurf (int face_number, const Point &position) const
- bool geomIsDegenerate (std::vector< std::pair< int, int > > &degen_bd, double epsge)
- void getDegenEnumeration (std::vector< std::pair< int, int > > &degen_bd, std::vector< std::vector< int > > &enumeration, double epsge)
- bool geomIsPeriodic (int per[], double epsge)
- bool getPeriodicEnumeration (int pardir, std::vector< std::pair< int, int > > &enumeration)
- virtual void refineGeometry (std::vector< double > newknots, int pardir)
- virtual void refineGeometry (const BsplineBasis &other_basis, int pardir)
- virtual void increaseGeometryDegree (int new_degree, int pardir)
- void updateGeometry (shared_ptr< SplineSurface > new_boundary, int face_number)
- virtual void erasePreEvaluatedBasisFunctions ()
- virtual int getNmbOfBoundaryConditions () const
- shared_ptr< VolBoundaryCondition > getBoundaryCondition (int index) const
- void getFaceBoundaryConditions (int face_number, std::vector< shared_ptr< VolBoundaryCondition > > &bd_cond) const
- virtual int getNmbOfPointBdConditions () const
- shared_ptr< VolPointBdCond > getPointBdCondition (int index) const
- void getFacePointBdConditions (int face_number, std::vector< shared_ptr< VolPointBdCond > > &bd_cond) const
- shared_ptr< VolSolution > getSolutionSpace (int solution_index)
- shared_ptr< SplineVolume > volume () const
- virtual void setMinimumDegree (int degree, int solutionspace_idx)
- virtual bool updateSolutionSplineSpace (int solutionspace_idx)
- int nmbSolutionSpaces () const
- int getFaceOrientation (shared_ptr< ParamSurface > srf, double tol)
- void getNeighbourInfo (IsogeometricVolBlock *other, std::vector< int > &faces, std::vector< int > &faces_other, std::vector< int > &orientation, std::vector< bool > &same_dir_order)
- bool sameDirOrder (int face_nmb) const

29.253.1 Detailed Description

Definition at line 61 of file IsogeometricVolBlock.h.

29.253.2 Constructor & Destructor Documentation

29.253.2.1 Go::IsogeometricVolBlock::IsogeometricVolBlock (**IsogeometricModel** * *model,* shared_ptr< **SplineVolume** > *geom_vol,* std::vector< int > *solution_space_dimension,* int *index*)

29.253.2.2 virtual Go::IsogeometricVolBlock::~IsogeometricVolBlock ( ) [virtual]

29.253.3 Member Function Documentation

29.253.3.1 void Go::IsogeometricVolBlock::addNeighbour (shared_ptr< **IsogeometricVolBlock** > *neighbour,* int *face_nmb_this,* int *face_nmb_other,* int *orientation,* **bool** *same_dir_order*)

29.253.3.2 virtual **IsogeometricVolBlock*** Go::IsogeometricVolBlock::asIsogeometricVolBlock ( ) [virtual]

Reimplemented from Go::IsogeometricBlock.

29.253.3.3 virtual **BsplineBasis** Go::IsogeometricVolBlock::basis (int *pardir*) const [virtual]

Implements Go::IsogeometricBlock.

29.253.3.4 virtual void Go::IsogeometricVolBlock::erasePreEvaluatedBasisFunctions ( ) [virtual]

Implements Go::IsogeometricBlock.

29.253.3.5 **bool** Go::IsogeometricVolBlock::geomIsDegenerate (std::vector< std::pair< int, int > > & *degen_bd,* **double** *epsge*)

29.253.3.6 **bool** Go::IsogeometricVolBlock::geomIsPeriodic (int *per[ ],* **double** *epsge*)

29.253.3.7 shared_ptr<**VolBoundaryCondition**> Go::IsogeometricVolBlock::getBoundaryCondition (int *index*) const

29.253.3.8 void Go::IsogeometricVolBlock::getDegenEnumeration (std::vector< std::pair< int, int > > & *degen_bd,* std::vector< std::vector< int > > & *enumeration,* **double** *epsge*)

29.253.3.9 void Go::IsogeometricVolBlock::getFaceBoundaryConditions (int *face_number,* std::vector< shared_ptr< **VolBoundaryCondition** > > & *bd_cond*) const

29.253.3.10 int Go::IsogeometricVolBlock::getFaceOrientation (shared_ptr< **ParamSurface** > *srf,* **double** *tol*)

29.253.3.11 void Go::IsogeometricVolBlock::getFacePointBdConditions (int *face_number,* std::vector< shared_ptr< **VolPointBdCond** > > & *bd_cond*) const

29.253.3.12 shared_ptr<**SplineSurface**> Go::IsogeometricVolBlock::getGeomBoundarySurface (int *face_number*) const

29.253.3.13 **IsogeometricVolBlock*** Go::IsogeometricVolBlock::getNeighbour (int *bd_nmb*) const [virtual]

Implements Go::IsogeometricBlock.

29.253.3.14 void Go::IsogeometricVolBlock::getNeighbourInfo (IsogeometricVolBlock * *other,* std::vector< int > & *faces,* std::vector< int > & *faces_other,* std::vector< int > & *orientation,* std::vector< bool > & *same_dir_order*)

29.253.3.15 virtual int Go::IsogeometricVolBlock::getNmbOfBoundaryConditions ( ) const [virtual]

Implements Go::IsogeometricBlock.

29.253.3.16 virtual int Go::IsogeometricVolBlock::getNmbOfPointBdConditions ( ) const [virtual]

Implements Go::IsogeometricBlock.

29.253.3.17 std::vector<double> Go::IsogeometricVolBlock::getParamOnBdSurf (int *face_number,* const Point & *position*) const

29.253.3.18 bool Go::IsogeometricVolBlock::getPeriodicEnumeration (int *pardir,* std::vector< std::pair< int, int > > & *enumeration*)

29.253.3.19 shared_ptr<VolPointBdCond> Go::IsogeometricVolBlock::getPointBdCondition (int *index*) const

29.253.3.20 shared_ptr<VolSolution> Go::IsogeometricVolBlock::getSolutionSpace (int *solution_index*)

29.253.3.21 virtual void Go::IsogeometricVolBlock::increaseGeometryDegree (int *new_degree,* int *pardir*) [virtual]

Implements Go::IsogeometricBlock.

29.253.3.22 virtual bool Go::IsogeometricVolBlock::isNeighbour (IsogeometricBlock * *other*) const [virtual]

Implements Go::IsogeometricBlock.

29.253.3.23 virtual int Go::IsogeometricVolBlock::nmbCoefs ( ) const [virtual]

Implements Go::IsogeometricBlock.

29.253.3.24 virtual int Go::IsogeometricVolBlock::nmbOfNeighbours ( ) const [virtual]

Implements Go::IsogeometricBlock.

29.253.3.25 int Go::IsogeometricVolBlock::nmbSolutionSpaces ( ) const

29.253.3.26 virtual void Go::IsogeometricVolBlock::refineGeometry (std::vector< double > *newknots,* int *pardir*) [virtual]

Implements Go::IsogeometricBlock.

29.253.3.27 virtual void Go::IsogeometricVolBlock::refineGeometry (const BsplineBasis & *other_basis,* int *pardir*) [virtual]

Implements Go::IsogeometricBlock.

29.253.3.28 bool Go::IsogeometricVolBlock::sameDirOrder (int *face_nmb*) const

29.253.3.29 virtual void Go::IsogeometricVolBlock::setMinimumDegree (int *degree,* int *solutionspace_idx*) [virtual]

29.253.3.30 void Go::IsogeometricVolBlock::updateGeometry (shared_ptr< SplineSurface > *new_boundary,* int *face_number*)

29.253.3.31 virtual bool Go::IsogeometricVolBlock::updateSolutionSplineSpace (int *solutionspace_idx*) [virtual]

29.253.3.32 shared_ptr<SplineVolume> Go::IsogeometricVolBlock::volume ( ) const

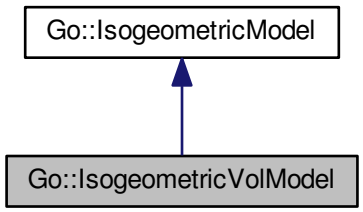
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/IsogeometricVolBlock.h

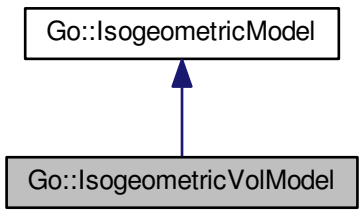
29.254 Go::IsogeometricVolModel Class Reference

`#include <IsogeometricVolModel.h>`

Inheritance diagram for Go::IsogeometricVolModel:



Collaboration diagram for Go::IsogeometricVolModel:



Public Member Functions

- IsogeometricVolModel (shared_ptr< VolumeModel > volmodel, std::vector< int > solution_space_↩ dimension)
- virtual ~IsogeometricVolModel ()
- bool addBoundaryCond (std::vector< std::pair< ParamSurface *, Point > > polygon, BdConditionType type, BdCondFunctor *fbd, int solutionspace_idx, double *constant_value=0)
- void addDirichletPointBdCond (ParamSurface *bd_surf, Point &pos, Point &condition_value, int solutionspace_idx)
- virtual int getNmbOfBoundaries () const
- std::vector< shared_ptr< ParamSurface > > getOuterBoundary () const
- std::vector< shared_ptr< ParamSurface > > getBoundary (int idx) const
- virtual void setMinimumDegree (int degree, int solutionspace_idx)
- virtual void updateSolutionSplineSpace ()
- virtual void updateSolutionSplineSpace (int solutionspace_idx)
- void getIsogeometricBlocks (std::vector< shared_ptr< IsogeometricVolBlock > > &volblock)

29.254.1 Detailed Description

Definition at line 63 of file IsogeometricVolModel.h.

29.254.2 Constructor & Destructor Documentation

29.254.2.1 Go::IsogeometricVolModel::IsogeometricVolModel (shared_ptr< VolumeModel > *volmodel,* std::vector< int > *solution_space_dimension*)

29.254.2.2 virtual Go::IsogeometricVolModel::~IsogeometricVolModel ( ) [virtual]

29.254.3 Member Function Documentation

29.254.3.1 bool Go::IsogeometricVolModel::addBoundaryCond (std::vector< std::pair< ParamSurface *, Point > > *polygon,* BdConditionType *type,* BdCondFunctor * *fbd,* int *solutionspace_idx,* double * *constant_value* = 0)

29.254.3.2 void Go::IsogeometricVolModel::addDirichletPointBdCond (ParamSurface * *bd_surf,* Point & *pos,* Point & *condition_value,* int *solutionspace_idx*)

29.254.3.3 std::vector<shared_ptr<ParamSurface> > Go::IsogeometricVolModel::getBoundary (int *idx*) const

29.254.3.4 void Go::IsogeometricVolModel::getIsogeometricBlocks (std::vector< shared_ptr< IsogeometricVolBlock > > & *volblock*)

29.254.3.5 virtual int Go::IsogeometricVolModel::getNmbOfBoundaries ( ) const [virtual]

Implements Go::IsogeometricModel.

29.254.3.6 std::vector<shared_ptr<ParamSurface> > Go::IsogeometricVolModel::getOuterBoundary ( ) const

29.254.3.7 virtual void Go::IsogeometricVolModel::setMinimumDegree (int *degree,* int *solutionspace_idx*) [virtual]

Implements Go::IsogeometricModel.

29.254.3.8 virtual void Go::IsogeometricVolModel::updateSolutionSplineSpace ( ) [virtual]

Implements Go::IsogeometricModel.

29.254.3.9 virtual void Go::IsogeometricVolModel::updateSolutionSplineSpace (int *solutionspace_idx*) [virtual]

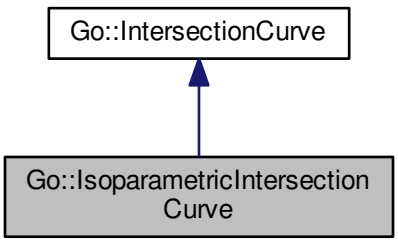
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/IsogeometricVolModel.h

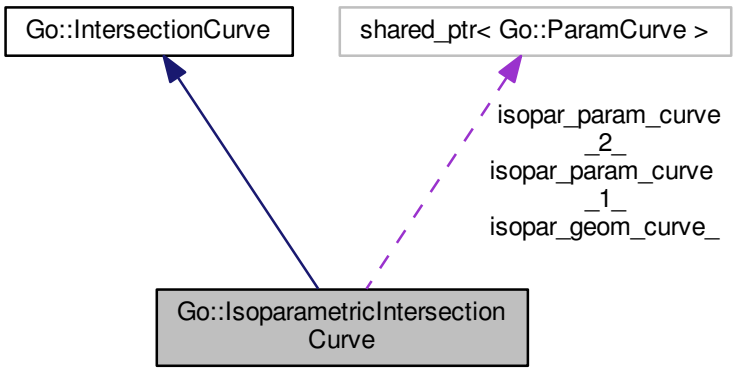
29.255 Go::IsoparametricIntersectionCurve Class Reference

`#include <IntersectionCurve.h>`

Inheritance diagram for Go::IsoparametricIntersectionCurve:



Collaboration diagram for Go::IsoparametricIntersectionCurve:



Public Member Functions

- virtual ~IsoparametricIntersectionCurve ()
- virtual shared_ptr< ParamCurve > getCurve () const
- virtual shared_ptr< ParamCurve > getParamCurve (int obj_nmb) const
- virtual bool isIsocurve () const
- virtual bool isDegenerated () const
- virtual void refine (const double &pos_tol, const double &angle_tol)
- virtual void getParamSpan (double &start, double &end) const
- virtual void evaluateAt (double pval, Point &pos, Point &tan)

Protected Member Functions

- template<class iterator >
  IsoparametricIntersectionCurve (const iterator begin, const iterator end, int isopar)
- void precalculate_iso_curves (int isopar)

Static Protected Member Functions

- template<class iterator >
  static std::vector< int > resolve_isoparametric_directions (const iterator begin, const iterator end)

Protected Attributes

- shared_ptr< ParamCurve > isopar_geom_curve_
- shared_ptr< ParamCurve > isopar_param_curve_1_
- shared_ptr< ParamCurve > isopar_param_curve_2_
- std::vector< Go::Point > temp_

Friends

- template<class iterator >
  shared_ptr< IntersectionCurve > constructIntersectionCurve (const iterator begin, const iterator end)

29.255.1 Detailed Description

IntersectionCurve defined by an isoparametric curve that can be picked from the underlying object

Definition at line 326 of file IntersectionCurve.h.

29.255.2 Constructor & Destructor Documentation

29.255.2.1 virtual Go::IsoparametricIntersectionCurve::~IsoparametricIntersectionCurve ( ) [inline], [virtual]

Definition at line 330 of file IntersectionCurve.h.

29.255.2.2 template<class iterator > Go::IsoparametricIntersectionCurve::IsoparametricIntersectionCurve (const iterator *begin*, const iterator *end*, int *isopar*) [inline], [protected]

Definition at line 368 of file IntersectionCurve.h.

29.255.3 Member Function Documentation

29.255.3.1 virtual void Go::IsoparametricIntersectionCurve::evaluateAt (double *pval*, Point & *pos*, Point & *tan*) [inline], [virtual]

Evaluate the IntersectionCurve at parameter value *pval*. Its position at this parameter value will be returned in *pos* and its tangent direction will be returned in *tan*.

Parameters

pval	the parameter value for which to evaluate the IntersectionCurve. It should be within the parametric span (which can be obtained from GetParamSpan().

Return values

pos	the calculated position of the point on the curve at parameter *pval*.

Parameters

tan	the calculated tangent of the curve at parameter *pval*.

Implements Go::IntersectionCurve.

Definition at line 353 of file IntersectionCurve.h.

29.255.3.2 virtual shared_ptr<ParamCurve> Go::IsoparametricIntersectionCurve::getCurve ( ) const [virtual]

Get out a (shared) pointer to a parametric curve that approximates this IntersectionCurve.

Implements Go::IntersectionCurve.

29.255.3.3 virtual shared_ptr<ParamCurve> Go::IsoparametricIntersectionCurve::getParamCurve (int *obj_nmb*) const [virtual]

Get out a (shared) pointer to the curve in the parametric plane of the first or second object. Should only be called when the concerned object is 2-parametric.

Parameters

obj_nmb	should be either 1 or 2, depending on whether you want to get the parametric curve in object 1 or object 2.

Returns

a shared pointer to a curve that approximates the intersection curve in the parametric domain of the specified object.

Implements Go::IntersectionCurve.

29.255.3.4 virtual void Go::IsoparametricIntersectionCurve::getParamSpan (double & *start*, double & *end*) const [inline], [virtual]

Get the start and end value for the parametric span of the IntersectionCurve.

Return values

start	upon function return this variable will contain the start value of the parametric span.
end	upon function return this variable will contain the end value of the parametric span.

Implements Go::IntersectionCurve.

Definition at line 347 of file IntersectionCurve.h.

29.255.3.5 virtual bool Go::IsoparametricIntersectionCurve::isDegenerated ( ) const [inline], [virtual]

Determine if the IntersectionCurve is in fact a degenerated curve (a single point in space).

Returns

'true' if the IntersectionCurve is degenerated. 'false' otherwise.

Implements Go::IntersectionCurve.

Definition at line 339 of file IntersectionCurve.h.

29.255.3.6 virtual bool Go::IsoparametricIntersectionCurve::isIsocurve ( ) const [inline], [virtual]

Determine if the IntersectionCurve is in fact representing an isoparametric intersection.

Returns

'true' if the IntersectionCurve is part of an isocurve for one of the objects, 'false' otherwise.

Implements Go::IntersectionCurve.

Definition at line 336 of file IntersectionCurve.h.

29.255.3.7 void Go::IsoparametricIntersectionCurve::precalculate_iso_curves (int *isopar*) [protected]

29.255.3.8 virtual void Go::IsoparametricIntersectionCurve::refine (const double & *pos_tol*, const double & *angle_tol*) [inline], [virtual]

Refine the curve (which means to increase the number of IntersectionPoint s defining it), so that the curve matches a specific positional and angle tolerance.

Parameters

pos_tol	the positional tolerance that the curve should match after refinement.
angle_tol	the angular tolerance that the tangent of the curve should match after refinement.

Implements Go::IntersectionCurve.

Definition at line 342 of file IntersectionCurve.h.

29.255.3.9 template<class iterator > std::vector< int > Go::IsoparametricIntersectionCurve::resolve_isoparametric_directions (const iterator *begin*, const iterator *end*) [static], [protected]

Definition at line 658 of file IntersectionCurve.h.

29.255.4 Friends And Related Function Documentation

29.255.4.1 template<class iterator > shared_ptr<IntersectionCurve> constructIntersectionCurve (const iterator *begin*, const iterator *end*) [friend]

Definition at line 601 of file IntersectionCurve.h.

29.255.5 Member Data Documentation

29.255.5.1 shared_ptr<ParamCurve> Go::IsoparametricIntersectionCurve::isopar_geom_curve_ [protected]

Definition at line 362 of file IntersectionCurve.h.

29.255.5.2 shared_ptr<ParamCurve> Go::IsoparametricIntersectionCurve::isopar_param_curve_1_ [protected]

Definition at line 363 of file IntersectionCurve.h.

29.255.5.3 shared_ptr<ParamCurve> Go::IsoparametricIntersectionCurve::isopar_param_curve_2_ [protected]

Definition at line 364 of file IntersectionCurve.h.

29.255.5.4 std::vector<Go::Point> Go::IsoparametricIntersectionCurve::temp_ [mutable], [protected]

Definition at line 365 of file IntersectionCurve.h.

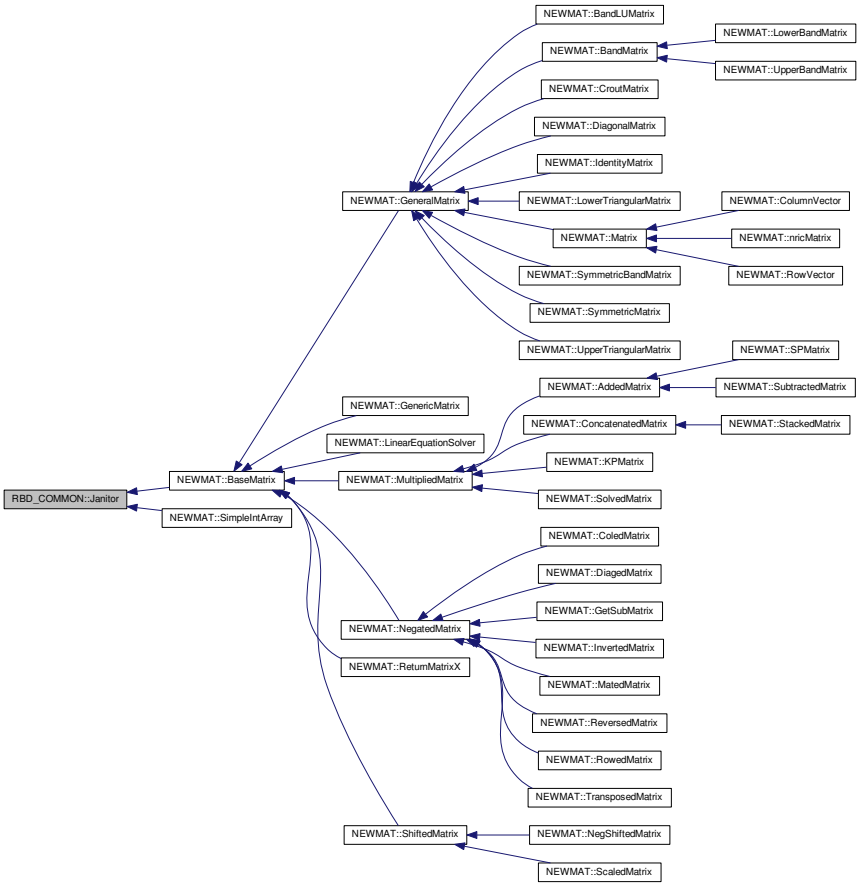
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionCurve.h

29.256 RBD_COMMON::Janitor Class Reference

`#include <myexcept.h>`

Inheritance diagram for RBD_COMMON::Janitor:



Public Member Functions

- virtual void CleanUp ()
- Janitor ()
- virtual ~Janitor ()

29.256.1 Detailed Description

Definition at line 216 of file myexcept.h.

29.256.2 Constructor & Destructor Documentation

29.256.2.1 RBD_COMMON::Janitor::Janitor ( ) [inline]

Definition at line 220 of file myexcept.h.

29.256.2.2 virtual RBD_COMMON::Janitor::~Janitor ( ) [inline], [virtual]

Definition at line 221 of file myexcept.h.

29.256.3 Member Function Documentation

29.256.3.1 virtual void RBD_COMMON::Janitor::CleanUp ( ) [inline], [virtual]

Reimplemented in NEWMAT::SimpleIntArray, NEWMAT::LinearEquationSolver, NEWMAT::GenericMatrix, NEWMAT::BandLUMatrix, NEWMAT::CroutMatrix, NEWMAT::ColumnVector, NEWMAT::RowVector, NEWMAT::nricMatrix, NEWMAT::GeneralMatrix, and NEWMAT::BaseMatrix.

Definition at line 219 of file myexcept.h.

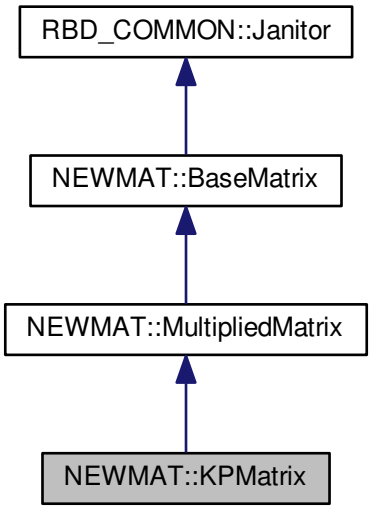
The documentation for this class was generated from the following file:

- newmat/include/myexcept.h

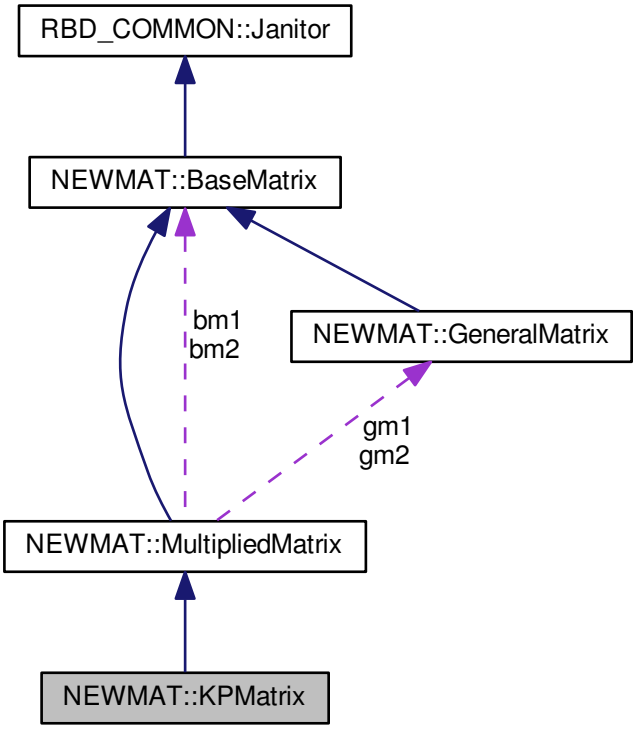
29.257 NEWMAT::KPMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::KPMatrix:



Collaboration diagram for NEWMAT::KPMatrix:



Public Member Functions

- ~KPMatrix ()
- MatrixBandWidth BandWidth () const
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)

Protected Member Functions

- KPMatrix (const BaseMatrix *bm1x, const BaseMatrix *bm2x)

Friends

- class BaseMatrix
- class GeneralMatrix
- class GenericMatrix
- KPMatrix KP (const BaseMatrix &, const BaseMatrix &)

Additional Inherited Members

29.257.1 Detailed Description

Definition at line 1233 of file newmat.h.

29.257.2 Constructor & Destructor Documentation

29.257.2.1 NEWMAT::KPMatrix::KPMatrix (const BaseMatrix * *bm1x*, const BaseMatrix * *bm2x*) [inline], [protected]

Definition at line 1236 of file newmat.h.

29.257.2.2 NEWMAT::KPMatrix::~KPMatrix ( ) [inline]

Definition at line 1243 of file newmat.h.

29.257.3 Member Function Documentation

29.257.3.1 MatrixBandWidth KPMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::MultipliedMatrix.

Definition at line 424 of file newmat4.cpp.

29.257.3.2 GeneralMatrix * KPMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::MultipliedMatrix.

Definition at line 130 of file newmat7.cpp.

29.257.4 Friends And Related Function Documentation

29.257.4.1 friend class BaseMatrix [friend]

Definition at line 1239 of file newmat.h.

29.257.4.2 friend class GeneralMatrix [friend]

Definition at line 1240 of file newmat.h.

29.257.4.3 friend class GenericMatrix [friend]

Definition at line 1241 of file newmat.h.

29.257.4.4 KPMatrix KP (const BaseMatrix &, const BaseMatrix &) [friend]

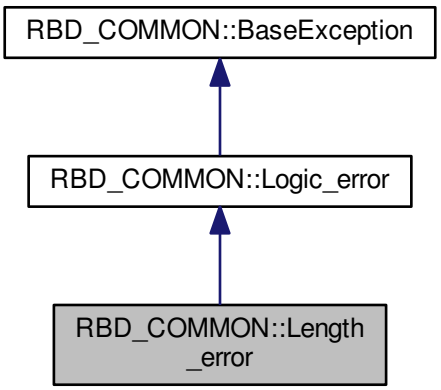
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp

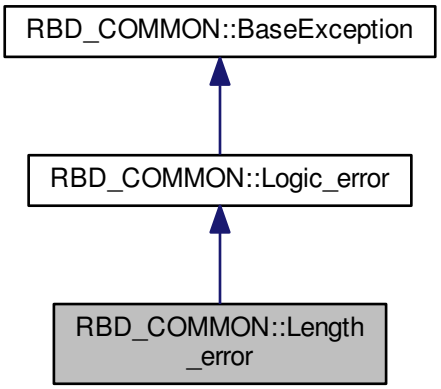
29.258 RBD_COMMON::Length_error Class Reference

```
#include <myexcept.h>
```

Inheritance diagram for RBD_COMMON::Length_error:



Collaboration diagram for RBD_COMMON::Length_error:



- static unsigned long Select
- Length_error (const char ∗a_what=0)

Additional Inherited Members

29.258.1 Detailed Description

Definition at line 385 of file myexcept.h.

29.258.2 Constructor & Destructor Documentation

29.258.2.1 Length_error::Length_error (const char ∗ *a_what* = 0)

Definition at line 426 of file myexcept.cpp.

29.258.3 Member Data Documentation

29.258.3.1 unsigned long Length_error::Select [static]

Definition at line 388 of file myexcept.h.

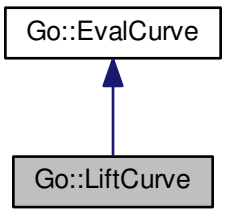
The documentation for this class was generated from the following files:

- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

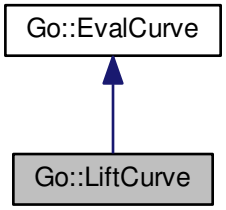
29.259 Go::LiftCurve Class Reference

`#include <LiftCurve.h>`

Inheritance diagram for Go::LiftCurve:



Collaboration diagram for Go::LiftCurve:



Public Member Functions

- LiftCurve (shared_ptr< Go::ParamCurve > &parameter_crv, shared_ptr< Go::ParamSurface > &surf, double epsgeo)
- virtual ~LiftCurve ()

  virtual destructor enables safe inheritance
- virtual Point eval (double t) const
- virtual void eval (double t, int n, Point der[ ]) const
- virtual double start () const
- virtual double end () const
- virtual int dim () const

  Dimension of the lifted curve (i.e. 3).
- virtual bool approximationOK (double par, Point approxpos, double tol1, double tol2) const

29.259.1 Detailed Description

This class represents a "lift curve", generated from taking a surface and a 2D curve and then evaluate the surface at the parameter values obtained by evaluating the 2D curve.

Definition at line 59 of file LiftCurve.h.

29.259.2 Constructor & Destructor Documentation

29.259.2.1 Go::LiftCurve::LiftCurve (shared_ptr< Go::ParamCurve > & *parameter_crv,* shared_ptr< Go::ParamSurface > & *surf,* double *epsgeo*)

Constructor, taking a 2D parameter curve and a surface.

Parameters

parameter_crv	the 2D parameter curve that will be 'lifted'
surf	the surface on which the resulting, 'lifted' curve will lie
epsgeo	geometrical tolerance used when running the 'approximationOK' function.

29.259.2.2 virtual Go::LiftCurve::~LiftCurve ( ) [virtual]

virtual destructor enables safe inheritance

29.259.3 Member Function Documentation

29.259.3.1 virtual bool Go::LiftCurve::approximationOK (double *par,* Point *approxpos,* double *tol1,* double *tol2*) const [virtual]

Inherited from EvalCurve::approximationOK().

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	unused
tol2	unused

Returns

'true' if the curve approximates the point at the parameter (within the tolerance given in the constructor, 'epsgeo'). 'false' otherwise.

Implements Go::EvalCurve.

29.259.3.2 virtual int Go::LiftCurve::dim ( ) const [virtual]

Dimension of the lifted curve (i.e. 3).

Implements Go::EvalCurve.

29.259.3.3 virtual double Go::LiftCurve::end ( ) const [virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implements Go::EvalCurve.

29.259.3.4 virtual Point Go::LiftCurve::eval (double *t*) const [virtual]

Evaluate a point on the curve for a given parameter

Parameters

t	the parameter for which to evaluate the curve.

Returns

the evaluated point

Implements Go::EvalCurve.

29.259.3.5 virtual void Go::LiftCurve::eval (double *t*, int *n*, Point *der[ ]*) const [virtual]

Evaluate a point and a certain number of derivatives on the curve for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalCurve', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implements Go::EvalCurve.

29.259.3.6 virtual double Go::LiftCurve::start ( ) const [virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implements Go::EvalCurve.

The documentation for this class was generated from the following file:

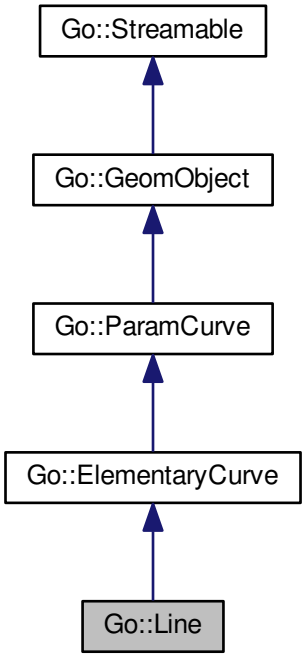
- gotools-core/include/GoTools/creators/LiftCurve.h

29.260 Go::Line Class Reference

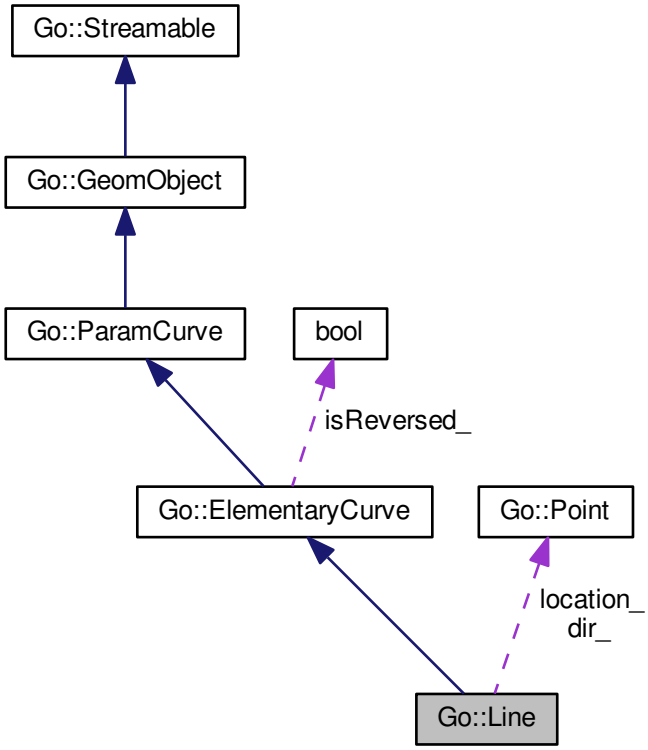
Class that represents a line. It is a subclass of ElementaryCurve and thus has a parametrization.

`#include <Line.h>`

Inheritance diagram for Go::Line:



Collaboration diagram for Go::Line:



Public Member Functions

- Line ()
- Line (Point point, Point direction, bool isReversed=false)
- Line (Point point, Point direction, double length, bool isReversed=false)

  Constructor. Bounded line.
- Line (Point point1, Point point2, double par1, double par2, bool isReversed=false)

  Constructor. Bounded line with parameterization.
- virtual ~Line ()

  virtual destructor - ensures safe inheritance
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual Line * clone () const
- virtual void point (Point &pt, double tpar) const
- virtual void point (std::vector< Point > &pts, double tpar, int derivs, bool from_right=true) const

- virtual double startparam () const
- virtual double endparam () const
- virtual void setParameterInterval (double t1, double t2)

  Limit the curve by limiting the parameter interval.
- virtual SplineCurve * geometryCurve ()
- virtual SplineCurve * createSplineCurve () const

  Fetch spline representation of curve.
- virtual bool isDegenerate (double degenerate_epsilon)
- virtual Line * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual DirectionCone directionCone () const
- virtual void appendCurve (ParamCurve *cv, bool reparam=true)
- virtual void appendCurve (ParamCurve *cv, int continuity, double &dist, bool reparam=true)
- virtual void closestPoint (const Point &pt, double tmin, double tmax, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const
- virtual double length (double tol)
- Point getPoint ()

  Point on line.
- Point getDirection ()

  Direction vector.
- virtual void setParamBounds (double startpar, double endpar)
- virtual void translateCurve (const Point &dir)
- bool isBounded () const
- virtual bool isLinear (Point &dir, double tol)

  Confirm that the curve is linear.
- virtual void swapParameters2D ()
- virtual bool isInPlane (const Point &loc, const Point &axis, double eps, Point &normal) const

  Check if the line lies in a plane passing through a given axis.
- virtual bool isInPlane (const Point &norm, double eps, Point &pos) const

  Check if the line lies in a plane with a given normal.

Static Public Member Functions

- static ClassType classType ()

Protected Attributes

- Point location_
- Point dir_
- double startparam_
- double endparam_

Additional Inherited Members

29.260.1 Detailed Description

Class that represents a line. It is a subclass of ElementaryCurve and thus has a parametrization.

A Line has a natural parametrization in terms of its location **C** and direction vector **V:** p(t) = C + tV.

Definition at line 56 of file Line.h.

29.260.2 Constructor & Destructor Documentation

29.260.2.1 Go::Line::Line ( ) [inline]

Default constructor. Constructs an uninitialized Line which can only be assigned to or read into.

Definition at line 61 of file Line.h.

29.260.2.2 Go::Line::Line (Point *point*, Point *direction*, bool *isReversed* = false)

Constructor. Input is point and direction. The default Line is unbounded in its parametrization. To bound it, use setParamBounds().

29.260.2.3 Go::Line::Line (Point *point*, Point *direction*, double *length*, bool *isReversed* = false)

Constructor. Bounded line.

29.260.2.4 Go::Line::Line (Point *point1*, Point *point2*, double *par1*, double *par2*, bool *isReversed* = false)

Constructor. Bounded line with parameterization.

29.260.2.5 virtual Go::Line::~Line ( ) [virtual]

virtual destructor - ensures safe inheritance

29.260.3 Member Function Documentation

29.260.3.1 virtual void Go::Line::appendCurve (ParamCurve * *cv*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparametrization NB: This virtual member function currently only works for SplineCurves and CurveOnSurfaces. Moreover, 'this' curve and the 'cv' curve must be of the same type.

Parameters

cv	the curve to append to 'this' curve.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.260.3.2 virtual void Go::Line::appendCurve (ParamCurve * *cv*, int *continuity*, double & *dist*, bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparmetrization

Parameters

cv	the curve to append to 'this' curve.
continuity	the required continuity at the transition. Can be G^(-1) and upwards.
dist	a measure of the local distorsion around the transition in order to achieve the specified continuity.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.260.3.3 virtual BoundingBox Go::Line::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.260.3.4 static ClassType Go::Line::classType ( ) [static]

29.260.3.5 virtual Line* Go::Line::clone ( ) const [virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::ElementaryCurve.

29.260.3.6 virtual void Go::Line::closestPoint (const Point & *pt,* double *tmin,* double *tmax,* double & *clo_t,* Point & *clo_pt,* double & *clo_dist,* double const * *seed* = 0) const [virtual]

Compute the closest point from an interval of this curve to a specified point.

Parameters

pt	point we want to find the closest point to
tmin	start parameter of search interval
tmax	end parameter of search interval
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.
seed	pointer to initial guess value, provided by the user (can be 0, for which the algorithm will determine a (hopefully) reasonable choice).

Implements Go::ParamCurve.

29.260.3.7 virtual SplineCurve* Go::Line::createSplineCurve ( ) const [virtual]

Fetch spline representation of curve.

Implements Go::ElementaryCurve.

29.260.3.8 virtual int Go::Line::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.260.3.9 virtual DirectionCone Go::Line::directionCone ( ) const [virtual]

Creates a DirectionCone which covers all tangent directions of this curve.

Returns

the smallest DirectionCone containing all tangent directions of this curve.

Implements Go::ParamCurve.

29.260.3.10 virtual double Go::Line::endparam ( ) const [virtual]

Query the end parameter of the curve

Returns

the curve's end parameter

Implements Go::ParamCurve.

29.260.3.11 virtual SplineCurve* Go::Line::geometryCurve ( ) [virtual]

If the definition of this ParamCurve contains a SplineCurve describing its spatial shape, then this function will return a pointer to this SplineCurve. Otherwise it will return a null pointer. The returned curve is NEWed, so the user is responsible for deleting it. This function may have side-effects.

Returns

a pointer to a SplineCurve representation of the ParamCurve, if it exists. Null pointer otherwise.

Implements Go::ParamCurve.

29.260.3.12 Point Go::Line::getDirection ( ) [inline]

Direction vector.

Definition at line 151 of file Line.h.

29.260.3.13 Point Go::Line::getPoint ( ) [inline]

Point on line.

Definition at line 147 of file Line.h.

29.260.3.14 virtual ClassType Go::Line::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.260.3.15 bool Go::Line::isBounded ( ) const

Query if parametrization is bounded. Both upper and lower parameter bounds must be finite for this to be true.

Returns

true if bounded, *false* otherwise

29.260.3.16 virtual bool Go::Line::isDegenerate (double *degenerate_epsilon*) [virtual]

Query whether the curve is degenerate (collapsed into a single point).

Parameters

degenerate_epsilon	the tolerance used in determine whether the curve is degenerate. A curve is considered degenerate if its total length is shorter than this value.

Returns

`true` if the curve is degenerate, `false` otherwise.

Implements Go::ParamCurve.

29.260.3.17 virtual bool Go::Line::isInPlane (const Point & *loc,* const Point & *axis,* double *eps,* Point & *normal*) const [virtual]

Check if the line lies in a plane passing through a given axis.

Reimplemented from Go::ParamCurve.

29.260.3.18 virtual bool Go::Line::isInPlane (const Point & *norm,* double *eps,* Point & *pos*) const [virtual]

Check if the line lies in a plane with a given normal.

Reimplemented from Go::ParamCurve.

29.260.3.19 virtual bool Go::Line::isLinear (Point & *dir,* double *tol*) [virtual]

Confirm that the curve is linear.

Reimplemented from Go::ParamCurve.

29.260.3.20 virtual double Go::Line::length (double *tol*) [virtual]

Compute the total length of this curve up to some tolerance

Parameters

tol	the relative tolerance when approximating the length, i.e. stop iteration when error becomes smaller than tol/(curve length)

Returns

the length calculated

Implements Go::ParamCurve.

29.260.3.21 virtual void Go::Line::point (Point & *pt,* double *tpar*) const [virtual]

Evaluate the curve's position at a given parameter

Parameters

pt	the evaluated position will be written to this Point
tpar	the parameter for which we wish to evaluate the curve

Implements Go::ParamCurve.

29.260.3.22 virtual void Go::Line::point (std::vector< Point > & *pts,* double *tpar,* int *derivs,* bool *from_right* = true) const [virtual]

Evaluate the curve's position and a certain number of derivatives at a given parameter.

Parameters

pts	the evaluated position and derivatives (tangent, curvature vector, etc.) will be written to this vector. The first entry will be the position, the second entry will be the first derivative, etc. The size of this vector must be set to 'derivs'+ 1 prior to calling this function.
tpar	the parameter for which we want to evaluate the curve
derivs	the number of derivatives we want to have calculated
from_right	specify whether we should calculate derivatives 'from the right' or 'from the left' (default is from the right). This matters only when the curve presents discontinuities in its derivatives.

Implements Go::ParamCurve.

29.260.3.23 virtual void Go::Line::read (std::istream & *is*) [virtual]

Read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.260.3.24 virtual void Go::Line::setParamBounds (double *startpar*, double *endpar*) [virtual]

Set bounds for the parametrization of the Line.

Parameters

startpar	start parameter
endpar	end parameter

Implements Go::ElementaryCurve.

29.260.3.25 virtual void Go::Line::setParameterInterval (double *t1*, double *t2*) [virtual]

Limit the curve by limiting the parameter interval.

Implements Go::ParamCurve.

29.260.3.26 virtual double Go::Line::startparam ( ) const [virtual]

Query the start parameter of the curve

Returns

the curve's start parameter

Implements Go::ParamCurve.

29.260.3.27 virtual Line* Go::Line::subCurve (double *from_par*, double *to_par*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implements Go::ElementaryCurve.

29.260.3.28 virtual void Go::Line::swapParameters2D ( ) [virtual]

If the curve is 2 dimensional, x and y coordinates will be swapped. Used when curve is a parameter curve.

Implements Go::ElementaryCurve.

29.260.3.29 virtual void Go::Line::translateCurve (const Point & *dir*) [virtual]

Implements Go::ElementaryCurve.

29.260.3.30 virtual void Go::Line::write (std::ostream & *os*) const [virtual]

Write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.260.4 Member Data Documentation

29.260.4.1 Point Go::Line::dir_ [protected]

Definition at line 185 of file Line.h.

29.260.4.2 double Go::Line::endparam_ [protected]

Definition at line 188 of file Line.h.

29.260.4.3 Point Go::Line::location_ [protected]

Definition at line 184 of file Line.h.

29.260.4.4 double Go::Line::startparam_ [protected]

Definition at line 187 of file Line.h.

The documentation for this class was generated from the following file:

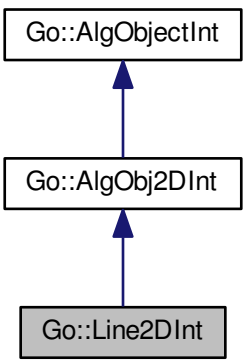
- gotools-core/include/GoTools/geometry/Line.h

29.261 Go::Line2DInt Class Reference

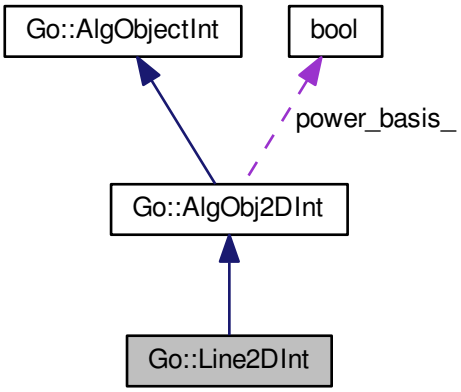
Class representing an algebraic line in 2-dimensional space.

`#include <Line2DInt.h>`

Inheritance diagram for Go::Line2DInt:



Collaboration diagram for Go::Line2DInt:



Public Member Functions

- Line2DInt (Point point, Point dir)
- Line2DInt (double a, double b, double c)
- virtual ~Line2DInt ()

  Destructor.
- double a ()
- double b ()
- double c ()

Additional Inherited Members

29.261.1 Detailed Description

Class representing an algebraic line in 2-dimensional space.

Definition at line 53 of file Line2DInt.h.

29.261.2 Constructor & Destructor Documentation

29.261.2.1 Go::Line2DInt::Line2DInt (Point *point*, Point *dir*)

Constructor.

Parameters

point	reference point which lies on the line.
dir	direction of the line.

29.261.2.2 Go::Line2DInt::Line2DInt (double *a*, double *b*, double *c*)

Constructor. The line is given by the expression $ax + by + c = 0$.

Parameters

a	the x multiplicator.
b	the y multiplicator.
c	the constant

29.261.2.3 virtual Go::Line2DInt::~Line2DInt ( ) [inline], [virtual]

Destructor.

Definition at line 68 of file Line2DInt.h.

29.261.3 Member Function Documentation

29.261.3.1 double Go::Line2DInt::a ( )

Get the x multiplicator.

Returns

The x multiplicator.

29.261.3.2 double Go::Line2DInt::b ( )

Get the y multiplicator.

Returns

The y multiplicator.

29.261.3.3 double Go::Line2DInt::c ( )

Get the constant.

Returns

The constant.

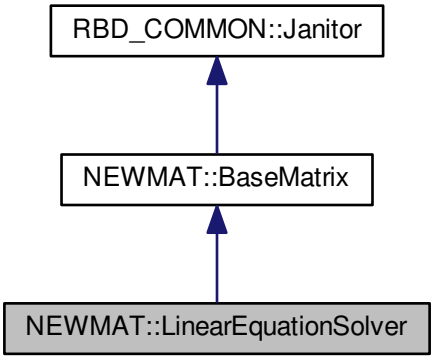
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Line2DInt.h

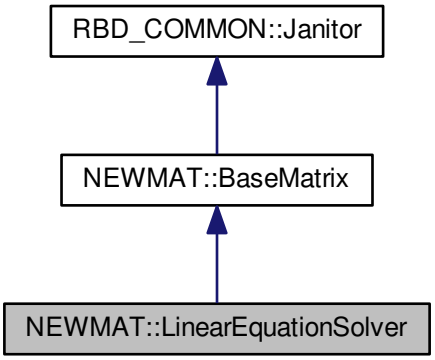
29.262 NEWMAT::LinearEquationSolver Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::LinearEquationSolver:



Collaboration diagram for NEWMAT::LinearEquationSolver:



Public Member Functions

- LinearEquationSolver (const BaseMatrix &bm)
- ~LinearEquationSolver ()
- void CleanUp ()
- GeneralMatrix * Evaluate (MatrixType)

Friends

- class BaseMatrix

Additional Inherited Members

29.262.1 Detailed Description

Definition at line 1528 of file newmat.h.

29.262.2 Constructor & Destructor Documentation

29.262.2.1 LinearEquationSolver::LinearEquationSolver (const BaseMatrix & *bm*)

Definition at line 722 of file newmat8.cpp.

29.262.2.2 NEWMAT::LinearEquationSolver::~LinearEquationSolver ( ) [inline]

Definition at line 1535 of file newmat.h.

29.262.3 Member Function Documentation

29.262.3.1 void NEWMAT::LinearEquationSolver::CleanUp ( ) [inline], [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 1536 of file newmat.h.

29.262.3.2 GeneralMatrix* NEWMAT::LinearEquationSolver::Evaluate (MatrixType) [inline], [virtual]

Implements NEWMAT::BaseMatrix.

Definition at line 1537 of file newmat.h.

29.262.4 Friends And Related Function Documentation

29.262.4.1 friend class BaseMatrix [friend]

Definition at line 1532 of file newmat.h.

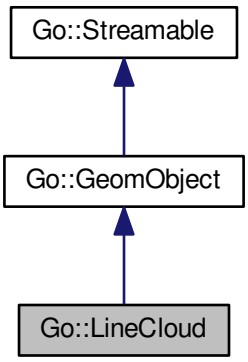
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat8.cpp

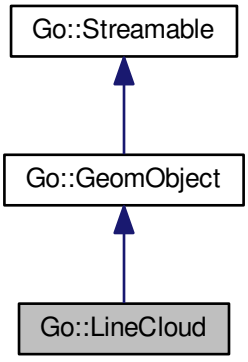
29.263 Go::LineCloud Class Reference

`#include <LineCloud.h>`

Inheritance diagram for Go::LineCloud:



Collaboration diagram for Go::LineCloud:



Public Member Functions

- LineCloud ()

  Makes an unitialized LineCloud that can later be assigned or read() into.
- template<typename ForwardIterator >
  LineCloud (ForwardIterator start, int numlines)
- virtual ~LineCloud ()

Virtual destructor, enables safe inheritance.

- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const
- virtual int dimension () const
- virtual ClassType instanceType () const
- virtual LineCloud * clone () const
- void setCloud (const double *points, int numlines)
- int numLines () const
- Vector3D & point (int i)
- const Vector3D & point (int i) const
- double * rawData ()

Static Public Member Functions

- static ClassType classType ()

29.263.1 Detailed Description

GeomObject representing a collection of line segments in space.

Definition at line 57 of file LineCloud.h.

29.263.2 Constructor & Destructor Documentation

29.263.2.1 Go::LineCloud::LineCloud ( ) [inline]

Makes an unitialized LineCloud that can later be assigned or read() into.

Definition at line 62 of file LineCloud.h.

29.263.2.2 template<typename ForwardIterator > Go::LineCloud::LineCloud (ForwardIterator *start*, int *numlines*) [inline]

start is supposed to point to the start of the array to be copied, its valuetype should be convertible to double Generate a LineCloud based on values stored in memory. The lines should be stored as a sequence of point pairs indicating the start and end position of each line in the line cloud. Each point is stored as (x_coord, y_coord, z_coord). The coordinates should be convertible to 'double'. Ex: p0_start_x, p0_start_y, p0_start_z, p0_end_x, p0_end_y, p0_end_z, p1_start_x, p1_start_y, p1_start_z,....

Parameters

start	pointer to the start of the memory area from which point information is to be copied
numlines	number of lines in the LineCloud

Definition at line 77 of file LineCloud.h.

29.263.2.3 virtual Go::LineCloud::~LineCloud ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.263.3 Member Function Documentation

29.263.3.1 virtual BoundingBox Go::LineCloud::boundingBox ( ) const [virtual]

Get the BoundingBox of the LineCloud

Returns

the BoundingBox enclosing the LineCloud

Implements Go::GeomObject.

29.263.3.2 static ClassType Go::LineCloud::classType ( ) [inline], [static]

Get the ClassType identifier of LineCloud.

Returns

the ClassType identifier of LineCloud

Definition at line 112 of file LineCloud.h.

29.263.3.3 virtual LineCloud* Go::LineCloud::clone ( ) const [inline], [virtual]

Clone this object

Returns

a pointer to a cloned LineCloud.

Implements Go::GeomObject.

Definition at line 126 of file LineCloud.h.

29.263.3.4 virtual int Go::LineCloud::dimension ( ) const [inline], [virtual]

Query the dimension of the space in which the LineCloud is embedded (currently, only dimension=3 is allowed...)

Returns

the dimension of the space (always 3 for now)

Implements Go::GeomObject.

Definition at line 101 of file LineCloud.h.

29.263.3.5 virtual ClassType Go::LineCloud::instanceType ( ) const [inline], [virtual]

Get the ClassType of this GeomObject (which is of course the ClassType identified LineCloud).

Returns

the ClassType identifier of LineCloud

Implements Go::GeomObject.

Definition at line 107 of file LineCloud.h.

29.263.3.6 int Go::LineCloud::numLines ( ) const [inline]

Query the number of lines in the LineCloud

Returns

the LineCloud's number of lines.

Definition at line 140 of file LineCloud.h.

29.263.3.7 Vector3D& Go::LineCloud::point (int *i*) [inline]

Get a start or end point from a line in the LineCloud (non-const version)

Parameters

i	the index of the start/end point. If 'i' is pair, then the returned point is a start point, else it is an end point.

Returns

a reference to the requested start/end point

Definition at line 146 of file LineCloud.h.

29.263.3.8 const Vector3D& Go::LineCloud::point (int *i*) const [inline]

Get a start or end point from a line in the LineCloud (const version)

Parameters

i	the index of the start/end point. If 'i' is even, then the returned point is a start point, else it is an end point.

Returns

a const-reference to the requested start/end point

Definition at line 152 of file LineCloud.h.

29.263.3.9 double* Go::LineCloud::rawData ( ) [inline]

Get a pointer to the start of the internal memory area where line information is stored.

Returns

a pointer to the beginning of the array where line information is stored.

Definition at line 157 of file LineCloud.h.

29.263.3.10 virtual void Go::LineCloud::read (std::istream & *is*) [virtual]

Read a LineCloud from an input stream

Parameters

is	the stream from which we will read the LineCloud

Implements Go::Streamable.

29.263.3.11 void Go::LineCloud::setCloud (const double * *points*, int *numlines*)

Fill a line cloud with information read from memory. The layout of the read information should be as for the LineCloud constructor: LineCloud(ForwardIterator start, int numlines)

Parameters

points	pointer to the memory area where the coordinates of the elements in the LineCloud can be found. (This information will be copied).
numlines	number of lines in the LineCloud.

29.263.3.12 virtual void Go::LineCloud::write (std::ostream & *os*) const [virtual]

Write the LineCloud to stream

Parameters

os	the stream that we will write the LineCloud to

Implements Go::Streamable.

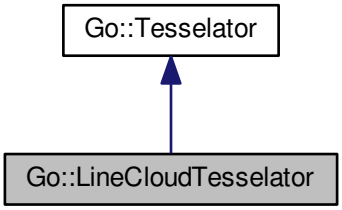
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/LineCloud.h

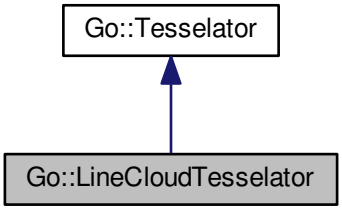
29.264 Go::LineCloudTesselator Class Reference

`#include <LineCloudTesselator.h>`

Inheritance diagram for Go::LineCloudTesselator:



Collaboration diagram for Go::LineCloudTesselator:



Public Member Functions

- LineCloudTesselator (const Go::LineCloud &lc)
  Constructor.
- virtual ~LineCloudTesselator ()
  Destructor.
- virtual void tesselate ()
  Perform tesselation.
- const Go::LineCloud & getRenderCloud ()
  Fetch result.
- void setScale (double scale)
- double getScale ()
  Fetch scaling factor.

29.264.1 Detailed Description

Tesselate line cloud. Preparation for visualization

Definition at line 52 of file LineCloudTesselator.h.

29.264.2 Constructor & Destructor Documentation

29.264.2.1 Go::LineCloudTesselator::LineCloudTesselator (const Go::LineCloud & *lc*) [inline]

Constructor.

Definition at line 56 of file LineCloudTesselator.h.

29.264.2.2 virtual Go::LineCloudTesselator::~LineCloudTesselator ( ) [virtual]

Destructor.

29.264.3 Member Function Documentation

29.264.3.1 const Go::LineCloud& Go::LineCloudTesselator::getRenderCloud ( ) [inline]

Fetch result.

Definition at line 66 of file LineCloudTesselator.h.

29.264.3.2 double Go::LineCloudTesselator::getScale ( ) [inline]

Fetch scaling factor.

Definition at line 81 of file LineCloudTesselator.h.

29.264.3.3 void Go::LineCloudTesselator::setScale (double *scale*) [inline]

The difference between the given line cload and the tesselated version is the scale. Set scaling factor.

Definition at line 73 of file LineCloudTesselator.h.

29.264.3.4 virtual void Go::LineCloudTesselator::tesselate ( ) [virtual]

Perform tesselation.

Implements Go::Tesselator.

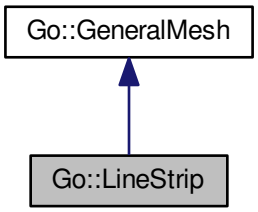
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/LineCloudTesselator.h

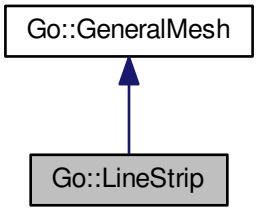
29.265 Go::LineStrip Class Reference

`#include <LineStrip.h>`

Inheritance diagram for Go::LineStrip:



Collaboration diagram for Go::LineStrip:



Public Member Functions

- LineStrip (int n=200)
  Constructor given size of mesh.
- virtual ~LineStrip ()
  Destrcutor.
- void resize (int n)
  Change mesh size.
- virtual int numVertices ()
  Number of nodes.
- virtual double * vertexArray ()
  Fetch all nodes.
- virtual double * paramArray ()
  Fetch parameter values corresponding to the nodes.
- virtual int atBoundary (int idx)

Check if a given node lies at the boundary.

- unsigned int * stripArray ()

  Indices for each line strip.

- virtual unsigned int * triangleIndexArray ()

  Indices for triangles. Not used.

- virtual LineStrip * asLineStrip ()

  Casting. Return object as line strip.

Additional Inherited Members

29.265.1 Detailed Description

LineStrip: Structure for storing values for a line strip, i.e. result of curve tesselation

Definition at line 54 of file LineStrip.h.

29.265.2 Constructor & Destructor Documentation

29.265.2.1 Go::LineStrip::LineStrip (int *n* = 200)

Constructor given size of mesh.

29.265.2.2 virtual Go::LineStrip::~LineStrip ( ) [virtual]

Destrcutor.

29.265.3 Member Function Documentation

29.265.3.1 virtual LineStrip* Go::LineStrip::asLineStrip ( ) [virtual]

Casting. Return object as line strip.

Reimplemented from Go::GeneralMesh.

29.265.3.2 virtual int Go::LineStrip::atBoundary (int *idx*) [virtual]

Check if a given node lies at the boundary.

Implements Go::GeneralMesh.

29.265.3.3 virtual int Go::LineStrip::numVertices ( ) [inline], [virtual]

Number of nodes.

Implements Go::GeneralMesh.

Definition at line 66 of file LineStrip.h.

29.265.3.4 virtual double* Go::LineStrip::paramArray ( ) [inline], [virtual]

Fetch parameter values corresponding to the nodes.

Implements Go::GeneralMesh.

Definition at line 70 of file LineStrip.h.

29.265.3.5 void Go::LineStrip::resize (int *n*)

Change mesh size.

29.265.3.6 unsigned int* Go::LineStrip::stripArray ( ) [inline]

Indices for each line strip.

Definition at line 73 of file LineStrip.h.

29.265.3.7 virtual unsigned int* Go::LineStrip::triangleIndexArray ( ) [inline], [virtual]

Indices for triangles. Not used.

Implements Go::GeneralMesh.

Definition at line 75 of file LineStrip.h.

29.265.3.8 virtual double* Go::LineStrip::vertexArray ( ) [inline], [virtual]

Fetch all nodes.

Implements Go::GeneralMesh.

Definition at line 69 of file LineStrip.h.

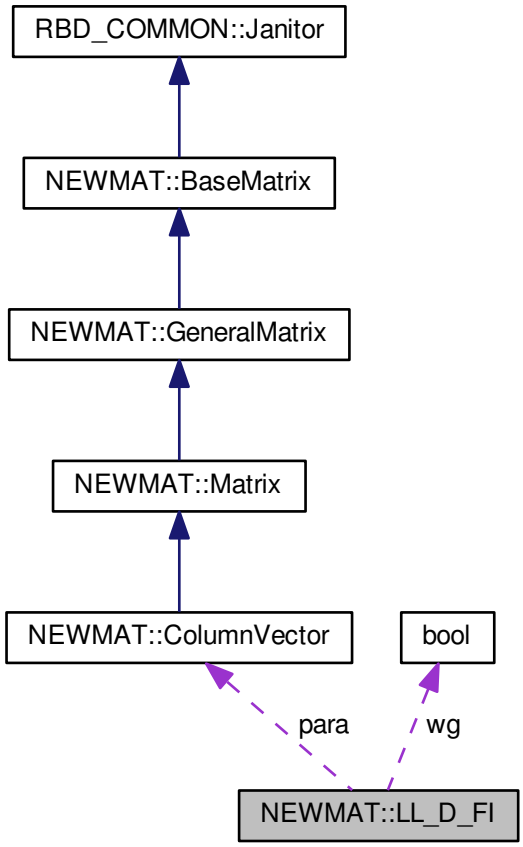
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/LineStrip.h

29.266 NEWMAT::LL_D_FI Class Reference

`#include <newmatnl.h>`

Collaboration diagram for NEWMAT::LL_D_FI:



Public Member Functions

- virtual void Set (const ColumnVector &X)
- virtual void WG (bool wgx)
- virtual bool IsValid ()
- bool IsValid (const ColumnVector &X, bool wgx=true)
- virtual Real LogLikelihood ()=0
- Real LogLikelihood (const ColumnVector &X, bool wgx=true)
- virtual ReturnMatrix Derivatives ()=0
- virtual ReturnMatrix FI ()=0
- virtual ~LL_D_FI ()

Protected Attributes

- ColumnVector para
- bool wg

29.266.1 Detailed Description

Definition at line 253 of file newmatnl.h.

29.266.2 Constructor & Destructor Documentation

29.266.2.1 virtual NEWMAT::LL_D_FI::~LL_D_FI ( ) [inline], [virtual]

Definition at line 277 of file newmatnl.h.

29.266.3 Member Function Documentation

29.266.3.1 virtual ReturnMatrix NEWMAT::LL_D_FI::Derivatives ( ) [pure virtual]

29.266.3.2 virtual ReturnMatrix NEWMAT::LL_D_FI::FI ( ) [pure virtual]

29.266.3.3 virtual bool NEWMAT::LL_D_FI::IsValid ( ) [inline], [virtual]

Definition at line 265 of file newmatnl.h.

29.266.3.4 bool NEWMAT::LL_D_FI::IsValid (const ColumnVector & *X*, bool *wgx* = true) [inline]

Definition at line 267 of file newmatnl.h.

29.266.3.5 virtual Real NEWMAT::LL_D_FI::LogLikelihood ( ) [pure virtual]

29.266.3.6 Real NEWMAT::LL_D_FI::LogLikelihood (const ColumnVector & *X*, bool *wgx* = true) [inline]

Definition at line 271 of file newmatnl.h.

29.266.3.7 virtual void NEWMAT::LL_D_FI::Set (const ColumnVector & *X*) [inline], [virtual]

Definition at line 260 of file newmatnl.h.

29.266.3.8 virtual void NEWMAT::LL_D_FI::WG (bool *wgx*) [inline], [virtual]

Definition at line 262 of file newmatnl.h.

29.266.4 Member Data Documentation

29.266.4.1 ColumnVector NEWMAT::LL_D_FI::para [protected]

Definition at line 256 of file newmatnl.h.

29.266.4.2 bool NEWMAT::LL_D_Fl::wg [protected]

Definition at line 257 of file newmatnl.h.

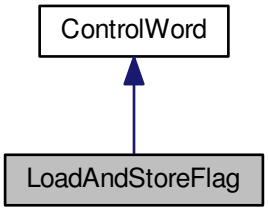
The documentation for this class was generated from the following file:

- newmat/include/newmatnl.h

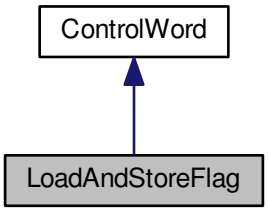
29.267 LoadAndStoreFlag Class Reference

`#include <newmatrc.h>`

Inheritance diagram for LoadAndStoreFlag:



Collaboration diagram for LoadAndStoreFlag:



Public Member Functions

- LoadAndStoreFlag ()
- LoadAndStoreFlag (int i)
- LoadAndStoreFlag (LSF lsf)
- LoadAndStoreFlag (const ControlWord &cwx)

Additional Inherited Members

29.267.1 Detailed Description

Definition at line 24 of file newmatrc.h.

29.267.2 Constructor & Destructor Documentation

29.267.2.1 LoadAndStoreFlag::LoadAndStoreFlag ( ) [inline]

Definition at line 27 of file newmatrc.h.

29.267.2.2 LoadAndStoreFlag::LoadAndStoreFlag (int *i*) [inline]

Definition at line 28 of file newmatrc.h.

29.267.2.3 LoadAndStoreFlag::LoadAndStoreFlag (LSF *lsf*) [inline]

Definition at line 29 of file newmatrc.h.

29.267.2.4 LoadAndStoreFlag::LoadAndStoreFlag (const ControlWord & *cwx*) [inline]

Definition at line 30 of file newmatrc.h.

The documentation for this class was generated from the following file:

- newmat/include/newmatrc.h

29.268 Go::LockedDirDistFunc Class Reference

`#include <IntersectionPoolUtils.h>`

Public Member Functions

- LockedDirDistFunc (const ParamObjectInt *const o1, const ParamObjectInt *const o2, int fixed_dir, double fixed_value)
- double operator() (const double *arg) const
- void grad (const double *arg, double *grad) const
- double minPar (int n) const
- double maxPar (int n) const

29.268.1 Detailed Description

Definition at line 356 of file IntersectionPoolUtils.h.

29.268.2 Constructor & Destructor Documentation

29.268.2.1 Go::LockedDirDistFunc::LockedDirDistFunc (const ParamObjectInt *const *o1*, const ParamObjectInt *const *o2*, int *fixed_dir*, double *fixed_value*) [inline]

Definition at line 360 of file IntersectionPoolUtils.h.

29.268.3 Member Function Documentation

29.268.3.1 void Go::LockedDirDistFunc::grad (const double * *arg*, double * *grad*) const

Definition at line 592 of file IntersectionPoolUtils.h.

29.268.3.2 double Go::LockedDirDistFunc::maxPar (int *n*) const [inline]

Definition at line 387 of file IntersectionPoolUtils.h.

29.268.3.3 double Go::LockedDirDistFunc::minPar (int *n*) const [inline]

Definition at line 386 of file IntersectionPoolUtils.h.

29.268.3.4 double Go::LockedDirDistFunc::operator() (const double * *arg*) const

Definition at line 581 of file IntersectionPoolUtils.h.

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionPoolUtils.h

29.269 NEWMAT::LogAndSign Class Reference

```
#include <newmat.h>
```

Public Member Functions

- LogAndSign ()
- LogAndSign (Real)
- void operator*= (Real)
- void PowEq (int k)
- void ChangeSign ()
- Real LogValue () const
- int Sign () const
- Real Value () const

29.269.1 Detailed Description

Definition at line 46 of file newmat.h.

29.269.2 Constructor & Destructor Documentation

29.269.2.1 NEWMAT::LogAndSign::LogAndSign ( ) [inline]

Definition at line 53 of file newmat.h.

29.269.2.2 NEWMAT::LogAndSign::LogAndSign (Real)

29.269.3 Member Function Documentation

29.269.3.1 void NEWMAT::LogAndSign::ChangeSign ( ) [inline]

Definition at line 57 of file newmat.h.

29.269.3.2 Real NEWMAT::LogAndSign::LogValue ( ) const [inline]

Definition at line 58 of file newmat.h.

29.269.3.3 void LogAndSign::operator*= (Real *x*)

Definition at line 615 of file newmat8.cpp.

29.269.3.4 void LogAndSign::PowEq (int *k*)

Definition at line 622 of file newmat8.cpp.

29.269.3.5 int NEWMAT::LogAndSign::Sign ( ) const [inline]

Definition at line 59 of file newmat.h.

29.269.3.6 Real LogAndSign::Value ( ) const

Definition at line 631 of file newmat8.cpp.

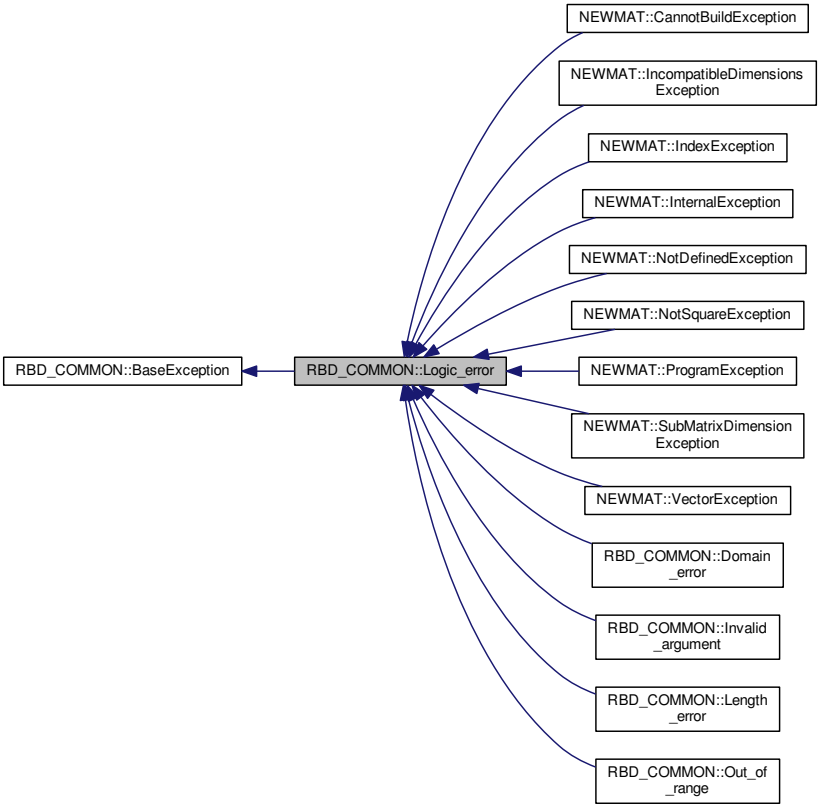
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat8.cpp

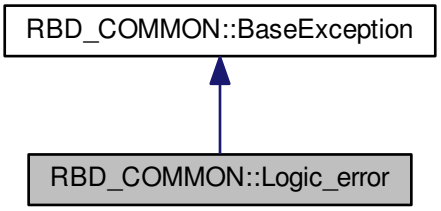
29.270 RBD_COMMON::Logic_error Class Reference

`#include <myexcept.h>`

Inheritance diagram for RBD_COMMON::Logic_error:



Collaboration diagram for RBD_COMMON::Logic_error:



- static unsigned long Select
- Logic_error (const char *a_what=0)

Additional Inherited Members

29.270.1 Detailed Description

Definition at line 357 of file myexcept.h.

29.270.2 Constructor & Destructor Documentation

29.270.2.1 Logic_error::Logic_error (const char * *a_what* = 0)

Definition at line 397 of file myexcept.cpp.

29.270.3 Member Data Documentation

29.270.3.1 unsigned long Logic_error::Select [static]

Definition at line 360 of file myexcept.h.

The documentation for this class was generated from the following files:

- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

29.271 Go::Loop Class Reference

Primarily a loop connected to a face in a boundary represented solid or face set. May also be used to represent a general closed sequence of edges.

`#include <Loop.h>`

Public Member Functions

- Loop (ftFaceBase *face, CurveLoop &curve_loop, double kink, bool split_in_kinks=true, bool no_split=false)
  Constructor.
- Loop (ftFaceBase *face, std::vector< shared_ptr< ftEdgeBase > > &edges, double space_epsilon)
- Loop (std::vector< shared_ptr< ftEdgeBase > > &edges, double space_epsilon)
- ~Loop ()
  Destructor.
- size_t size ()
  Number of edges in loop.
- std::vector< shared_ptr< ftEdgeBase > > & getEdges ()
  Get all edges oriented head to tail.
- shared_ptr< ftEdgeBase > getEdge (size_t idx)
- std::vector< shared_ptr< Vertex > > getVertices () const
  Fetch all vertices between edges in the loop.
- std::vector< shared_ptr< Vertex > > getSeqVertices () const

Fetch all vertices between edges in the loop in sequence.

- double getTol ()

  Get tolerance.
- bool isFaceConsistent ()

  Check consistency with regard to face.
- void setFace (ftFaceBase *face)

  Set face pointer.
- const ftFaceBase * getFace ()

  The face associated to this loop.
- void updateLoop (shared_ptr< ftEdgeBase > new_edge)

  Make sure that the edges belonging to this loop is complete.
- void split (int ind, double par)

  Split loop in a given parameter of an edge given by index.
- bool isClose (ftEdge *edge, RectDomain *domain, double tol) const

  Test if an edge is close to the surface within some tolerance.
- void getBadDistance (std::vector< std::pair< ftSurface *, ftEdge * > > &badPairs, RectDomain *domain, double tol) const

  Collect all pairs of surface and edges where some part of the edge has a distance to the surface greater than a tolerance.
- void getBadDistance (std::vector< std::pair< ftEdge *, shared_ptr< Vertex > > > &badPairs, double tol) const
- void getPosTangentSurfaceDiscont (std::vector< ftEdge * > &badPos, std::vector< ftEdge * > &bad↩ Tangent, double tol, double kink, double bend, int leastSurfIndex, shared_ptr< SurfaceModel > sm) const

  Fetch information on continuity.
- bool checkConsistency () const
- void getAcuteEdges (std::vector< std::pair< ftEdge *, ftEdge * > > &acute_edges, double angtol) const

  Check for acute edges in boundary loop.
- void getLoopIntersections (shared_ptr< Loop > loop2, double tol, std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > &int_pt) const

  Compute intersections between boundary loops.
- void getLoopSelfIntersections (double tol, std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > &int_pt) const

  Compute self intersections of boundary loop.
- bool correspondingEdges (shared_ptr< Loop > other, double tol, ftEdgeBase *&first1, ftEdgeBase *&first2, bool &same_dir, bool no_snap=true)
- bool hasRadialEdges () const
- bool allRadialEdges () const

  All edges is connected a radial edge.
- void closestPoint (const Point &pt, int &clo_ind, double &clo_par, Point &clo_pt, double &clo_dist) const
- bool isInLoop (ftEdgeBase *edge)

  Check if a given edge is in this loop.
- void groupSmoothEdges (double tol, double angtol, std::vector< std::vector< shared_ptr< ftEdgeBase > > > &edge_groups)

29.271.1 Detailed Description

Primarily a loop connected to a face in a boundary represented solid or face set. May also be used to represent a general closed sequence of edges.

Definition at line 70 of file Loop.h.

29.271.2 Constructor & Destructor Documentation

29.271.2.1 Go::Loop::Loop (ftFaceBase * *face,* CurveLoop & *curve_loop,* double *kink,* bool *split_in_kinks* = true, bool *no_split* = false)

Constructor.

29.271.2.2 Go::Loop::Loop (ftFaceBase * *face,* std::vector< shared_ptr< ftEdgeBase > > & *edges,* double *space_epsilon*)

This constructor takes an ordered sequence of edges as input Note that the function may throw

29.271.2.3 Go::Loop::Loop (std::vector< shared_ptr< ftEdgeBase > > & *edges,* double *space_epsilon*)

Constructor that takes an ordered sequence of edges as input. There is no reference to a face object.

29.271.2.4 Go::Loop::~Loop ( )

Destructor.

29.271.3 Member Function Documentation

29.271.3.1 bool Go::Loop::allRadialEdges ( ) const

All edges is connected a radial edge.

29.271.3.2 bool Go::Loop::checkConsistency ( ) const

Check if the edges of the loop are consistent with the corresponding curves with regard to orientation

29.271.3.3 void Go::Loop::closestPoint (const Point & *pt,* int & *clo_ind,* double & *clo_par,* Point & *clo_pt,* double & *clo_dist*) const

Find the closest point on the curve loop to a point specified by the user.

Parameters

pt	The point given by the user. We want to determine the closest point to this on the CurveLoop.
clo_ind	Upon return: the index of the curve segment on which the closest point was found.
clo_par	Upon return: the parameter of the detected closest point on the curve containing it.
clo_pt	Upon return: the geometric position of the detected closest point
clo_dist	Upon return: the distance to the detected closest point.

29.271.3.4 **bool Go::Loop::correspondingEdges (shared_ptr< Loop > *other,* double *tol,* ftEdgeBase *& *first1,* ftEdgeBase *& *first2,* bool & *same_dir,* bool *no_snap* = true)**

Non-manifold functionality Check for loop correspondance, split edges if required and return the start edges for corresponding loops

29.271.3.5 **void Go::Loop::getAcuteEdges (std::vector< std::pair< ftEdge *, ftEdge * > > & *acute_edges,* double *angtol*) const**

Check for acute edges in boundary loop.

29.271.3.6 **void Go::Loop::getBadDistance (std::vector< std::pair< ftSurface *, ftEdge * > > & *badPairs,* RectDomain * *domain,* double *tol*) const**

Collect all pairs of surface and edges where some part of the edge has a distance to the surface greater than a tolerance.

29.271.3.7 **void Go::Loop::getBadDistance (std::vector< std::pair< ftEdge *, shared_ptr< Vertex > > > & *badPairs,* double *tol*) const**

29.271.3.8 **shared_ptr<ftEdgeBase> Go::Loop::getEdge (size_t *idx*)** `[inline]`

Fetch an edge from the loop specified by the index in the sequence of edges

Definition at line 107 of file Loop.h.

29.271.3.9 **std::vector<shared_ptr<ftEdgeBase> >& Go::Loop::getEdges ( )** `[inline]`

Get all edges oriented head to tail.

Definition at line 100 of file Loop.h.

29.271.3.10 **const ftFaceBase* Go::Loop::getFace ( )** `[inline]`

The face associated to this loop.

Definition at line 136 of file Loop.h.

29.271.3.11 **void Go::Loop::getLoopIntersections (shared_ptr< Loop > *loop2,* double *tol,* std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > & *int_pt*) const**

Compute intersections between boundary loops.

29.271.3.12 void Go::Loop::getLoopSelfIntersections (double *tol,* std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > & *int_pt*) const

Compute self intersections of boundary loop.

29.271.3.13 void Go::Loop::getPosTangentSurfaceDiscont (std::vector< ftEdge * > & *badPos,* std::vector< ftEdge * > & *badTangent,* double *tol,* double *kink,* double *bend,* int *leastSurfIndex,* shared_ptr< SurfaceModel > *sm*) const

Fetch information on continuity.

29.271.3.14 std::vector<shared_ptr<Vertex> > Go::Loop::getSeqVertices ( ) const

Fetch all vertices between edges in the loop in sequence.

29.271.3.15 double Go::Loop::getTol ( ) [inline]

Get tolerance.

Definition at line 123 of file Loop.h.

29.271.3.16 std::vector<shared_ptr<Vertex> > Go::Loop::getVertices ( ) const

Fetch all vertices between edges in the loop.

29.271.3.17 void Go::Loop::groupSmoothEdges (double *tol,* double *angtol,* std::vector< std::vector< shared_ptr< ftEdgeBase > > > & *edge_groups*)

Group edges that are smoothly joined together. The sequence of edges corresponds to the sequence in the Loop, i.e. head to tail connected

29.271.3.18 bool Go::Loop::hasRadialEdges ( ) const

Check for radial edges Existance

29.271.3.19 bool Go::Loop::isClose (ftEdge * *edge,* RectDomain * *domain,* double *tol*) const

Test if an edge is close to the surface within some tolerance.

29.271.3.20 bool Go::Loop::isFaceConsistent ( )

Check consistency with regard to face.

29.271.3.21 bool Go::Loop::isInLoop (ftEdgeBase * *edge*) [inline]

Check if a given edge is in this loop.

Definition at line 212 of file Loop.h.

29.271.3.22 void Go::Loop::setFace (ftFaceBase * *face*)

Set face pointer.

29.271.3.23 size_t Go::Loop::size ( ) [inline]

Number of edges in loop.

Definition at line 94 of file Loop.h.

29.271.3.24 void Go::Loop::split (int *ind*, double *par*)

Split loop in a given parameter of an edge given by index.

29.271.3.25 void Go::Loop::updateLoop (shared_ptr< ftEdgeBase > *new_edge*)

Make sure that the edges belonging to this loop is complete.

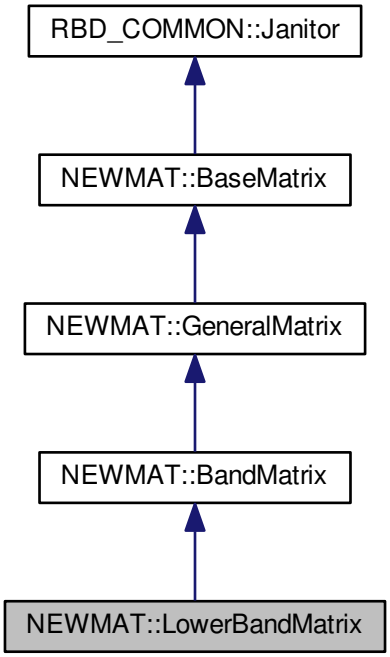
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/Loop.h

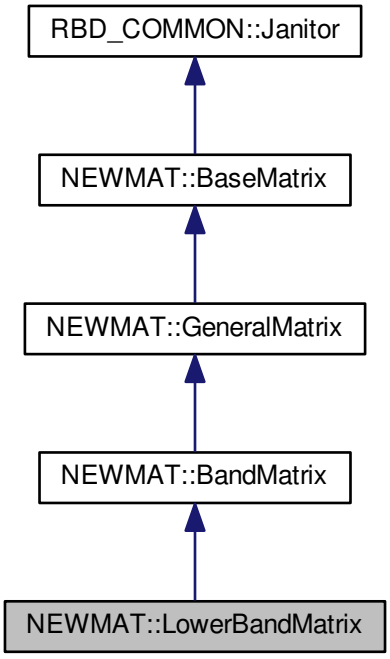
29.272 NEWMAT::LowerBandMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::LowerBandMatrix:



Collaboration diagram for NEWMAT::LowerBandMatrix:



Public Member Functions

- LowerBandMatrix ()
- ~LowerBandMatrix ()
- LowerBandMatrix (int n, int lbw)
- LowerBandMatrix (const BaseMatrix &)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- void operator= (const LowerBandMatrix &m)
- MatrixType Type () const
- LowerBandMatrix (const LowerBandMatrix &gm)
- GeneralMatrix * MakeSolver ()
- void Solver (MatrixColX &, const MatrixColX &)
- LogAndSign LogDeterminant () const
- void ReSize (int, int, int)
- void ReSize (int n, int lbw)
- void ReSize (const GeneralMatrix &A)
- Real & operator() (int, int)
- Real operator() (int, int) const
- Real & element (int, int)
- Real element (int, int) const

Additional Inherited Members

29.272.1 Detailed Description

Definition at line 984 of file newmat.h.

29.272.2 Constructor & Destructor Documentation

29.272.2.1 NEWMAT::LowerBandMatrix::LowerBandMatrix ( ) [inline]

Definition at line 988 of file newmat.h.

29.272.2.2 NEWMAT::LowerBandMatrix::~LowerBandMatrix ( ) [inline]

Definition at line 989 of file newmat.h.

29.272.2.3 NEWMAT::LowerBandMatrix::LowerBandMatrix (int *n*, int *lbw*) [inline]

Definition at line 990 of file newmat.h.

29.272.2.4 NEWMAT::LowerBandMatrix::LowerBandMatrix (const BaseMatrix &)

29.272.2.5 NEWMAT::LowerBandMatrix::LowerBandMatrix (const LowerBandMatrix & *gm*) [inline]

Definition at line 998 of file newmat.h.

29.272.3 Member Function Documentation

29.272.3.1 Real& NEWMAT::LowerBandMatrix::element (int , int)

29.272.3.2 Real NEWMAT::LowerBandMatrix::element (int , int) const

29.272.3.3 LogAndSign LowerBandMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::BandMatrix.

Definition at line 403 of file bandmat.cpp.

29.272.3.4 GeneralMatrix* NEWMAT::LowerBandMatrix::MakeSolver ( ) [inline], [virtual]

Reimplemented from NEWMAT::BandMatrix.

Definition at line 999 of file newmat.h.

29.272.3.5 Real& NEWMAT::LowerBandMatrix::operator() (int , int)

29.272.3.6 Real NEWMAT::LowerBandMatrix::operator() (int , int) const

29.272.3.7 void NEWMAT::LowerBandMatrix::operator= (const BaseMatrix &)

29.272.3.8 void NEWMAT::LowerBandMatrix::operator= (Real *f*) [inline]

Definition at line 994 of file newmat.h.

29.272.3.9 void NEWMAT::LowerBandMatrix::operator= (const LowerBandMatrix & *m*) [inline]

Definition at line 995 of file newmat.h.

29.272.3.10 void NEWMAT::LowerBandMatrix::ReSize (int , int , int) [virtual]

Reimplemented from NEWMAT::BandMatrix.

29.272.3.11 void NEWMAT::LowerBandMatrix::ReSize (int *n,* int *lbw*) [inline]

Definition at line 1003 of file newmat.h.

29.272.3.12 void NEWMAT::LowerBandMatrix::ReSize (const GeneralMatrix & *A*) [inline], [virtual]

Reimplemented from NEWMAT::BandMatrix.

Definition at line 1005 of file newmat.h.

29.272.3.13 void LowerBandMatrix::Solver (MatrixColX & *mcout,* const MatrixColX & *mcin*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 375 of file bandmat.cpp.

29.272.3.14 MatrixType LowerBandMatrix::Type ( ) const [virtual]

Reimplemented from NEWMAT::BandMatrix.

Definition at line 395 of file newmat4.cpp.

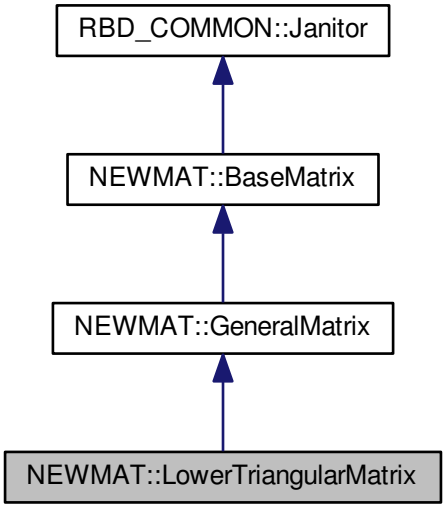
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/bandmat.cpp
- newmat/src/newmat4.cpp

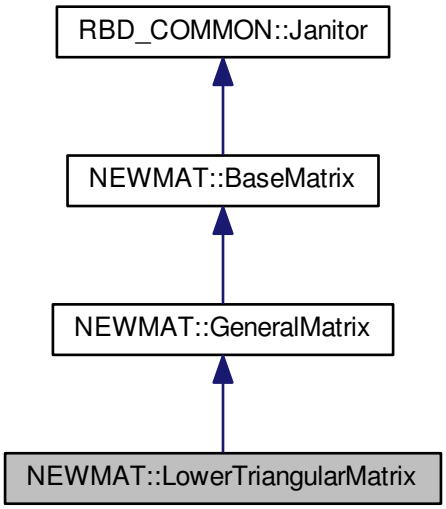
29.273 NEWMAT::LowerTriangularMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::LowerTriangularMatrix:



Collaboration diagram for NEWMAT::LowerTriangularMatrix:



Public Member Functions

- LowerTriangularMatrix ()
- ~LowerTriangularMatrix ()
- LowerTriangularMatrix (ArrayLengthSpecifier)
- LowerTriangularMatrix (const LowerTriangularMatrix &gm)
- LowerTriangularMatrix (const BaseMatrix &M)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- void operator= (const LowerTriangularMatrix &m)
- Real & operator() (int, int)
- Real & element (int, int)
- Real operator() (int, int) const
- Real element (int, int) const
- MatrixType Type () const
- GeneralMatrix * MakeSolver ()
- void Solver (MatrixColX &, const MatrixColX &)
- LogAndSign LogDeterminant () const
- Real Trace () const
- void GetRow (MatrixRowCol &)
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &)
- void RestoreCol (MatrixRowCol &)
- void RestoreCol (MatrixColX &c)
- void NextRow (MatrixRowCol &)
- void ReSize (int)
- void ReSize (const GeneralMatrix &A)
- MatrixBandWidth BandWidth () const

Additional Inherited Members

29.273.1 Detailed Description

Definition at line 708 of file newmat.h.

29.273.2 Constructor & Destructor Documentation

29.273.2.1 NEWMAT::LowerTriangularMatrix::LowerTriangularMatrix ( ) [inline]

Definition at line 712 of file newmat.h.

29.273.2.2 NEWMAT::LowerTriangularMatrix::~LowerTriangularMatrix ( ) [inline]

Definition at line 713 of file newmat.h.

29.273.2.3 NEWMAT::LowerTriangularMatrix::LowerTriangularMatrix (ArrayLengthSpecifier)

29.273.2.4 NEWMAT::LowerTriangularMatrix::LowerTriangularMatrix (const LowerTriangularMatrix & *gm*) [inline]

Definition at line 715 of file newmat.h.

29.273.2.5 LowerTriangularMatrix::LowerTriangularMatrix (const BaseMatrix & *M*)

Definition at line 108 of file newmat4.cpp.

29.273.3 Member Function Documentation

29.273.3.1 MatrixBandWidth LowerTriangularMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 409 of file newmat4.cpp.

29.273.3.2 Real& NEWMAT::LowerTriangularMatrix::element (int , int)

29.273.3.3 Real NEWMAT::LowerTriangularMatrix::element (int , int) const

29.273.3.4 void NEWMAT::LowerTriangularMatrix::GetCol (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.273.3.5 void NEWMAT::LowerTriangularMatrix::GetCol (MatrixColX &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.273.3.6 void LowerTriangularMatrix::GetRow (MatrixRowCol & *mrc*) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 334 of file newmat3.cpp.

29.273.3.7 LogAndSign LowerTriangularMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 655 of file newmat8.cpp.

29.273.3.8 GeneralMatrix* NEWMAT::LowerTriangularMatrix::MakeSolver ( ) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 730 of file newmat.h.

29.273.3.9 void LowerTriangularMatrix::NextRow (MatrixRowCol & *mrc*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 392 of file newmat3.cpp.

29.273.3.10 Real& NEWMAT::LowerTriangularMatrix::operator() (int , int)

29.273.3.11 Real NEWMAT::LowerTriangularMatrix::operator() (int , int) const

29.273.3.12 void NEWMAT::LowerTriangularMatrix::operator= (const BaseMatrix &)

29.273.3.13 void NEWMAT::LowerTriangularMatrix::operator= (Real *f*) [inline]

Definition at line 718 of file newmat.h.

29.273.3.14 void NEWMAT::LowerTriangularMatrix::operator= (const LowerTriangularMatrix & *m*) [inline]

Definition at line 719 of file newmat.h.

29.273.3.15 void NEWMAT::LowerTriangularMatrix::ReSize (int)

29.273.3.16 void LowerTriangularMatrix::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 315 of file newmat4.cpp.

29.273.3.17 void NEWMAT::LowerTriangularMatrix::RestoreCol (MatrixRowCol &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

29.273.3.18 void NEWMAT::LowerTriangularMatrix::RestoreCol (MatrixColX & *c*) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 738 of file newmat.h.

29.273.3.19 void LowerTriangularMatrix::Solver (MatrixColX & *mcout,* const MatrixColX & *mcin*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 70 of file newmat7.cpp.

29.273.3.20 Real LowerTriangularMatrix::Trace ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 563 of file newmat8.cpp.

29.273.3.21 MatrixType LowerTriangularMatrix::Type ( ) const [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 388 of file newmat4.cpp.

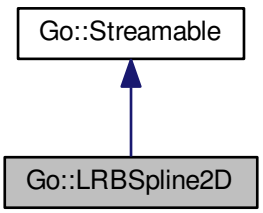
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat3.cpp
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp
- newmat/src/newmat8.cpp

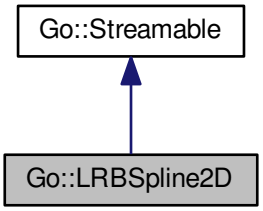
29.274 Go::LRBSpline2D Class Reference

`#include <LRBSpline2D.h>`

Inheritance diagram for Go::LRBSpline2D:



Collaboration diagram for Go::LRBSpline2D:



Public Member Functions

- LRBSpline2D ()

  Constructor to create an empty (invalid) LRBSpline2D.
- template<typename Iterator >
  LRBSpline2D (const Point &c_g, double weight, int deg_u, int deg_v, Iterator kvec_u_start, Iterator kvec_v↩
  _start, double gamma, const Mesh2D *mesh, bool rational=false)
- LRBSpline2D (const LRBSpline2D &rhs)

  Copy constructor.
- void swap (LRBSpline2D &rhs)

  Swap the contents of two LRBSpline2Ds.
- ~LRBSpline2D ()
- virtual void write (std::ostream &os) const

  Write the LRBSpline2D to a stream.
- virtual void read (std::istream &is)

  Read the LRBSpline2D from a stream.
- double evalBasisFunc (double u, double v) const
- double evalBasisFunction (double u, double v, int u_deriv=0, int v_deriv=0, bool u_at_end=false, bool v_at↩
  _end=false) const
- Point eval (double u, double v, int u_deriv=0, int v_deriv=0, bool u_at_end=false, bool v_at_end=false) const
- void evalpos (double u, double v, double pos[])
- void evalBasisGridDer (int nmb_der, const std::vector< double > &par1, const std::vector< double > &par2, std::vector< double > &derivs) const
- void evalBasisLineDer (int nmb_der, Direction2D d, const std::vector< double > &parval, std::vector< double > &derivs) const
- Point & coefTimesGamma ()
- const Point & coefTimesGamma () const
- Point Coef ()
- const Point Coef () const
- double & gamma ()
- const double & gamma () const
- double & weight ()
- const double & weight () const
- const bool rational () const
- const int dimension () const
- const std::vector< int > & kvec (Direction2D d) const
- std::vector< int > & kvec (Direction2D d)

- const int degree (Direction2D d) const
- const int suppMin (Direction2D d) const

  Get the index to the knot that defines the start (end) of the LRBSpline2D's support.
- const int suppMax (Direction2D d) const
- double umin () const

  Information about the domain covered by this B-spline.
- double umax () const
- double vmin () const
- double vmax () const
- int coefFixed () const
- void setFixCoef (int coef_fixed)
- int endmult_u (bool atstart) const
- int endmult_v (bool atstart) const
- bool coversCorner (int u_ix, int v_ix) const
- Point getGrevilleParameter () const
- double getGrevilleParameter (Direction2D d) const
- bool overlaps (Element2D *el) const
- bool overlaps (double domain[]) const
- bool addSupport (Element2D *el)
- void removeSupport (Element2D *el)
- std::vector< Element2D * >::iterator supportedElementBegin ()
- std::vector< Element2D * >::iterator supportedElementEnd ()
- std::vector< Element2D * > getExtendedSupport ()
- std::vector< Element2D * > getMinimalExtendedSupport ()
- const std::vector< Element2D * > & supportedElements ()
- void setSupport (std::vector< Element2D * > elements)
- bool hasSupportedElement (Element2D *el)
- int nmbSupportedElements ()
- void setMesh (const Mesh2D *mesh)
- const Mesh2D * getMesh ()
- void subtractKnotIdx (int u_del, int v_del)
- bool operator< (const LRBSpline2D &rhs) const
- bool operator== (const LRBSpline2D &rhs) const
- void setCoefAndGamma (Point &coef, double gamma)
- void reverseParameterDirection (bool dir_is_u)
- void swapParameterDirection ()
- std::vector< double > unitSquareBernsteinBasis (double start_u, double stop_u, double start_v, double stop_v) const

29.274.1 Detailed Description

Definition at line 66 of file LRBSpline2D.h.

29.274.2 Constructor & Destructor Documentation

29.274.2.1 Go::LRBSpline2D::LRBSpline2D ( ) [inline]

Constructor to create an empty (invalid) LRBSpline2D.

Definition at line 76 of file LRBSpline2D.h.

29.274.2.2 template<typename Iterator > Go::LRBSpline2D::LRBSpline2D (const Point & *c_g*, double *weight*, int *deg_u*, int *deg_v*, Iterator *kvec_u_start*, Iterator *kvec_v_start*, double *gamma*, const Mesh2D * *mesh*, bool *rational* = false) [inline]

Definition at line 80 of file LRBSpline2D.h.

29.274.2.3 Go::LRBSpline2D::LRBSpline2D (const LRBSpline2D & *rhs*)

Copy constructor.

29.274.2.4 Go::LRBSpline2D::~LRBSpline2D ( ) [inline]

Definition at line 110 of file LRBSpline2D.h.

29.274.3 Member Function Documentation

29.274.3.1 bool Go::LRBSpline2D::addSupport (Element2D * *el*)

29.274.3.2 Point Go::LRBSpline2D::Coef ( ) [inline]

Definition at line 203 of file LRBSpline2D.h.

29.274.3.3 const Point Go::LRBSpline2D::Coef ( ) const [inline]

Definition at line 204 of file LRBSpline2D.h.

29.274.3.4 int Go::LRBSpline2D::coefFixed ( ) const [inline]

Definition at line 255 of file LRBSpline2D.h.

29.274.3.5 Point& Go::LRBSpline2D::coefTimesGamma ( ) [inline]

Definition at line 200 of file LRBSpline2D.h.

29.274.3.6 const Point& Go::LRBSpline2D::coefTimesGamma ( ) const [inline]

Definition at line 201 of file LRBSpline2D.h.

29.274.3.7 bool Go::LRBSpline2D::coversCorner (int *u_ix*, int *v_ix*) const [inline]

Definition at line 273 of file LRBSpline2D.h.

29.274.3.8 const int Go::LRBSpline2D::degree (Direction2D *d*) const [inline]

Definition at line 229 of file LRBSpline2D.h.

29.274.3.9 const int Go::LRBSpline2D::dimension ( ) const [inline]

Definition at line 219 of file LRBSpline2D.h.

29.274.3.10 int Go::LRBSpline2D::endmult_u (bool *atstart*) const

29.274.3.11 int Go::LRBSpline2D::endmult_v (bool *atstart*) const

29.274.3.12 Point Go::LRBSpline2D::eval (double *u*, double *v*, int *u_deriv* = 0, int *v_deriv* = 0, bool *u_at_end* = false, bool *v_at_end* = false) const [inline]

Definition at line 151 of file LRBSpline2D.h.

29.274.3.13 double Go::LRBSpline2D::evalBasisFunc (double *u*, double *v*) const

29.274.3.14 double Go::LRBSpline2D::evalBasisFunction (double *u*, double *v*, int *u_deriv* = 0, int *v_deriv* = 0, bool *u_at_end* = false, bool *v_at_end* = false) const

Similar to 'eval' below, but returns the value of the LRBSpline2D's underlying *basis* function, rather than the function value itself. (In other words, the basis function's value is not multiplied by the spline coefficient, nor gamma, before it is returned.)

29.274.3.15 void Go::LRBSpline2D::evalBasisGridDer (int *nmb_der*, const std::vector< double > & *par1*, const std::vector< double > & *par2*, std::vector< double > & *derivs*) const

Compute a number of derivatives of the LRBspline in a grid of parameter values specified in the two parameter directions. The sequence of the output is: du for all points, then dv, duu, duv, dvv, ... The position of the basis function is NOT stored. Rationals are NOT handled

29.274.3.16 void Go::LRBSpline2D::evalBasisLineDer (int *nmb_der*, Direction2D *d*, const std::vector< double > & *parval*, std::vector< double > & *derivs*) const

29.274.3.17 void Go::LRBSpline2D::evalpos (double *u*, double *v*, double *pos[]*) [inline]

Evaluate position only, array of correct size is expected as input. No size checking

Definition at line 173 of file LRBSpline2D.h.

29.274.3.18 double& Go::LRBSpline2D::gamma ( ) [inline]

Definition at line 208 of file LRBSpline2D.h.

29.274.3.19 const double& Go::LRBSpline2D::gamma ( ) const [inline]

Definition at line 209 of file LRBSpline2D.h.

29.274.3.20 std::vector<Element2D*> Go::LRBSpline2D::getExtendedSupport ( )

29.274.3.21 Point Go::LRBSpline2D::getGrevilleParameter ( ) const

29.274.3.22 double Go::LRBSpline2D::getGrevilleParameter (Direction2D *d*) const

29.274.3.23 const Mesh2D* Go::LRBSpline2D::getMesh ( ) [inline]

Definition at line 308 of file LRBSpline2D.h.

29.274.3.24 std::vector<Element2D*> Go::LRBSpline2D::getMinimalExtendedSupport ( )

29.274.3.25 bool Go::LRBSpline2D::hasSupportedElement (Element2D * *el*)

29.274.3.26 const std::vector<int>& Go::LRBSpline2D::kvec (Direction2D *d*) const [inline]

Definition at line 225 of file LRBSpline2D.h.

29.274.3.27 std::vector<int>& Go::LRBSpline2D::kvec (Direction2D *d*) [inline]

Definition at line 226 of file LRBSpline2D.h.

29.274.3.28 int Go::LRBSpline2D::nmbSupportedElements ( ) [inline]

Definition at line 301 of file LRBSpline2D.h.

29.274.3.29 bool Go::LRBSpline2D::operator< (const LRBSpline2D & *rhs*) const

29.274.3.30 bool Go::LRBSpline2D::operator== (const LRBSpline2D & *rhs*) const

29.274.3.31 bool Go::LRBSpline2D::overlaps (Element2D * *el*) const

29.274.3.32 bool Go::LRBSpline2D::overlaps (double *domain[]*) const

29.274.3.33 const bool Go::LRBSpline2D::rational ( ) const [inline]

Definition at line 215 of file LRBSpline2D.h.

29.274.3.34 virtual void Go::LRBSpline2D::read (std::istream & *is*) [virtual]

Read the LRBSpline2D from a stream.

Implements Go::Streamable.

29.274.3.35 void Go::LRBSpline2D::removeSupport (Element2D * *el*)

29.274.3.36 void Go::LRBSpline2D::reverseParameterDirection (bool *dir_is_u*)

29.274.3.37 void Go::LRBSpline2D::setCoefAndGamma (Point & *coef,* double *gamma*) [inline]

Definition at line 325 of file LRBSpline2D.h.

29.274.3.38 void Go::LRBSpline2D::setFixCoef (int *coef_fixed*) [inline]

Definition at line 260 of file LRBSpline2D.h.

29.274.3.39 void Go::LRBSpline2D::setMesh (const Mesh2D * *mesh*) [inline]

Definition at line 303 of file LRBSpline2D.h.

29.274.3.40 void Go::LRBSpline2D::setSupport (std::vector< Element2D * > *elements*) [inline]

Definition at line 295 of file LRBSpline2D.h.

29.274.3.41 void Go::LRBSpline2D::subtractKnotIdx (int *u_del,* int *v_del*)

29.274.3.42 const int Go::LRBSpline2D::suppMax (Direction2D *d*) const [inline]

Definition at line 235 of file LRBSpline2D.h.

29.274.3.43 const int Go::LRBSpline2D::suppMin (Direction2D *d*) const [inline]

Get the index to the knot that defines the start (end) of the LRBSpline2D's support.

Definition at line 234 of file LRBSpline2D.h.

29.274.3.44 std::vector<Element2D*>::iterator Go::LRBSpline2D::supportedElementBegin ( )

29.274.3.45 std::vector<Element2D*>::iterator Go::LRBSpline2D::supportedElementEnd ( )

29.274.3.46 const std::vector<Element2D*>& Go::LRBSpline2D::supportedElements ( ) [inline]

Definition at line 291 of file LRBSpline2D.h.

29.274.3.47 void Go::LRBSpline2D::swap (LRBSpline2D & *rhs*) [inline]

Swap the contents of two LRBSpline2Ds.

Definition at line 98 of file LRBSpline2D.h.

29.274.3.48 void Go::LRBSpline2D::swapParameterDirection ( )

29.274.3.49 double Go::LRBSpline2D::umax ( ) const [inline]

Definition at line 242 of file LRBSpline2D.h.

29.274.3.50 double Go::LRBSpline2D::umin ( ) const [inline]

Information about the domain covered by this B-spline.

Definition at line 238 of file LRBSpline2D.h.

29.274.3.51 std::vector<double> Go::LRBSpline2D::unitSquareBernsteinBasis (double *start_u,* double *stop_u,* double *start_v,* double *stop_v*) const

For a given rectangle inside one of the elements cut out by the knot lines, this B-spline is a bi-degree polynomial. After transforming the rectangle to the unit square, this polynomial times the coefficient times gamma can be expressed by the Bernstein basis. This function returns the coefficients for this expression.

Parameters

start_u	the minimum u-value of the given rectangle
stop_u	the maximum u-value of the given rectangle
start_v	the minimum v-value of the given rectangle
stop_v	the maximum v-value of the given rectangle

Returns

a vector of the coefficients of the control points p_ij in order p_00[0], p_00[1], ..., p_10[0], ..., p_01[0], ...

29.274.3.52 double Go::LRBSpline2D::vmax ( ) const [inline]

Definition at line 250 of file LRBSpline2D.h.

29.274.3.53 double Go::LRBSpline2D::vmin ( ) const [inline]

Definition at line 246 of file LRBSpline2D.h.

29.274.3.54 double& Go::LRBSpline2D::weight ( ) [inline]

Definition at line 212 of file LRBSpline2D.h.

29.274.3.55 const double& Go::LRBSpline2D::weight ( ) const [inline]

Definition at line 213 of file LRBSpline2D.h.

29.274.3.56 virtual void Go::LRBSpline2D::write (std::ostream & *os*) const [virtual]

Write the LRBSpline2D to a stream.

Implements Go::Streamable.

The documentation for this class was generated from the following file:

- lrsplines2D/include/GoTools/lrsplines2D/LRBSpline2D.h

29.275 Go::LRSplineEvalGrid Class Reference

`#include <LRSplineEvalGrid.h>`

Public Types

- typedef double param_float_type

Public Member Functions

- LRSplineEvalGrid ()
- LRSplineEvalGrid (LRSplineSurface &lr_spline)
- std::vector< Element2D >::iterator elements_begin ()
- std::vector< Element2D >::iterator elements_end ()
- void evaluate (Element2D &elem, double u, double v, double *res) const
- int numElements () const
- int dim () const
- int orderU () const
- int orderV () const
- void low (const Element2D &e, double &u, double &v)
- void high (const Element2D &e, double &u, double &v)
- void testCoefComputation ()
- void computeBezCoefs (int dim, const double *points, int orderU, int orderV, double *coefs)
- template<class V >
  void evaluateGrid (V &element, double *points)
- RectDomain origDom ()

29.275.1 Detailed Description

Definition at line 70 of file LRSplineEvalGrid.h.

29.275.2 Member Typedef Documentation

29.275.2.1 typedef double Go::LRSplineEvalGrid::param_float_type

Definition at line 77 of file LRSplineEvalGrid.h.

29.275.3 Constructor & Destructor Documentation

29.275.3.1 Go::LRSplineEvalGrid::LRSplineEvalGrid ( )

29.275.3.2 Go::LRSplineEvalGrid::LRSplineEvalGrid (LRSplineSurface & *lr_spline*)

29.275.4 Member Function Documentation

29.275.4.1 void Go::LRSplineEvalGrid::computeBezCoefs (int *dim,* const double * *points,* int *orderU,* int *orderV,* double * *coefs*) [inline]

Definition at line 186 of file LRSplineEvalGrid.h.

29.275.4.2 int Go::LRSplineEvalGrid::dim ( ) const [inline]

Definition at line 148 of file LRSplineEvalGrid.h.

29.275.4.3 std::vector<Element2D>::iterator Go::LRSplineEvalGrid::elements_begin ( ) [inline]

Definition at line 83 of file LRSplineEvalGrid.h.

29.275.4.4 std::vector<Element2D>::iterator Go::LRSplineEvalGrid::elements_end ( ) [inline]

Definition at line 88 of file LRSplineEvalGrid.h.

29.275.4.5 void Go::LRSplineEvalGrid::evaluate (Element2D & *elem,* double *u,* double *v,* double * *res*) const [inline]

Definition at line 93 of file LRSplineEvalGrid.h.

29.275.4.6 template<class V > void Go::LRSplineEvalGrid::evaluateGrid (V & *element,* double * *points*) [inline]

Definition at line 245 of file LRSplineEvalGrid.h.

29.275.4.7 void Go::LRSplineEvalGrid::high (const Element2D & *e*, double & *u*, double & *v*) [inline]

Definition at line 173 of file LRSplineEvalGrid.h.

29.275.4.8 void Go::LRSplineEvalGrid::low (const Element2D & *e*, double & *u*, double & *v*) [inline]

Definition at line 163 of file LRSplineEvalGrid.h.

29.275.4.9 int Go::LRSplineEvalGrid::numElements ( ) const [inline]

Definition at line 143 of file LRSplineEvalGrid.h.

29.275.4.10 int Go::LRSplineEvalGrid::orderU ( ) const [inline]

Definition at line 153 of file LRSplineEvalGrid.h.

29.275.4.11 int Go::LRSplineEvalGrid::orderV ( ) const [inline]

Definition at line 158 of file LRSplineEvalGrid.h.

29.275.4.12 RectDomain Go::LRSplineEvalGrid::origDom ( ) [inline]

Definition at line 274 of file LRSplineEvalGrid.h.

29.275.4.13 void Go::LRSplineEvalGrid::testCoefComputation ( )

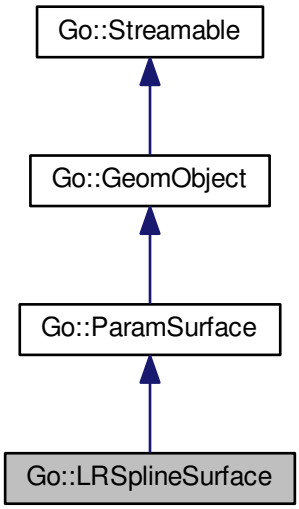
The documentation for this class was generated from the following file:

- lrsplines2D/include/GoTools/lrsplines2D/LRSplineEvalGrid.h

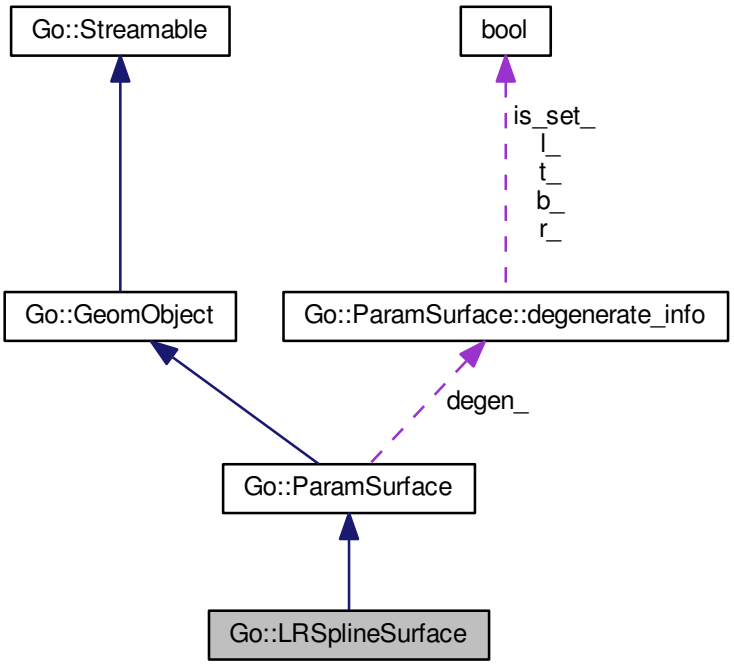
29.276 Go::LRSplineSurface Class Reference

`#include <LRSplineSurface.h>`

Inheritance diagram for Go::LRSplineSurface:



Collaboration diagram for Go::LRSplineSurface:



Classes

- struct BSKey
- struct double_pair_hash
- struct ElemKey
- struct Refinement2D

Public Types

- typedef std::map< BSKey, std::unique_ptr< LRBSpline2D > > BSplineMap
- typedef std::map< ElemKey, std::unique_ptr< Element2D > > ElementMap

Public Member Functions

- template<typename KnotIterator , typename CoefIterator >
  LRSplineSurface (int deg_u, int deg_v, int coefs_u, int coefs_v, int dimension, KnotIterator knotvals_u_start, KnotIterator knotvals_v_start, CoefIterator coefs_start, double knot_tol=1.0e-8)
- template<typename KnotIterator >
  LRSplineSurface (int deg_u, int deg_v, int coefs_u, int coefs_v, int dimension, KnotIterator knotvals_u_start, KnotIterator knotvals_v_start, double knot_tol=1.0e-8)
- LRSplineSurface (SplineSurface *surf, double knot_tol)
- LRSplineSurface ()
- LRSplineSurface (const LRSplineSurface &rhs)

- virtual ~LRSplineSurface ()

  Virtual destructor, enables safe inheritance.
- const LRSplineSurface & operator= (const LRSplineSurface &other)
- LRSplineSurface (std::istream &is)
- void swap (LRSplineSurface &rhs)
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual LRSplineSurface * clone () const
- virtual SplineSurface * asSplineSurface ()
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual const RectDomain & parameterDomain () const
- virtual RectDomain containingDomain () const
- virtual bool inDomain (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies inside the domain of this surface.
- virtual int inDomain2 (double u, double v, double eps=1.0e-4) const
- virtual bool onBoundary (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies at the boundary of this surface.
- virtual Point closestInDomain (double u, double v) const
- virtual CurveLoop outerBoundaryLoop (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- virtual std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EP↩SILON) const
- SplineCurve * edgeCurve (int edge_num) const
- virtual void point (Point &pt, double upar, double vpar) const
- void point (Point &pt, double upar, double vpar, Element2D *elem) const
- virtual void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_from_right=true, double resolution=1.0e-12) const
- void point (std::vector< Point > &pts, double upar, double vpar, int derivs, Element2D *elem, bool u_from↩_right=true, bool v_from_right=true, double resolution=1.0e-12) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, int maxiter, Element2D *elem=NULL, const RectDomain *rd=NULL, double *seed=NULL) const
- virtual void evalGrid (int num_u, int num_v, double umin, double umax, double vmin, double vmax, std↩::vector< double > &points, double nodata_val=-9999) const
- virtual double startparam_u () const
- virtual double startparam_v () const
- virtual double endparam_u () const
- virtual double endparam_v () const
- virtual void normal (Point &n, double upar, double vpar) const
- void normal (Point &n, double upar, double vpar, Element2D *elem) const
- virtual DirectionCone normalCone () const
- virtual DirectionCone tangentCone (bool pardir_is_u) const
- virtual CompositeBox compositeBox () const
- LRSplineSurface * subSurface (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy) const
- virtual std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual LRSplineSurface * mirrorSurface (const Point &pos, const Point &norm) const

  Mirror a surface around a specified plane.
- virtual void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const

- virtual void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve ∗&cv, SplineCurve ∗&crosscv, double knot_tol=1e-05) const
- void getBoundaryInfo (double par1, double par2, int bdindex, SplineCurve ∗&cv, SplineCurve ∗&crosscv, double knot_tol) const
- void getBoundaryIdx (Point &pt1, Point &pt2, double epsilon, int &bdindex, double &par1, double &par2, double knot_tol=1e-05) const
- virtual void turnOrientation ()

  Turns the direction of the normal of the surface.
- virtual void swapParameterDirection ()

  Swaps the two parameter directions.
- virtual void reverseParameterDirection (bool direction_is_u)
- virtual void setParameterDomain (double u1, double u2, double v1, double v2)
- virtual double area (double tol) const
- virtual void getCornerPoints (std::vector< std::pair< Point, Point > > &corners) const
- SplineCurve ∗ constParamCurve (double parameter, bool pardir_is_u) const
- void constParamCurve (double parameter, bool pardir_is_u, SplineCurve ∗&cv, SplineCurve ∗&crosscv) const
- virtual std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for parallel and anti parallel partial derivatives in surface corners.
- virtual double nextSegmentVal (int dir, double par, bool forward, double tol) const
- Point operator() (double u, double v, int u_deriv=0, int v_deriv=0) const
- Point operator() (double u, double v, int u_deriv, int v_deriv, Element2D ∗elem) const
- double paramMin (Direction2D d) const
- double paramMax (Direction2D d) const
- int degree (Direction2D d) const
- const Mesh2D & mesh () const
- int numBasisFunctions () const
- int numElements () const
- void computeBasis (double param_u, double param_v, BasisPtsSf &result, int iEl=-1) const
- void computeBasis (double param_u, double param_v, BasisDerivsSf &result, int iEl=-1) const
- void computeBasis (double param_u, double param_v, BasisDerivsSf2 &result, int iEl=-1) const
- void computeBasis (double param_u, double param_v, std::vector< std::vector< double > > &result, int derivs=0, int iEl=-1) const
- int getElementContaining (double u, double v) const
- Element2D ∗ coveringElement (double u, double v) const
- void constructElementMesh (std::vector< Element2D ∗ > &elements) const
- std::vector< LRBSpline2D ∗ > basisFunctionsWithSupportAt (double u, double v) const
- BSplineMap::const_iterator basisFunctionsBegin () const
- BSplineMap::const_iterator basisFunctionsEnd () const
- BSplineMap::iterator basisFunctionsBeginNonconst ()
- BSplineMap::iterator basisFunctionsEndNonconst ()
- BSplineMap::iterator bsplineFromDomain (double start_u, double start_v, double end_u, double end_v, int startmult_u, int startmult_v, int endmult_u, int endmult_v)
- std::vector< LRBSpline2D ∗ > getBoundaryBsplines (Direction2D d, bool atstart)
- bool isFullTensorProduct () const
- double getKnotTol ()

  Tolerance for equality of knots.
- void refine (Direction2D d, double fixed_val, double start, double end, int mult=1, bool absolute=false)
- void refine (const Refinement2D &ref, bool absolute=false)
- void refine (const std::vector< Refinement2D > &refs, bool absolute=false)
- void refineBasisFunction (int index)
- void refineBasisFunction (const std::vector< int > &indices)

- void refineElement (int index)
- void refineElement (const std::vector< int > &indices)
- void setCoef (const Point &value, const LRBSpline2D *target)
- void setCoefTimesGamma (const Point &value, const LRBSpline2D *target)
- void setCoef (const Point &value, int umin_ix, int vmin_ix, int umax_ix, int vmax_ix, int u_mult=1, int v_mult=1)
- void expandToFullTensorProduct ()
- void addSurface (const LRSplineSurface &other_sf, double fac=1.0)
- void to3D ()
- bool rational () const
- void translate (const Point &vec)
- ElementMap::const_iterator elementsBegin () const
- ElementMap::const_iterator elementsEnd () const
- void setCurrentElement (Element2D *curr_el)
- LineCloud getElementBds (int num_pts=5) const

Static Public Member Functions

- static BSKey generate_key (const LRBSpline2D &b, const Mesh2D &m)
- static BSKey generate_key (const LRBSpline2D &b)
- static ElemKey generate_key (const double &, const double &)
- static ClassType classType ()

Additional Inherited Members

29.276.1 Detailed Description

Definition at line 61 of file LRSplineSurface.h.

29.276.2 Member Typedef Documentation

29.276.2.1 typedef std::map<BSKey, std::unique_ptr<LRBSpline2D> > Go::LRSplineSurface::BSplineMap

Definition at line 114 of file LRSplineSurface.h.

29.276.2.2 typedef std::map<ElemKey, std::unique_ptr<Element2D> > Go::LRSplineSurface::ElementMap

Definition at line 143 of file LRSplineSurface.h.

29.276.3 Constructor & Destructor Documentation

29.276.3.1 template<typename KnotIterator , typename CoefIterator > Go::LRSplineSurface::LRSplineSurface (int *deg_u,* int *deg_v,* int *coefs_u,* int *coefs_v,* int *dimension,* KnotIterator *knotvals_u_start,* KnotIterator *knotvals_v_start,* CoefIterator *coefs_start,* double *knot_tol* = `1.0e-8`)

Definition at line 244 of file LRSplineSurface_impl.h.

29.276.3.2 template<typename KnotIterator > Go::LRSplineSurface::LRSplineSurface (int *deg_u,* int *deg_v,* int *coefs_u,* int *coefs_v,* int *dimension,* KnotIterator *knotvals_u_start,* KnotIterator *knotvals_v_start,* double *knot_tol* = 1.0e-8)

Definition at line 286 of file LRSplineSurface_impl.h.

29.276.3.3 Go::LRSplineSurface::LRSplineSurface (SplineSurface * *surf,* double *knot_tol*)

29.276.3.4 Go::LRSplineSurface::LRSplineSurface ( ) [inline]

Definition at line 184 of file LRSplineSurface.h.

29.276.3.5 Go::LRSplineSurface::LRSplineSurface (const LRSplineSurface & *rhs*)

29.276.3.6 virtual Go::LRSplineSurface::~LRSplineSurface ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.276.3.7 Go::LRSplineSurface::LRSplineSurface (std::istream & *is*) [inline]

Definition at line 200 of file LRSplineSurface.h.

29.276.4 Member Function Documentation

29.276.4.1 void Go::LRSplineSurface::addSurface (const LRSplineSurface & *other_sf,* double *fac* = 1.0)

29.276.4.2 virtual std::vector<CurveLoop> Go::LRSplineSurface::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.276.4.3 virtual double Go::LRSplineSurface::area (double *tol*) const [virtual]

Compute the total area of this surface up to some tolerance

Parameters

tol	the relative tolerance when approximating the area, i.e. stop iteration when error becomes smaller than tol/(surface area)

Returns

the area calculated

Implements Go::ParamSurface.

29.276.4.4 virtual SplineSurface* Go::LRSplineSurface::asSplineSurface ( ) [virtual]

Return the spline surface represented by this surface, if any The user may get the spline surface lying in the (refined) regular grid by calling the function expandToFullTensorProduct().

Reimplemented from Go::ParamSurface.

29.276.4.5 BSplineMap::const_iterator Go::LRSplineSurface::basisFunctionsBegin ( ) const [inline]

Definition at line 546 of file LRSplineSurface.h.

29.276.4.6 BSplineMap::iterator Go::LRSplineSurface::basisFunctionsBeginNonconst ( ) [inline]

Definition at line 550 of file LRSplineSurface.h.

29.276.4.7 BSplineMap::const_iterator Go::LRSplineSurface::basisFunctionsEnd ( ) const [inline]

Definition at line 547 of file LRSplineSurface.h.

29.276.4.8 BSplineMap::iterator Go::LRSplineSurface::basisFunctionsEndNonconst ( ) [inline]

Definition at line 551 of file LRSplineSurface.h.

29.276.4.9 std::vector<LRBSpline2D*> Go::LRSplineSurface::basisFunctionsWithSupportAt (double *u*, double *v*) const

29.276.4.10 virtual BoundingBox Go::LRSplineSurface::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.276.4.11 BSplineMap::iterator Go::LRSplineSurface::bsplineFromDomain (double *start_u*, double *start_v*, double *end_u*, double *end_v*, int *startmult_u*, int *startmult_v*, int *endmult_u*, int *endmult_v*)

29.276.4.12 static ClassType Go::LRSplineSurface::classType ( ) [inline], [static]

Definition at line 216 of file LRSplineSurface.h.

29.276.4.13 virtual LRSplineSurface* Go::LRSplineSurface::clone ( ) const [inline], [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ParamSurface.

Definition at line 219 of file LRSplineSurface.h.

29.276.4.14 virtual void Go::LRSplineSurface::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.276.4.15 virtual Point Go::LRSplineSurface::closestInDomain (double *u*, double *v*) const [virtual]

Fetch the parameter value in the parameter domain of the surface closest to the parameter pair (u,v)

Implements Go::ParamSurface.

29.276.4.16 void Go::LRSplineSurface::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, int *maxiter*, Element2D * *elem* = NULL, const RectDomain * *rd* = NULL, double * *seed* = NULL) const

Closest point iteration taking benifit from information about an element in which to start searching

29.276.4.17 virtual CompositeBox Go::LRSplineSurface::compositeBox ( ) const [virtual]

Creates a composite box enclosing the surface. The composite box consists of an inner and an edge box. The inner box is supposed to be made from the interior of the surface, while the edge box is made from the boundary curves. The default implementation simply makes both boxes identical to the regular bounding box.

Returns

the CompositeBox of the surface, as specified above

Reimplemented from Go::ParamSurface.

29.276.4.18 void Go::LRSplineSurface::computeBasis (double *param_u*, double *param_v*, BasisPtsSf & *result*, int *iEl* = −1) const

29.276.4.19 void Go::LRSplineSurface::computeBasis (double *param_u*, double *param_v*, BasisDerivsSf & *result*, int *iEl* = −1) const

29.276.4.20 void Go::LRSplineSurface::computeBasis (double *param_u*, double *param_v*, BasisDerivsSf2 & *result*, int *iEl* = −1) const

29.276.4.21 void Go::LRSplineSurface::computeBasis (double *param_u*, double *param_v*, std::vector< std::vector< double > > & *result*, int *derivs* = 0, int *iEl* = −1) const

29.276.4.22 SplineCurve* Go::LRSplineSurface::constParamCurve (double *parameter*, bool *pardir_is_u*) const

29.276.4.23 void Go::LRSplineSurface::constParamCurve (double *parameter*, bool *pardir_is_u*, SplineCurve *& *cv*, SplineCurve *& *crosscv*) const

Generate and return two SplineCurves, representing a constant parameter curve on the surface as well as it cross-tangent curve.

Parameters

parameter	value of the fixed parameter
pardir_is_u	'true' if the first parameter is the running parameter, 'false' otherwise.
cv	upon function completion, 'cv' will point to a newly constructed SplineCurve representing the specified constant parameter curve. It is the user's responsibility to delete it when it is no longer needed.
crosscv	upon function completion, 'crosscv' will point to a newly constructed SplineCurve representing the cross-tangent curve of the specified constant parameter curve. It is the user's reponsibility to delete it when it is no longer needed.

29.276.4.24 virtual std::vector< shared_ptr<ParamCurve> > Go::LRSplineSurface::constParamCurves (double *parameter*, bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint

curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.276.4.25 void Go::LRSplineSurface::constructElementMesh (std::vector< Element2D * > & *elements*) const

29.276.4.26 virtual RectDomain Go::LRSplineSurface::containingDomain ( ) const [virtual]

Get a rectangular parameter domain that is guaranteed to contain the surface's parameterDomain(). It may be the same. There is no guarantee that this is the smallest domain containing the actual domain.

Returns

a RectDomain that is guaranteed to include the surface's total parameter domain.

Implements Go::ParamSurface.

29.276.4.27 Element2D* Go::LRSplineSurface::coveringElement (double *u*, double *v*) const

29.276.4.28 int Go::LRSplineSurface::degree (Direction2D *d*) const [inline]

Definition at line 84 of file LRSplineSurface_impl.h.

29.276.4.29 virtual int Go::LRSplineSurface::dimension ( ) const [inline], [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

Definition at line 233 of file LRSplineSurface.h.

29.276.4.30 SplineCurve* Go::LRSplineSurface::edgeCurve (int *edge_num*) const

29.276.4.31 ElementMap::const_iterator Go::LRSplineSurface::elementsBegin ( ) const [inline]

Definition at line 638 of file LRSplineSurface.h.

29.276.4.32 ElementMap::const_iterator Go::LRSplineSurface::elementsEnd ( ) const [inline]

Definition at line 639 of file LRSplineSurface.h.

29.276.4.33 virtual double Go::LRSplineSurface::endparam_u ( ) const [virtual]

Get the end value for the u-parameter

Returns

the end value for the u-parameter

29.276.4.34 virtual double Go::LRSplineSurface::endparam_v ( ) const [virtual]

Get the end value for the v-parameter

Returns

the end value for the v-parameter

29.276.4.35 virtual void Go::LRSplineSurface::evalGrid (int *num_u*, int *num_v*, double *umin*, double *umax*, double *vmin*, double *vmax*, std::vector< double > & *points*, double *nodata_val* = -9999) const [virtual]

Evaluate points in a grid The nodata value is applicable for bounded surfaces and will not be used in this context

Reimplemented from Go::ParamSurface.

29.276.4.36 void Go::LRSplineSurface::expandToFullTensorProduct ( )

29.276.4.37 LRSplineSurface::BSKey Go::LRSplineSurface::generate_key (const LRBSpline2D & *b*, const Mesh2D & *m*) [inline], [static]

Definition at line 152 of file LRSplineSurface_impl.h.

29.276.4.38 LRSplineSurface::BSKey Go::LRSplineSurface::generate_key (const LRBSpline2D & *b*) [inline], [static]

Definition at line 176 of file LRSplineSurface_impl.h.

29.276.4.39 LRSplineSurface::ElemKey Go::LRSplineSurface::generate_key (const double & *umin*, const double & *vmin*) [inline], [static]

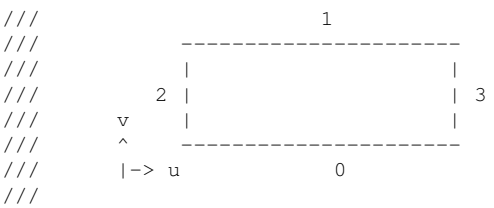
Definition at line 218 of file LRSplineSurface_impl.h.

29.276.4.40 std::vector<LRBSpline2D*> Go::LRSplineSurface::getBoundaryBsplines (Direction2D *d,* bool *atstart*)

29.276.4.41 void Go::LRSplineSurface::getBoundaryIdx (Point & *pt1,* Point & *pt2,* double *epsilon,* int & *bdindex,* double & *par1,* double & *par2,* double *knot_tol* = 1e-05) const

Given two points on the surface boundary, find the number of the corresponding boundary and the curve parameter of the closest points on this surface boundary.

Ordering of boundaries:



Parameters

pt1	point in geometry space
pt2	point in geometry space
epsilon	geometric tolerance
bdindex	if the two points are on a common boundary, the index of the boundary, otherwise -1.
par1	if bdindex is 0 or 1, the u parameter of pt1, otherwise the v parameter.
par2	if bdindex is 0 or 1, the u parameter of pt2, otherwise the v parameter.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

29.276.4.42 virtual void Go::LRSplineSurface::getBoundaryInfo (Point & *pt1,* Point & *pt2,* double *epsilon,* SplineCurve *& *cv,* SplineCurve *& *crosscv,* double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.276.4.43 void Go::LRSplineSurface::getBoundaryInfo (double *par1*, double *par2*, int *bdindex*, SplineCurve *&* *cv*, SplineCurve *&* *crosscv*, double *knot_tol*) const

29.276.4.44 virtual void Go::LRSplineSurface::getCornerPoints (std::vector< std::pair< Point, Point > > & *corners*) const [virtual]

Return surface corners, geometric and parametric points in that sequence

Implements Go::ParamSurface.

29.276.4.45 virtual void Go::LRSplineSurface::getDegenerateCorners (std::vector< Point > & *deg_corners*, double *tol*) const [virtual]

Check for parallel and anti parallel partial derivatives in surface corners.

Implements Go::ParamSurface.

29.276.4.46 LineCloud Go::LRSplineSurface::getElementBds (int *num_pts* = 5) const

29.276.4.47 int Go::LRSplineSurface::getElementContaining (double *u*, double *v*) const

29.276.4.48 double Go::LRSplineSurface::getKnotTol ( ) [inline]

Tolerance for equality of knots.

Definition at line 565 of file LRSplineSurface.h.

29.276.4.49 virtual bool Go::LRSplineSurface::inDomain (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies inside the domain of this surface.

Implements Go::ParamSurface.

29.276.4.50 virtual int Go::LRSplineSurface::inDomain2 (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies inside the domain of this surface return value = 0: outside = 1: internal = 2: at the boundary

Implements Go::ParamSurface.

29.276.4.51 virtual ClassType Go::LRSplineSurface::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.276.4.52 bool Go::LRSplineSurface::isDegenerate (bool & *b*, bool & *r*, bool & *t*, bool & *l*, double *tolerance*) const [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

29.276.4.53 bool Go::LRSplineSurface::isFullTensorProduct ( ) const

29.276.4.54 const Mesh2D& Go::LRSplineSurface::mesh ( ) const [inline]

Definition at line 505 of file LRSplineSurface.h.

29.276.4.55 virtual LRSplineSurface* Go::LRSplineSurface::mirrorSurface (const Point & *pos,* const Point & *norm*) const [virtual]

Mirror a surface around a specified plane.

Reimplemented from Go::ParamSurface.

29.276.4.56 virtual double Go::LRSplineSurface::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.276.4.57 virtual void Go::LRSplineSurface::normal (Point & *n*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.276.4.58 void Go::LRSplineSurface::normal (Point & *n*, double *upar*, double *vpar*, Element2D * *elem*) const

29.276.4.59 virtual DirectionCone Go::LRSplineSurface::normalCone ( ) const [virtual]

Function that calls normalCone(NormalConeMethod) with method = SederbergMeyers. Needed because normal↩ Cone() is virtual! (Inherited from ParamSurface).

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.276.4.60 int Go::LRSplineSurface::numBasisFunctions ( ) const [inline]

Definition at line 508 of file LRSplineSurface.h.

29.276.4.61 int Go::LRSplineSurface::numElements ( ) const [inline]

Definition at line 510 of file LRSplineSurface.h.

29.276.4.62 virtual bool Go::LRSplineSurface::onBoundary (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies at the boundary of this surface.

Implements Go::ParamSurface.

29.276.4.63 Point Go::LRSplineSurface::operator() (double *u*, double *v*, int *u_deriv* = 0, int *v_deriv* = 0) const

29.276.4.64 Point Go::LRSplineSurface::operator() (double *u*, double *v*, int *u_deriv*, int *v_deriv*, Element2D * *elem*) const

29.276.4.65 const LRSplineSurface& Go::LRSplineSurface::operator= (const LRSplineSurface & *other*)

29.276.4.66 virtual CurveLoop Go::LRSplineSurface::outerBoundaryLoop (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise, outer boundary loop of the surface.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a CurveLoop describing the anticlockwise, outer boundary loop of the surface. A negative degenerate_epsilon indicates that all curves, also the degenerate ones are wanted

Implements Go::ParamSurface.

29.276.4.67 virtual const RectDomain& Go::LRSplineSurface::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.276.4.68 double Go::LRSplineSurface::paramMax (Direction2D *d*) const [inline]

Definition at line 122 of file LRSplineSurface_impl.h.

29.276.4.69 double Go::LRSplineSurface::paramMin (Direction2D *d*) const [inline]

Definition at line 92 of file LRSplineSurface_impl.h.

29.276.4.70 virtual void Go::LRSplineSurface::point (Point & *pt,* double *upar,* double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.276.4.71 void Go::LRSplineSurface::point (Point & *pt,* double *upar,* double *vpar,* Element2D * *elem*) const

29.276.4.72 virtual void Go::LRSplineSurface::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) * (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.276.4.73 void Go::LRSplineSurface::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, Element2D * *elem*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const

29.276.4.74 bool Go::LRSplineSurface::rational ( ) const

29.276.4.75 virtual void Go::LRSplineSurface::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.276.4.76 void Go::LRSplineSurface::refine (Direction2D *d*, double *fixed_val*, double *start*, double *end*, int *mult* = 1, bool *absolute* = false)

29.276.4.77 void Go::LRSplineSurface::refine (const Refinement2D & *ref*, bool *absolute* = false)

29.276.4.78 void Go::LRSplineSurface::refine (const std::vector< Refinement2D > & *refs*, bool *absolute* = false)

29.276.4.79 void Go::LRSplineSurface::refineBasisFunction (int *index*)

29.276.4.80 void Go::LRSplineSurface::refineBasisFunction (const std::vector< int > & *indices*)

29.276.4.81 void Go::LRSplineSurface::refineElement (int *index*)

29.276.4.82 void Go::LRSplineSurface::refineElement (const std::vector< int > & *indices*)

29.276.4.83 virtual void Go::LRSplineSurface::reverseParameterDirection (bool *direction_is_u*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

direction_is_u	if 'true', the first parameter direction will be reversed, otherwise, the second parameter direction will be reversed

Implements Go::ParamSurface.

29.276.4.84 void Go::LRSplineSurface::setCoef (const Point & *value,* const LRBSpline2D * *target*)

29.276.4.85 void Go::LRSplineSurface::setCoef (const Point & *value,* int *umin_ix,* int *vmin_ix,* int *umax_ix,* int *vmax_ix,* int *u_mult* = 1, int *v_mult* = 1)

29.276.4.86 void Go::LRSplineSurface::setCoefTimesGamma (const Point & *value,* const LRBSpline2D * *target*)

29.276.4.87 void Go::LRSplineSurface::setCurrentElement (Element2D * *curr_el*) [inline]

Definition at line 642 of file LRSplineSurface.h.

29.276.4.88 virtual void Go::LRSplineSurface::setParameterDomain (double *u1,* double *u2,* double *v1,* double *v2*) [virtual]

set the parameter domain to a given rectangle

Parameters

u1	new min. value of first parameter span
u2	new max. value of first parameter span
v1	new min. value of second parameter span
v2	new max. value of second parameter span

Reimplemented from Go::ParamSurface.

29.276.4.89 virtual double Go::LRSplineSurface::startparam_u ( ) const [virtual]

Get the start value for the u-parameter

Returns

the start value for the u-parameter

29.276.4.90 virtual double Go::LRSplineSurface::startparam_v ( ) const [virtual]

Get the start value for the v-parameter

Returns

the start value for the v-parameter

29.276.4.91 LRSplineSurface* Go::LRSplineSurface::subSurface (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy*) const

29.276.4.92 virtual std::vector<shared_ptr<ParamSurface> > Go::LRSplineSurface::subSurfaces (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.276.4.93 void Go::LRSplineSurface::swap (LRSplineSurface & *rhs*)

29.276.4.94 virtual void Go::LRSplineSurface::swapParameterDirection ( ) [virtual]

Swaps the two parameter directions.

Implements Go::ParamSurface.

29.276.4.95 virtual DirectionCone Go::LRSplineSurface::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.276.4.96 void Go::LRSplineSurface::to3D ( )

29.276.4.97 void Go::LRSplineSurface::translate (const Point & *vec*)

29.276.4.98 virtual void Go::LRSplineSurface::turnOrientation ( ) [virtual]

Turns the direction of the normal of the surface.

Implements Go::ParamSurface.

29.276.4.99 virtual void Go::LRSplineSurface::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

The documentation for this class was generated from the following files:

- lrsplines2D/include/GoTools/lrsplines2D/LRSplineSurface.h
- lrsplines2D/include/GoTools/lrsplines2D/LRSplineSurface_impl.h

29.277 Go::LRSurfApprox Class Reference

`#include <LRSurfApprox.h>`

Public Member Functions

- LRSurfApprox (std::vector< double > &points, int dim, double epsge, bool init_mba=false, double mba_level=0.0, bool closest_dist=true, bool repar=false)
- LRSurfApprox (shared_ptr< SplineSurface > &srf, std::vector< double > &points, double epsge, bool closest_dist=true, bool repar=false)
- LRSurfApprox (shared_ptr< LRSplineSurface > &srf, std::vector< double > &points, double epsge, bool closest_dist=true, bool repar=false, bool check_init_accuracy=false)
- LRSurfApprox (int ncoef_u, int order_u, int ncoef_v, int order_v, std::vector< double > &points, int dim, double epsge, bool init_mba=false, double mba_level=0.0, bool closest_dist=true, bool repar=false)
- LRSurfApprox (int order_u, std::vector< double > &knots_u, int order_v, std::vector< double > &knots_v, std::vector< double > &points, int dim, double epsge, bool init_mba=false, double mba_level=0.0, bool closest_dist=true, bool repar=false)
- LRSurfApprox (int ncoef_u, int order_u, int ncoef_v, int order_v, std::vector< double > &points, int dim, double domain[4], double epsge, bool init_mba=false, double mba_level=0.0, bool closest_dist=true, bool repar=false)
- ~LRSurfApprox ()

  Destructor.
- void setSmoothingWeight (double smooth)
- void setSmoothBoundary (bool smoothbd)
- void setFixBoundary (bool fix_boundary)
- void setFixCorner (bool fix_corner)
- void edgeFix (int edge_fix[])
- void setTurn3D (int iter)
- void setGridInfo (double grid_start[], double cell_size[])
- void setMakeGhostPoints (bool make_ghost_points)

  Decide if ghost points should be constructed.
- void setUseMBA (bool useMBA)
- void addLowerConstraint (double minval)

  Add lower constraint. Only functional (1D surface)
- void addUpperConstraint (double maxval)

  Add upper constraint. Only functional (1D surface)
- void setLocalConstraint (double constraint_factor)

  Set local constraint on coefficient. Only functional (1D surface)
- void setMinimumElementSize (double usize_min, double vsize_min)

  Set minimum element size.
- void setSwitchToMBA (int iter)

  Iteration count on which to swith to MBA (if LS)
- void setInitMBA (bool initMBA, double start_coef=0.0)
- void setVerbose (bool verbose)
- shared_ptr< LRSplineSurface > getApproxSurf (double &maxdist, double &avdist_all, double &avdist, int &nmb_out_eps, int max_iter=4)

29.277.1 Detailed Description

This class can generate a LR B-spline surface that approximates a set of points for a given accuracy.

Definition at line 57 of file LRSurfApprox.h.

29.277.2 Constructor & Destructor Documentation

29.277.2.1 Go::LRSurfApprox::LRSurfApprox (std::vector< double > & *points*, int *dim*, double *epsge*, bool *init_mba* = false, double *mba_level* = 0.0, bool *closest_dist* = true, bool *repar* = false)

Constructor given a parameterized point set

Parameters

points	Parameterized point set given as (u1,v1,x1,y1,z1, u2, v2, ...) The length of the array is (2+dim)x(the number of points)
dim	The dimension of the geometry space
epsge	Requested approximation accuracy
closest_dist	Check accuracy in closest point or in corresponding parameter value
repar	Perform reparameterization during iterations

29.277.2.2 Go::LRSurfApprox::LRSurfApprox (shared_ptr< SplineSurface > & *srf,* std::vector< double > & *points,* double *epsge,* bool *closest_dist* = true, bool *repar* = false)

Constructor given a parameterized point set and an initial spline surface

Parameters

srf	Given spline surface
points	Parameterized point set given as (u1,v1,x1,y1,z1, u2, v2, ...) The length of the array is (2+dim)x(the number of points) Note that the sequence of the points can be changed and this class references the initial points (no copy)
dim	The dimension of the geometry space
epsge	Requested approximation accuracy
closest_dist	Check accuracy in closest point or in corresponding parameter value
repar	Perform reparameterization during iterations

29.277.2.3 Go::LRSurfApprox::LRSurfApprox (shared_ptr< LRSplineSurface > & *srf,* std::vector< double > & *points,* double *epsge,* bool *closest_dist* = true, bool *repar* = false, bool *check_init_accuracy* = false)

Constructor given a parameterized point set and an initial LR B-spline surface

Parameters

srf	Given LR B-spline surface
points	Parameterized point set given as (u1,v1,x1,y1,z1, u2, v2, ...) The length of the array is (2+dim)x(the number of points) Note that the sequence of the points can be changed and this class references the initial points (no copy)
dim	The dimension of the geometry space
epsge	Requested approximation accuracy
closest_dist	Check accuracy in closest point or in corresponding parameter value
repar	Perform reparameterization during iterations

29.277.2.4 Go::LRSurfApprox::LRSurfApprox (int *ncoef_u,* int *order_u,* int *ncoef_v,* int *order_v,* std::vector< double > & *points,* int *dim,* double *epsge,* bool *init_mba* = false, double *mba_level* = 0.0, bool *closest_dist* = true, bool *repar* = false)

Constructor given a parameterized point set and the size of an initial spline space

Parameters

ncoef_u	Number of coefficients in the 1. parameter direction
order_u	Order in the 1. parameter direction
ncoef_v	Number of coefficients in the 2. parameter direction
order_v	Order in the 2. parameter direction
points	Parameterized point set given as (u1,v1,x1,y1,z1, u2, v2, ...) The length of the array is (2+dim)x(the number of points) Note that the sequence of the points can be changed and this class references the initial points (no copy)
dim	The dimension of the geometry space
epsge	Requested approximation accuracy
closest_dist	Check accuracy in closest point or in corresponding parameter value
repar	Perform reparameterization during iterations

29.277.2.5 Go::LRSurfApprox::LRSurfApprox (int *order_u*, std::vector< double > & *knots_u*, int *order_v*, std::vector< double > & *knots_v*, std::vector< double > & *points*, int *dim*, double *epsge*, bool *init_mba* = false, double *mba_level* = 0.0, bool *closest_dist* = true, bool *repar* = false)

Constructor given a parameterized point set and an initial spline space

Parameters

order_u	Order in the 1. parameter direction
knots_u	Knot vector in the 1. parameter direction
order_v	Order in the 2. parameter direction
knots_v	Knot vector in the 2. parameter direction
points	Parameterized point set given as (u1,v1,x1,y1,z1, u2, v2, ...) The length of the array is (2+dim)x(the number of points) Note that the sequence of the points can be changed and this class references the initial points (no copy)
dim	The dimension of the geometry space
epsge	Requested approximation accuracy
closest_dist	Check accuracy in closest point or in corresponding parameter value
repar	Perform reparameterization during iterations

29.277.2.6 Go::LRSurfApprox::LRSurfApprox (int *ncoef_u*, int *order_u*, int *ncoef_v*, int *order_v*, std::vector< double > & *points*, int *dim*, double *domain[4]*, double *epsge*, bool *init_mba* = false, double *mba_level* = 0.0, bool *closest_dist* = true, bool *repar* = false)

Constructor given a parameterized point set and the size of an initial spline space

Parameters

ncoef_u	Number of coefficients in the 1. parameter direction
order_u	Order in the 1. parameter direction
ncoef_v	Number of coefficients in the 2. parameter direction
order_v	Order in the 2. parameter direction
points	Parameterized point set given as (u1,v1,x1,y1,z1, u2, v2, ...) The length of the array is (2+dim)x(the number of points) Note that the sequence of the points can be changed and this class references the initial points (no copy)

Parameters

dim	The dimension of the geometry space
domain	A possibly extende parameter domain (umin, umax, vmin, vmax)
epsge	Requested approximation accuracy
closest_dist	Check accuracy in closest point or in corresponding parameter value
repar	Perform reparameterization during iterations

29.277.2.7 Go::LRSurfApprox::~LRSurfApprox ( )

Destructor.

29.277.3 Member Function Documentation

29.277.3.1 void Go::LRSurfApprox::addLowerConstraint (double *minval*) [inline]

Add lower constraint. Only functional (1D surface)

Definition at line 251 of file LRSurfApprox.h.

29.277.3.2 void Go::LRSurfApprox::addUpperConstraint (double *maxval*) [inline]

Add upper constraint. Only functional (1D surface)

Definition at line 258 of file LRSurfApprox.h.

29.277.3.3 void Go::LRSurfApprox::edgeFix (int *edge_fix[]*) [inline]

Decide whether specific edges of the surface's boundary should be kept fixed (i.e. unchanged by approximation process), as well as a certain number of cross- derivatives across these curves.

Parameters

edge_fix	pointer to an array of four integers specifying to which extent each surface edge should be kept fixed during the approximation process. A value of 0 means that it will not be kept fixed, 1 means that its position will be kept fixed, derivatives at the boundary are currently NOT kept fixed The integers are associated with the surface edges starting with the edge 'v=vmin' and moving counterclockwise.

Definition at line 216 of file LRSurfApprox.h.

29.277.3.4 shared_ptr<LRSplineSurface> Go::LRSurfApprox::getApproxSurf (double & *maxdist,* double & *avdist_all,* double & *avdist,* int & *nmb_out_eps,* int *max_iter* = 4)

When everything else is set, this function can be used to run the approximation process and fetch the approximated surface.

Return values

maxdist	report the maximum distance between the approximated surface and the data points
avdist	report the average distance between the approximated surface and the datapoints

Parameters

nmb_out_eps	report the number of data points that were found to lie outside the geometric tolerance (as specified by the 'aepsge' argument to the ApproxSurf constructor.
max_iter	maximum number of iterations

Returns

a shared pointer to the generated SplineCurve, approximating the points as specified.

29.277.3.5 void Go::LRSurfApprox::setFixBoundary (bool *fix_boundary*) [inline]

Decide whether or not the total bondary of the surface should be kept fixed (i.e. unchanged by approximation process). Default is true. Cross derivatives will not be kept fixed. (If you want to keep cross derivatives fixed, use the edgeFix() member function instead).

Parameters

fix_boundary	if 'true' the boundary of the surface will not be modified, if 'false' it will be open to modification.

Definition at line 193 of file LRSurfApprox.h.

29.277.3.6 void Go::LRSurfApprox::setFixCorner (bool *fix_corner*) [inline]

Definition at line 200 of file LRSurfApprox.h.

29.277.3.7 void Go::LRSurfApprox::setGridInfo (double *grid_start[]*, double *cell_size[]*) [inline]

Definition at line 228 of file LRSurfApprox.h.

29.277.3.8 void Go::LRSurfApprox::setInitMBA (bool *initMBA*, double *start_coef* = 0.0) [inline]

Set if an initial MBA surface should be used in LS approximation Default is false

Definition at line 286 of file LRSurfApprox.h.

29.277.3.9 void Go::LRSurfApprox::setLocalConstraint (double *constraint_factor*) [inline]

Set local constraint on coefficient. Only functional (1D surface)

Definition at line 265 of file LRSurfApprox.h.

29.277.3.10 void Go::LRSurfApprox::setMakeGhostPoints (bool *make_ghost_points*) [inline]

Decide if ghost points should be constructed.

Definition at line 238 of file LRSurfApprox.h.

29.277.3.11 void Go::LRSurfApprox::setMinimumElementSize (double *usize_min,* double *vsize_min*) [inline]

Set minimum element size.

Definition at line 272 of file LRSurfApprox.h.

29.277.3.12 void Go::LRSurfApprox::setSmoothBoundary (bool *smoothbd*) [inline]

Definition at line 182 of file LRSurfApprox.h.

29.277.3.13 void Go::LRSurfApprox::setSmoothingWeight (double *smooth*) [inline]

Sets the smoothing weight to something other than the default (1e-9). The value should lie in the unit interval, typically close to 0.

Parameters

smooth	the new smoothing weight.

Definition at line 176 of file LRSurfApprox.h.

29.277.3.14 void Go::LRSurfApprox::setSwitchToMBA (int *iter*) [inline]

Iteration count on which to swith to MBA (if LS)

Definition at line 279 of file LRSurfApprox.h.

29.277.3.15 void Go::LRSurfApprox::setTurn3D (int *iter*) [inline]

Definition at line 223 of file LRSurfApprox.h.

29.277.3.16 void Go::LRSurfApprox::setUseMBA (bool *useMBA*) [inline]

Decide if the MBA algorithm should be used to approximate points (default == false)

Definition at line 245 of file LRSurfApprox.h.

29.277.3.17 void Go::LRSurfApprox::setVerbose (bool *verbose*) [inline]

Whether or not intermediate information should be written to standard output (default is not)

Definition at line 294 of file LRSurfApprox.h.

The documentation for this class was generated from the following file:

- lrsplines2D/include/GoTools/lrsplines2D/LRSurfApprox.h

29.278 Go::LRSurfSmoothLS Class Reference

`#include <LRSurfSmoothLS.h>`

Public Member Functions

- LRSurfSmoothLS (shared_ptr< LRSplineSurface > surf, std::vector< int > &coef_known)
- LRSurfSmoothLS ()

  Empty constructor.
- ~LRSurfSmoothLS ()

  Destructor.
- void setInitSf (shared_ptr< LRSplineSurface > surf, std::vector< int > &coef_known)
- void updateLocals ()

  Reset local arrays after changing LR B-spline surface.
- bool hasDataPoints () const

  Check if data points already are available.
- void addDataPoints (std::vector< double > &points, bool is_ghost_points=false)
- void setOptimize (const double weight1, const double weight2, const double weight3)
- void smoothBoundary (const double weight1, const double weight2, const double weight3)
- void setLeastSquares (const double weight)
- void setLeastSquares_omp (const double weight)

  OpenMP enabled version of the above function.
- void setLeastSquares (std::vector< double > &points, const double weight)
- int equationSolve (shared_ptr< LRSplineSurface > &surf)

29.278.1 Detailed Description

Definition at line 72 of file LRSurfSmoothLS.h.

29.278.2 Constructor & Destructor Documentation

29.278.2.1 Go::LRSurfSmoothLS::LRSurfSmoothLS (shared_ptr< LRSplineSurface > *surf*, std::vector< int > & *coef_known*)

Constructor Note that the surface is modified

Parameters

coef_known	indicates if the coefficient associated to the LR B-splines is known already

29.278.2.2 Go::LRSurfSmoothLS::LRSurfSmoothLS ( )

Empty constructor.

29.278.2.3 Go::LRSurfSmoothLS::~LRSurfSmoothLS ( )

Destructor.

29.278.3 Member Function Documentation

29.278.3.1 void Go::LRSurfSmoothLS::addDataPoints (std::vector< double > & *points,* bool *is_ghost_points* = false)

Add data points for approximation. The points are parameterized and are store as follows: parameter values for point 1 (2 doubles), position for point1 (dim doubles where dim is the dimension of the associated LR spline surface), parameter values for point 2 etc.

29.278.3.2 int Go::LRSurfSmoothLS::equationSolve (shared_ptr< LRSplineSurface > & *surf*)

Solve equation system, and produce output surface. If failing to solve the routine may throw an exception.

Parameters

surf	the output surface.

Returns

0 = OK, negative = failed solving system.

29.278.3.3 bool Go::LRSurfSmoothLS::hasDataPoints ( ) const

Check if data points already are available.

29.278.3.4 void Go::LRSurfSmoothLS::setInitSf (shared_ptr< LRSplineSurface > *surf,* std::vector< int > & *coef_known*)

Set initial surface Note that the surface is modified

Parameters

coef_known	indicates if the coefficient associated to the LR B-splines is known already

29.278.3.5 void Go::LRSurfSmoothLS::setLeastSquares (const double *weight*)

Compute matrices for least squares approximation. The data points are expected to be added already

Parameters

weight	the contribution of the approximation of the pnts in the system. weight should lie in the unit interval.

29.278.3.6 void Go::LRSurfSmoothLS::setLeastSquares (std::vector< double > & *points,* const double *weight*)

Compute matrices for least squares approximation.

Parameters

points	Parameter values and point for each data point
weight	the contribution of the approximation of the pnts in the system. weight should lie in the unit interval.

29.278.3.7 void Go::LRSurfSmoothLS::setLeastSquares_omp (const double *weight*)

OpenMP enabled version of the above function.

29.278.3.8 void Go::LRSurfSmoothLS::setOptimize (const double *weight1,* const double *weight2,* const double *weight3*)

Compute the smoothing part of the equation system.

Parameters

weight1	contribution weight with respect to the 1st derivative.
weight2	contribution weight with respect to the 2nd derivative.
weight3	contribution weight with respect to the 3rd derivative.

29.278.3.9 void Go::LRSurfSmoothLS::smoothBoundary (const double *weight1,* const double *weight2,* const double *weight3*)

Compute the boundary smoothing part of the equation system.

Parameters

weight1	contribution weight with respect to the 1st derivative.
weight2	contribution weight with respect to the 2nd derivative.
weight3	contribution weight with respect to the 3rd derivative.

29.278.3.10 void Go::LRSurfSmoothLS::updateLocals ( )

Reset local arrays after changing LR B-spline surface.

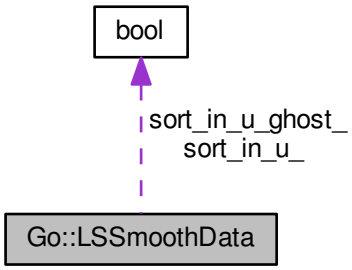
The documentation for this class was generated from the following file:

- lrsplines2D/include/GoTools/lrsplines2D/LRSurfSmoothLS.h

29.279 Go::LSSmoothData Struct Reference

`#include <Element2D.h>`

Collaboration diagram for Go::LSSmoothData:



Public Member Functions

- LSSmoothData ()
- bool hasDataPoints ()
- void eraseDataPoints ()
- void eraseGhostPoints ()
- void eraseDataPoints (std::vector< double >::iterator start, std::vector< double >::iterator end)
- void addDataPoints (std::vector< double >::iterator start, std::vector< double >::iterator end, bool sort_in_u)
- void addDataPoints (std::vector< double >::iterator start, std::vector< double >::iterator end, int del, bool sort_in_u)
- void addGhostPoints (std::vector< double >::iterator start, std::vector< double >::iterator end, bool sort_↩ in_u)
- void addGhostPoints (std::vector< double >::iterator start, std::vector< double >::iterator end, int del, bool sort_in_u)
- std::vector< double > & getDataPoints ()
- std::vector< double > & getGhostPoints ()
- void getOutsidePoints (std::vector< double > &points, int dim, Direction2D d, double start, double end, bool &sort_in_u)
- void getOutsideGhostPoints (std::vector< double > &ghost, int dim, Direction2D d, double start, double end, bool &sort_in_u)
- int dataPointSize ()

- int ghostPointSize ()
- bool hasLSMatrix ()
- void setLSMatrix (int nmb, int dim)
- void getLSMatrix (double *&LSmat, double *&LSright, int &ncond)
- bool hasAccuracyInfo ()
- void getAccuracyInfo (double &average_error, double &max_error, int &nmb_outside_tol)
- int getNmbOutsideTol ()
- double getAverageError ()
- double getAccumulatedError ()
- double getMaxError ()
- void setAccuracyInfo (double accumulated_error, double average_error, double max_error, int nmb_outside_tol)
- void resetAccuracyInfo ()
- bool getDataBoundingBox (int dim, double bb[])
- void makeDataPoints3D (int dim)
- void updateAccuracyInfo (int dim)
- void updateLSDataParDomain (double u1, double u2, double v1, double v2, double u1new, double u2new, double v1new, double v2new, int dim)

Public Attributes

- std::vector< double > data_points_
- std::vector< double > ghost_points_
- std::vector< double > LSmat_
- std::vector< double > LSright_
- int ncond_
- bool sort_in_u_
- bool sort_in_u_ghost_
- double accumulated_error_
- double average_error_
- double max_error_
- double max_error_prev_
- int nmb_outside_tol_

29.279.1 Detailed Description

Definition at line 52 of file Element2D.h.

29.279.2 Constructor & Destructor Documentation

29.279.2.1 Go::LSSmoothData::LSSmoothData ( ) [inline]

Definition at line 54 of file Element2D.h.

29.279.3 Member Function Documentation

29.279.3.1 void Go::LSSmoothData::addDataPoints (std::vector< double >::iterator *start,* std::vector< double >::iterator *end,* bool *sort_in_u*) [inline]

Definition at line 83 of file Element2D.h.

29.279.3.2 void Go::LSSmoothData::addDataPoints (std::vector< double >::iterator *start,* std::vector< double >::iterator *end,* int *del,* bool *sort_in_u*) [inline]

Definition at line 91 of file Element2D.h.

29.279.3.3 void Go::LSSmoothData::addGhostPoints (std::vector< double >::iterator *start,* std::vector< double >::iterator *end,* bool *sort_in_u*) [inline]

Definition at line 103 of file Element2D.h.

29.279.3.4 void Go::LSSmoothData::addGhostPoints (std::vector< double >::iterator *start,* std::vector< double >::iterator *end,* int *del,* bool *sort_in_u*) [inline]

Definition at line 111 of file Element2D.h.

29.279.3.5 int Go::LSSmoothData::dataPointSize ( ) [inline]

Definition at line 141 of file Element2D.h.

29.279.3.6 void Go::LSSmoothData::eraseDataPoints ( ) [inline]

Definition at line 67 of file Element2D.h.

29.279.3.7 void Go::LSSmoothData::eraseDataPoints (std::vector< double >::iterator *start,* std::vector< double >::iterator *end*) [inline]

Definition at line 77 of file Element2D.h.

29.279.3.8 void Go::LSSmoothData::eraseGhostPoints ( ) [inline]

Definition at line 72 of file Element2D.h.

29.279.3.9 double Go::LSSmoothData::getAccumulatedError ( ) [inline]

Definition at line 193 of file Element2D.h.

29.279.3.10 void Go::LSSmoothData::getAccuracyInfo (double & *average_error,* double & *max_error,* int & *nmb_outside_tol*) [inline]

Definition at line 175 of file Element2D.h.

29.279.3.11 **double Go::LSSmoothData::getAverageError ( ) [inline]**

Definition at line 188 of file Element2D.h.

29.279.3.12 **bool Go::LSSmoothData::getDataBoundingBox (int *dim,* double *bb[]*)**

29.279.3.13 **std::vector<double>& Go::LSSmoothData::getDataPoints ( ) [inline]**

Definition at line 123 of file Element2D.h.

29.279.3.14 **std::vector<double>& Go::LSSmoothData::getGhostPoints ( ) [inline]**

Definition at line 128 of file Element2D.h.

29.279.3.15 **void Go::LSSmoothData::getLSMatrix (double *& *LSmat,* double *& *LSright,* int & *ncond*) [inline]**

Definition at line 163 of file Element2D.h.

29.279.3.16 **double Go::LSSmoothData::getMaxError ( ) [inline]**

Definition at line 198 of file Element2D.h.

29.279.3.17 **int Go::LSSmoothData::getNmbOutsideTol ( ) [inline]**

Definition at line 183 of file Element2D.h.

29.279.3.18 **void Go::LSSmoothData::getOutsideGhostPoints (std::vector< double > & *ghost,* int *dim,* Direction2D *d,* double *start,* double *end,* bool & *sort_in_u*)**

29.279.3.19 **void Go::LSSmoothData::getOutsidePoints (std::vector< double > & *points,* int *dim,* Direction2D *d,* double *start,* double *end,* bool & *sort_in_u*)**

29.279.3.20 **int Go::LSSmoothData::ghostPointSize ( ) [inline]**

Definition at line 146 of file Element2D.h.

29.279.3.21 **bool Go::LSSmoothData::hasAccuracyInfo ( ) [inline]**

Definition at line 170 of file Element2D.h.

29.279.3.22 **bool Go::LSSmoothData::hasDataPoints ( ) [inline]**

Definition at line 62 of file Element2D.h.

29.279.3.23 **bool Go::LSSmoothData::hasLSMatrix ( ) [inline]**

Definition at line 151 of file Element2D.h.

29.279.3.24 **void Go::LSSmoothData::makeDataPoints3D (int *dim*)**

29.279.3.25 **void Go::LSSmoothData::resetAccuracyInfo ( ) [inline]**

Definition at line 214 of file Element2D.h.

29.279.3.26 **void Go::LSSmoothData::setAccuracyInfo (double *accumulated_error,* double *average_error,* double *max_error,* int *nmb_outside_tol*) [inline]**

Definition at line 203 of file Element2D.h.

29.279.3.27 **void Go::LSSmoothData::setLSMatrix (int *nmb,* int *dim*) [inline]**

Definition at line 156 of file Element2D.h.

29.279.3.28 **void Go::LSSmoothData::updateAccuracyInfo (int *dim*)**

29.279.3.29 **void Go::LSSmoothData::updateLSDataParDomain (double *u1,* double *u2,* double *v1,* double *v2,* double *u1new,* double *u2new,* double *v1new,* double *v2new,* int *dim*)**

29.279.4 Member Data Documentation

29.279.4.1 **double Go::LSSmoothData::accumulated_error_**

Definition at line 242 of file Element2D.h.

29.279.4.2 **double Go::LSSmoothData::average_error_**

Definition at line 243 of file Element2D.h.

29.279.4.3 **std::vector<double> Go::LSSmoothData::data_points_**

Definition at line 234 of file Element2D.h.

29.279.4.4 **std::vector<double> Go::LSSmoothData::ghost_points_**

Definition at line 235 of file Element2D.h.

29.279.4.5 std::vector<double> Go::LSSmoothData::LSmat_

Definition at line 236 of file Element2D.h.

29.279.4.6 std::vector<double> Go::LSSmoothData::LSright_

Definition at line 237 of file Element2D.h.

29.279.4.7 double Go::LSSmoothData::max_error_

Definition at line 244 of file Element2D.h.

29.279.4.8 double Go::LSSmoothData::max_error_prev_

Definition at line 245 of file Element2D.h.

29.279.4.9 int Go::LSSmoothData::ncond_

Definition at line 238 of file Element2D.h.

29.279.4.10 int Go::LSSmoothData::nmb_outside_tol_

Definition at line 246 of file Element2D.h.

29.279.4.11 bool Go::LSSmoothData::sort_in_u_

Definition at line 239 of file Element2D.h.

29.279.4.12 bool Go::LSSmoothData::sort_in_u_ghost_

Definition at line 240 of file Element2D.h.

The documentation for this struct was generated from the following file:

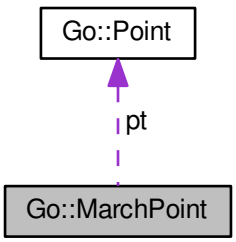
- lrsplines2D/include/GoTools/lrsplines2D/Element2D.h

29.280 Go::MarchPoint Class Reference

Helper class for marching.

`#include <FaceAdjacency.h>`

Collaboration diagram for Go::MarchPoint:



Public Member Functions

- MarchPoint (const Go::Point &p, double pa, double pa2, double d, double ca, int s)
- bool operator< (const MarchPoint &other) const

Public Attributes

- Go::Point pt
- double par
- double par2
- double dist
- double cos_ang
- int status

29.280.1 Detailed Description

Helper class for marching.

Definition at line 63 of file FaceAdjacency.h.

29.280.2 Constructor & Destructor Documentation

29.280.2.1 Go::MarchPoint::MarchPoint (const Go::Point & *p*, double *pa*, double *pa2*, double *d*, double *ca*, int *s*) [inline]

Definition at line 72 of file FaceAdjacency.h.

29.280.3 Member Function Documentation

29.280.3.1 bool Go::MarchPoint::operator< (const MarchPoint & *other*) const [inline]

Definition at line 76 of file FaceAdjacency.h.

29.280.4 Member Data Documentation

29.280.4.1 double Go::MarchPoint::cos_ang

Definition at line 70 of file FaceAdjacency.h.

29.280.4.2 double Go::MarchPoint::dist

Definition at line 69 of file FaceAdjacency.h.

29.280.4.3 double Go::MarchPoint::par

Definition at line 67 of file FaceAdjacency.h.

29.280.4.4 double Go::MarchPoint::par2

Definition at line 68 of file FaceAdjacency.h.

29.280.4.5 Go::Point Go::MarchPoint::pt

Definition at line 66 of file FaceAdjacency.h.

29.280.4.6 int Go::MarchPoint::status

Definition at line 71 of file FaceAdjacency.h.

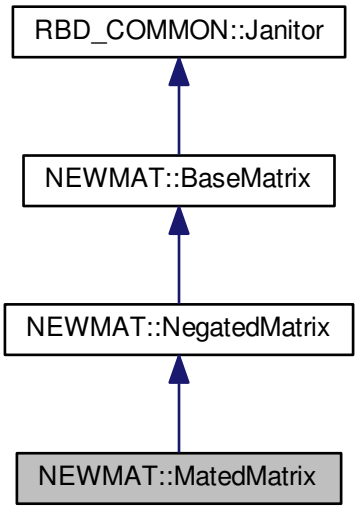
The documentation for this class was generated from the following file:

- topology/include/GoTools/topology/FaceAdjacency.h

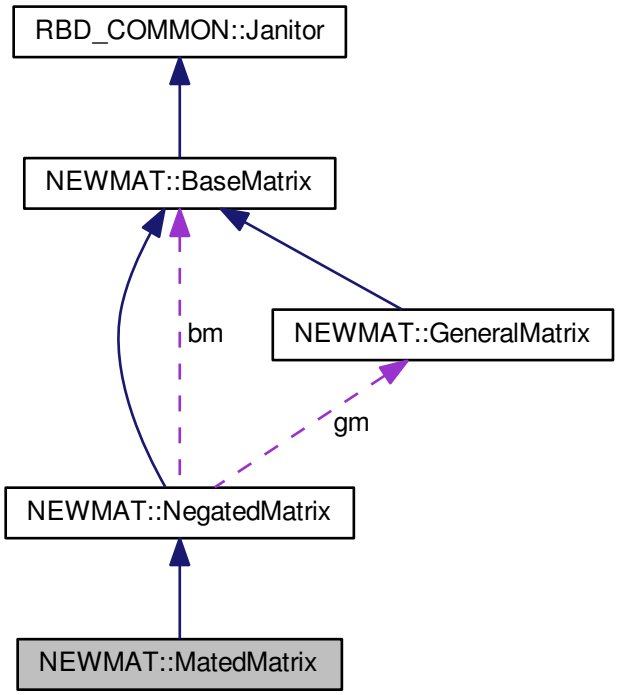
29.281 NEWMAT::MatedMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::MatedMatrix:



Collaboration diagram for NEWMAT::MatedMatrix:



Public Member Functions

- ~MatedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix

Additional Inherited Members

29.281.1 Detailed Description

Definition at line 1453 of file newmat.h.

29.281.2 Constructor & Destructor Documentation

29.281.2.1 NEWMAT::MatedMatrix::~MatedMatrix ( ) [inline]

Definition at line 1460 of file newmat.h.

29.281.3 Member Function Documentation

29.281.3.1 MatrixBandWidth MatedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 484 of file newmat4.cpp.

29.281.3.2 GeneralMatrix * MatedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 326 of file newmat5.cpp.

29.281.4 Friends And Related Function Documentation

29.281.4.1 friend class BaseMatrix [friend]

Definition at line 1458 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

29.282 material_appearance Class Reference

`#include <gl_aux.h>`

Public Member Functions

- material_appearance (void)
- int col_scheme_selected (void) const
- void col_scheme_select (const int i)
- void set_material (void)
- void redefine_material_f (const vector3t< double > &diff, const vector3t< double > &amb, const vector3t< double > &em, const vector3t< double > &spec, const double shin)
- void Key (unsigned char key)

Public Attributes

- double ztrans_delta

29.282.1 Detailed Description

Definition at line 68 of file gl_aux.h.

29.282.2 Constructor & Destructor Documentation

29.282.2.1 material_appearance::material_appearance (void) [inline]

Definition at line 101 of file gl_aux.h.

29.282.3 Member Function Documentation

29.282.3.1 void material_appearance::col_scheme_select (const int *i*) [inline]

Definition at line 189 of file gl_aux.h.

29.282.3.2 int material_appearance::col_scheme_selected (void) const [inline]

Definition at line 188 of file gl_aux.h.

29.282.3.3 void material_appearance::Key (unsigned char *key*) [inline]

Definition at line 238 of file gl_aux.h.

29.282.3.4 void material_appearance::redefine_material_f (const vector3t< double > & *diff,* const vector3t< double > & *amb,* const vector3t< double > & *em,* const vector3t< double > & *spec,* const double *shin*) [inline]

Definition at line 209 of file gl_aux.h.

29.282.3.5 void material_appearance::set_material (void) [inline]

Definition at line 194 of file gl_aux.h.

29.282.4 Member Data Documentation

29.282.4.1 double material_appearance::ztrans_delta

Definition at line 96 of file gl_aux.h.

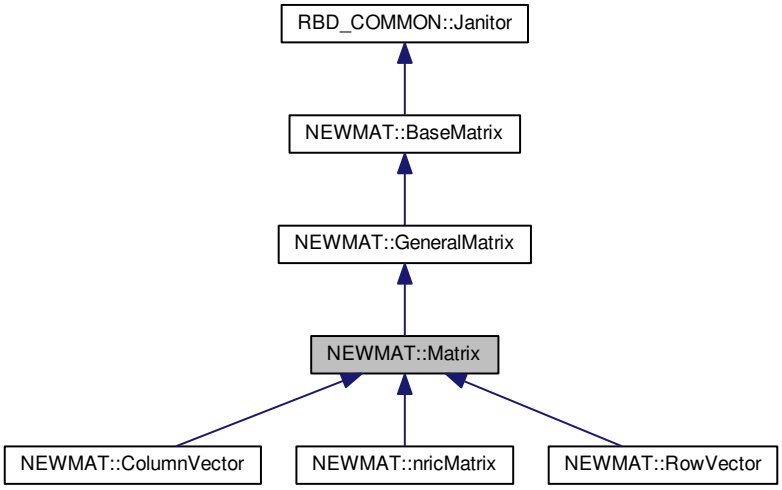
The documentation for this class was generated from the following file:

- sisl/examples/viewer/include/gl_aux.h

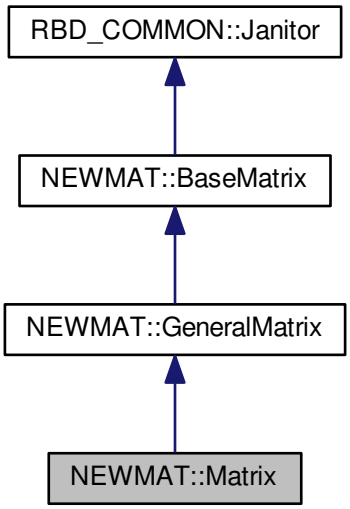
29.283 NEWMAT::Matrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::Matrix:



Collaboration diagram for NEWMAT::Matrix:



Public Member Functions

- Matrix ()
- ~Matrix ()
- Matrix (int, int)
- Matrix (const BaseMatrix &)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- void operator= (const Matrix &m)
- MatrixType Type () const
- Real & operator() (int, int)
- Real & element (int, int)
- Real operator() (int, int) const
- Real element (int, int) const
- Matrix (const Matrix &gm)
- GeneralMatrix * MakeSolver ()
- Real Trace () const
- void GetRow (MatrixRowCol &)
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &)
- void RestoreCol (MatrixRowCol &)
- void RestoreCol (MatrixColX &)
- void NextRow (MatrixRowCol &)
- void NextCol (MatrixRowCol &)
- void NextCol (MatrixColX &)
- virtual void ReSize (int, int)
- void ReSize (const GeneralMatrix &A)
- Real MaximumAbsoluteValue2 (int &i, int &j) const
- Real MinimumAbsoluteValue2 (int &i, int &j) const
- Real Maximum2 (int &i, int &j) const
- Real Minimum2 (int &i, int &j) const

Friends

- Real DotProduct (const Matrix &A, const Matrix &B)

Additional Inherited Members

29.283.1 Detailed Description

Definition at line 563 of file newmat.h.

29.283.2 Constructor & Destructor Documentation

29.283.2.1 NEWMAT::Matrix::Matrix ( ) [inline]

Definition at line 567 of file newmat.h.

29.283.2.2 NEWMAT::Matrix::~Matrix ( ) [inline]

Definition at line 568 of file newmat.h.

29.283.2.3 NEWMAT::Matrix::Matrix (int , int)

29.283.2.4 NEWMAT::Matrix::Matrix (const BaseMatrix &)

29.283.2.5 NEWMAT::Matrix::Matrix (const Matrix & *gm*) [inline]

Definition at line 583 of file newmat.h.

29.283.3 Member Function Documentation

29.283.3.1 Real& NEWMAT::Matrix::element (int , int)

29.283.3.2 Real NEWMAT::Matrix::element (int , int) const

29.283.3.3 void NEWMAT::Matrix::GetCol (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::RowVector.

29.283.3.4 void NEWMAT::Matrix::GetCol (MatrixColX &) [virtual]

Implements NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::RowVector.

29.283.3.5 void Matrix::GetRow (MatrixRowCol & *mrc*) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 111 of file newmat3.cpp.

29.283.3.6 GeneralMatrix * Matrix::MakeSolver ( ) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 31 of file newmat7.cpp.

29.283.3.7 Real Matrix::Maximum2 (int & *i,* int & *j*) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 366 of file newmat8.cpp.

29.283.3.8 Real Matrix::MaximumAbsoluteValue2 (int & *i,* int & *j*) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 350 of file newmat8.cpp.

29.283.3.9 Real Matrix::Minimum2 (int & *i,* int & *j*) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 374 of file newmat8.cpp.

29.283.3.10 Real Matrix::MinimumAbsoluteValue2 (int & *i,* int & *j*) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 358 of file newmat8.cpp.

29.283.3.11 void NEWMAT::Matrix::NextCol (MatrixRowCol &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::RowVector.

29.283.3.12 void NEWMAT::Matrix::NextCol (MatrixColX &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::RowVector.

29.283.3.13 void Matrix::NextRow (MatrixRowCol & *mrc*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 184 of file newmat3.cpp.

29.283.3.14 Real& NEWMAT::Matrix::operator() (int , int)

29.283.3.15 Real NEWMAT::Matrix::operator() (int , int) const

29.283.3.16 void NEWMAT::Matrix::operator= (const BaseMatrix &)

29.283.3.17 void NEWMAT::Matrix::operator= (Real *f*) [inline]

Definition at line 572 of file newmat.h.

29.283.3.18 void NEWMAT::Matrix::operator= (const Matrix & *m*) [inline]

Definition at line 573 of file newmat.h.

29.283.3.19 virtual void NEWMAT::Matrix::ReSize (int , int) [virtual]

Reimplemented in NEWMAT::ColumnVector, NEWMAT::RowVector, and NEWMAT::nricMatrix.

29.283.3.20 void Matrix::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::ColumnVector, NEWMAT::RowVector, and NEWMAT::nricMatrix.

Definition at line 267 of file newmat4.cpp.

29.283.3.21 void NEWMAT::Matrix::RestoreCol (MatrixRowCol &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::RowVector.

29.283.3.22 void NEWMAT::Matrix::RestoreCol (MatrixColX &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::RowVector.

29.283.3.23 Real Matrix::Trace ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 534 of file newmat8.cpp.

29.283.3.24 MatrixType Matrix::Type ( ) const [virtual]

Implements NEWMAT::GeneralMatrix.

Reimplemented in NEWMAT::ColumnVector, and NEWMAT::RowVector.

Definition at line 385 of file newmat4.cpp.

29.283.4 Friends And Related Function Documentation

29.283.4.1 Real DotProduct (const Matrix & *A*, const Matrix & *B*) [friend]

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat3.cpp
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp
- newmat/src/newmat8.cpp

29.284 NEWMAT::MatrixBandWidth Class Reference

```
#include <newmat.h>
```

Public Member Functions

- MatrixBandWidth (const int l, const int u)
- MatrixBandWidth (const int i)
- MatrixBandWidth operator+ (const MatrixBandWidth &) const
- MatrixBandWidth operator∗ (const MatrixBandWidth &) const
- MatrixBandWidth minimum (const MatrixBandWidth &) const
- MatrixBandWidth t () const
- bool operator== (const MatrixBandWidth &bw) const
- bool operator!= (const MatrixBandWidth &bw) const
- int Upper () const
- int Lower () const

Public Attributes

- int lower
- int upper

29.284.1 Detailed Description

Definition at line 190 of file newmat.h.

29.284.2 Constructor & Destructor Documentation

29.284.2.1 NEWMAT::MatrixBandWidth::MatrixBandWidth (const int *l*, const int *u*) [inline]

Definition at line 195 of file newmat.h.

29.284.2.2 NEWMAT::MatrixBandWidth::MatrixBandWidth (const int *i*) [inline]

Definition at line 196 of file newmat.h.

29.284.3 Member Function Documentation

29.284.3.1 int NEWMAT::MatrixBandWidth::Lower ( ) const [inline]

Definition at line 205 of file newmat.h.

29.284.3.2 MatrixBandWidth MatrixBandWidth::minimum (const MatrixBandWidth & *bw*) const

Definition at line 186 of file bandmat.cpp.

29.284.3.3 bool NEWMAT::MatrixBandWidth::operator!= (const MatrixBandWidth & *bw*) const [inline]

Definition at line 203 of file newmat.h.

29.284.3.4 MatrixBandWidth MatrixBandWidth::operator* (const MatrixBandWidth & *bw*) const

Definition at line 177 of file bandmat.cpp.

29.284.3.5 MatrixBandWidth MatrixBandWidth::operator+ (const MatrixBandWidth & *bw*) const

Definition at line 168 of file bandmat.cpp.

29.284.3.6 bool NEWMAT::MatrixBandWidth::operator== (const MatrixBandWidth & *bw*) const [inline]

Definition at line 201 of file newmat.h.

29.284.3.7 MatrixBandWidth NEWMAT::MatrixBandWidth::t ( ) const [inline]

Definition at line 200 of file newmat.h.

29.284.3.8 int NEWMAT::MatrixBandWidth::Upper ( ) const [inline]

Definition at line 204 of file newmat.h.

29.284.4 Member Data Documentation

29.284.4.1 int NEWMAT::MatrixBandWidth::lower

Definition at line 193 of file newmat.h.

29.284.4.2 int NEWMAT::MatrixBandWidth::upper

Definition at line 194 of file newmat.h.

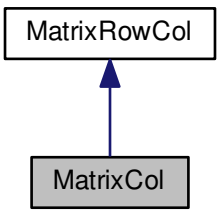
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/bandmat.cpp

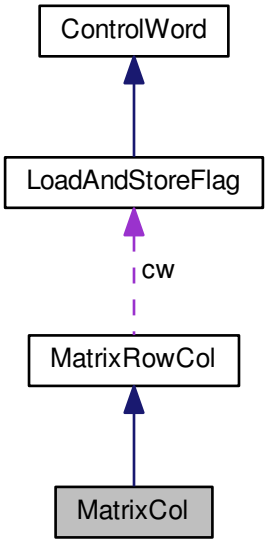
29.285 MatrixCol Class Reference

```
#include <newmatrc.h>
```

Inheritance diagram for MatrixCol:



Collaboration diagram for MatrixCol:



Public Member Functions

- MatrixCol (GeneralMatrix *, LoadAndStoreFlag, int=0)
- MatrixCol (GeneralMatrix *, Real *, LoadAndStoreFlag, int=0)
- ~MatrixCol ()
- void Next ()

Additional Inherited Members

29.285.1 Detailed Description

Definition at line 114 of file newmatrc.h.

29.285.2 Constructor & Destructor Documentation

29.285.2.1 MatrixCol::MatrixCol (GeneralMatrix * *gmx,* LoadAndStoreFlag *cwx,* int *col* = 0) [inline]

Definition at line 150 of file newmatrc.h.

29.285.2.2 MatrixCol::MatrixCol (GeneralMatrix * *gmx,* Real * *r,* LoadAndStoreFlag *cwx,* int *col* = 0) [inline]

Definition at line 153 of file newmatrc.h.

29.285.2.3 MatrixCol::~MatrixCol ( )

Definition at line 835 of file newmat3.cpp.

29.285.3 Member Function Documentation

29.285.3.1 void MatrixCol::Next ( ) [inline]

Definition at line 162 of file newmatrc.h.

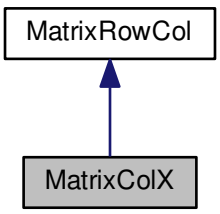
The documentation for this class was generated from the following files:

- newmat/include/newmatrc.h
- newmat/src/newmat3.cpp

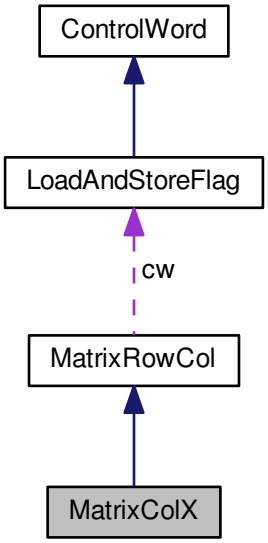
29.286 MatrixColX Class Reference

```
#include <newmatrc.h>
```

Inheritance diagram for MatrixColX:



Collaboration diagram for MatrixColX:



Public Member Functions

- MatrixColX (GeneralMatrix ∗, Real ∗, LoadAndStoreFlag, int=0)
- ∼MatrixColX ()
- void Next ()

Public Attributes

- Real ∗ store

29.286.1 Detailed Description

Definition at line 130 of file newmatrc.h.

29.286.2 Constructor & Destructor Documentation

29.286.2.1 MatrixColX::MatrixColX (GeneralMatrix ∗ *gmx,* Real ∗ *r,* LoadAndStoreFlag *cwx,* int *col* = 0) [inline]

Definition at line 157 of file newmatrc.h.

29.286.2.2 MatrixColX::∼MatrixColX ( )

Definition at line 837 of file newmat3.cpp.

29.286.3 Member Function Documentation

29.286.3.1 void MatrixColX::Next ( ) [inline]

Definition at line 164 of file newmatrc.h.

29.286.4 Member Data Documentation

29.286.4.1 Real* MatrixColX::store

Definition at line 138 of file newmatrc.h.

The documentation for this class was generated from the following files:

- newmat/include/newmatrc.h
- newmat/src/newmat3.cpp

29.287 NEWMAT::MatrixInput Class Reference

`#include <newmat.h>`

Public Member Functions

- MatrixInput (const MatrixInput &mi)
- MatrixInput (int nx, Real *rx)
- ~MatrixInput ()
- MatrixInput operator<< (Real)
- MatrixInput operator<< (int f)

Friends

- class GeneralMatrix

29.287.1 Detailed Description

Definition at line 1544 of file newmat.h.

29.287.2 Constructor & Destructor Documentation

29.287.2.1 NEWMAT::MatrixInput::MatrixInput (const MatrixInput & *mi*) [inline]

Definition at line 1551 of file newmat.h.

29.287.2.2 NEWMAT::MatrixInput::MatrixInput (int *nx*, Real * *rx*) [inline]

Definition at line 1552 of file newmat.h.

29.287.2.3 MatrixInput::~MatrixInput ( )

Definition at line 521 of file newmat5.cpp.

29.287.3 Member Function Documentation

29.287.3.1 MatrixInput NEWMAT::MatrixInput::operator<< (Real)

29.287.3.2 MatrixInput NEWMAT::MatrixInput::operator<< (int *f*) [inline]

Definition at line 1783 of file newmat.h.

29.287.4 Friends And Related Function Documentation

29.287.4.1 friend class GeneralMatrix [friend]

Definition at line 1556 of file newmat.h.

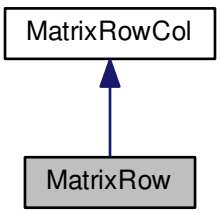
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat5.cpp

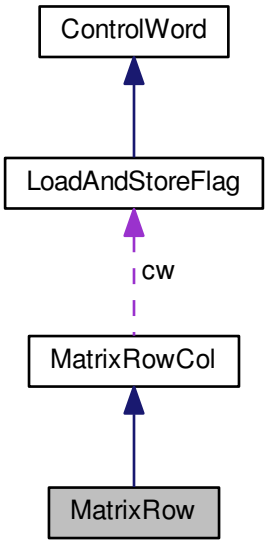
29.288 MatrixRow Class Reference

`#include <newmatrc.h>`

Inheritance diagram for MatrixRow:



Collaboration diagram for MatrixRow:



Public Member Functions

- MatrixRow (GeneralMatrix *, LoadAndStoreFlag, int=0)
- ~MatrixRow ()
- void Next ()

Additional Inherited Members

29.288.1 Detailed Description

Definition at line 103 of file newmatrc.h.

29.288.2 Constructor & Destructor Documentation

29.288.2.1 MatrixRow::MatrixRow (GeneralMatrix * *gmx,* LoadAndStoreFlag *cwx,* int *row* = 0) [inline]

Definition at line 145 of file newmatrc.h.

29.288.2.2 MatrixRow::~MatrixRow ( )

Definition at line 833 of file newmat3.cpp.

29.288.3 Member Function Documentation

29.288.3.1 void MatrixRow::Next ( ) [inline]

Definition at line 148 of file newmatrc.h.

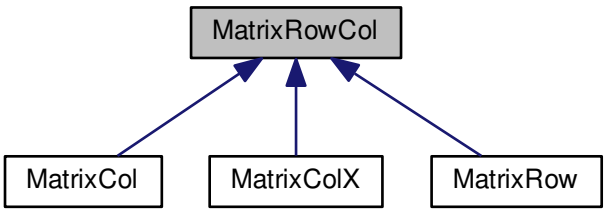
The documentation for this class was generated from the following files:

- newmat/include/newmatrc.h
- newmat/src/newmat3.cpp

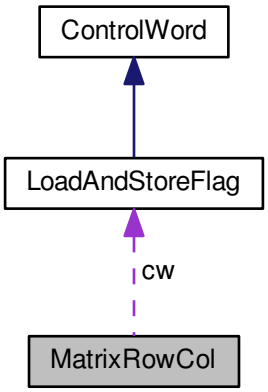
29.289 MatrixRowCol Class Reference

`#include <newmatrc.h>`

Inheritance diagram for MatrixRowCol:



Collaboration diagram for MatrixRowCol:



Public Member Functions

- void IncrMat ()
- void IncrDiag ()
- void IncrId ()
- void IncrUT ()
- void IncrLT ()
- void Zero ()
- void Add (const MatrixRowCol &)
- void AddScaled (const MatrixRowCol &, Real)
- void Add (const MatrixRowCol &, const MatrixRowCol &)
- void Add (const MatrixRowCol &, Real)
- void NegAdd (const MatrixRowCol &, Real)
- void Sub (const MatrixRowCol &)
- void Sub (const MatrixRowCol &, const MatrixRowCol &)
- void RevSub (const MatrixRowCol &)
- void ConCat (const MatrixRowCol &, const MatrixRowCol &)
- void Multiply (const MatrixRowCol &)
- void Multiply (const MatrixRowCol &, const MatrixRowCol &)
- void KP (const MatrixRowCol &, const MatrixRowCol &)
- void Copy (const MatrixRowCol &)
- void CopyCheck (const MatrixRowCol &)
- void Check (const MatrixRowCol &)
- void Check ()
- void Copy (const Real *&)
- void Copy (Real)
- void Add (Real)
- void Multiply (Real)
- Real SumAbsoluteValue ()
- Real MaximumAbsoluteValue1 (Real r, int &i)
- Real MinimumAbsoluteValue1 (Real r, int &i)
- Real Maximum1 (Real r, int &i)
- Real Minimum1 (Real r, int &i)
- Real Sum ()
- void Inject (const MatrixRowCol &)
- void Negate (const MatrixRowCol &)
- void Multiply (const MatrixRowCol &, Real)
- Real * Data ()
- int Skip ()
- int Storage ()
- int Length ()
- void Skip (int i)
- void Storage (int i)
- void Length (int i)
- void SubRowCol (MatrixRowCol &, int, int) const
- MatrixRowCol ()
- ~MatrixRowCol ()

Public Attributes

- int length
- int skip
- int storage
- int rowcol
- GeneralMatrix * gm
- Real * data
- LoadAndStoreFlag cw

Friends

- Real DotProd (const MatrixRowCol &, const MatrixRowCol &)

29.289.1 Detailed Description

Definition at line 33 of file newmatrc.h.

29.289.2 Constructor & Destructor Documentation

29.289.2.1 MatrixRowCol::MatrixRowCol ( ) [inline]

Definition at line 98 of file newmatrc.h.

29.289.2.2 MatrixRowCol::~MatrixRowCol ( )

Definition at line 824 of file newmat3.cpp.

29.289.3 Member Function Documentation

29.289.3.1 void MatrixRowCol::Add (const MatrixRowCol & *mrc*)

Definition at line 29 of file newmat2.cpp.

29.289.3.2 void MatrixRowCol::Add (const MatrixRowCol & *mrc1*, const MatrixRowCol & *mrc2*)

Definition at line 87 of file newmat2.cpp.

29.289.3.3 void MatrixRowCol::Add (const MatrixRowCol & *mrc1*, Real *x*)

Definition at line 232 of file newmat2.cpp.

29.289.3.4 void MatrixRowCol::Add (Real *r*)

Definition at line 555 of file newmat2.cpp.

29.289.3.5 void MatrixRowCol::AddScaled (const MatrixRowCol & *mrc*, Real *x*)

Definition at line 40 of file newmat2.cpp.

29.289.3.6 void MatrixRowCol::Check (const MatrixRowCol & *mrc1*)

Definition at line 445 of file newmat2.cpp.

29.289.3.7 void MatrixRowCol::Check ( )

Definition at line 453 of file newmat2.cpp.

29.289.3.8 void MatrixRowCol::ConCat (const MatrixRowCol & *mrc1,* const MatrixRowCol & *mrc2*)

Definition at line 280 of file newmat2.cpp.

29.289.3.9 void MatrixRowCol::Copy (const MatrixRowCol & *mrc1*)

Definition at line 412 of file newmat2.cpp.

29.289.3.10 void MatrixRowCol::Copy (const Real *& *r*)

Definition at line 529 of file newmat2.cpp.

29.289.3.11 void MatrixRowCol::Copy (Real *r*)

Definition at line 537 of file newmat2.cpp.

29.289.3.12 void MatrixRowCol::CopyCheck (const MatrixRowCol & *mrc1*)

Definition at line 430 of file newmat2.cpp.

29.289.3.13 Real* MatrixRowCol::Data ( ) [inline]

Definition at line 89 of file newmatrc.h.

29.289.3.14 void MatrixRowCol::IncrDiag ( ) [inline]

Definition at line 46 of file newmatrc.h.

29.289.3.15 void MatrixRowCol::IncrId ( ) [inline]

Definition at line 47 of file newmatrc.h.

29.289.3.16 void MatrixRowCol::IncrLT ( ) [inline]

Definition at line 49 of file newmatrc.h.

29.289.3.17 void MatrixRowCol::IncrMat ( ) [inline]

Definition at line 45 of file newmatrc.h.

29.289.3.18 void MatrixRowCol::IncrUT ( ) [inline]

Definition at line 48 of file newmatrc.h.

29.289.3.19 void MatrixRowCol::Inject (const MatrixRowCol & *mrc*)

Definition at line 62 of file newmat2.cpp.

29.289.3.20 void MatrixRowCol::KP (const MatrixRowCol & *mrc1,* const MatrixRowCol & *mrc2*)

Definition at line 345 of file newmat2.cpp.

29.289.3.21 int MatrixRowCol::Length ( ) [inline]

Definition at line 92 of file newmatrc.h.

29.289.3.22 void MatrixRowCol::Length (int *i*) [inline]

Definition at line 95 of file newmatrc.h.

29.289.3.23 Real MatrixRowCol::Maximum1 (Real *r,* int & *i*)

Definition at line 593 of file newmat2.cpp.

29.289.3.24 Real MatrixRowCol::MaximumAbsoluteValue1 (Real *r,* int & *i*)

Definition at line 573 of file newmat2.cpp.

29.289.3.25 Real MatrixRowCol::Minimum1 (Real *r,* int & *i*)

Definition at line 603 of file newmat2.cpp.

29.289.3.26 Real MatrixRowCol::MinimumAbsoluteValue1 (Real *r,* int & *i*)

Definition at line 583 of file newmat2.cpp.

29.289.3.27 void MatrixRowCol::Multiply (const MatrixRowCol & *mrc1*)

Definition at line 307 of file newmat2.cpp.

29.289.3.28 void MatrixRowCol::Multiply (const MatrixRowCol & *mrc1,* const MatrixRowCol & *mrc2*)

Definition at line 323 of file newmat2.cpp.

29.289.3.29 void MatrixRowCol::Multiply (Real *r*)

Definition at line 549 of file newmat2.cpp.

29.289.3.30 void MatrixRowCol::Multiply (const MatrixRowCol & *mrc1,* Real *s*)

Definition at line 479 of file newmat2.cpp.

29.289.3.31 void MatrixRowCol::NegAdd (const MatrixRowCol & *mrc1,* Real *x*)

Definition at line 248 of file newmat2.cpp.

29.289.3.32 void MatrixRowCol::Negate (const MatrixRowCol & *mrc1*)

Definition at line 463 of file newmat2.cpp.

29.289.3.33 void MatrixRowCol::RevSub (const MatrixRowCol & *mrc1*)

Definition at line 264 of file newmat2.cpp.

29.289.3.34 int MatrixRowCol::Skip ( ) [inline]

Definition at line 90 of file newmatrc.h.

29.289.3.35 void MatrixRowCol::Skip (int *i*) [inline]

Definition at line 93 of file newmatrc.h.

29.289.3.36 int MatrixRowCol::Storage ( ) [inline]

Definition at line 91 of file newmatrc.h.

29.289.3.37 void MatrixRowCol::Storage (int *i*) [inline]

Definition at line 94 of file newmatrc.h.

29.289.3.38 void MatrixRowCol::Sub (const MatrixRowCol & *mrc*)

Definition at line 51 of file newmat2.cpp.

29.289.3.39 void MatrixRowCol::Sub (const MatrixRowCol & *mrc1,* const MatrixRowCol & *mrc2*)

Definition at line 159 of file newmat2.cpp.

29.289.3.40 void MatrixRowCol::SubRowCol (MatrixRowCol & *mrc,* int *skip1,* int *l1*) const

Definition at line 620 of file newmat2.cpp.

29.289.3.41 Real MatrixRowCol::Sum ( )

Definition at line 612 of file newmat2.cpp.

29.289.3.42 Real MatrixRowCol::SumAbsoluteValue ( )

Definition at line 562 of file newmat2.cpp.

29.289.3.43 void MatrixRowCol::Zero ( )

Definition at line 543 of file newmat2.cpp.

29.289.4 Friends And Related Function Documentation

29.289.4.1 Real DotProd (const MatrixRowCol & *mrc1,* const MatrixRowCol & *mrc2*) [friend]

Definition at line 73 of file newmat2.cpp.

29.289.5 Member Data Documentation

29.289.5.1 LoadAndStoreFlag MatrixRowCol::cw

Definition at line 44 of file newmatrc.h.

29.289.5.2 Real* MatrixRowCol::data

Definition at line 43 of file newmatrc.h.

29.289.5.3 GeneralMatrix* MatrixRowCol::gm

Definition at line 42 of file newmatrc.h.

29.289.5.4 int MatrixRowCol::length

Definition at line 38 of file newmatrc.h.

29.289.5.5 int MatrixRowCol::rowcol

Definition at line 41 of file newmatrc.h.

29.289.5.6 int MatrixRowCol::skip

Definition at line 39 of file newmatrc.h.

29.289.5.7 int MatrixRowCol::storage

Definition at line 40 of file newmatrc.h.

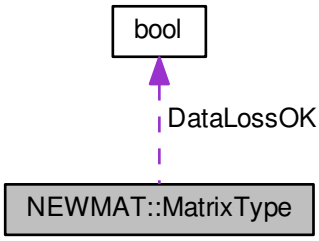
The documentation for this class was generated from the following files:

- newmat/include/newmatrc.h
- newmat/src/newmat2.cpp
- newmat/src/newmat3.cpp

29.290 NEWMAT::MatrixType Class Reference

`#include <newmat.h>`

Collaboration diagram for NEWMAT::MatrixType:



Public Types

- enum Attribute {
  Valid = 1, Diagonal = 2, Symmetric = 4, Band = 8,
  Lower = 16, Upper = 32, LUDeco = 64, Ones = 128 }
- enum {
  US = 0, UT = Valid + Upper, LT = Valid + Lower, Rt = Valid,
  Sm = Valid + Symmetric, Dg = Valid + Diagonal + Band + Lower + Upper + Symmetric, Id, RV = Valid,
  CV = Valid, BM = Valid + Band, UB = Valid + Band + Upper, LB = Valid + Band + Lower,
  SB = Valid + Band + Symmetric, Ct = Valid + LUDeco, BC = Valid + Band + LUDeco }

Public Member Functions

- MatrixType ()
- MatrixType (int i)
- MatrixType (int i, bool dlok)
- MatrixType (const MatrixType &mt)
- void operator= (const MatrixType &mt)
- void SetDataLossOK ()
- int operator+ () const
- MatrixType operator+ (MatrixType mt) const
- MatrixType operator∗ (const MatrixType &) const
- MatrixType SP (const MatrixType &) const
- MatrixType KP (const MatrixType &) const
- MatrixType operator| (const MatrixType &mt) const
- MatrixType operator& (const MatrixType &mt) const
- bool operator>= (MatrixType mt) const
- bool operator< (MatrixType mt) const
- bool operator== (MatrixType t) const
- bool operator!= (MatrixType t) const
- bool operator! () const

- MatrixType i () const
- MatrixType t () const
- MatrixType AddEqualEl () const
- MatrixType MultRHS () const
- MatrixType sub () const
- MatrixType ssub () const
- GeneralMatrix * New () const
- GeneralMatrix * New (int, int, BaseMatrix *) const
- const char * Value () const
- bool IsBand () const
- bool IsDiagonal () const
- bool IsSymmetric () const
- bool CannotConvert () const

Static Public Member Functions

- static int nTypes ()

Public Attributes

- int attribute
- bool DataLossOK

Friends

- bool Rectangular (MatrixType a, MatrixType b, MatrixType c)
- bool Compare (const MatrixType &, MatrixType &)

29.290.1 Detailed Description

Definition at line 98 of file newmat.h.

29.290.2 Member Enumeration Documentation

29.290.2.1 anonymous enum

Enumerator

US
UT
LT
Rt
Sm
Dg
Id
RV
CV
BM
UB
LB
SB
Ct
BC

Definition at line 110 of file newmat.h.

29.290.2.2 enum NEWMAT::MatrixType::Attribute

Enumerator

Valid

Diagonal

Symmetric

Band

Lower

Upper

LUDeco

Ones

Definition at line 101 of file newmat.h.

29.290.3 Constructor & Destructor Documentation

29.290.3.1 NEWMAT::MatrixType::MatrixType ( ) [inline]

Definition at line 136 of file newmat.h.

29.290.3.2 NEWMAT::MatrixType::MatrixType (int *i*) [inline]

Definition at line 137 of file newmat.h.

29.290.3.3 NEWMAT::MatrixType::MatrixType (int *i,* bool *dlok*) [inline]

Definition at line 138 of file newmat.h.

29.290.3.4 NEWMAT::MatrixType::MatrixType (const MatrixType & *mt*) [inline]

Definition at line 139 of file newmat.h.

29.290.4 Member Function Documentation

29.290.4.1 MatrixType NEWMAT::MatrixType::AddEqualEl ( ) const [inline]

Definition at line 165 of file newmat.h.

29.290.4.2 bool NEWMAT::MatrixType::CannotConvert ( ) const [inline]

Definition at line 182 of file newmat.h.

29.290.4.3 MatrixType MatrixType::i ( ) const

Definition at line 63 of file newmat1.cpp.

29.290.4.4 bool NEWMAT::MatrixType::IsBand ( ) const [inline]

Definition at line 179 of file newmat.h.

29.290.4.5 bool NEWMAT::MatrixType::IsDiagonal ( ) const [inline]

Definition at line 180 of file newmat.h.

29.290.4.6 bool NEWMAT::MatrixType::IsSymmetric ( ) const [inline]

Definition at line 181 of file newmat.h.

29.290.4.7 MatrixType MatrixType::KP (const MatrixType & *mt*) const

Definition at line 52 of file newmat1.cpp.

29.290.4.8 MatrixType MatrixType::MultRHS ( ) const

Definition at line 81 of file newmat1.cpp.

29.290.4.9 GeneralMatrix* NEWMAT::MatrixType::New ( ) const

29.290.4.10 GeneralMatrix* NEWMAT::MatrixType::New (int , int , BaseMatrix *) const

29.290.4.11 static int NEWMAT::MatrixType::nTypes ( ) [inline], [static]

Definition at line 129 of file newmat.h.

29.290.4.12 bool NEWMAT::MatrixType::operator! ( ) const [inline]

Definition at line 162 of file newmat.h.

29.290.4.13 bool NEWMAT::MatrixType::operator!= (MatrixType *t*) const [inline]

Definition at line 160 of file newmat.h.

29.290.4.14 MatrixType NEWMAT::MatrixType::operator& (const MatrixType & *mt*) const [inline]

Definition at line 152 of file newmat.h.

29.290.4.15 MatrixType MatrixType::operator∗ (const MatrixType & *mt*) const

Definition at line 29 of file newmat1.cpp.

29.290.4.16 int NEWMAT::MatrixType::operator+ ( ) const [inline]

Definition at line 144 of file newmat.h.

29.290.4.17 MatrixType NEWMAT::MatrixType::operator+ (MatrixType *mt*) const [inline]

Definition at line 145 of file newmat.h.

29.290.4.18 bool NEWMAT::MatrixType::operator< (MatrixType *mt*) const [inline]

Definition at line 156 of file newmat.h.

29.290.4.19 void NEWMAT::MatrixType::operator= (const MatrixType & *mt*) [inline]

Definition at line 141 of file newmat.h.

29.290.4.20 bool NEWMAT::MatrixType::operator== (MatrixType *t*) const [inline]

Definition at line 158 of file newmat.h.

29.290.4.21 bool NEWMAT::MatrixType::operator>= (MatrixType *mt*) const [inline]

Definition at line 154 of file newmat.h.

29.290.4.22 MatrixType NEWMAT::MatrixType::operator| (const MatrixType & *mt*) const [inline]

Definition at line 150 of file newmat.h.

29.290.4.23 void NEWMAT::MatrixType::SetDataLossOK ( ) [inline]

Definition at line 143 of file newmat.h.

29.290.4.24 MatrixType MatrixType::SP (const MatrixType & *mt*) const

Definition at line 37 of file newmat1.cpp.

29.290.4.25 MatrixType NEWMAT::MatrixType::ssub ( ) const [inline]

Definition at line 170 of file newmat.h.

29.290.4.26 MatrixType NEWMAT::MatrixType::sub ( ) const [inline]

Definition at line 168 of file newmat.h.

29.290.4.27 MatrixType MatrixType::t ( ) const

Definition at line 71 of file newmat1.cpp.

29.290.4.28 const char * MatrixType::Value ( ) const

Definition at line 95 of file newmat1.cpp.

29.290.5 Friends And Related Function Documentation

29.290.5.1 bool Compare (const MatrixType & , MatrixType &) [friend]

29.290.5.2 bool Rectangular (MatrixType *a,* MatrixType *b,* MatrixType *c*) [friend]

29.290.6 Member Data Documentation

29.290.6.1 int NEWMAT::MatrixType::attribute

Definition at line 132 of file newmat.h.

29.290.6.2 bool NEWMAT::MatrixType::DataLossOK

Definition at line 133 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat1.cpp

29.291 Go::MatrixXD< T, Dim > Class Template Reference

`#include <MatrixXD.h>`

Public Member Functions

- MatrixXD ()
  Default constructor.
- ~MatrixXD ()
  Default destructor.
- T & operator() (int row, int col)
  Element access operator.
- T ** get ()
  Access data array directly.
- const T & operator() (int row, int col) const
  Const element access operator.
- void zero ()
  Set all elements to zero.
- void identity ()
  Identity matrix.
- void transpose ()
  Transpose matrix.
- void setToRotation (T angle, T x, T y, T z)
- void setToRotation (const Vector3D &p, const Vector3D &q)
- MatrixXD operator* (const MatrixXD &other) const
  Matrix-matrix multiplication.
- MatrixXD & operator*= (const MatrixXD &other)
  Multiply this matrix with a matrix.
- MatrixXD operator* (T scalar) const
  Multiplication by a scalar.
- MatrixXD & operator*= (T scalar)
  Multiplication by a scalar.
- MatrixXD operator+ (const MatrixXD &other) const
  Addition.
- MatrixXD & operator+= (const MatrixXD &other)
  Add a matrix to this matrix.
- MatrixXD operator- () const
  Negation.
- template<class VectorType >
  VectorType operator* (const VectorType &vec) const
  Matrix-vector multiplication.
- template<class FromConstIteratorType , class ToIteratorType >
  void mult (const FromConstIteratorType from, const ToIteratorType to) const
  Matrix-vector multiplication.
- T det () const
  Determinant.
- T trace () const
  Trace.
- T frobeniusNorm () const
  Frobenius norm.

- MatrixXD< T, Dim-1 > submatrix (int r, int c) const
  Submatrix with given row and column removed.
- template<>
  void setToRotation (double angle, double x, double y, double z)
- template<>
  void setToRotation (double angle, double x, double y, double z)
- template<>
  void setToRotation (const Vector3D &p, const Vector3D &q)

29.291.1 Detailed Description

template<typename T, int Dim>
class Go::MatrixXD< T, Dim >

Square n-dimensional (compile time constant dim) matrix.

Definition at line 59 of file MatrixXD.h.

29.291.2 Constructor & Destructor Documentation

29.291.2.1 template<typename T, int Dim> Go::MatrixXD< T, Dim >::MatrixXD ( ) [inline]

Default constructor.

Definition at line 63 of file MatrixXD.h.

29.291.2.2 template<typename T, int Dim> Go::MatrixXD< T, Dim >::~MatrixXD ( ) [inline]

Default destructor.

Definition at line 66 of file MatrixXD.h.

29.291.3 Member Function Documentation

29.291.3.1 template<typename T, int Dim> T Go::MatrixXD< T, Dim >::det ( ) const

Determinant.

29.291.3.2 template<typename T, int Dim> T Go::MatrixXD< T, Dim >::frobeniusNorm ( ) const [inline]

Frobenius norm.

Definition at line 245 of file MatrixXD.h.

29.291.3.3 template<typename T, int Dim> T** Go::MatrixXD< T, Dim >::get ( ) [inline]

Access data array directly.

Definition at line 75 of file MatrixXD.h.

29.291.3.4 template<typename T, int Dim> void Go::MatrixXD< T, Dim >::identity ( ) [inline]

Identity matrix.

Definition at line 94 of file MatrixXD.h.

29.291.3.5 template<typename T, int Dim> template<class FromConstIteratorType , class ToIteratorType > void Go::MatrixXD< T, Dim >::mult (const FromConstIteratorType *from,* const ToIteratorType *to*) const [inline]

Matrix-vector multiplication.

Definition at line 216 of file MatrixXD.h.

29.291.3.6 template<typename T, int Dim> T& Go::MatrixXD< T, Dim >::operator() (int *row,* int *col*) [inline]

Element access operator.

Definition at line 69 of file MatrixXD.h.

29.291.3.7 template<typename T, int Dim> const T& Go::MatrixXD< T, Dim >::operator() (int *row,* int *col*) const [inline]

Const element access operator.

Definition at line 78 of file MatrixXD.h.

29.291.3.8 template<typename T, int Dim> MatrixXD Go::MatrixXD< T, Dim >::operator* (const MatrixXD< T, Dim > & *other*) const [inline]

Matrix-matrix multiplication.

Definition at line 125 of file MatrixXD.h.

29.291.3.9 template<typename T, int Dim> MatrixXD Go::MatrixXD< T, Dim >::operator* (T *scalar*) const [inline]

Multiplication by a scalar.

Definition at line 149 of file MatrixXD.h.

29.291.3.10 template<typename T, int Dim> template<class VectorType > VectorType Go::MatrixXD< T, Dim >::operator∗ (const VectorType & *vec*) const [inline]

Matrix-vector multiplication.

Definition at line 200 of file MatrixXD.h.

29.291.3.11 template<typename T, int Dim> MatrixXD& Go::MatrixXD< T, Dim >::operator∗= (const MatrixXD< T, Dim > & *other*) [inline]

Multiply this matrix with a matrix.

Definition at line 142 of file MatrixXD.h.

29.291.3.12 template<typename T, int Dim> MatrixXD& Go::MatrixXD< T, Dim >::operator∗= (T *scalar*) [inline]

Multiplication by a scalar.

Definition at line 157 of file MatrixXD.h.

29.291.3.13 template<typename T, int Dim> MatrixXD Go::MatrixXD< T, Dim >::operator+ (const MatrixXD< T, Dim > & *other*) const [inline]

Addition.

Definition at line 168 of file MatrixXD.h.

29.291.3.14 template<typename T, int Dim> MatrixXD& Go::MatrixXD< T, Dim >::operator+= (const MatrixXD< T, Dim > & *other*) [inline]

Add a matrix to this matrix.

Definition at line 176 of file MatrixXD.h.

29.291.3.15 template<typename T, int Dim> MatrixXD Go::MatrixXD< T, Dim >::operator- ( ) const [inline]

Negation.

Definition at line 187 of file MatrixXD.h.

29.291.3.16 template<typename T, int Dim> void Go::MatrixXD< T, Dim >::setToRotation (T *angle,* T *x,* T *y,* T *z*) [inline]

Similar to glRotate(), sets the matrix to be a rotation of angle radians about the axis given by (x, y, z). (x, y, z) does not have to be normalized. Only makes sense for Dim == 3 or Dim == 4.

Definition at line 281 of file MatrixXD.h.

29.291.3.17 template<typename T, int Dim> void Go::MatrixXD< T, Dim >::setToRotation (const Vector3D & *p,* const Vector3D & *q*) [inline]

Sets the matrix to be a rotation that takes the point p to q. p and q are assumed to lie on the 2-sphere. Only makes sense for Dim == 3.

Definition at line 343 of file MatrixXD.h.

29.291.3.18 template<> void Go::MatrixXD< double, 3 >::setToRotation (double *angle,* double *x,* double *y,* double *z*) [inline]

Definition at line 290 of file MatrixXD.h.

29.291.3.19 template<> void Go::MatrixXD< double, 4 >::setToRotation (double *angle,* double *x,* double *y,* double *z*) [inline]

Definition at line 326 of file MatrixXD.h.

29.291.3.20 template<> void Go::MatrixXD< double, 3 >::setToRotation (const Vector3D & *p,* const Vector3D & *q*) [inline]

Definition at line 352 of file MatrixXD.h.

29.291.3.21 template<typename T, int Dim> MatrixXD<T, Dim-1> Go::MatrixXD< T, Dim >::submatrix (int *r,* int *c*) const [inline]

Submatrix with given row and column removed.

Definition at line 258 of file MatrixXD.h.

29.291.3.22 template<typename T, int Dim> T Go::MatrixXD< T, Dim >::trace ( ) const [inline]

Trace.

Definition at line 233 of file MatrixXD.h.

29.291.3.23 template<typename T, int Dim> void Go::MatrixXD< T, Dim >::transpose ( ) [inline]

Transpose matrix.

Definition at line 103 of file MatrixXD.h.

29.291.3.24 template<typename T, int Dim> void Go::MatrixXD< T, Dim >::zero ( ) [inline]

Set all elements to zero.

Definition at line 84 of file MatrixXD.h.

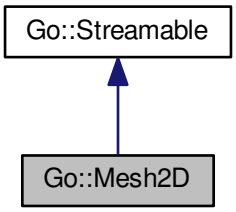
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/MatrixXD.h

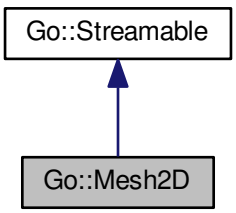
29.292 Go::Mesh2D Class Reference

`#include <Mesh2D.h>`

Inheritance diagram for Go::Mesh2D:



Collaboration diagram for Go::Mesh2D:



Public Member Functions

- Mesh2D ()
- Mesh2D (std::istream &is)
- template<typename Iterator >
  Mesh2D (Iterator kx_start, Iterator kx_end, Iterator ky_start, Iterator ky_end)
- template<typename Array >
  Mesh2D (const Array &xknots, const Array &yknots)
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- void swap (Mesh2D &rhs)
- int nu (Direction2D d, int ix, int start, int end) const
- int numDistinctKnots (Direction2D d) const
- double kval (Direction2D d, int ix) const
- double minParam (Direction2D d) const
- double maxParam (Direction2D d) const
- const double *const knotsBegin (Direction2D d) const
- const double *const knotsEnd (Direction2D d) const
- std::vector< double > getKnots (Direction2D d, int ix, bool right=true) const
- int extent (Direction2D d, int ix, int start, int mult) const
- int largestMultInLine (Direction2D d, int ix) const
- int minMultInLine (Direction2D d, int ix) const
- int knotIntervalFuzzy (Direction2D d, double &par, double eps) const
- int getKnotIdx (Direction2D d, double &par, double eps) const
- std::vector< std::pair< int, int > > segments (Direction2D dir, int ix, int threshold=1) const
- std::vector< std::pair< int, int > > zeroSegments (Direction2D dir, int ix) const
- Mesh2DIterator begin () const
- Mesh2DIterator end () const
- IndexMesh2DIterator indexMeshBegin () const
- IndexMesh2DIterator indexMeshEnd () const
- int firstMeshVecIx (Direction2D d) const
- int lastMeshVecIx (Direction2D d) const
- shared_ptr< Mesh2D > subMesh (int ix1, int ix2, int iy1, int iy2) const
- void setMult (Direction2D d, int ix, int start, int end, int mult)
- void incrementMult (Direction2D d, int ix, int start, int end, int mult)
- int insertLine (Direction2D d, double kval, int mult=0)
- void setParameterDomain (double u1, double u2, double v1, double v2)
- void swapParameterDirection ()
- void reverseParameterDirection (bool dir_is_u)

29.292.1 Detailed Description

Definition at line 67 of file Mesh2D.h.

29.292.2 Constructor & Destructor Documentation

29.292.2.1 Go::Mesh2D::Mesh2D ( ) [inline]

Definition at line 74 of file Mesh2D.h.

29.292.2.2 Go::Mesh2D::Mesh2D (std::istream & *is*)

29.292.2.3 template<typename Iterator > Go::Mesh2D::Mesh2D (Iterator *kx_start,* Iterator *kx_end,* Iterator *ky_start,* Iterator *ky_end*)

Definition at line 297 of file Mesh2D.h.

29.292.2.4 template<typename Array > Go::Mesh2D::Mesh2D (**const Array** & *xknots,* **const Array** & *yknots*)

Definition at line 305 of file Mesh2D.h.

29.292.3 Member Function Documentation

29.292.3.1 **Mesh2DIterator** Go::Mesh2D::begin ( ) const

29.292.3.2 **Mesh2DIterator** Go::Mesh2D::end ( ) const

29.292.3.3 int Go::Mesh2D::extent (**Direction2D** *d,* int *ix,* int *start,* int *mult*) const

29.292.3.4 int Go::Mesh2D::firstMeshVecIx (**Direction2D** *d*) const [inline]

Definition at line 378 of file Mesh2D.h.

29.292.3.5 int Go::Mesh2D::getKnotIdx (**Direction2D** *d,* **double** & *par,* **double** *eps*) const

29.292.3.6 std::vector<**double**> Go::Mesh2D::getKnots (**Direction2D** *d,* int *ix,* **bool** *right* = **true**) const

29.292.3.7 void Go::Mesh2D::incrementMult (**Direction2D** *d,* int *ix,* int *start,* int *end,* int *mult*)

29.292.3.8 **IndexMesh2DIterator** Go::Mesh2D::indexMeshBegin ( ) const

29.292.3.9 **IndexMesh2DIterator** Go::Mesh2D::indexMeshEnd ( ) const

29.292.3.10 int Go::Mesh2D::insertLine (**Direction2D** *d,* **double** *kval,* int *mult* = 0)

29.292.3.11 int Go::Mesh2D::knotIntervalFuzzy (**Direction2D** *d,* **double** & *par,* **double** *eps*) const

29.292.3.12 **const double** *const Go::Mesh2D::knotsBegin (**Direction2D** *d*) const [inline]

Definition at line 416 of file Mesh2D.h.

29.292.3.13 **const double** *const Go::Mesh2D::knotsEnd (**Direction2D** *d*) const [inline]

Definition at line 423 of file Mesh2D.h.

29.292.3.14 **double Go::Mesh2D::kval (Direction2D *d,* int *ix*) const** `[inline]`

Definition at line 391 of file Mesh2D.h.

29.292.3.15 **int Go::Mesh2D::largestMultInLine (Direction2D *d,* int *ix*) const**

29.292.3.16 **int Go::Mesh2D::lastMeshVecIx (Direction2D *d*) const** `[inline]`

Definition at line 384 of file Mesh2D.h.

29.292.3.17 **double Go::Mesh2D::maxParam (Direction2D *d*) const** `[inline]`

Definition at line 365 of file Mesh2D.h.

29.292.3.18 **int Go::Mesh2D::minMultInLine (Direction2D *d,* int *ix*) const**

29.292.3.19 **double Go::Mesh2D::minParam (Direction2D *d*) const** `[inline]`

Definition at line 358 of file Mesh2D.h.

29.292.3.20 **int Go::Mesh2D::nu (Direction2D *d,* int *ix,* int *start,* int *end*) const**

29.292.3.21 **int Go::Mesh2D::numDistinctKnots (Direction2D *d*) const** `[inline]`

Definition at line 372 of file Mesh2D.h.

29.292.3.22 **virtual void Go::Mesh2D::read (std::istream & *is*)** `[virtual]`

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.292.3.23 **void Go::Mesh2D::reverseParameterDirection (bool *dir_is_u*)**

29.292.3.24 **std::vector<std::pair<int, int> > Go::Mesh2D::segments (Direction2D *dir,* int *ix,* int *threshold* = 1) const**

29.292.3.25 **void Go::Mesh2D::setMult (Direction2D *d,* int *ix,* int *start,* int *end,* int *mult*)**

29.292.3.26 void Go::Mesh2D::setParameterDomain (double *u1*, double *u2*, double *v1*, double *v2*)

29.292.3.27 shared_ptr<Mesh2D> Go::Mesh2D::subMesh (int *ix1*, int *ix2*, int *iy1*, int *iy2*) const

29.292.3.28 void Go::Mesh2D::swap (Mesh2D & *rhs*)

29.292.3.29 void Go::Mesh2D::swapParameterDirection ( )

29.292.3.30 virtual void Go::Mesh2D::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.292.3.31 std::vector<std::pair<int, int> > Go::Mesh2D::zeroSegments (Direction2D *dir*, int *ix*) const

The documentation for this class was generated from the following file:

- lrsplines2D/include/GoTools/lrsplines2D/Mesh2D.h

29.293 Go::Mesh2DIterator Class Reference

`#include <Mesh2DIterator.h>`

Public Member Functions

- Mesh2DIterator ()
- Mesh2DIterator (const Mesh2D &m, int u_ix, int v_ix)
- Mesh2DIterator & operator++ ()
- bool operator== (const Mesh2DIterator &rhs) const
- bool operator!= (const Mesh2DIterator &rhs) const
- void swap (Mesh2DIterator &rhs)
- const std::array< int, 4 > & operator* () const

29.293.1 Detailed Description

Definition at line 52 of file Mesh2DIterator.h.

29.293.2 Constructor & Destructor Documentation

29.293.2.1 Go::Mesh2DIterator::Mesh2DIterator ( ) [inline]

Definition at line 58 of file Mesh2DIterator.h.

29.293.2.2 Go::Mesh2DIterator::Mesh2DIterator (const Mesh2D & *m*, int *u_ix*, int *v_ix*)

29.293.3 Member Function Documentation

29.293.3.1 bool Go::Mesh2DIterator::operator!= (const Mesh2DIterator & *rhs*) const [inline]

Definition at line 77 of file Mesh2DIterator.h.

29.293.3.2 const std::array<int, 4>& Go::Mesh2DIterator::operator* ( ) const [inline]

Definition at line 92 of file Mesh2DIterator.h.

29.293.3.3 Mesh2DIterator& Go::Mesh2DIterator::operator++ ( )

29.293.3.4 bool Go::Mesh2DIterator::operator== (const Mesh2DIterator & *rhs*) const [inline]

Definition at line 72 of file Mesh2DIterator.h.

29.293.3.5 void Go::Mesh2DIterator::swap (Mesh2DIterator & *rhs*) [inline]

Definition at line 82 of file Mesh2DIterator.h.

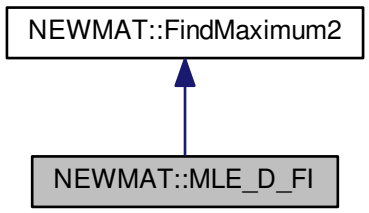
The documentation for this class was generated from the following file:

- lrsplines2D/include/GoTools/lrsplines2D/Mesh2DIterator.h

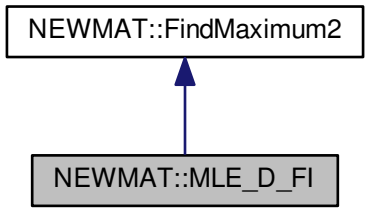
29.294 NEWMAT::MLE_D_FI Class Reference

`#include <newmatnl.h>`

Inheritance diagram for NEWMAT::MLE_D_FI:



Collaboration diagram for NEWMAT::MLE_D_FI:



Public Member Functions

- MLE_D_FI (LL_D_FI &ll, int lim=1000, Real criterion=0.0001)
- void Fit (ColumnVector &Parameters)
- void GetStandardErrors (ColumnVector &)
- void GetCorrelations (SymmetricMatrix &)

29.294.1 Detailed Description

Definition at line 282 of file newmatnl.h.

29.294.2 Constructor & Destructor Documentation

29.294.2.1 NEWMAT::MLE_D_FI::MLE_D_FI (LL_D_FI & *ll*, int *lim* = `1000`, Real *criterion* = `0.0001`) [inline]

Definition at line 299 of file newmatnl.h.

29.294.3 Member Function Documentation

29.294.3.1 void MLE_D_FI::Fit (ColumnVector & *Parameters*)

Definition at line 228 of file newmatnl.cpp.

29.294.3.2 void MLE_D_FI::GetCorrelations (SymmetricMatrix & *Corr*)

Definition at line 250 of file newmatnl.cpp.

29.294.3.3 void MLE_D_FI::GetStandardErrors (ColumnVector & *SEX*)

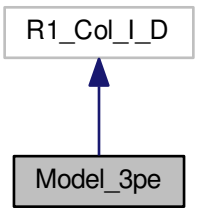
Definition at line 247 of file newmatnl.cpp.

The documentation for this class was generated from the following files:

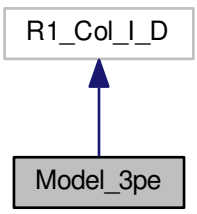
- newmat/include/newmatnl.h
- newmat/src/newmatnl.cpp

29.295 Model_3pe Class Reference

Inheritance diagram for Model_3pe:



Collaboration diagram for Model_3pe:



Public Member Functions

- Model_3pe (const ColumnVector &X_Values)
- Real operator() (int)
- bool IsValid ()
- ReturnMatrix Derivatives ()

29.295.1 Detailed Description

Definition at line 20 of file nl_ex.cpp.

29.295.2 Constructor & Destructor Documentation

29.295.2.1 Model_3pe::Model_3pe (const ColumnVector & *X_Values*) [inline]

Definition at line 25 of file nl_ex.cpp.

29.295.3 Member Function Documentation

29.295.3.1 ReturnMatrix Model_3pe::Derivatives ( ) [inline]

Definition at line 31 of file nl_ex.cpp.

29.295.3.2 bool Model_3pe::IsValid ( ) [inline]

Definition at line 29 of file nl_ex.cpp.

29.295.3.3 Real Model_3pe::operator() (int *i*)

Definition at line 34 of file nl_ex.cpp.

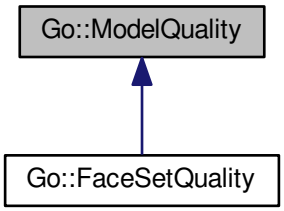
The documentation for this class was generated from the following file:

- newmat/app/nl_ex.cpp

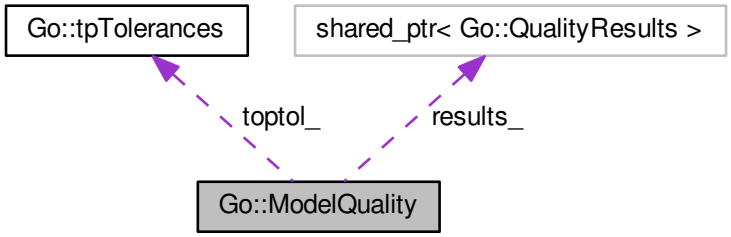
29.296 Go::ModelQuality Class Reference

`#include <ModelQuality.h>`

Inheritance diagram for Go::ModelQuality:



Collaboration diagram for Go::ModelQuality:



Public Member Functions

- ModelQuality (double gap, double kink, double approx)
- ModelQuality (const tpTolerances &toptol, double approx)
- virtual ~ModelQuality ()
- void setMiniElementSize (double element_size)
- void setCurvatureRadius (double radius)
- virtual void degenSurfaces (std::vector< shared_ptr< ParamSurface > > &deg_sfs)

  Does not generate new geometry.
- virtual void degenerateSfCorners (std::vector< shared_ptr< ftPoint > > &deg_corners)

  Generates new points, pointers to existing surfaces.
- virtual void identicalVertices (std::vector< std::pair< shared_ptr< Vertex >, shared_ptr< Vertex > > > &identical_vertices)

  Uses existing topological entity.

- virtual void identicalOrEmbeddedEdges (std::vector< std::pair< shared_ptr< ftEdge >, shared_ptr< ftEdge > > > &identical_edges, std::vector< std::pair< shared_ptr< ftEdge >, shared_ptr< ftEdge > > > &embedded_edges)

  Uses existing topological entities. May contain generated curves.
- virtual void identicalOrEmbeddedFaces (std::vector< std::pair< shared_ptr< ftSurface >, shared_ptr< ftSurface > > > &identical_faces, std::vector< std::pair< shared_ptr< ftSurface >, shared_ptr< ftSurface > > > &embedded_faces)

  Uses existing topological entities. Points to existing surfaces.
- virtual void miniEdges (std::vector< shared_ptr< ftEdge > > &mini_edges)

  Uses existing topological entities.
- virtual void miniSurfaces (std::vector< shared_ptr< ftSurface > > &mini_surfaces)

  Uses existing topological entities. Points to existing surfaces.
- virtual void vanishingSurfaceNormal (std::vector< shared_ptr< ftPoint > > &singular_points, std::vector< shared_ptr< ftCurve > > &singular_curves)

  Returns ftPoints and ftCurves that will contain generated geometry.
- virtual void vanishingCurveTangent (std::vector< shared_ptr< PointOnCurve > > &sing_points, std::vector< std::pair< shared_ptr< PointOnCurve >, shared_ptr< PointOnCurve > > > &sing_curves)

  Contains generated points and curves fetched from topological entities.
- virtual void sliverSurfaces (std::vector< shared_ptr< ParamSurface > > &sliver_sfs, double thickness, double factor=2.0)

  Uses existing geometry.
- virtual void narrowRegion (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > &narrow_regions)

  Uses existing topological entities. Contains generated geometry.
- virtual void edgeVertexDistance (std::vector< std::pair< ftEdge *, shared_ptr< Vertex > > > &edge_vertices)

  Uses existing topological entities.
- virtual void faceVertexDistance (std::vector< std::pair< ftSurface *, shared_ptr< Vertex > > > &face_vertices)

  Existing topology. Partly generated geometry, existing surfaces.
- virtual void faceEdgeDistance (std::vector< std::pair< ftSurface *, ftEdge * > > &face_edges)

  Existing topology. Partly generated geometry, existing surfaces.
- virtual void edgePosAndTangDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > &pos_disconts, std::vector< std::pair< ftEdge *, ftEdge * > > &tang_disconts)

  Uses existing topological entities.
- virtual void facePositionDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > &pos_disconts)

  Uses existing topological entities. Existing surfaces available.
- virtual void faceTangentDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > &tangent_disconts)

  Uses existing topological entities. Existing surfaces available.
- virtual void loopOrientationConsistency (std::vector< shared_ptr< Loop > > &inconsistent_loops)

  Uses existing topological entities.
- virtual void faceNormalConsistency (std::vector< shared_ptr< ftSurface > > &inconsistent_faces)

  Uses existing topological entities. Existing surfaces available.
- virtual void sfG1Discontinuity (std::vector< shared_ptr< ftSurface > > &discont_sfs)

  Uses existing topological entities. Existing surfaces available.
- virtual void sfC1Discontinuity (std::vector< shared_ptr< ftSurface > > &discont_sfs)

  Uses existing topological entities. Existing surfaces available.
- virtual void cvC1G1Discontinuity (std::vector< shared_ptr< ParamCurve > > &c1_discont, std::vector< shared_ptr< ParamCurve > > &g1_discont)

  Contains curves fetched from topological entities.
- virtual void cvCurvatureRadius (std::vector< std::pair< shared_ptr< PointOnCurve >, double > > &small_curv_rad, std::pair< shared_ptr< PointOnCurve >, double > &minimum_curv_rad)

Contains generated points and curves fetched from topological entities.

- virtual void sfCurvatureRadius (std::vector< std::pair< shared_ptr< ftPoint >, double > > &small_curv_rad, std::pair< shared_ptr< ftPoint >, double > &minimum_curv_rad)

  Generates new points, pointers to existing surfaces.
- virtual void acuteEdgeAngle (std::vector< std::pair< ftEdge *, ftEdge * > > &edge_acute)

  Uses existing topological entities.
- virtual void acuteFaceAngle (std::vector< std::pair< ftSurface *, ftSurface * > > &face_acute)

  Uses existing topological entities. Existing surfaces available.
- virtual void loopIntersection (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > &loop_intersection)

  Uses existing topological entities. Contains generated geometry.
- virtual void loopSelfIntersection (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > &loop_self_intersection)

  Uses existing topological entities. Contains generated geometry.
- virtual void indistinctKnots (std::vector< shared_ptr< ParamCurve > > &cv_knots, std::vector< shared_ptr< ParamSurface > > &sf_knots, double tol=1.0e-8)

  Uses existing surface and possibly generated curves.
- shared_ptr< QualityResults > getResults ()

Protected Attributes

- tpTolerances toptol_
- double approx_
- double small_size_
- double curvature_radius_
- shared_ptr< QualityResults > results_

29.296.1 Detailed Description

Definition at line 53 of file ModelQuality.h.

29.296.2 Constructor & Destructor Documentation

29.296.2.1 Go::ModelQuality::ModelQuality (double *gap*, double *kink*, double *approx*)

29.296.2.2 Go::ModelQuality::ModelQuality (const tpTolerances & *toptol*, double *approx*)

29.296.2.3 virtual Go::ModelQuality::~ModelQuality ( ) [virtual]

29.296.3 Member Function Documentation

29.296.3.1 virtual void Go::ModelQuality::acuteEdgeAngle (std::vector< std::pair< ftEdge *, ftEdge * > > & *edge_acute*) [virtual]

Uses existing topological entities.

Reimplemented in Go::FaceSetQuality.

29.296.3.2 virtual void Go::ModelQuality::acuteFaceAngle (std::vector< std::pair< ftSurface *, ftSurface * > > & *face_acute*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented in Go::FaceSetQuality.

29.296.3.3 virtual void Go::ModelQuality::cvC1G1Discontinuity (std::vector< shared_ptr< ParamCurve > > & *c1_discont,* std::vector< shared_ptr< ParamCurve > > & *g1_discont*) [virtual]

Contains curves fetched from topological entities.

Reimplemented in Go::FaceSetQuality.

29.296.3.4 virtual void Go::ModelQuality::cvCurvatureRadius (std::vector< std::pair< shared_ptr< PointOnCurve >, double > > & *small_curv_rad,* std::pair< shared_ptr< PointOnCurve >, double > & *minimum_curv_rad*) [virtual]

Contains generated points and curves fetched from topological entities.

Reimplemented in Go::FaceSetQuality.

29.296.3.5 virtual void Go::ModelQuality::degenerateSfCorners (std::vector< shared_ptr< ftPoint > > & *deg_corners*) [virtual]

Generates new points, pointers to existing surfaces.

Reimplemented in Go::FaceSetQuality.

29.296.3.6 virtual void Go::ModelQuality::degenSurfaces (std::vector< shared_ptr< ParamSurface > > & *deg_sfs*) [virtual]

Does not generate new geometry.

Reimplemented in Go::FaceSetQuality.

29.296.3.7 virtual void Go::ModelQuality::edgePosAndTangDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > & *pos_disconts,* std::vector< std::pair< ftEdge *, ftEdge * > > & *tang_disconts*) [virtual]

Uses existing topological entities.

Reimplemented in Go::FaceSetQuality.

29.296.3.8 virtual void Go::ModelQuality::edgeVertexDistance (std::vector< std::pair< ftEdge *, shared_ptr< Vertex > > > & *edge_vertices*) [virtual]

Uses existing topological entities.

Reimplemented in Go::FaceSetQuality.

29.296.3.9 virtual void Go::ModelQuality::faceEdgeDistance (std::vector< std::pair< ftSurface *, ftEdge * > > & *face_edges*) [virtual]

Existing topology. Partly generated geometry, existing surfaces.

Reimplemented in Go::FaceSetQuality.

29.296.3.10 virtual void Go::ModelQuality::faceNormalConsistency (std::vector< shared_ptr< ftSurface > > & *inconsistent_faces*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented in Go::FaceSetQuality.

29.296.3.11 virtual void Go::ModelQuality::facePositionDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > & *pos_disconts*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented in Go::FaceSetQuality.

29.296.3.12 virtual void Go::ModelQuality::faceTangentDiscontinuity (std::vector< std::pair< ftEdge *, ftEdge * > > & *tangent_disconts*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented in Go::FaceSetQuality.

29.296.3.13 virtual void Go::ModelQuality::faceVertexDistance (std::vector< std::pair< ftSurface *, shared_ptr< Vertex > > > & *face_vertices*) [virtual]

Existing topology. Partly generated geometry, existing surfaces.

Reimplemented in Go::FaceSetQuality.

29.296.3.14 shared_ptr<QualityResults> Go::ModelQuality::getResults ( ) [inline]

Definition at line 215 of file ModelQuality.h.

29.296.3.15 virtual void Go::ModelQuality::identicalOrEmbeddedEdges (std::vector< std::pair< shared_ptr< ftEdge >, shared_ptr< ftEdge > > > & *identical_edges*, std::vector< std::pair< shared_ptr< ftEdge >, shared_ptr< ftEdge > > > & *embedded_edges*) [virtual]

Uses existing topological entities. May contain generated curves.

Reimplemented in Go::FaceSetQuality.

29.296.3.16 virtual void Go::ModelQuality::identicalOrEmbeddedFaces (std::vector< std::pair< shared_ptr< ftSurface >, shared_ptr< ftSurface > > > & *identical_faces,* std::vector< std::pair< shared_ptr< ftSurface >, shared_ptr< ftSurface > > > & *embedded_faces*) [virtual]

Uses existing topological entities. Points to existing surfaces.

Reimplemented in Go::FaceSetQuality.

29.296.3.17 virtual void Go::ModelQuality::identicalVertices (std::vector< std::pair< shared_ptr< Vertex >, shared_ptr< Vertex > > > & *identical_vertices*) [virtual]

Uses existing topological entity.

Reimplemented in Go::FaceSetQuality.

29.296.3.18 virtual void Go::ModelQuality::indistinctKnots (std::vector< shared_ptr< ParamCurve > > & *cv_knots,* std::vector< shared_ptr< ParamSurface > > & *sf_knots,* double *tol* = 1.0e-8) [virtual]

Uses existing surface and possibly generated curves.

Reimplemented in Go::FaceSetQuality.

29.296.3.19 virtual void Go::ModelQuality::loopIntersection (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > & *loop_intersection*) [virtual]

Uses existing topological entities. Contains generated geometry.

Reimplemented in Go::FaceSetQuality.

29.296.3.20 virtual void Go::ModelQuality::loopOrientationConsistency (std::vector< shared_ptr< Loop > > & *inconsistent_loops*) [virtual]

Uses existing topological entities.

Reimplemented in Go::FaceSetQuality.

29.296.3.21 virtual void Go::ModelQuality::loopSelfIntersection (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > & *loop_self_intersection*) [virtual]

Uses existing topological entities. Contains generated geometry.

Reimplemented in Go::FaceSetQuality.

29.296.3.22 virtual void Go::ModelQuality::miniEdges (std::vector< shared_ptr< ftEdge > > & *mini_edges*) [virtual]

Uses existing topological entities.

Reimplemented in Go::FaceSetQuality.

29.296.3.23 virtual void Go::ModelQuality::miniSurfaces (std::vector< shared_ptr< ftSurface > > & *mini_surfaces*) [virtual]

Uses existing topological entities. Points to existing surfaces.

Reimplemented in Go::FaceSetQuality.

29.296.3.24 virtual void Go::ModelQuality::narrowRegion (std::vector< std::pair< shared_ptr< PointOnEdge >, shared_ptr< PointOnEdge > > > & *narrow_regions*) [virtual]

Uses existing topological entities. Contains generated geometry.

Reimplemented in Go::FaceSetQuality.

29.296.3.25 void Go::ModelQuality::setCurvatureRadius (double *radius*) [inline]

Definition at line 70 of file ModelQuality.h.

29.296.3.26 void Go::ModelQuality::setMiniElementSize (double *element_size*) [inline]

Definition at line 65 of file ModelQuality.h.

29.296.3.27 virtual void Go::ModelQuality::sfC1Discontinuity (std::vector< shared_ptr< ftSurface > > & *discont_sfs*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented in Go::FaceSetQuality.

29.296.3.28 virtual void Go::ModelQuality::sfCurvatureRadius (std::vector< std::pair< shared_ptr< ftPoint >, double > > & *small_curv_rad,* std::pair< shared_ptr< ftPoint >, double > & *minimum_curv_rad*) [virtual]

Generates new points, pointers to existing surfaces.

Reimplemented in Go::FaceSetQuality.

29.296.3.29 virtual void Go::ModelQuality::sfG1Discontinuity (std::vector< shared_ptr< ftSurface > > & *discont_sfs*) [virtual]

Uses existing topological entities. Existing surfaces available.

Reimplemented in Go::FaceSetQuality.

29.296.3.30 virtual void Go::ModelQuality::sliverSurfaces (std::vector< shared_ptr< ParamSurface > > & *sliver_sfs*, double *thickness*, double *factor* = 2.0) [virtual]

Uses existing geometry.

Reimplemented in Go::FaceSetQuality.

29.296.3.31 virtual void Go::ModelQuality::vanishingCurveTangent (std::vector< shared_ptr< PointOnCurve > > & *sing_points*, std::vector< std::pair< shared_ptr< PointOnCurve >, shared_ptr< PointOnCurve > > > & *sing_curves*) [virtual]

Contains generated points and curves fetched from topological entities.

Reimplemented in Go::FaceSetQuality.

29.296.3.32 virtual void Go::ModelQuality::vanishingSurfaceNormal (std::vector< shared_ptr< ftPoint > > & *singular_points*, std::vector< shared_ptr< ftCurve > > & *singular_curves*) [virtual]

Returns ftPoints and ftCurves that will contain generated geometry.

Reimplemented in Go::FaceSetQuality.

29.296.4 Member Data Documentation

29.296.4.1 double Go::ModelQuality::approx_ [protected]

Definition at line 222 of file ModelQuality.h.

29.296.4.2 double Go::ModelQuality::curvature_radius_ [protected]

Definition at line 224 of file ModelQuality.h.

29.296.4.3 shared_ptr<QualityResults> Go::ModelQuality::results_ [protected]

Definition at line 225 of file ModelQuality.h.

29.296.4.4 double Go::ModelQuality::small_size_ [protected]

Definition at line 223 of file ModelQuality.h.

29.296.4.5 tpTolerances Go::ModelQuality::toptol_ [protected]

Definition at line 221 of file ModelQuality.h.

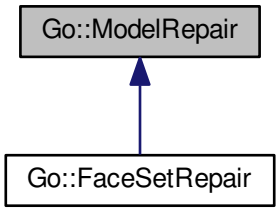
The documentation for this class was generated from the following file:

- qualitymodule/include/GoTools/qualitymodule/ModelQuality.h

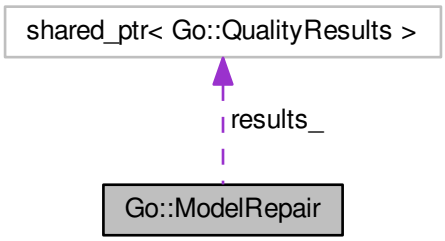
29.297 Go::ModelRepair Class Reference

`#include <ModelRepair.h>`

Inheritance diagram for Go::ModelRepair:



Collaboration diagram for Go::ModelRepair:



Public Member Functions

- ModelRepair ()
  Constructor.
- ModelRepair (shared_ptr< QualityResults > results)
- virtual void mendGaps ()=0
  Remove gaps in the model.
- virtual void identicalAndEmbeddedFaces ()=0
  Remove identical and embedded faces.
- virtual void identicalVertices ()=0
  Handle identical vertices.
- virtual void consistentFaceNormal ()=0
  Handle inconsistent face normals.
- virtual void optimizeVertexPosition ()=0
- virtual void mendEdgeDistance ()=0

Protected Attributes

- shared_ptr< QualityResults > results_

29.297.1 Detailed Description

Definition at line 49 of file ModelRepair.h.

29.297.2 Constructor & Destructor Documentation

29.297.2.1 Go::ModelRepair::ModelRepair ( )

Constructor.

29.297.2.2 Go::ModelRepair::ModelRepair (shared_ptr< QualityResults > *results*)

29.297.3 Member Function Documentation

29.297.3.1 virtual void Go::ModelRepair::consistentFaceNormal ( ) [pure virtual]

Handle inconsistent face normals.

Implemented in Go::FaceSetRepair.

29.297.3.2 virtual void Go::ModelRepair::identicalAndEmbeddedFaces ( ) [pure virtual]

Remove identical and embedded faces.

Implemented in Go::FaceSetRepair.

29.297.3.3 virtual void Go::ModelRepair::identicalVertices ( ) [pure virtual]

Handle identical vertices.

Implemented in Go::FaceSetRepair.

29.297.3.4 virtual void Go::ModelRepair::mendEdgeDistance ( ) [pure virtual]

Implemented in Go::FaceSetRepair.

29.297.3.5 virtual void Go::ModelRepair::mendGaps ( ) [pure virtual]

Remove gaps in the model.

Implemented in Go::FaceSetRepair.

29.297.3.6 virtual void Go::ModelRepair::optimizeVertexPosition ( ) [pure virtual]

Implemented in Go::FaceSetRepair.

29.297.4 Member Data Documentation

29.297.4.1 shared_ptr<QualityResults> Go::ModelRepair::results_ [protected]

Definition at line 75 of file ModelRepair.h.

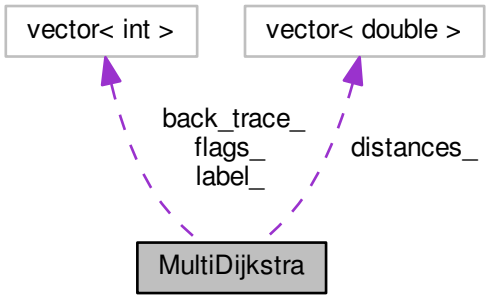
The documentation for this class was generated from the following file:

- qualitymodule/include/GoTools/qualitymodule/ModelRepair.h

29.298 MultiDijkstra Class Reference

`#include <PrMultiDijkstra.h>`

Collaboration diagram for MultiDijkstra:



Public Member Functions

- MultiDijkstra ()
  Constructor.
- ~MultiDijkstra ()
  Destructor.
- void setGraph (GraphType *tri)
  Set the graph to run the algorithm on. Must be run before 'initialize()'.
- void initialize ()
- void setSource (int node_idx, int node_label, double dist=0)
- void run ()
- void run (double radius)
- void run (int target)
- int getLabel (int node_idx)
- double getDistance (int node_idx)
- double getDistance (int node_idx, int neighbour)
- int closestNeighbour (int node_idx)

Protected Member Functions

- void setFinished (int node_idx)
- int isFinished (int node_idx)
- void insertInCandidates (int node_idx)

Protected Attributes

- GraphType * graph_
- HeapType2 * queue_
- vector< double > * distances_
- vector< int > * back_trace_
- vector< int > * label_
- vector< int > * flags_
- double large_distance_

29.298.1 Detailed Description

MultiDijkstra Class implementing the Dijkstra algorithm, where each node is labeled according to which "candidate node" its path ends up in.

Definition at line 76 of file PrMultiDijkstra.h.

29.298.2 Constructor & Destructor Documentation

29.298.2.1 MultiDijkstra::MultiDijkstra ( )

Constructor.

29.298.2.2 MultiDijkstra::~MultiDijkstra ( )

Destructor.

29.298.3 Member Function Documentation

29.298.3.1 int MultiDijkstra::closestNeighbour (int *node_idx*)

Get the index of the closest neighbour to the node 'node_idx'. Does not give a valid answer until the Dijkstra algorithm has been run().

29.298.3.2 double MultiDijkstra::getDistance (int *node_idx*) [inline]

Get the distance associated with the node 'node_ix'. Does not give a valid answer until the Dijkstra algorithm has been run().

Definition at line 129 of file PrMultiDijkstra.h.

29.298.3.3 double MultiDijkstra::getDistance (int *node_idx,* int *neighbour*) [inline]

Compute the euclidean distance between two nodes, supposedly neighbours. If they are boundary nodes, their mutual distance will be set to a very large number.

Definition at line 166 of file PrMultiDijkstra.h.

29.298.3.4 int MultiDijkstra::getLabel (int *node_idx*) [inline]

After the algorithm has been run (using the run() function *without* arguments), this function can be used to find which label each node has been assigned.

Definition at line 125 of file PrMultiDijkstra.h.

29.298.3.5 void MultiDijkstra::initialize ( )

Initialize internal data structures. Must be done after 'setGraph()' has been called.

29.298.3.6 void MultiDijkstra::insertInCandidates (int *node_idx*) [inline], [protected]

Definition at line 158 of file PrMultiDijkstra.h.

29.298.3.7 int MultiDijkstra::isFinished (int *node_idx*) [inline], [protected]

Definition at line 150 of file PrMultiDijkstra.h.

29.298.3.8 void MultiDijkstra::run ( )

Run the algorithm. Compute the associated distance for all nodes in the graph.

29.298.3.9 void MultiDijkstra::run (double *radius*)

Run the algorithm. Compute the associated distance for all nodes in the graph. Edges longer than 'radius' will be ignored.

29.298.3.10 void MultiDijkstra::run (int *target*)

Run the algorithm. Compute the associated distance for nodes in the graph until the distance for the 'target' node has been found. Then skip further computations.

29.298.3.11 void MultiDijkstra::setFinished (int *node_idx*) [inline], [protected]

Definition at line 143 of file PrMultiDijkstra.h.

29.298.3.12 void MultiDijkstra::setGraph (GraphType * *tri*) [inline]

Set the graph to run the algorithm on. Must be run before 'initialize()'.

Definition at line 99 of file PrMultiDijkstra.h.

29.298.3.13 void MultiDijkstra::setSource (int *node_idx,* int *node_label,* double *dist* = 0)

Set a 'source' for the algorithm. This is a node for which the associated minimum distance is known. At least one source must be set for the algorithm to work properly.

Parameters

node_idx	the index of the node to be designated as a source
node_label	set a label for this source (makes it possibly to identify which nodes in the graph whose solution depends on this node.
dist	the distance at this node (typically 0).

29.298.4 Member Data Documentation

29.298.4.1 vector<int>* MultiDijkstra::back_trace_ [protected]

Definition at line 83 of file PrMultiDijkstra.h.

29.298.4.2 vector<double>* MultiDijkstra::distances_ [protected]

Definition at line 82 of file PrMultiDijkstra.h.

29.298.4.3 vector<int>* MultiDijkstra::flags_ [protected]

Definition at line 85 of file PrMultiDijkstra.h.

29.298.4.4 GraphType* MultiDijkstra::graph_ [protected]

Definition at line 80 of file PrMultiDijkstra.h.

29.298.4.5 vector<int>* MultiDijkstra::label_ [protected]

Definition at line 84 of file PrMultiDijkstra.h.

29.298.4.6 double MultiDijkstra::large_distance_ [protected]

Definition at line 86 of file PrMultiDijkstra.h.

29.298.4.7 HeapType2* MultiDijkstra::queue_ [protected]

Definition at line 81 of file PrMultiDijkstra.h.

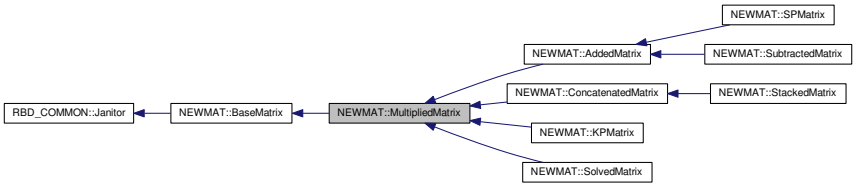
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrMultiDijkstra.h

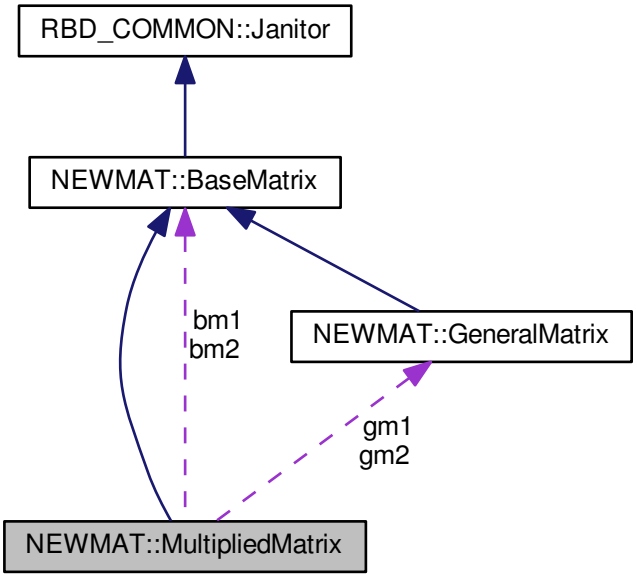
29.299 NEWMAT::MultipliedMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::MultipliedMatrix:



Collaboration diagram for NEWMAT::MultipliedMatrix:



Public Member Functions

- ~MultipliedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Protected Member Functions

- MultipliedMatrix (const BaseMatrix *bm1x, const BaseMatrix *bm2x)
- int search (const BaseMatrix *) const

Protected Attributes

- union {
  const BaseMatrix * bm1
  GeneralMatrix * gm1
  };
- union {
  const BaseMatrix * bm2
  GeneralMatrix * gm2
  };

Friends

- class BaseMatrix
- class GeneralMatrix
- class GenericMatrix

29.299.1 Detailed Description

Definition at line 1173 of file newmat.h.

29.299.2 Constructor & Destructor Documentation

29.299.2.1 NEWMAT::MultipliedMatrix::MultipliedMatrix (const BaseMatrix * *bm1x*, const BaseMatrix * *bm2x*) [inline], [protected]

Definition at line 1181 of file newmat.h.

29.299.2.2 NEWMAT::MultipliedMatrix::~MultipliedMatrix ( ) [inline]

Definition at line 1188 of file newmat.h.

29.299.3 Member Function Documentation

29.299.3.1 MatrixBandWidth MultipliedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::SolvedMatrix, NEWMAT::ConcatenatedMatrix, NEWMAT::KPMatrix, NEWMAT::SPMatrix, and NEWMAT::AddedMatrix.

Definition at line 453 of file newmat4.cpp.

29.299.3.2 GeneralMatrix * MultipliedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Implements NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::SubtractedMatrix, NEWMAT::SolvedMatrix, NEWMAT::StackedMatrix, NEWMAT::ConcatenatedMatrix, NEWMAT::KPMatrix, NEWMAT::SPMatrix, and NEWMAT::AddedMatrix.

Definition at line 99 of file newmat7.cpp.

29.299.3.3 int MultipliedMatrix::search (const BaseMatrix * *s*) const [protected], [virtual]

Implements NEWMAT::BaseMatrix.

Definition at line 373 of file newmat4.cpp.

29.299.4 Friends And Related Function Documentation

29.299.4.1 friend class BaseMatrix [friend]

Definition at line 1184 of file newmat.h.

29.299.4.2 friend class GeneralMatrix [friend]

Definition at line 1185 of file newmat.h.

29.299.4.3 friend class GenericMatrix [friend]

Definition at line 1186 of file newmat.h.

29.299.5 Member Data Documentation

29.299.5.1 union { ... } [protected]

29.299.5.2 union { ... } [protected]

29.299.5.3 const BaseMatrix* NEWMAT::MultipliedMatrix::bm1

Definition at line 1178 of file newmat.h.

29.299.5.4 const BaseMatrix* NEWMAT::MultipliedMatrix::bm2

Definition at line 1180 of file newmat.h.

29.299.5.5 GeneralMatrix* NEWMAT::MultipliedMatrix::gm1

Definition at line 1178 of file newmat.h.

29.299.5.6 GeneralMatrix* NEWMAT::MultipliedMatrix::gm2

Definition at line 1180 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp

29.300 NEWMAT::MultiRadixCounter Class Reference

`#include <newmatap.h>`

Public Member Functions

- MultiRadixCounter (int nx, const SimpleIntArray &rx, SimpleIntArray &vx)
- void operator++ ()
- bool Swap () const
- bool Finish () const
- int Reverse () const
- int Counter () const

29.300.1 Detailed Description

Definition at line 129 of file newmatap.h.

29.300.2 Constructor & Destructor Documentation

29.300.2.1 MultiRadixCounter::MultiRadixCounter (int *nx,* const SimpleIntArray & *rx,* SimpleIntArray & *vx*)

Definition at line 1014 of file newfft.cpp.

29.300.3 Member Function Documentation

29.300.3.1 int NEWMAT::MultiRadixCounter::Counter ( ) const [inline]

Definition at line 147 of file newmatap.h.

29.300.3.2 bool NEWMAT::MultiRadixCounter::Finish ( ) const [inline]

Definition at line 145 of file newmatap.h.

29.300.3.3 void MultiRadixCounter::operator++ ( )

Definition at line 1022 of file newfft.cpp.

29.300.3.4 int NEWMAT::MultiRadixCounter::Reverse ( ) const [inline]

Definition at line 146 of file newmatap.h.

29.300.3.5 bool NEWMAT::MultiRadixCounter::Swap ( ) const [inline]

Definition at line 144 of file newmatap.h.

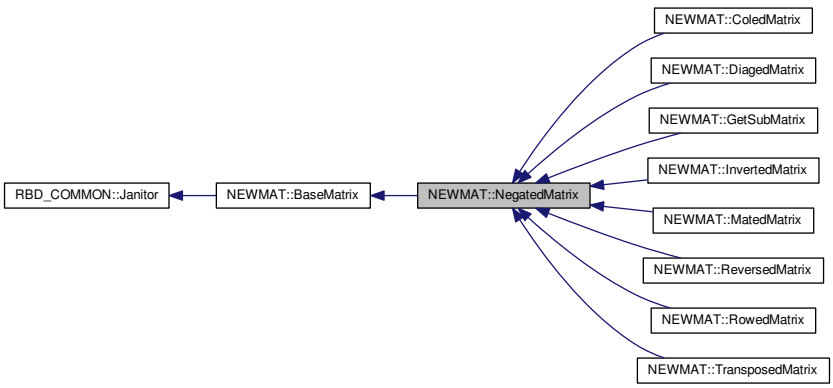
The documentation for this class was generated from the following files:

- newmat/include/newmatap.h
- newmat/src/newfft.cpp

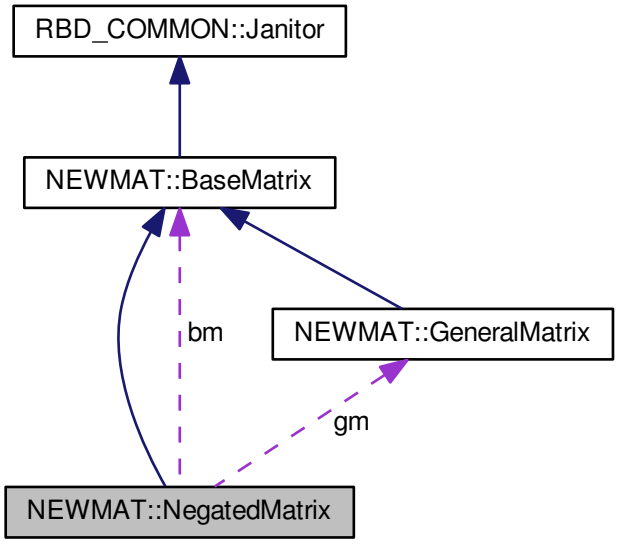
29.301 NEWMAT::NegatedMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::NegatedMatrix:



Collaboration diagram for NEWMAT::NegatedMatrix:



Public Member Functions

- ~NegatedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Protected Member Functions

- NegatedMatrix (const BaseMatrix *bmx)
- int search (const BaseMatrix *) const

Protected Attributes

- union {
  const BaseMatrix * bm
  GeneralMatrix * gm
  };

Friends

- class BaseMatrix

29.301.1 Detailed Description

Definition at line 1366 of file newmat.h.

29.301.2 Constructor & Destructor Documentation

29.301.2.1 NEWMAT::NegatedMatrix::NegatedMatrix (const BaseMatrix * bmx) [inline], [protected]

Definition at line 1370 of file newmat.h.

29.301.2.2 NEWMAT::NegatedMatrix::~NegatedMatrix ( ) [inline]

Definition at line 1375 of file newmat.h.

29.301.3 Member Function Documentation

29.301.3.1 MatrixBandWidth NegatedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::GetSubMatrix, NEWMAT::MatedMatrix, NEWMAT::DiagedMatrix, NEWMAT::ColedMatrix, NEWMAT::RowedMatrix, NEWMAT::InvertedMatrix, and NEWMAT::TransposedMatrix.

Definition at line 468 of file newmat4.cpp.

29.301.3.2 GeneralMatrix * NegatedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Implements NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::GetSubMatrix, NEWMAT::MatedMatrix, NEWMAT::DiagedMatrix, NEWMAT::ColedMatrix, NEWMAT::RowedMatrix, NEWMAT::InvertedMatrix, NEWMAT::ReversedMatrix, and NEWMAT::TransposedMatrix.

Definition at line 210 of file newmat5.cpp.

29.301.3.3 int NegatedMatrix::search (const BaseMatrix * *s*) const [protected], [virtual]

Implements NEWMAT::BaseMatrix.

Definition at line 379 of file newmat4.cpp.

29.301.4 Friends And Related Function Documentation

29.301.4.1 friend class BaseMatrix [friend]

Definition at line 1373 of file newmat.h.

29.301.5 Member Data Documentation

29.301.5.1 union { ... } [protected]

29.301.5.2 const BaseMatrix* NEWMAT::NegatedMatrix::bm

Definition at line 1369 of file newmat.h.

29.301.5.3 GeneralMatrix* NEWMAT::NegatedMatrix::gm

Definition at line 1369 of file newmat.h.

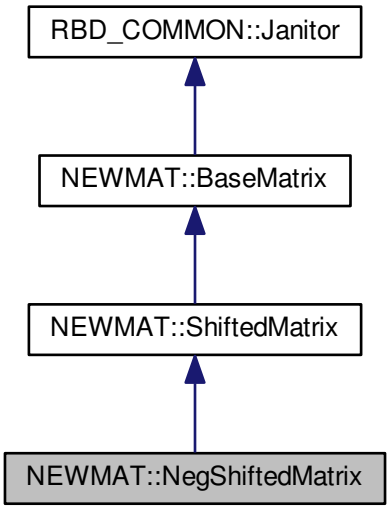
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

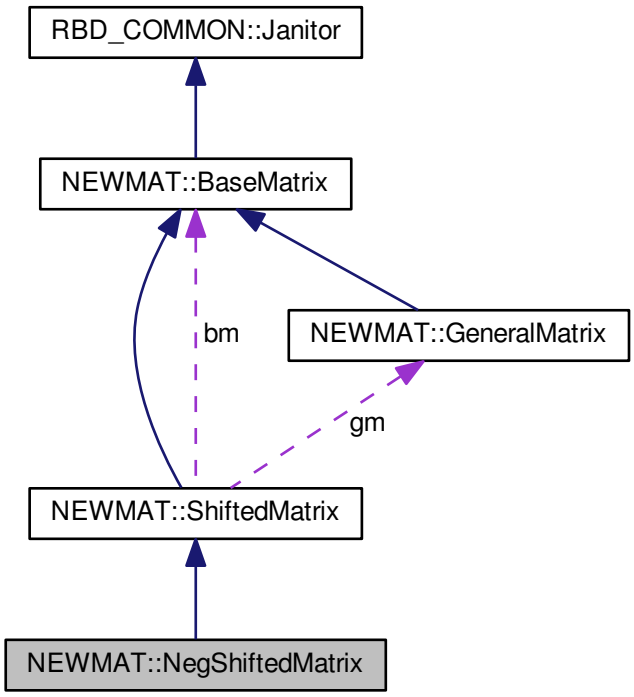
29.302 NEWMAT::NegShiftedMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::NegShiftedMatrix:



Collaboration diagram for NEWMAT::NegShiftedMatrix:



Public Member Functions

- ~NegShiftedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)

Protected Member Functions

- NegShiftedMatrix (Real fx, const BaseMatrix *bmx)

Friends

- class BaseMatrix
- class GeneralMatrix
- class GenericMatrix
- NegShiftedMatrix operator- (Real, const BaseMatrix &)

Additional Inherited Members

29.302.1 Detailed Description

Definition at line 1331 of file newmat.h.

29.302.2 Constructor & Destructor Documentation

29.302.2.1 NEWMAT::NegShiftedMatrix::NegShiftedMatrix (Real *fx*, const BaseMatrix * *bmx*) [inline], [protected]

Definition at line 1334 of file newmat.h.

29.302.2.2 NEWMAT::NegShiftedMatrix::~NegShiftedMatrix ( ) [inline]

Definition at line 1339 of file newmat.h.

29.302.3 Member Function Documentation

29.302.3.1 GeneralMatrix * NegShiftedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::ShiftedMatrix.

Definition at line 132 of file newmat5.cpp.

29.302.4 Friends And Related Function Documentation

29.302.4.1 friend class BaseMatrix [friend]

Definition at line 1335 of file newmat.h.

29.302.4.2 friend class GeneralMatrix [friend]

Definition at line 1336 of file newmat.h.

29.302.4.3 friend class GenericMatrix [friend]

Definition at line 1337 of file newmat.h.

29.302.4.4 NegShiftedMatrix operator- (Real , const BaseMatrix &) [friend]

The documentation for this class was generated from the following files:

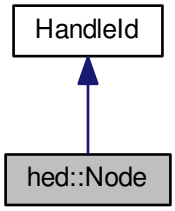
- newmat/include/newmat.h
- newmat/src/newmat5.cpp

29.303 hed::Node Class Reference

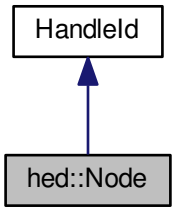
Node class for data structures (Inherits from HandleId)

`#include <HeTriang.h>`

Inheritance diagram for hed::Node:



Collaboration diagram for hed::Node:



Public Member Functions

- Node ()
  Default constructor.
- Node (double x, double y, double z=0.0)
  Constructor.
- ~Node ()
  Destructor.
- void init (double x, double y, double z)
  Initialize the position.
- const double & x () const
  Returns the x-coordinate.
- const double & y () const

Returns the y-coordinate.

- const double & z () const

  Returns the z-coordinate.

- const int & id () const

  Returns the id (TTL_USE_NODE_ID must be defined)

- void setFlag (bool flag)

  Sets the flag (TTL_USE_NODE_FLAG must be defined)

- const bool & getFlag () const

  Returns the flag (TTL_USE_NODE_FLAG must be defined)

Additional Inherited Members

29.303.1 Detailed Description

Node class for data structures (Inherits from HandleId)

Note

- To enable node IDs, TTL_USE_NODE_ID must be defined.
- To enable node flags, TTL_USE_NODE_FLAG must be defined.
- TTL_USE_NODE_ID and TTL_USE_NODE_FLAG should only be enabled if this functionality is required by the application, because they increase the memory usage for each Node object.

Definition at line 80 of file HeTriang.h.

29.303.2 Constructor & Destructor Documentation

29.303.2.1 hed::Node::Node ( ) [inline]

Default constructor.

Definition at line 101 of file HeTriang.h.

29.303.2.2 hed::Node::Node (double *x*, double *y*, double *z* = 0.0) [inline]

Constructor.

Definition at line 104 of file HeTriang.h.

29.303.2.3 hed::Node::~Node ( ) [inline]

Destructor.

Definition at line 107 of file HeTriang.h.

29.303.3 Member Function Documentation

29.303.3.1 const bool& hed::Node::getFlag ( ) const [inline]

Returns the flag (TTL_USE_NODE_FLAG must be defined)

Definition at line 138 of file HeTriang.h.

29.303.3.2 const int& hed::Node::id ( ) const [inline]

Returns the id (TTL_USE_NODE_ID must be defined)

Definition at line 130 of file HeTriang.h.

29.303.3.3 void hed::Node::init (double *x*, double *y*, double *z*) [inline]

Initialize the position.

Definition at line 110 of file HeTriang.h.

29.303.3.4 void hed::Node::setFlag (bool *flag*) [inline]

Sets the flag (TTL_USE_NODE_FLAG must be defined)

Definition at line 135 of file HeTriang.h.

29.303.3.5 const double& hed::Node::x (void) const [inline]

Returns the x-coordinate.

Definition at line 120 of file HeTriang.h.

29.303.3.6 const double& hed::Node::y (void) const [inline]

Returns the y-coordinate.

Definition at line 123 of file HeTriang.h.

29.303.3.7 const double& hed::Node::z (void) const [inline]

Returns the z-coordinate.

Definition at line 126 of file HeTriang.h.

The documentation for this class was generated from the following file:

- ttl/include/ttl/halfedge/HeTriang.h

29.304 hetriang::Node Class Reference

Node class in the half-edge data structure

`#include <ttlTriang.h>`

Public Member Functions

- Node ()
- Node (double x, double y, double z=0.0)
- Node (Go::PointIter iter, double x, double y, double z=0)
- ~Node ()
- void init (double x, double y, double z)
- double x () const
- double y () const
- double z () const
- const Go::PointIter & pointIter () const

29.304.1 Detailed Description

Node class in the half-edge data structure

Definition at line 64 of file ttlTriang.h.

29.304.2 Constructor & Destructor Documentation

29.304.2.1 hetriang::Node::Node ( ) [inline]

Definition at line 72 of file ttlTriang.h.

29.304.2.2 hetriang::Node::Node (double *x*, double *y*, double *z* = 0.0) [inline]

Definition at line 73 of file ttlTriang.h.

29.304.2.3 hetriang::Node::Node (Go::PointIter *iter*, double *x*, double *y*, double *z* = 0) [inline]

Definition at line 75 of file ttlTriang.h.

29.304.2.4 hetriang::Node::~Node ( ) [inline]

Definition at line 78 of file ttlTriang.h.

29.304.3 Member Function Documentation

29.304.3.1 void hetriang::Node::init (double *x*, double *y*, double *z*) [inline]

Definition at line 79 of file ttlTriang.h.

29.304.3.2 const Go::PointIter& hetriang::Node::pointIter ( ) const [inline]

Definition at line 84 of file ttlTriang.h.

29.304.3.3 double hetriang::Node::x ( ) const [inline]

Definition at line 81 of file ttlTriang.h.

29.304.3.4 double hetriang::Node::y ( ) const [inline]

Definition at line 82 of file ttlTriang.h.

29.304.3.5 double hetriang::Node::z ( ) const [inline]

Definition at line 83 of file ttlTriang.h.

The documentation for this class was generated from the following file:

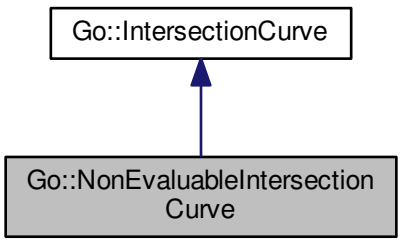
- compositemodel/include/GoTools/compositemodel/ttlTriang.h

29.305 Go::NonEvaluableIntersectionCurve Class Reference

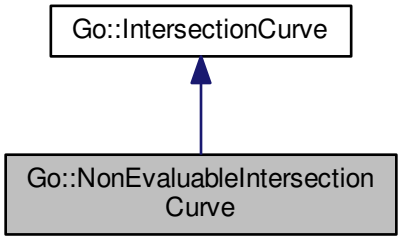
IntersectionCurve that cannot be evaluated.

`#include <IntersectionCurve.h>`

Inheritance diagram for Go::NonEvaluableIntersectionCurve:



Collaboration diagram for Go::NonEvaluableIntersectionCurve:



Public Member Functions

- virtual ~NonEvaluableIntersectionCurve ()
- virtual shared_ptr< ParamCurve > getCurve () const
- virtual shared_ptr< ParamCurve > getParamCurve (int obj_nmb) const
- virtual void getParamSpan (double &start, double &end) const
- virtual void evaluateAt (double pval, Point &pos, Point &tan)
- virtual void refine (const double &pos_tol, const double &angle_tol)
- virtual bool isIsocurve () const
- virtual bool isDegenerated () const

Friends

- template<class iterator >
  shared_ptr< IntersectionCurve > constructIntersectionCurve (const iterator begin, const iterator end)

Additional Inherited Members

29.305.1 Detailed Description

IntersectionCurve that cannot be evaluated.

Definition at line 275 of file IntersectionCurve.h.

29.305.2 Constructor & Destructor Documentation

29.305.2.1 virtual Go::NonEvaluableIntersectionCurve::~NonEvaluableIntersectionCurve ( ) [virtual]

29.305.3 Member Function Documentation

29.305.3.1 virtual void Go::NonEvaluableIntersectionCurve::evaluateAt (double *pval*, Point & *pos*, Point & *tan*) [inline], [virtual]

Evaluate the IntersectionCurve at parameter value *pval*. Its position at this parameter value will be returned in *pos* and its tangent direction will be returned in *tan*.

Parameters

pval	the parameter value for which to evaluate the IntersectionCurve. It should be within the parametric span (which can be obtained from GetParamSpan().

Return values

pos	the calculated position of the point on the curve at parameter *pval*.

Parameters

tan	the calculated tangent of the curve at parameter *pval*.

Implements Go::IntersectionCurve.

Definition at line 290 of file IntersectionCurve.h.

29.305.3.2 virtual shared_ptr<ParamCurve> Go::NonEvaluableIntersectionCurve::getCurve ( ) const [inline], [virtual]

Get out a (shared) pointer to a parametric curve that approximates this IntersectionCurve.

Implements Go::IntersectionCurve.

Definition at line 281 of file IntersectionCurve.h.

29.305.3.3 virtual shared_ptr<ParamCurve> Go::NonEvaluableIntersectionCurve::getParamCurve (int *obj_nmb*) const [inline], [virtual]

Get out a (shared) pointer to the curve in the parametric plane of the first or second object. Should only be called when the concerned object is 2-parametric.

Parameters

obj_nmb	should be either 1 or 2, depending on whether you want to get the parametric curve in object 1 or object 2.

Returns

a shared pointer to a curve that approximates the intersection curve in the parametric domain of the specified object.

Implements Go::IntersectionCurve.

Definition at line 284 of file IntersectionCurve.h.

29.305.3.4 virtual void Go::NonEvaluableIntersectionCurve::getParamSpan (double & *start*, double & *end*) const [inline], [virtual]

Get the start and end value for the parametric span of the IntersectionCurve.

Return values

start	upon function return this variable will contain the start value of the parametric span.
end	upon function return this variable will contain the end value of the parametric span.

Implements Go::IntersectionCurve.

Definition at line 287 of file IntersectionCurve.h.

29.305.3.5 virtual bool Go::NonEvaluableIntersectionCurve::isDegenerated ( ) const [inline], [virtual]

Determine if the IntersectionCurve is in fact a degenerated curve (a single point in space).

Returns

'true' if the IntersectionCurve is degenerated. 'false' otherwise.

Implements Go::IntersectionCurve.

Definition at line 305 of file IntersectionCurve.h.

29.305.3.6 virtual bool Go::NonEvaluableIntersectionCurve::isIsocurve ( ) const [inline], [virtual]

Determine if the IntersectionCurve is in fact representing an isoparametric intersection.

Returns

'true' if the IntersectionCurve is part of an isocurve for one of the objects, 'false' otherwise.

Implements Go::IntersectionCurve.

Definition at line 302 of file IntersectionCurve.h.

29.305.3.7 virtual void Go::NonEvaluableIntersectionCurve::refine (const double & *pos_tol*, const double & *angle_tol*) [inline], [virtual]

Refine the curve (which means to increase the number of IntersectionPoint s defining it), so that the curve matches a specific positional and angle tolerance.

Parameters

pos_tol	the positional tolerance that the curve should match after refinement.
angle_tol	the angular tolerance that the tangent of the curve should match after refinement.

Implements Go::IntersectionCurve.

Definition at line 296 of file IntersectionCurve.h.

29.305.4 Friends And Related Function Documentation

29.305.4.1 template<class iterator > shared_ptr<IntersectionCurve> constructIntersectionCurve (const iterator *begin*, const iterator *end*) [friend]

Definition at line 601 of file IntersectionCurve.h.

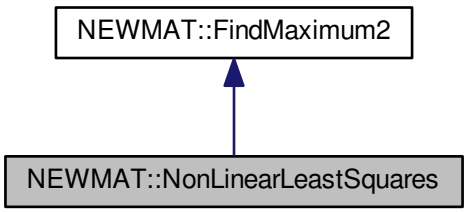
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionCurve.h

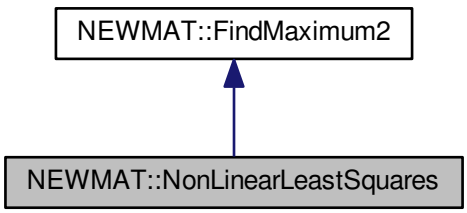
29.306 NEWMAT::NonLinearLeastSquares Class Reference

```
#include <newmatnl.h>
```

Inheritance diagram for NEWMAT::NonLinearLeastSquares:



Collaboration diagram for NEWMAT::NonLinearLeastSquares:



Public Member Functions

- NonLinearLeastSquares (R1_Col_I_D &pred, int lim=1000, Real crit=0.0001)
- void Fit (const ColumnVector &, ColumnVector &)
- Real ResidualVariance () const
- void GetResiduals (ColumnVector &Z) const
- void GetStandardErrors (ColumnVector &)
- void GetCorrelations (SymmetricMatrix &)
- void GetHatDiagonal (DiagonalMatrix &) const

29.306.1 Detailed Description

Definition at line 211 of file newmatnl.h.

29.306.2 Constructor & Destructor Documentation

29.306.2.1 NEWMAT::NonLinearLeastSquares::NonLinearLeastSquares (R1_Col_I_D & *pred,* int *lim* = `1000`, Real *crit* = `0.0001`) [inline]

Definition at line 232 of file newmatnl.h.

29.306.3 Member Function Documentation

29.306.3.1 void NonLinearLeastSquares::Fit (const ColumnVector & *Data,* ColumnVector & *Parameters*)

Definition at line 165 of file newmatnl.cpp.

29.306.3.2 void NonLinearLeastSquares::GetCorrelations (SymmetricMatrix & *Corr*)

Definition at line 189 of file newmatnl.cpp.

29.306.3.3 void NonLinearLeastSquares::GetHatDiagonal (DiagonalMatrix & *Hat*) const

Definition at line 192 of file newmatnl.cpp.

29.306.3.4 void NEWMAT::NonLinearLeastSquares::GetResiduals (ColumnVector & *Z*) const [inline]

Definition at line 236 of file newmatnl.h.

29.306.3.5 void NonLinearLeastSquares::GetStandardErrors (ColumnVector & *SEX*)

Definition at line 186 of file newmatnl.cpp.

29.306.3.6 Real NEWMAT::NonLinearLeastSquares::ResidualVariance ( ) const [inline]

Definition at line 235 of file newmatnl.h.

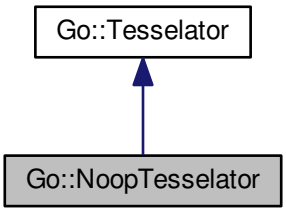
The documentation for this class was generated from the following files:

- newmat/include/newmatnl.h
- newmat/src/newmatnl.cpp

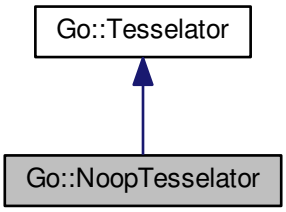
29.307 Go::NoopTesselator Class Reference

`#include <NoopTesselator.h>`

Inheritance diagram for Go::NoopTesselator:



Collaboration diagram for Go::NoopTesselator:



Public Member Functions

- virtual ~NoopTesselator ()
- virtual void tesselate ()

  Perform tesselation.

29.307.1 Detailed Description

Not operative tesselator

Definition at line 50 of file NoopTesselator.h.

29.307.2 Constructor & Destructor Documentation

29.307.2.1 virtual Go::NoopTesselator::~NoopTesselator ( ) [virtual]

29.307.3 Member Function Documentation

29.307.3.1 virtual void Go::NoopTesselator::tesselate ( ) [virtual]

Perform tesselation.

Implements Go::Tesselator.

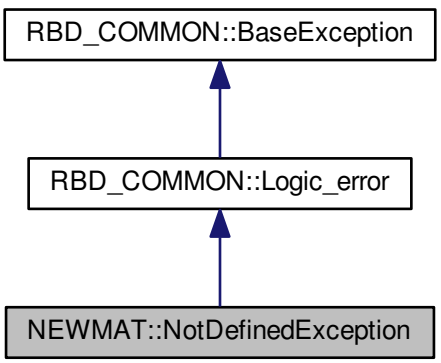
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/NoopTesselator.h

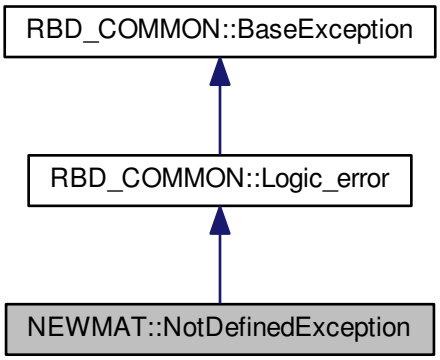
29.308 NEWMAT::NotDefinedException Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::NotDefinedException:



Collaboration diagram for NEWMAT::NotDefinedException:



Public Member Functions

- NotDefinedException (const char ∗op, const char ∗matrix)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.308.1 Detailed Description

Definition at line 1677 of file newmat.h.

29.308.2 Constructor & Destructor Documentation

29.308.2.1 NotDefinedException::NotDefinedException (const char ∗ *op,* const char ∗ *matrix*)

Definition at line 178 of file newmatex.cpp.

29.308.3 Member Data Documentation

29.308.3.1 unsigned long NotDefinedException::Select [static]

Definition at line 1680 of file newmat.h.

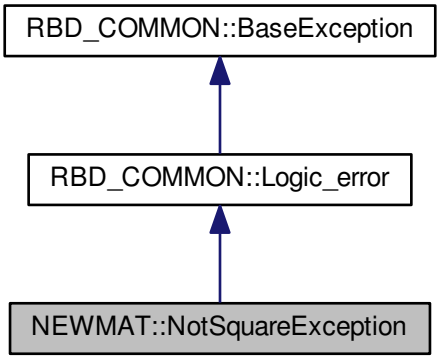
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

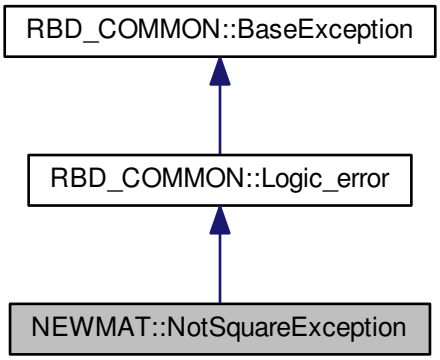
29.309 NEWMAT::NotSquareException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::NotSquareException:



Collaboration diagram for NEWMAT::NotSquareException:



Public Member Functions

- NotSquareException (const GeneralMatrix &A)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.309.1 Detailed Description

Definition at line 1655 of file newmat.h.

29.309.2 Constructor & Destructor Documentation

29.309.2.1 NotSquareException::NotSquareException (const GeneralMatrix & *A*)

Definition at line 143 of file newmatex.cpp.

29.309.3 Member Data Documentation

29.309.3.1 unsigned long NotSquareException::Select [static]

Definition at line 1658 of file newmat.h.

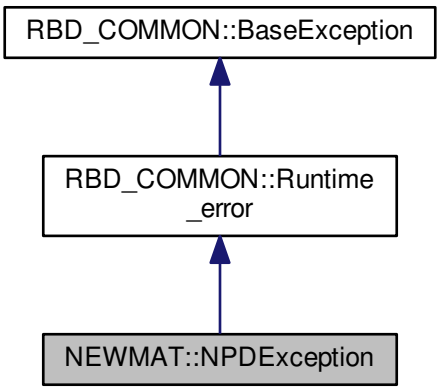
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

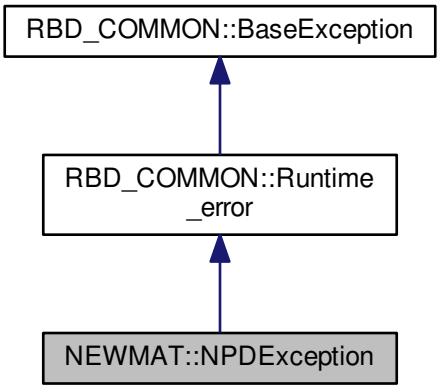
29.310 NEWMAT::NPDException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::NPDException:



Collaboration diagram for NEWMAT::NPDException:



Public Member Functions

- NPDException (const GeneralMatrix &)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.310.1 Detailed Description

Definition at line 1595 of file newmat.h.

29.310.2 Constructor & Destructor Documentation

29.310.2.1 NPDException::NPDException (const GeneralMatrix & *A*)

Definition at line 45 of file newmatex.cpp.

29.310.3 Member Data Documentation

29.310.3.1 unsigned long NPDException::Select [static]

Definition at line 1598 of file newmat.h.

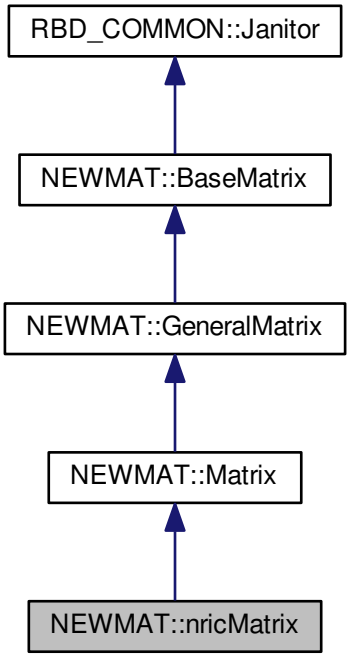
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

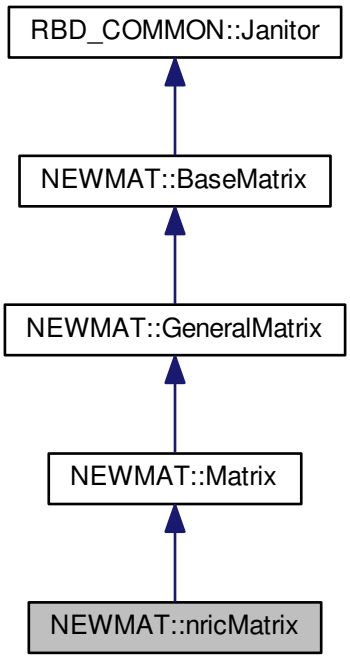
29.311 NEWMAT::nricMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::nricMatrix:



Collaboration diagram for NEWMAT::nricMatrix:



Public Member Functions

- nricMatrix ()
- nricMatrix (int m, int n)
- nricMatrix (const BaseMatrix &bm)
- void operator= (const BaseMatrix &bm)
- void operator= (Real f)
- void operator= (const nricMatrix &m)
- void operator<< (const BaseMatrix &X)
- nricMatrix (const nricMatrix &gm)
- void ReSize (int m, int n)
- void ReSize (const GeneralMatrix &A)
- ~nricMatrix ()
- Real ** nric () const
- void CleanUp ()

Additional Inherited Members

29.311.1 Detailed Description

Definition at line 605 of file newmat.h.

29.311.2 Constructor & Destructor Documentation

29.311.2.1 NEWMAT::nricMatrix::nricMatrix ( ) [inline]

Definition at line 613 of file newmat.h.

29.311.2.2 NEWMAT::nricMatrix::nricMatrix (int *m,* int *n*) [inline]

Definition at line 614 of file newmat.h.

29.311.2.3 NEWMAT::nricMatrix::nricMatrix (const BaseMatrix & *bm*) [inline]

Definition at line 616 of file newmat.h.

29.311.2.4 NEWMAT::nricMatrix::nricMatrix (const nricMatrix & *gm*) [inline]

Definition at line 624 of file newmat.h.

29.311.2.5 NEWMAT::nricMatrix::~nricMatrix ( ) [inline]

Definition at line 628 of file newmat.h.

29.311.3 Member Function Documentation

29.311.3.1 void nricMatrix::CleanUp ( ) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 829 of file newmat4.cpp.

29.311.3.2 Real** NEWMAT::nricMatrix::nric ( ) const [inline]

Definition at line 629 of file newmat.h.

29.311.3.3 void NEWMAT::nricMatrix::operator<< (const BaseMatrix & *X*) [inline]

Definition at line 622 of file newmat.h.

29.311.3.4 void NEWMAT::nricMatrix::operator= (const BaseMatrix & *bm*) [inline]

Definition at line 618 of file newmat.h.

29.311.3.5 void NEWMAT::nricMatrix::operator= (Real *f*) [inline]

Definition at line 620 of file newmat.h.

29.311.3.6 void NEWMAT::nricMatrix::operator= (const nricMatrix & *m*) [inline]

Definition at line 621 of file newmat.h.

29.311.3.7 void NEWMAT::nricMatrix::ReSize (int *m*, int *n*) [inline], [virtual]

Reimplemented from NEWMAT::Matrix.

Definition at line 625 of file newmat.h.

29.311.3.8 void nricMatrix::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::Matrix.

Definition at line 270 of file newmat4.cpp.

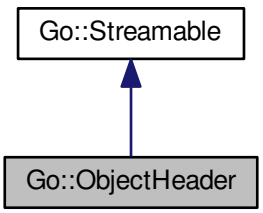
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp

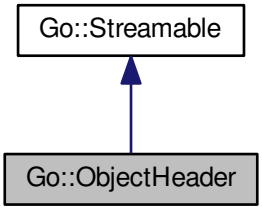
29.312 Go::ObjectHeader Class Reference

`#include <ObjectHeader.h>`

Inheritance diagram for Go::ObjectHeader:



Collaboration diagram for Go::ObjectHeader:



Public Member Functions

- ObjectHeader ()

  Default constructor (uninitialized header)
- ObjectHeader (ClassType t, int major, int minor)
- ObjectHeader (ClassType t, int major, int minor, const std::vector< int > &auxdata)
- virtual ~ObjectHeader ()

  Virtual destructor, allowing safe destruction of derived objects.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- ClassType classType () const

  Get the ClassType stored in this ObjectHeader.
- int majorVersion () const

  Get the major version number stored in this ObjectHeader.
- int minorVersion () const

  Get the minor version number stored in this ObjectHeader.
- int auxdataSize () const
- int auxdata (int i) const

29.312.1 Detailed Description

An object representing the "header" usually preceeding a GeomObject in a stream. This header contains information about the GeomObject, and this information can be read by ObjectHeader and accessed by its member functions.

Definition at line 58 of file ObjectHeader.h.

29.312.2 Constructor & Destructor Documentation

29.312.2.1 Go::ObjectHeader::ObjectHeader ( ) [inline]

Default constructor (uninitialized header)

Definition at line 62 of file ObjectHeader.h.

29.312.2.2 Go::ObjectHeader::ObjectHeader (ClassType *t*, int *major*, int *minor*) [inline]

Constructor creating an ObjectHeader that is initialized with a given ClassType, major and minor version.

Parameters

t	the ClassType of the GeomObject that this ObjectHeader shall represent.
major	major version number
minor	minor version number

Definition at line 74 of file ObjectHeader.h.

29.312.2.3 Go::ObjectHeader::ObjectHeader (ClassType *t*, int *major*, int *minor*, const std::vector< int > & *auxdata*) [inline]

Constructor creating an ObjectHeader that is initialized with a given ClassType, major and minor version and auxiliary, class- specific data.

Parameters

t	the ClassType of the GeomObject that this ObjectHeader shall represent.
major	major version number
minor	minor version number
auxdata	auxiliary data, specific to the ClassType.

Definition at line 88 of file ObjectHeader.h.

29.312.2.4 virtual Go::ObjectHeader::~ObjectHeader ( ) [virtual]

Virtual destructor, allowing safe destruction of derived objects.

29.312.3 Member Function Documentation

29.312.3.1 int Go::ObjectHeader::auxdata (int *i*) const [inline]

Get a certain piece of auxiliary data (an integer).

Parameters

i	the requested integer's position in the auxiliary data vector

Definition at line 122 of file ObjectHeader.h.

29.312.3.2 int Go::ObjectHeader::auxdataSize ( ) const [inline]

Get the size of the auxiliary data stored in this ObjectHeader (size measured in number of ints).

Definition at line 118 of file ObjectHeader.h.

29.312.3.3 ClassType Go::ObjectHeader::classType ( ) const [inline]

Get the ClassType stored in this ObjectHeader.

Definition at line 108 of file ObjectHeader.h.

29.312.3.4 int Go::ObjectHeader::majorVersion ( ) const [inline]

Get the major version number stored in this ObjectHeader.

Definition at line 111 of file ObjectHeader.h.

29.312.3.5 int Go::ObjectHeader::minorVersion ( ) const [inline]

Get the minor version number stored in this ObjectHeader.

Definition at line 114 of file ObjectHeader.h.

29.312.3.6 virtual void Go::ObjectHeader::read (std::istream & *is*) [virtual]

Read the ObjectHeader from an input stream

Parameters

is	the input stream from which the ObjectHeader is read

Implements Go::Streamable.

29.312.3.7 virtual void Go::ObjectHeader::write (std::ostream & *os*) const [virtual]

Write the ObjectHeader to an output stream

Parameters

os	the output stream to which the ObjectHeader is written

Implements Go::Streamable.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/ObjectHeader.h

29.313 RBD_COMMON::OneDimSolve Class Reference

`#include <solution.h>`

Public Member Functions

- OneDimSolve (R1_R1 &f, Real AccY=0.0001, Real AccX=0.0)
- Real Solve (Real Y, Real X, Real Dev, int Lim=100)

29.313.1 Detailed Description

Definition at line 52 of file solution.h.

29.313.2 Constructor & Destructor Documentation

29.313.2.1 RBD_COMMON::OneDimSolve::OneDimSolve (R1_R1 & *f,* Real *AccY* = `0.0001`, Real *AccX* = `0.0`) [inline]

Definition at line 60 of file solution.h.

29.313.3 Member Function Documentation

29.313.3.1 Real OneDimSolve::Solve (Real *Y,* Real *X,* Real *Dev,* int *Lim* = `100`)

Definition at line 96 of file solution.cpp.

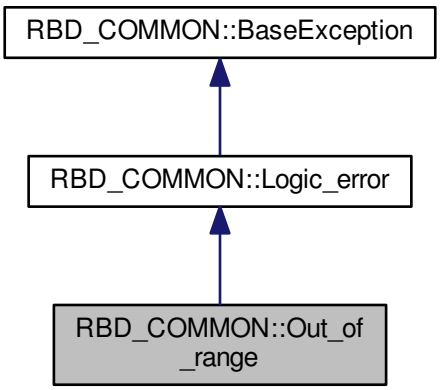
The documentation for this class was generated from the following files:

- newmat/include/solution.h
- newmat/src/solution.cpp

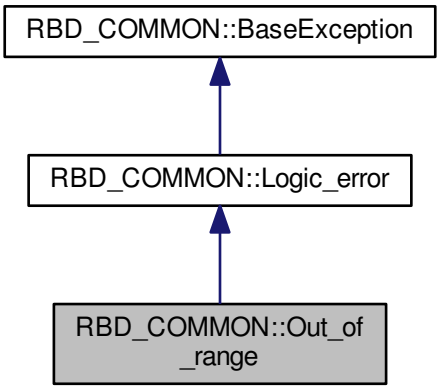
29.314 RBD_COMMON::Out_of_range Class Reference

`#include <myexcept.h>`

Inheritance diagram for RBD_COMMON::Out_of_range:



Collaboration diagram for RBD_COMMON::Out_of_range:



- static unsigned long Select
- Out_of_range (const char *a_what=0)

Additional Inherited Members

29.314.1 Detailed Description

Definition at line 392 of file myexcept.h.

29.314.2 Constructor & Destructor Documentation

29.314.2.1 Out_of_range::Out_of_range (const char * *a_what* = 0)

Definition at line 433 of file myexcept.cpp.

29.314.3 Member Data Documentation

29.314.3.1 unsigned long Out_of_range::Select [static]

Definition at line 395 of file myexcept.h.

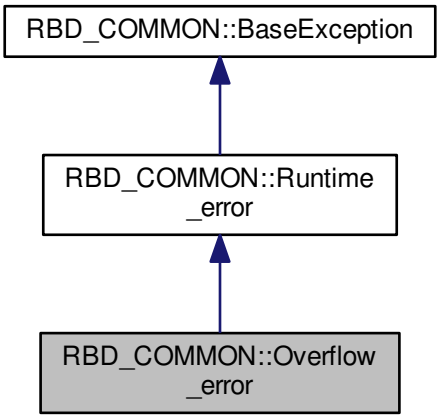
The documentation for this class was generated from the following files:

- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

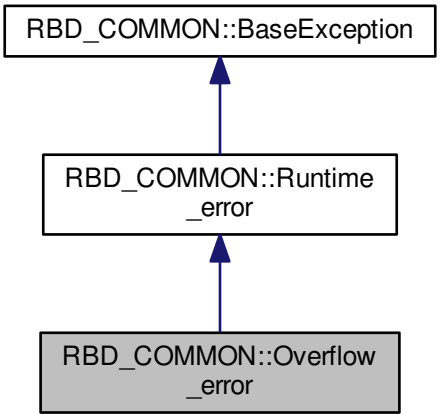
29.315 RBD_COMMON::Overflow_error Class Reference

`#include <myexcept.h>`

Inheritance diagram for RBD_COMMON::Overflow_error:



Collaboration diagram for RBD_COMMON::Overflow_error:



- static unsigned long Select
- Overflow_error (const char *a_what=0)

Additional Inherited Members

29.315.1 Detailed Description

Definition at line 420 of file myexcept.h.

29.315.2 Constructor & Destructor Documentation

29.315.2.1 Overflow_error::Overflow_error (const char * *a_what* = 0)

Definition at line 461 of file myexcept.cpp.

29.315.3 Member Data Documentation

29.315.3.1 unsigned long Overflow_error::Select [static]

Definition at line 423 of file myexcept.h.

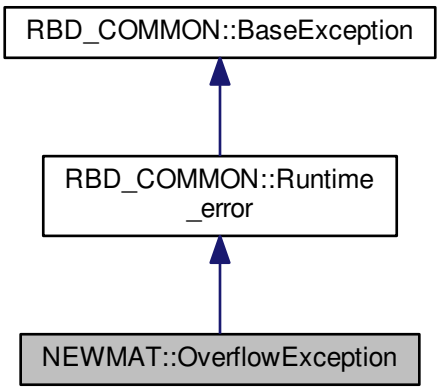
The documentation for this class was generated from the following files:

- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

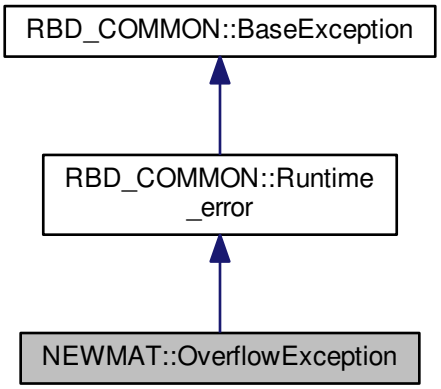
29.316 NEWMAT::OverflowException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::OverflowException:



Collaboration diagram for NEWMAT::OverflowException:



Public Member Functions

- OverflowException (const char ∗c)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.316.1 Detailed Description

Definition at line 1617 of file newmat.h.

29.316.2 Constructor & Destructor Documentation

29.316.2.1 OverflowException::OverflowException (const char ∗ *c*)

Definition at line 80 of file newmatex.cpp.

29.316.3 Member Data Documentation

29.316.3.1 unsigned long OverflowException::Select [static]

Definition at line 1620 of file newmat.h.

The documentation for this class was generated from the following files:

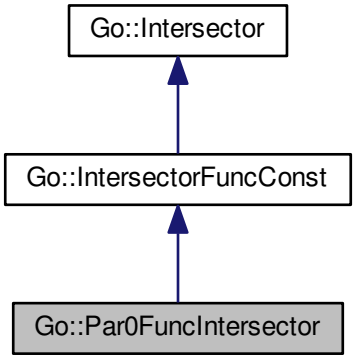
- newmat/include/newmat.h
- newmat/src/newmatex.cpp

29.317 Go::Par0FuncIntersector Class Reference

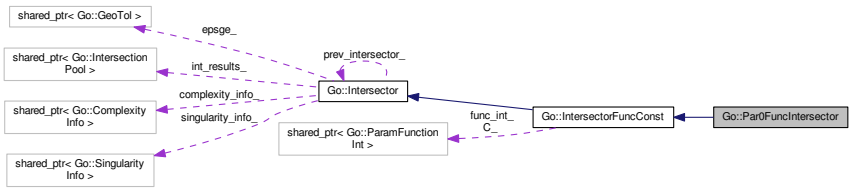
This class is performing intersections between two constants.

`#include <Par0FuncIntersector.h>`

Inheritance diagram for Go::Par0FuncIntersector:



Collaboration diagram for Go::Par0FuncIntersector:



Public Member Functions

- Par0FuncIntersector (shared_ptr< ParamFunctionInt > func, shared_ptr< ParamFunctionInt > C, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~Par0FuncIntersector ()

  Destructor.
- virtual int numParams () const

Protected Member Functions

- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamFunctionInt > obj1, shared_ptr< ParamFunctionInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- virtual int doSubdivide ()

Additional Inherited Members

29.317.1 Detailed Description

This class is performing intersections between two constants.

Definition at line 52 of file Par0FuncIntersector.h.

29.317.2 Constructor & Destructor Documentation

29.317.2.1 Go::Par0FuncIntersector::Par0FuncIntersector (shared_ptr< ParamFunctionInt > *func*, shared_ptr< ParamFunctionInt > *C*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. Both objects should refer to constants (this is not checked compile-time, so we rely on the user to obey this rule). The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

func	of type Param0FunctionInt.
C	of type Param0FunctionInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index (0) of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.317.2.2 virtual Go::Par0FuncIntersector::~Par0FuncIntersector ( ) [virtual]

Destructor.

29.317.3 Member Function Documentation

29.317.3.1 virtual int Go::Par0FuncIntersector::checkCoincidence ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.317.3.2 virtual int Go::Par0FuncIntersector::doSubdivide ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.317.3.3 virtual shared_ptr<Intersector> Go::Par0FuncIntersector::lowerOrderIntersector (shared_ptr< ParamFunctionInt > *obj1*, shared_ptr< ParamFunctionInt > *obj2*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.317.3.4 virtual void Go::Par0FuncIntersector::microCase ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.317.3.5 virtual int Go::Par0FuncIntersector::numParams ( ) const [inline], [virtual]

Return the number of parameter directions for the object.

Returns

the number of parameter directions

Implements Go::Intersector.

Definition at line 91 of file Par0FuncIntersector.h.

29.317.3.6 virtual int Go::Par0FuncIntersector::repairIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 110 of file Par0FuncIntersector.h.

29.317.3.7 virtual int Go::Par0FuncIntersector::updateIntersections ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

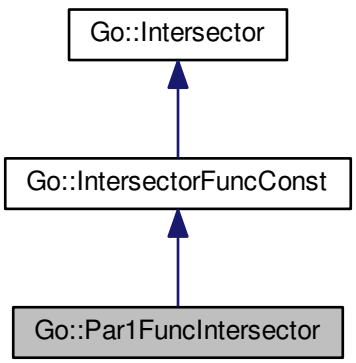
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Par0FuncIntersector.h

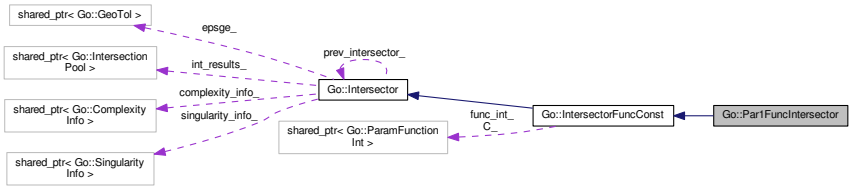
29.318 Go::Par1FuncIntersector Class Reference

`#include <Par1FuncIntersector.h>`

Inheritance diagram for Go::Par1FuncIntersector:



Collaboration diagram for Go::Par1FuncIntersector:



Public Member Functions

- Par1FuncIntersector (shared_ptr< ParamFunctionInt > func, shared_ptr< ParamFunctionInt > C, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~Par1FuncIntersector ()

  Destructor.
- virtual int numParams () const

Protected Member Functions

- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamFunctionInt > obj1, shared_ptr< ParamFunctionInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- virtual int doSubdivide ()

Additional Inherited Members

29.318.1 Detailed Description

This class is performing intersections between a 1-dimensional parametric curve and a constant.

Definition at line 53 of file Par1FuncIntersector.h.

29.318.2 Constructor & Destructor Documentation

29.318.2.1 Go::Par1FuncIntersector::Par1FuncIntersector (shared_ptr< ParamFunctionInt > *func*, shared_ptr< ParamFunctionInt > *C*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. One of the objects should refer to a 1D-curve, the other a constant (this is not checked compile-time, so we rely on the user to obey this rule). The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

func	of type Param1FunctionInt.
C	of type Param0FunctionInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index (0 or 1) of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.318.2.2 virtual Go::Par1FuncIntersector::~Par1FuncIntersector ( ) [virtual]

Destructor.

29.318.3 Member Function Documentation

29.318.3.1 virtual int Go::Par1FuncIntersector::checkCoincidence ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.318.3.2 virtual int Go::Par1FuncIntersector::doSubdivide ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.318.3.3 virtual shared_ptr<Intersector> Go::Par1FuncIntersector::lowerOrderIntersector (shared_ptr< ParamFunctionInt > *obj1*, shared_ptr< ParamFunctionInt > *obj2*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.318.3.4 virtual void Go::Par1FuncIntersector::microCase ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.318.3.5 virtual int Go::Par1FuncIntersector::numParams ( ) const [inline], [virtual]

Return the number of parameter directions for the object.

Returns

the number of parameter directions

Implements Go::Intersector.

Definition at line 93 of file Par1FuncIntersector.h.

29.318.3.6 virtual int Go::Par1FuncIntersector::repairIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 112 of file Par1FuncIntersector.h.

29.318.3.7 virtual int Go::Par1FuncIntersector::updateIntersections ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

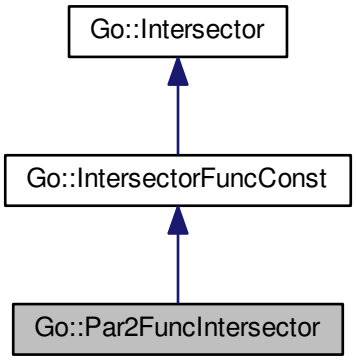
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Par1FuncIntersector.h

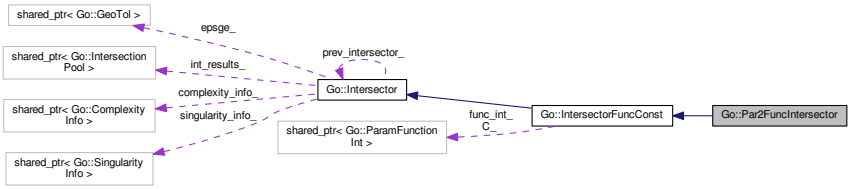
29.319 Go::Par2FuncIntersector Class Reference

`#include <Par2FuncIntersector.h>`

Inheritance diagram for Go::Par2FuncIntersector:



Collaboration diagram for Go::Par2FuncIntersector:



Public Member Functions

- Par2FuncIntersector (shared_ptr< ParamFunctionInt > func, shared_ptr< ParamFunctionInt > C, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~Par2FuncIntersector ()

  Destructor.
- virtual int numParams () const

Protected Member Functions

- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamFunctionInt > obj1, shared_ptr< ParamFunctionInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- bool isConnected (std::vector< shared_ptr< IntersectionPoint > > bd_ints, int nmbbd)
- bool isConnected (std::vector< std::pair< shared_ptr< IntersectionPoint >, IntPtClassification > > &bd_ints, int nmb_nottouch)
- bool connectDirected (std::vector< std::pair< shared_ptr< IntersectionPoint >, IntPtClassification > > &bd_ints, int nmbbd)
- bool canConnect (shared_ptr< IntersectionPoint > pt1, shared_ptr< IntersectionPoint > pt2)
- virtual int doSubdivide ()

Additional Inherited Members

29.319.1 Detailed Description

This class is performing intersections between a 1-dimensional parametric surface and a constant.

Definition at line 54 of file Par2FuncIntersector.h.

29.319.2 Constructor & Destructor Documentation

29.319.2.1 Go::Par2FuncIntersector::Par2FuncIntersector (shared_ptr< ParamFunctionInt > *func*, shared_ptr< ParamFunctionInt > *C*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. One of the objects should refer to a 1D-surface, the other a constant (this is not checked compile-time, so we rely on the user to obey this rule). The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

func	of type Param2FunctionInt.
C	of type Param0FunctionInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.319.2.2 virtual Go::Par2FuncIntersector::~Par2FuncIntersector ( ) [virtual]

Destructor.

29.319.3 Member Function Documentation

29.319.3.1 bool Go::Par2FuncIntersector::canConnect (shared_ptr< IntersectionPoint > *pt1*, shared_ptr< IntersectionPoint > *pt2*) [protected]

29.319.3.2 virtual int Go::Par2FuncIntersector::checkCoincidence ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.319.3.3 bool Go::Par2FuncIntersector::connectDirected (std::vector< std::pair< shared_ptr< IntersectionPoint >, IntPtClassification > > & *bd_ints*, int *nmbbd*) [protected]

29.319.3.4 virtual int Go::Par2FuncIntersector::doSubdivide ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.319.3.5 bool Go::Par2FuncIntersector::isConnected (std::vector< shared_ptr< IntersectionPoint > > *bd_ints*, int *nmbbd*) [protected]

29.319.3.6 bool Go::Par2FuncIntersector::isConnected (std::vector< std::pair< shared_ptr< IntersectionPoint >, IntPtClassification > > & *bd_ints*, int *nmb_nottouch*) [protected]

29.319.3.7 virtual shared_ptr<Intersector> Go::Par2FuncIntersector::lowerOrderIntersector (shared_ptr< ParamFunctionInt > *obj1*, shared_ptr< ParamFunctionInt > *obj2*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.319.3.8 virtual void Go::Par2FuncIntersector::microCase ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

29.319.3.9 virtual int Go::Par2FuncIntersector::numParams ( ) const [inline], [virtual]

Return the number of parameter directions for the object.

Returns

the number of parameter directions

Implements Go::Intersector.

Definition at line 92 of file Par2FuncIntersector.h.

29.319.3.10 virtual int Go::Par2FuncIntersector::repairIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 111 of file Par2FuncIntersector.h.

29.319.3.11 virtual int Go::Par2FuncIntersector::updateIntersections ( ) [protected], [virtual]

Implements Go::IntersectorFuncConst.

The documentation for this class was generated from the following file:

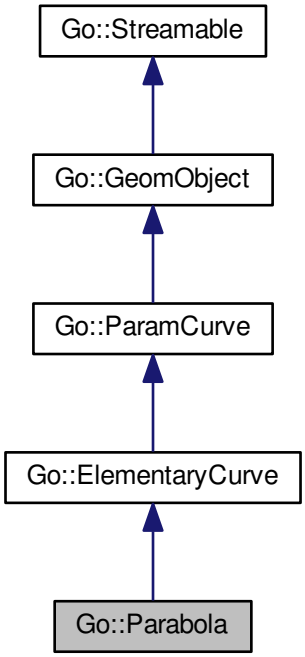
- intersections/include/GoTools/intersections/Par2FuncIntersector.h

29.320 Go::Parabola Class Reference

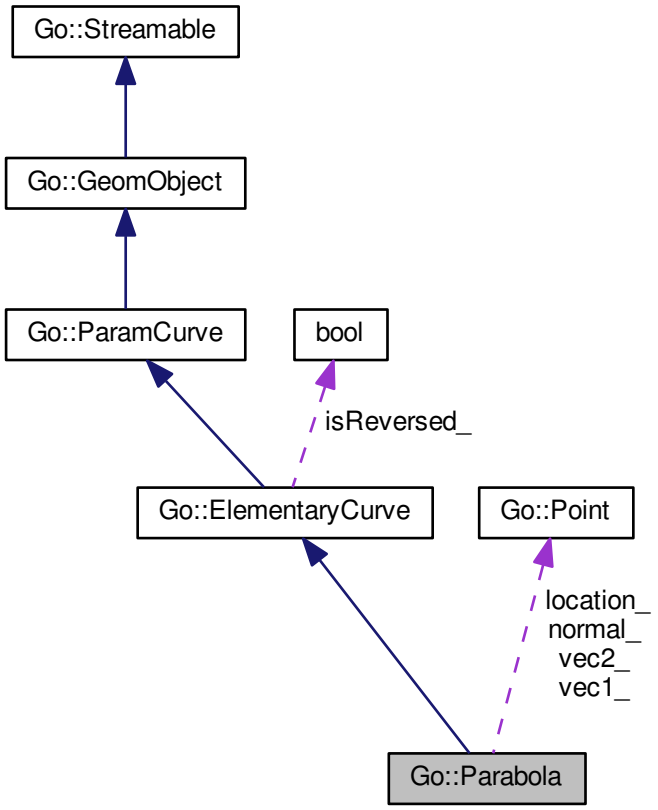
Class that represents a parabola. It is a subclass of ElementaryCurve and thus has a parametrization.

`#include <Parabola.h>`

Inheritance diagram for Go::Parabola:



Collaboration diagram for Go::Parabola:



Public Member Functions

- Parabola ()
- Parabola (Point location, Point direction, Point normal, double focal_dist, bool isReversed=false)
- virtual ~Parabola ()

  virtual destructor - ensures safe inheritance
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual Parabola * clone () const
- virtual void point (Point &pt, double tpar) const
- virtual void point (std::vector< Point > &pts, double tpar, int derivs, bool from_right=true) const
- virtual double startparam () const
- virtual double endparam () const

- virtual void setParameterInterval (double t1, double t2)

  Limit the curve by limiting the parameter interval.
- virtual SplineCurve * geometryCurve ()
- virtual SplineCurve * createSplineCurve () const

  Fetch spline representation of curve.
- virtual bool isDegenerate (double degenerate_epsilon)
- virtual Parabola * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual DirectionCone directionCone () const
- virtual void appendCurve (ParamCurve *cv, bool reparam=true)
- virtual void appendCurve (ParamCurve *cv, int continuity, double &dist, bool reparam=true)
- virtual void closestPoint (const Point &pt, double tmin, double tmax, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const
- virtual double length (double tol)
- virtual void setParamBounds (double startpar, double endpar)
- bool isBounded () const
- virtual void translateCurve (const Point &dir)
- virtual void swapParameters2D ()
- virtual bool isInPlane (const Point &norm, double eps, Point &pos) const

  Check if the parabola lies in a plane with a given normal.

Static Public Member Functions

- static ClassType classType ()

Protected Member Functions

- void setSpanningVectors ()

Protected Attributes

- Point location_
- Point vec1_
- Point vec2_
- Point normal_
- double f_
- double startparam_
- double endparam_

29.320.1 Detailed Description

Class that represents a parabola. It is a subclass of ElementaryCurve and thus has a parametrization.

An parabola has a natural parametrization in terms of its values: f(t) = C + F*(t^2 * x + 2 * t * y). The parametrization is unbounded: - $\infty < t < \infty$.

Definition at line 59 of file Parabola.h.

29.320.2 Constructor & Destructor Documentation

29.320.2.1 Go::Parabola::Parabola ( ) [inline]

Default constructor. Constructs an uninitialized Parabola which can only be assigned to or read into.

Definition at line 64 of file Parabola.h.

29.320.2.2 Go::Parabola::Parabola (Point *location,* Point *direction,* Point *normal,* double *focal_dist,* bool *isReversed* = false)

Constructor. Input is location, direction (x-axis), normal and focal dist. The default Parabola is unbounded in its parametrization. To bound it, use setParamBounds().

29.320.2.3 virtual Go::Parabola::~Parabola ( ) [virtual]

virtual destructor - ensures safe inheritance

29.320.3 Member Function Documentation

29.320.3.1 virtual void Go::Parabola::appendCurve (ParamCurve * *cv,* bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparametrization NB: This virtual member function currently only works for SplineCurves and CurveOnSurfaces. Moreover, 'this' curve and the 'cv' curve must be of the same type.

Parameters

cv	the curve to append to 'this' curve.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.320.3.2 virtual void Go::Parabola::appendCurve (ParamCurve * *cv,* int *continuity,* double & *dist,* bool *reparam* = true) [virtual]

append a curve to this curve, with eventual reparmetrization

Parameters

cv	the curve to append to 'this' curve.
continuity	the required continuity at the transition. Can be G^(-1) and upwards.
dist	a measure of the local distorsion around the transition in order to achieve the specified continuity.
reparam	specify whether or not there should be reparametrization

Implements Go::ParamCurve.

29.320.3.3 virtual BoundingBox Go::Parabola::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.320.3.4 static ClassType Go::Parabola::classType ( ) [static]

29.320.3.5 virtual Parabola* Go::Parabola::clone ( ) const [virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::ElementaryCurve.

29.320.3.6 virtual void Go::Parabola::closestPoint (const Point & *pt*, double *tmin*, double *tmax*, double & *clo_t*, Point & *clo_pt*, double & *clo_dist*, double const * *seed* = 0) const [virtual]

Compute the closest point from an interval of this curve to a specified point.

Parameters

pt	point we want to find the closest point to
tmin	start parameter of search interval
tmax	end parameter of search interval
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.
seed	pointer to initial guess value, provided by the user (can be 0, for which the algorithm will determine a (hopefully) reasonable choice).

Implements Go::ParamCurve.

29.320.3.7 virtual SplineCurve* Go::Parabola::createSplineCurve ( ) const [virtual]

Fetch spline representation of curve.

Implements Go::ElementaryCurve.

29.320.3.8 virtual int Go::Parabola::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.320.3.9 virtual DirectionCone Go::Parabola::directionCone ( ) const [virtual]

Creates a DirectionCone which covers all tangent directions of this curve.

Returns

the smallest DirectionCone containing all tangent directions of this curve.

Implements Go::ParamCurve.

29.320.3.10 virtual double Go::Parabola::endparam ( ) const [virtual]

Query the end parameter of the curve

Returns

the curve's end parameter

Implements Go::ParamCurve.

29.320.3.11 virtual SplineCurve* Go::Parabola::geometryCurve ( ) [virtual]

If the definition of this ParamCurve contains a SplineCurve describing its spatial shape, then this function will return a pointer to this SplineCurve. Otherwise it will return a null pointer. The returned curve is NEWed, so the user is responsible for deleting it. This function may have side-effects.

Returns

a pointer to a SplineCurve representation of the ParamCurve, if it exists. Null pointer otherwise.

Implements Go::ParamCurve.

29.320.3.12 virtual ClassType Go::Parabola::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.320.3.13 bool Go::Parabola::isBounded ( ) const

Query if parametrization is bounded. Both upper and lower parameter bounds must be finite for this to be true.

Returns

true if bounded, *false* otherwise

29.320.3.14 virtual bool Go::Parabola::isDegenerate (double *degenerate_epsilon*) [virtual]

Query whether the curve is degenerate (collapsed into a single point).

Parameters

degenerate_epsilon	the tolerance used in determine whether the curve is degenerate. A curve is considered degenerate if its total length is shorter than this value.

Returns

`true` if the curve is degenerate, `false` otherwise.

Implements Go::ParamCurve.

29.320.3.15 virtual bool Go::Parabola::isInPlane (const Point & *norm*, double *eps*, Point & *pos*) const [virtual]

Check if the parabola lies in a plane with a given normal.

Reimplemented from Go::ParamCurve.

29.320.3.16 virtual double Go::Parabola::length (double *tol*) [virtual]

Compute the total length of this curve up to some tolerance

Parameters

tol	the relative tolerance when approximating the length, i.e. stop iteration when error becomes smaller than tol/(curve length)

Returns

the length calculated

Implements Go::ParamCurve.

29.320.3.17 virtual void Go::Parabola::point (Point & *pt*, double *tpar*) const [virtual]

Evaluate the curve's position at a given parameter

Parameters

pt	the evaluated position will be written to this Point
tpar	the parameter for which we wish to evaluate the curve

Implements Go::ParamCurve.

29.320.3.18 virtual void Go::Parabola::point (std::vector< Point > & *pts*, double *tpar*, int *derivs*, bool *from_right* = true) const [virtual]

Evaluate the curve's position and a certain number of derivatives at a given parameter.

Parameters

pts	the evaluated position and derivatives (tangent, curvature vector, etc.) will be written to this vector. The first entry will be the position, the second entry will be the first derivative, etc. The size of this vector must be set to 'derivs'+ 1 prior to calling this function.
tpar	the parameter for which we want to evaluate the curve
derivs	the number of derivatives we want to have calculated
from_right	specify whether we should calculate derivatives 'from the right' or 'from the left' (default is from the right). This matters only when the curve presents discontinuities in its derivatives.

Implements Go::ParamCurve.

29.320.3.19 virtual void Go::Parabola::read (std::istream & *is*) [virtual]

Read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.320.3.20 virtual void Go::Parabola::setParamBounds (double *startpar*, double *endpar*) [virtual]

Set bounds for the parametrization of the Parabola.

Parameters

startpar	start parameter
endpar	end parameter

Implements Go::ElementaryCurve.

29.320.3.21 virtual void Go::Parabola::setParameterInterval (double *t1*, double *t2*) [virtual]

Limit the curve by limiting the parameter interval.

Implements Go::ParamCurve.

29.320.3.22 void Go::Parabola::setSpanningVectors ( ) [protected]

29.320.3.23 virtual double Go::Parabola::startparam ( ) const [virtual]

Query the start parameter of the curve

Returns

the curve's start parameter

Implements Go::ParamCurve.

29.320.3.24 virtual Parabola* Go::Parabola::subCurve (double *from_par*, double *to_par*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implements Go::ElementaryCurve.

29.320.3.25 virtual void Go::Parabola::swapParameters2D ( ) [virtual]

If the curve is 2 dimensional, x and y coordinates will be swapped. Used when curve is a parameter curve.

Implements Go::ElementaryCurve.

29.320.3.26 virtual void Go::Parabola::translateCurve (const Point & *dir*) [virtual]

Implements Go::ElementaryCurve.

29.320.3.27 virtual void Go::Parabola::write (std::ostream & *os*) const [virtual]

Write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.320.4 Member Data Documentation

29.320.4.1 double Go::Parabola::endparam_ [protected]

Definition at line 174 of file Parabola.h.

29.320.4.2 double Go::Parabola::f_ [protected]

Definition at line 171 of file Parabola.h.

29.320.4.3 Point Go::Parabola::location_ [protected]

Definition at line 166 of file Parabola.h.

29.320.4.4 Point Go::Parabola::normal_ [protected]

Definition at line 169 of file Parabola.h.

29.320.4.5 double Go::Parabola::startparam_ [protected]

Definition at line 173 of file Parabola.h.

29.320.4.6 Point Go::Parabola::vec1_ [protected]

Definition at line 167 of file Parabola.h.

29.320.4.7 Point Go::Parabola::vec2_ [protected]

Definition at line 168 of file Parabola.h.

The documentation for this class was generated from the following file:

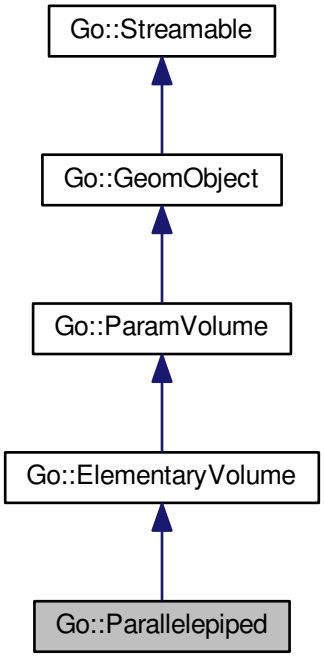
- gotools-core/include/GoTools/geometry/Parabola.h

29.321 Go::Parallelepiped Class Reference

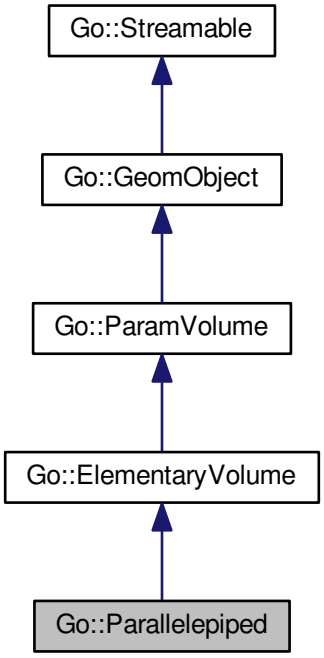
Class that represents a solid parallelepiped. It is a subclass of ElementaryVolume, and thus has a parametrization.

`#include <Parallelepiped.h>`

Inheritance diagram for Go::Parallelepiped:



Collaboration diagram for Go::Parallelepiped:



Public Member Functions

- Parallelepiped ()
- Parallelepiped (Point corner, Point dir_u, Point dir_v, Point dir_w, double len_u, double len_v, double len_w)

  Constructor.
- virtual ~Parallelepiped ()

  virtual destructor - ensures safe inheritance
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual Parallelepiped * clone () const
- DirectionCone tangentCone (int pardir) const
- const Array< double, 6 > parameterSpan () const
- void point (Point &pt, double upar, double vpar, double wpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, double wpar, int derivs, bool u_from_right=true, bool v_from_right=true, bool w_from_right=true, double resolution=1.0e-12) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, double &clo_w, Point &clo_pt, double &clo_dist, double epsilon, double *seed=0) const

- void reverseParameterDirection (int pardir)
- void swapParameterDirection (int pardir1, int pardir2)
- virtual std::vector< shared_ptr< ParamSurface > > getAllBoundarySurfaces () const

  Fetch all boundary surfaces corresponding to the volume.
- virtual void translate (const Point &vec)

  Translate.
- SplineVolume * geometryVolume () const

  Make a NURBS representation of the object.

Static Public Member Functions

- static ClassType classType ()

29.321.1 Detailed Description

Class that represents a solid parallelepiped. It is a subclass of ElementaryVolume, and thus has a parametrization.

A Parallelepiped has a natural parametrization in terms of the distances *u*, *v* and *w* along the edges: **p**(*u*, *v*, *w*) = **C** + *u* **x** + *v* **y** + *w* **z**. The parametrization is bounded by: $0 \leq u \leq a$, $0 \leq v \leq b$, $0 \leq w \leq c$, where *a*, *b*, *c* are the edge lengths. The dimension is 3.

Definition at line 64 of file Parallelepiped.h.

29.321.2 Constructor & Destructor Documentation

29.321.2.1 Go::Parallelepiped::Parallelepiped ( ) [inline]

Default constructor. Constructs an uninitialized Parallelepiped which can only be assigned to or read into.

Definition at line 69 of file Parallelepiped.h.

29.321.2.2 Go::Parallelepiped::Parallelepiped (Point *corner*, Point *dir_u*, Point *dir_v*, Point *dir_w*, double *len_u*, double *len_v*, double *len_w*)

Constructor.

29.321.2.3 virtual Go::Parallelepiped::~Parallelepiped ( ) [virtual]

virtual destructor - ensures safe inheritance

29.321.3 Member Function Documentation

29.321.3.1 virtual BoundingBox Go::Parallelepiped::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.321.3.2 static ClassType Go::Parallelepiped::classType ( ) [inline], [static]

Definition at line 94 of file Parallelepiped.h.

29.321.3.3 virtual Parallelepiped* Go::Parallelepiped::clone ( ) const [inline], [virtual]

make a clone of this volume and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementaryVolume.

Definition at line 101 of file Parallelepiped.h.

29.321.3.4 void Go::Parallelepiped::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, double & *clo_w*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the volume.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_w	w parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
seed	pointer to parameter values where iteration starts.

Implements Go::ParamVolume.

29.321.3.5 virtual int Go::Parallelepiped::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.321.3.6 SplineVolume* Go::Parallelepiped::geometryVolume ( ) const [virtual]

Make a NURBS representation of the object.

Implements Go::ElementaryVolume.

29.321.3.7 virtual std::vector<shared_ptr<ParamSurface> > Go::Parallelepiped::getAllBoundarySurfaces ( ) const [virtual]

Fetch all boundary surfaces corresponding to the volume.

Implements Go::ParamVolume.

29.321.3.8 virtual ClassType Go::Parallelepiped::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.321.3.9 double Go::Parallelepiped::nextSegmentVal (int *dir*, double *par*, bool *forward*, double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0, 1 or 2)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamVolume.

29.321.3.10 const Array<double,6> Go::Parallelepiped::parameterSpan ( ) const [virtual]

Return the parameter domain of the volume. This is an array containing the start and end parameter values. The spline's parameter i has its start value at the array position (2i) and its end parameter value at the array position (2i+1)

Returns

An array describing the parametric domain of the volume

Implements Go::ParamVolume.

29.321.3.11 void Go::Parallelepiped::point (Point & *pt*, double *upar*, double *vpar*, double *wpar*) const [virtual]

Evaluates the volume's position for a given parameter triple.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter
wpar	the third parameter

Implements Go::ParamVolume.

29.321.3.12 void Go::Parallelepiped::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, double *wpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, bool *w_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the volume's position and a certain number of derivatives for a given parameter triple.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function. Upon completion of the function, its first entry is the volume's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the volume tangents along the first, second and third parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dudw, dv2, dvdw, dw2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
wpar	the third parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
w_from_right	specify whether derivatives along the third parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamVolume.

29.321.3.13 virtual void Go::Parallelepiped::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.321.3.14 void Go::Parallelepiped::reverseParameterDirection (int *pardir*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

pardir	which parameter direction to reverse

Implements Go::ParamVolume.

29.321.3.15 void Go::Parallelepiped::swapParameterDirection (int *pardir1*, int *pardir2*) [virtual]

Swaps two parameter directions

Parameters

pardir1	One of the parameter directions (0, 1 or 2) to be swapped
pardir2	The other parameter direction (0, 1 or 2) to be swapped

Implements Go::ParamVolume.

29.321.3.16 DirectionCone Go::Parallelepiped::tangentCone (int *pardir*) const [virtual]

Creates a DirectionCone covering all tangents to this volume along a given parameter direction.

Parameters

pardir	if 1, the DirectionCone will be defined on basis of the volume's tangents along the first parameter direction. If 2, the second parameter direction will be used. If 3, the third parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this volume along the specified parameter direction.

Implements Go::ParamVolume.

29.321.3.17 virtual void Go::Parallelepiped::translate (const Point & *vec*) [virtual]

Translate.

Implements Go::ParamVolume.

29.321.3.18 virtual void Go::Parallelepiped::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

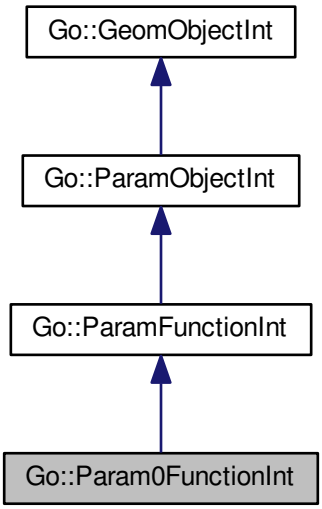
The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/Parallelepiped.h

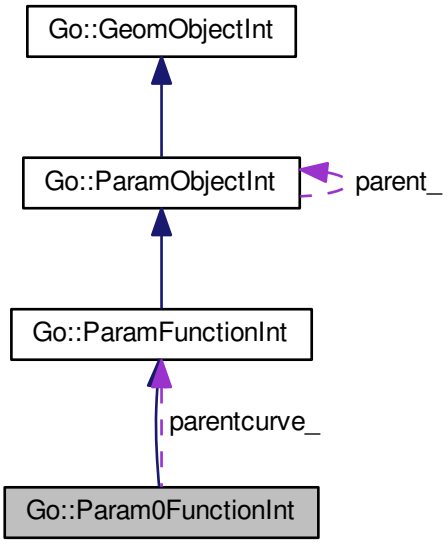
29.322 Go::Param0FunctionInt Class Reference

```
#include <Param0FunctionInt.h>
```

Inheritance diagram for Go::Param0FunctionInt:



Collaboration diagram for Go::Param0FunctionInt:



Public Member Functions

- Param0FunctionInt (double C)
- Param0FunctionInt (double C, ParamFunctionInt *parent)
- virtual ~Param0FunctionInt ()

  Destructor.
- virtual void point (Point &res, const double *par) const
- virtual void point (std::vector< Point > &pt, const double *tpar, int derivs, const bool *from_right=0, double resolution=1.0e-12) const
- virtual Param0FunctionInt * getParam0FunctionInt ()

  Return pointer to this object.
- virtual int numParams () const

  The number of parameters in the object.
- virtual void getLengthAndWiggle (double *length, double *wiggle)
- virtual bool hasInnerKnots (int pardir) const
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const
- virtual bool hasCriticalVals (int pardir) const
- virtual std::vector< double > getCriticalVals (int pardir) const
- virtual bool hasCriticalValsOrKnots (int pardir) const
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const
- virtual bool canDivide (int pardir)
- virtual int getMeshSize (int dir)
- virtual double paramFromMesh (int dir, int idx)
- virtual std::vector< double >::iterator getMesh ()

  Return the geometric sample mesh for the parametric function.
- virtual double startParam (int pardir) const
- virtual double endParam (int pardir) const

- virtual bool boundaryPoint (const double *par, double eps) const
- virtual void subdivide (int pardir, double par, std::vector< shared_ptr< ParamFunctionInt > > &subdiv_objs, std::vector< shared_ptr< ParamFunctionInt > > &bd_objs)
- virtual CompositeBox compositeBox () const

  Return the CompositeBox for the parametric object.
- virtual bool monotone (Point &dir, double tol=1.0e-15) const
- virtual void getBoundaryObjects (std::vector< shared_ptr< BoundaryFunctionInt > > &bd_objs)
- int dimension ()

  Return the dimension of the geometric space.
- virtual int knotIntervalFuzzy (double &t, double tol) const
- virtual double nextSegmentVal (double par, bool forward) const
- double getValue () const

  Return the scalar value of this object.

Protected Attributes

- double C_
- int dim_
- ParamFunctionInt * parentcurve_

29.322.1 Detailed Description

This is a class that represents the "intersection object" of a scalar (a "0-variate" function).

Definition at line 53 of file Param0FunctionInt.h.

29.322.2 Constructor & Destructor Documentation

29.322.2.1 Go::Param0FunctionInt::Param0FunctionInt (double *C*) [explicit]

Constructor.

Parameters

C	the constant defining the object.

29.322.2.2 Go::Param0FunctionInt::Param0FunctionInt (double *C*, ParamFunctionInt * *parent*) [explicit]

Constructor.

Parameters

C	the constant defining the object.
parent	the parent object to this object.

29.322.2.3 virtual Go::Param0FunctionInt::~Param0FunctionInt ( ) [virtual]

Destructor.

29.322.3 Member Function Documentation

29.322.3.1 virtual bool Go::Param0FunctionInt::boundaryPoint (const double * *par*, double *eps*) const [virtual]

Return true if the specified point lies within eps from the boundary.

Parameters

par	the parameter in which to evaluate. Size of array should be equal to numParams().
eps	the tolerance defining boundary neighbourhood.

Implements Go::ParamObjectInt.

29.322.3.2 virtual bool Go::Param0FunctionInt::canDivide (int *pardir*) [virtual]

Return true if we are allowed to divide in the specified parameter direction.

Parameters

pardir	the parameter direction in question.

Implements Go::ParamObjectInt.

29.322.3.3 virtual CompositeBox Go::Param0FunctionInt::compositeBox ( ) const [virtual]

Return the CompositeBox for the parametric object.

Implements Go::ParamObjectInt.

29.322.3.4 int Go::Param0FunctionInt::dimension ( )

Return the dimension of the geometric space.

29.322.3.5 virtual double Go::Param0FunctionInt::endParam (int *pardir*) const [virtual]

Return the end parameter in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.322.3.6 virtual void Go::Param0FunctionInt::getBoundaryObjects (std::vector< shared_ptr< BoundaryFunctionInt > > & *bd_objs*) [virtual]

Return the boundary objects of this object.

Parameters

bd_objs	the boundary objects of this object.

Implements Go::ParamFunctionInt.

29.322.3.7 virtual std::vector<double> Go::Param0FunctionInt::getCriticalVals (int *pardir*) const [virtual]

Return the critical parameter values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.322.3.8 virtual std::vector<double> Go::Param0FunctionInt::getCriticalValsAndKnots (int *pardir*) const [virtual]

Return the critical parameter values and inner knots for object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.322.3.9 virtual std::vector<double> Go::Param0FunctionInt::getInnerKnotVals (int *pardir*, bool *sort* = false) const [virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Implements Go::ParamObjectInt.

29.322.3.10 virtual void Go::Param0FunctionInt::getLengthAndWiggle (double * *length*, double * *wiggle*) [virtual]

Return an estimate on the size and wiggle of the object.

Parameters

length	the approximative length of the object in the corresponding parameter directions. The size of the array should be equal to numParams().
wiggle	a scalar representing the wiggle of the object in the corresponding parameter directions. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

29.322.3.11 virtual std::vector<double>::iterator Go::Param0FunctionInt::getMesh ( ) [virtual]

Return the geometric sample mesh for the parametric function.

Implements Go::ParamFunctionInt.

29.322.3.12 virtual int Go::Param0FunctionInt::getMeshSize (int *dir*) [virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamFunctionInt.

29.322.3.13 virtual Param0FunctionInt* Go::Param0FunctionInt::getParam0FunctionInt ( ) [virtual]

Return pointer to this object.

Reimplemented from Go::ParamFunctionInt.

29.322.3.14 double Go::Param0FunctionInt::getValue ( ) const [inline]

Return the scalar value of this object.

Definition at line 238 of file Param0FunctionInt.h.

29.322.3.15 virtual bool Go::Param0FunctionInt::hasCriticalVals (int *pardir*) const [virtual]

Return true if the object has any critical parameter values in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.322.3.16 virtual bool Go::Param0FunctionInt::hasCriticalValsOrKnots (int *pardir*) const [virtual]

Return true if the object has any critical parameter values or inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.322.3.17 virtual bool Go::Param0FunctionInt::hasInnerKnots (int *pardir*) const [virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.322.3.18 virtual int Go::Param0FunctionInt::knotIntervalFuzzy (double & *t*, double *tol*) const [virtual]

Return the knot interval for which t lies inside, possibly moving the value t if it lies close to a knot.

Parameters

t	the parameter value
tol	the parametric tolerance deciding if the input parameter should be moved.

29.322.3.19 virtual bool Go::Param0FunctionInt::monotone (Point & *dir*, double *tol* = 1.0e-15) const [virtual]

Return true if the object is monotone in any direction.

Parameters

dir	the direction in which the object is monotone. Relevant only if object is monotone.

Implements Go::ParamFunctionInt.

29.322.3.20 virtual double Go::Param0FunctionInt::nextSegmentVal (double *par*, bool *forward*) const [virtual]

Return the value of the knot closest to the input parameter.

Parameters

par	the parameter value
forward	if true we return the closest knot to the right, otherwise the closest knot to the left.

29.322.3.21 virtual int Go::Param0FunctionInt::numParams ( ) const [virtual]

The number of parameters in the object.

Implements Go::ParamObjectInt.

29.322.3.22 virtual double Go::Param0FunctionInt::paramFromMesh (int *dir*, int *idx*) [virtual]

Return the corresponding mesh parameter.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Implements Go::ParamFunctionInt.

29.322.3.23 virtual void Go::Param0FunctionInt::point (Point & *res*, const double * *par*) const [virtual]

Evaluate the object in the input parameter.

Parameters

res	the Point to be returned.
par	the parameter in which to evaluate. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

29.322.3.24 virtual void Go::Param0FunctionInt::point (std::vector< Point > & *pt*, const double * *tpar*, int *derivs*, const bool * *from_right* = 0, double *resolution* = 1.0e-12) const [inline], [virtual]

Evaluate the object in the input parameter, with the specified number of derivatives.

Parameters

pt	the Point to be returned.

Parameters

tpar	the parameter in which to evaluate. The size of the array should be equal to numParams().
derivs	the number of derivatives to calculate.
from_right	if true the evaluation is to be performed from the right side of the parameter value.
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar: knot values in case of spline objects.

Implements Go::ParamObjectInt.

Definition at line 85 of file Param0FunctionInt.h.

29.322.3.25 virtual double Go::Param0FunctionInt::startParam (int *pardir*) const [virtual]

Return the start parameter value in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.322.3.26 virtual void Go::Param0FunctionInt::subdivide (int *pardir*, double *par*, std::vector< shared_ptr< ParamFunctionInt > > & *subdiv_objs*, std::vector< shared_ptr< ParamFunctionInt > > & *bd_objs*) [virtual]

Subdivide the object in the specified parameter direction and parameter value.

Parameters

pardir	direction in which to subdive. Indexing starts at 0.
par	parameter in which to subdivide.
subdiv_objs	the subparts of this object. Of the same geometric dimension as this object.
bd_objs	the boundaries between the returned *subdiv_objs*. Of geometric dimension 1 less than this object.

Implements Go::ParamFunctionInt.

29.322.4 Member Data Documentation

29.322.4.1 double Go::Param0FunctionInt::C_ [protected]

Definition at line 243 of file Param0FunctionInt.h.

29.322.4.2 int Go::Param0FunctionInt::dim_ [protected]

Definition at line 245 of file Param0FunctionInt.h.

29.322.4.3 ParamFunctionInt* Go::Param0FunctionInt::parentcurve_ [protected]

Definition at line 247 of file Param0FunctionInt.h.

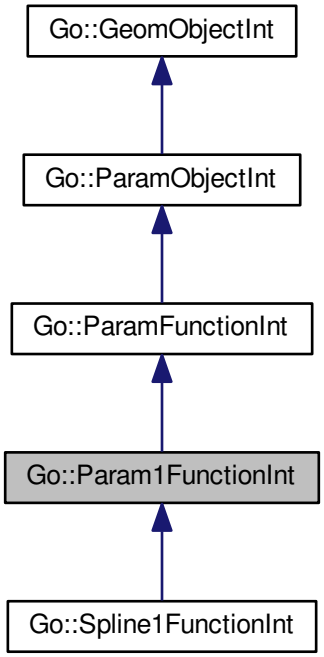
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Param0FunctionInt.h

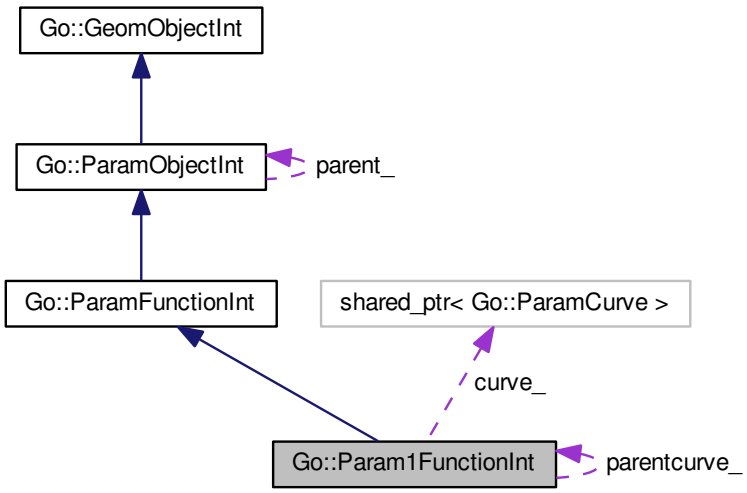
29.323 Go::Param1FunctionInt Class Reference

`#include <Param1FunctionInt.h>`

Inheritance diagram for Go::Param1FunctionInt:



Collaboration diagram for Go::Param1FunctionInt:



Public Member Functions

- Param1FunctionInt (shared_ptr< ParamCurve > curve)
- Param1FunctionInt (shared_ptr< ParamCurve > curve, ParamFunctionInt *parent)
- virtual ~Param1FunctionInt ()

  Destructor.
- virtual void point (Point &res, const double *par) const
- virtual void point (std::vector< Point > &res, double par, int der)
- virtual void point (std::vector< Point > &pt, const double *tpar, int derivs, const bool *from_right=0, double resolution=1.0e-12) const
- virtual Param1FunctionInt * getParam1FunctionInt ()

  Return pointer to this object.
- shared_ptr< ParamCurve > getParamCurve ()

  Return pointer to the parametric curve.
- shared_ptr< const ParamCurve > getParamCurve () const

  Return pointer to the parametric curve.
- shared_ptr< ParamCurve > getParentParamCurve (double &start, double &end)
- shared_ptr< ParamCurve > getParentParamCurve ()
- virtual shared_ptr< Param1FunctionInt > makeIntFunction (shared_ptr< ParamCurve > curve)
- virtual int numParams () const

  The number of parameters in the object.
- virtual void getLengthAndWiggle (double *length, double *wiggle)
- virtual bool hasInnerKnots (int pardir) const
- virtual bool hasCriticalVals (int pardir) const
- virtual bool hasCriticalValsOrKnots (int pardir) const
- virtual bool canDivide (int pardir)
- virtual std::vector< double > getCriticalVals (int pardir) const
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const

- virtual int getMeshSize (int dir)
- virtual double paramFromMesh (int dir, int idx)
- virtual std::vector< double >::iterator getMesh ()

  Return the geometric sample mesh for the parametric function.
- virtual double startParam (int pardir) const
- virtual double endParam (int pardir) const
- virtual bool boundaryPoint (const double *par, double eps) const
- virtual void subdivide (int pardir, double par, std::vector< shared_ptr< ParamFunctionInt > > &subdiv_objs, std::vector< shared_ptr< ParamFunctionInt > > &bd_objs)
- virtual bool monotone (Point &dir, double tol=1.0e-15) const
- virtual CompositeBox compositeBox () const

  Return the CompositeBox for the parametric object.
- virtual void getBoundaryObjects (std::vector< shared_ptr< BoundaryFunctionInt > > &bd_objs)
- int dimension ()

  Return the dimension of the geometric space.
- double startparam () const

  Return the start parameter of the curve.
- double endparam () const

  Return the end parameter of the curve.
- void assureInRange (double &t)
- virtual int knotIntervalFuzzy (double &t, double tol) const
- virtual double nextSegmentVal (double par, bool forward) const
- virtual bool isDegenerate (double epsge, int dir, double *par)

Protected Attributes

- shared_ptr< ParamCurve > curve_
- int dim_
- Param1FunctionInt * parentcurve_
- std::vector< std::pair< double, int > > segment_
- std::vector< double > mesh_
- double deg_tol_

29.323.1 Detailed Description

Class that represents an "intersection object" of a parametric curve of dimension 1.

Definition at line 54 of file Param1FunctionInt.h.

29.323.2 Constructor & Destructor Documentation

29.323.2.1 Go::Param1FunctionInt::Param1FunctionInt (shared_ptr< ParamCurve > *curve*) [explicit]

Constructor.

Parameters

curve	the parametric 1-dimensional curve defining the intersection object.

29.323.2.2 Go::Param1FunctionInt::Param1FunctionInt (shared_ptr< ParamCurve > *curve*, ParamFunctionInt * *parent*) [explicit]

Constructor.

Parameters

curve	the parametric 1-dimensional curve defining the intersection object.
parent	the parent object to this object. Can be either a curve or a surface.

29.323.2.3 virtual Go::Param1FunctionInt::~Param1FunctionInt ( ) [virtual]

Destructor.

29.323.3 Member Function Documentation

29.323.3.1 void Go::Param1FunctionInt::assureInRange (double & *t*)

Make sure that the input parameter lies inside the range of the parametric curve. Set t equal to tmin if it lies below tmin, or tmax if it lies above tmax.

Parameters

t	the input parameter

29.323.3.2 virtual bool Go::Param1FunctionInt::boundaryPoint (const double * *par*, double *eps*) const [virtual]

Return true if the specified point lies within eps from the boundary.

Parameters

par	the parameter in which to evaluate. Size of array should be equal to numParams().
eps	the tolerance defining boundary neighbourhood.

Implements Go::ParamObjectInt.

29.323.3.3 virtual bool Go::Param1FunctionInt::canDivide (int *pardir*) [virtual]

Return true if we are allowed to divide in the specified parameter direction.

Parameters

pardir	the parameter direction in question.

Implements Go::ParamObjectInt.

29.323.3.4 virtual CompositeBox Go::Param1FunctionInt::compositeBox ( ) const [virtual]

Return the CompositeBox for the parametric object.

Implements Go::ParamObjectInt.

29.323.3.5 int Go::Param1FunctionInt::dimension ( ) [inline]

Return the dimension of the geometric space.

Definition at line 256 of file Param1FunctionInt.h.

29.323.3.6 virtual double Go::Param1FunctionInt::endParam (int *pardir*) const [inline], [virtual]

Return the end parameter in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 215 of file Param1FunctionInt.h.

29.323.3.7 double Go::Param1FunctionInt::endparam ( ) const [inline]

Return the end parameter of the curve.

Definition at line 263 of file Param1FunctionInt.h.

29.323.3.8 virtual void Go::Param1FunctionInt::getBoundaryObjects (std::vector< shared_ptr< BoundaryFunctionInt > > & *bd_objs*) [virtual]

Return the boundary objects of this object.

Parameters

bd_objs	the boundary objects of this object.

Implements Go::ParamFunctionInt.

29.323.3.9 virtual std::vector<double> Go::Param1FunctionInt::getCriticalVals (int *pardir*) const [virtual]

Return the critical parameter values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.323.3.10 virtual std::vector<double> Go::Param1FunctionInt::getCriticalValsAndKnots (int *pardir*) const [virtual]

Return the critical parameter values and inner knots for object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.11 virtual std::vector<double> Go::Param1FunctionInt::getInnerKnotVals (int *pardir*, bool *sort* = false) const [virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Implements Go::ParamObjectInt.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.12 virtual void Go::Param1FunctionInt::getLengthAndWiggle (double * *length*, double * *wiggle*) [virtual]

Return an estimate on the size and wiggle of the object.

Parameters

length	the approximative length of the object in the corresponding parameter directions. The size of the array should be equal to numParams().
wiggle	a scalar representing the wiggle of the object in the corresponding parameter directions. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

29.323.3.13 virtual std::vector<double>::iterator Go::Param1FunctionInt::getMesh ( ) [virtual]

Return the geometric sample mesh for the parametric function.

Implements Go::ParamFunctionInt.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.14 virtual int Go::Param1FunctionInt::getMeshSize (int *dir*) [virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamFunctionInt.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.15 virtual Param1FunctionInt* Go::Param1FunctionInt::getParam1FunctionInt ( ) [virtual]

Return pointer to this object.

Reimplemented from Go::ParamFunctionInt.

29.323.3.16 shared_ptr<ParamCurve> Go::Param1FunctionInt::getParamCurve ( )

Return pointer to the parametric curve.

29.323.3.17 shared_ptr<const ParamCurve> Go::Param1FunctionInt::getParamCurve ( ) const

Return pointer to the parametric curve.

29.323.3.18 shared_ptr<ParamCurve> Go::Param1FunctionInt::getParentParamCurve (double & *start*, double & *end*)

Return pointer to a subpart of the parent curve of this object. If a parent curve does not exist, return pointer to curve in this object. To reduce numerical noise we go straight to the source (undivided) curve.

29.323.3.19 shared_ptr<ParamCurve> Go::Param1FunctionInt::getParentParamCurve ( )

Return pointer to the parent curve of this object. If a parent curve does not exist, return pointer to curve in this object. To reduce numerical noise we go straight to the source (undivided) curve.

29.323.3.20 virtual bool Go::Param1FunctionInt::hasCriticalVals (int *pardir*) const [virtual]

Return true if the object has any critical parameter values in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.323.3.21 virtual bool Go::Param1FunctionInt::hasCriticalValsOrKnots (int *pardir*) const [virtual]

Return true if the object has any critical parameter values or inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.22 virtual bool Go::Param1FunctionInt::hasInnerKnots (int *pardir*) const [virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.23 virtual bool Go::Param1FunctionInt::isDegenerate (double *epsge*, int *dir*, double * *par*) [virtual]

Return true if the object is degenerate in the specified direction and parameter.

Parameters

epsge	the geometric tolerance defining degeneracy.
dir	the parameter direction in question.
par	the parameter in which to evaluate. Size of array should be equal to numParams().

Reimplemented from Go::ParamObjectInt.

29.323.3.24 virtual int Go::Param1FunctionInt::knotIntervalFuzzy (double & *t*, double *tol*) const [virtual]

Return the knot interval for which t lies inside, moving the value t if it lies close to a knot.

Parameters

t	the parameter value
tol	the parametric tolerance deciding if the input parameter t should be moved.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.25 virtual shared_ptr<Param1FunctionInt> Go::Param1FunctionInt::makeIntFunction (shared_ptr< ParamCurve > *curve*) [virtual]

Return an intersection object for the input curve. This object is used as the parent for the intersection object.

Parameters

curve	the parametric curve defining the intersection object.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.26 virtual bool Go::Param1FunctionInt::monotone (Point & *dir,* double *tol* = 1.0e-15) const [virtual]

Return true if the curve is monotone.

Parameters

dir	the direction in which the object is monotone. Is not of interest here as the curve has only 1 parameter direction.

Returns

Whether or not the curve is monotone.

Implements Go::ParamFunctionInt.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.27 virtual double Go::Param1FunctionInt::nextSegmentVal (double *par,* bool *forward*) const [virtual]

Return the value of the knot next to the input parameter par.

Parameters

par	the parameter value
forward	if true we return the closest knot to the right, otherwise the closest knot to the left.

Returns

The knot closest to the input parameter.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.28 virtual int Go::Param1FunctionInt::numParams ( ) const [virtual]

The number of parameters in the object.

Implements Go::ParamObjectInt.

29.323.3.29 virtual double Go::Param1FunctionInt::paramFromMesh (int *dir*, int *idx*) [virtual]

Return the corresponding mesh parameter.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Implements Go::ParamFunctionInt.

Reimplemented in Go::Spline1FunctionInt.

29.323.3.30 virtual void Go::Param1FunctionInt::point (Point & *res*, const double * *par*) const [inline], [virtual]

Evaluate the object in the input parameter.

Parameters

res	the Point to be returned.
par	the parameter in which to evaluate. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

Definition at line 76 of file Param1FunctionInt.h.

29.323.3.31 virtual void Go::Param1FunctionInt::point (std::vector< Point > & *res*, double *par*, int *der*) [inline], [virtual]

Evaluate the object in the input parameter, with the specified number of derivatives.

Parameters

res	the Point to be returned.
par	the parameter in which to evaluate. The size of the array should be equal to numParams().
der	the number of derivatives to calculate.

Definition at line 85 of file Param1FunctionInt.h.

29.323.3.32 virtual void Go::Param1FunctionInt::point (std::vector< Point > & *pt,* const double * *tpar,* int *derivs,* const bool * *from_right* = 0, double *resolution* = 1.0e-12) const [inline], [virtual]

Evaluate the object in the input parameter, with the specified number of derivatives.

Parameters

pt	the Point to be returned.
tpar	the parameter in which to evaluate. The size of the array should be equal to numParams().
derivs	the number of derivatives to calculate.
from_right	if true the evaluation is to be performed from the right side of the parameter value.
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar: knot values in case of spline objects.

Implements Go::ParamObjectInt.

Definition at line 99 of file Param1FunctionInt.h.

29.323.3.33 virtual double Go::Param1FunctionInt::startParam (int *pardir*) const [inline], [virtual]

Return the start parameter value in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 209 of file Param1FunctionInt.h.

29.323.3.34 double Go::Param1FunctionInt::startparam ( ) const [inline]

Return the start parameter of the curve.

Definition at line 260 of file Param1FunctionInt.h.

29.323.3.35 virtual void Go::Param1FunctionInt::subdivide (int *pardir,* double *par,* std::vector< shared_ptr< ParamFunctionInt > > & *subdiv_objs,* std::vector< shared_ptr< ParamFunctionInt > > & *bd_objs*) [virtual]

Subdivide the object in the specified parameter direction and parameter value.

Parameters

pardir	direction in which to subdive. Indexing starts at 0.
par	parameter in which to subdivide.
subdiv_objs	The subparts of this object. Of the same geometric dimension as this object.
bd_objs	the boundaries between the returned *subdiv_objs*. Of geometric dimension 1 less than this object.

Implements Go::ParamFunctionInt.

29.323.4 Member Data Documentation

29.323.4.1 shared_ptr<ParamCurve> Go::Param1FunctionInt::curve_ [protected]

Definition at line 304 of file Param1FunctionInt.h.

29.323.4.2 double Go::Param1FunctionInt::deg_tol_ [protected]

Definition at line 315 of file Param1FunctionInt.h.

29.323.4.3 int Go::Param1FunctionInt::dim_ [protected]

Definition at line 306 of file Param1FunctionInt.h.

29.323.4.4 std::vector<double> Go::Param1FunctionInt::mesh_ [mutable], [protected]

Definition at line 313 of file Param1FunctionInt.h.

29.323.4.5 Param1FunctionInt* Go::Param1FunctionInt::parentcurve_ [protected]

Definition at line 308 of file Param1FunctionInt.h.

29.323.4.6 std::vector<std::pair<double, int> > Go::Param1FunctionInt::segment_ [protected]

Definition at line 310 of file Param1FunctionInt.h.

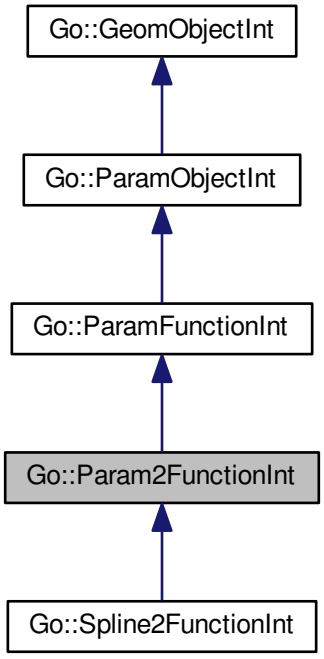
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Param1FunctionInt.h

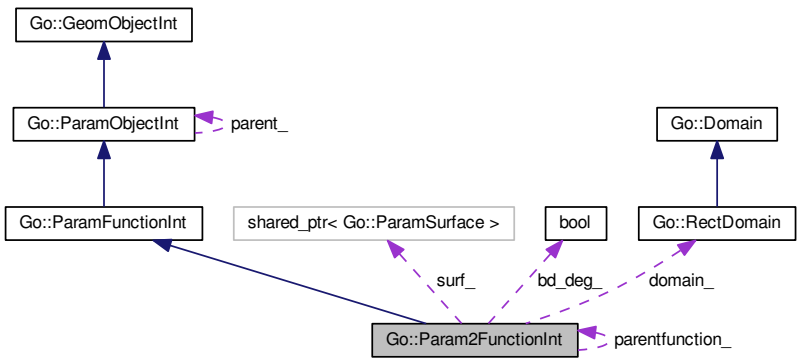
29.324 Go::Param2FunctionInt Class Reference

`#include <Param2FunctionInt.h>`

Inheritance diagram for Go::Param2FunctionInt:



Collaboration diagram for Go::Param2FunctionInt:



Public Member Functions

- Param2FunctionInt (shared_ptr< ParamSurface > surf)
- Param2FunctionInt (shared_ptr< ParamSurface > surf, Param2FunctionInt *parent)
- virtual ~Param2FunctionInt ()

  Destructor.
- virtual void point (Point &res, const double *par) const
- virtual void point (std::vector< Point > &pt, const double *tpar, int der, const bool *from_right=0, double resolution=1.0e-12) const
- virtual Param2FunctionInt * getParam2FunctionInt ()

  Return pointer to this object.
- shared_ptr< ParamSurface > getParamSurface ()

  Return pointer to the parametric surface.
- shared_ptr< const ParamSurface > getParamSurface () const

  Return pointer to the parametric surface.
- shared_ptr< ParamSurface > getParentParamSurface (RectDomain &domain)
- shared_ptr< ParamSurface > getParentParamSurface ()
- virtual shared_ptr< Param2FunctionInt > makeIntFunction (shared_ptr< ParamSurface > surf)
- virtual int numParams () const

  The number of parameters in the object.
- shared_ptr< ParamCurve > getIsoCurve (double param_start, double param_end, double isoval, bool pardir_is_u) const
- shared_ptr< ParamCurve > getConstantParameterCurve (int dir, double par)
- virtual void getLengthAndWiggle (double *length, double *wiggle)
- virtual bool hasInnerKnots (int pardir) const
- virtual bool hasCriticalVals (int pardir) const
- virtual bool hasCriticalValsOrKnots (int pardir) const
- virtual bool canDivide (int pardir)
- virtual std::vector< double > getCriticalVals (int pardir) const
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const
- virtual int getMeshSize (int dir)
- virtual double paramFromMesh (int dir, int idx)
- virtual std::vector< double >::iterator getMesh ()

  Return the geometric sample mesh for the parametric function.
- virtual double startParam (int pardir) const
- virtual double endParam (int pardir) const
- virtual bool boundaryPoint (const double *par, double eps) const
- std::vector< double > getMima () const
- virtual void subdivide (int pardir, double par, std::vector< shared_ptr< ParamFunctionInt > > &subdiv_objs, std::vector< shared_ptr< ParamFunctionInt > > &bd_objs)
- virtual bool monotone (Point &dir, double tol=1.0e-15) const
- virtual CompositeBox compositeBox () const
- virtual void getBoundaryObjects (std::vector< shared_ptr< BoundaryFunctionInt > > &bd_objs)
- int dimension ()

  Return the dimension of the geometric space.
- double isolateDegPar (int dir, int deg_edge, double threshold)
- void assureInRange (int pardir, double &t)
- virtual int knotIntervalFuzzy (int pardir, double &t, double tol) const
- virtual double nextSegmentVal (int pardir, double par, bool forward) const
- bool isDegenerate (double epsge, int pardir)
- virtual bool isDegenerate (double epsge, int pardir, double *par)
- shared_ptr< ParamSurface > getSurface ()
- shared_ptr< const ParamSurface > getSurface () const
- void derivs (double u, double v, Point &deriv_u, Point &deriv_v) const

Protected Member Functions

- Go::SplineCurve * extractBdCurve (const Go::SplineSurface &, int bdidx, int &pardir, double &tpar) const

Protected Attributes

- shared_ptr< ParamSurface > surf_
- int dim_
- Param2FunctionInt * parentfunction_
- std::vector< std::pair< double, int > > segment_ [2]
- bool bd_deg_ [4]
- double deg_tol_
- RectDomain domain_
- int nmesh_ [2]
- std::vector< double > mesh_
- std::vector< Point > temp_point_array_

29.324.1 Detailed Description

Class that represents the "intersection object" of a parametric surface of dimension 1.

Definition at line 57 of file Param2FunctionInt.h.

29.324.2 Constructor & Destructor Documentation

29.324.2.1 Go::Param2FunctionInt::Param2FunctionInt (shared_ptr< ParamSurface > *surf*) [explicit]

Constructor.

Parameters

surf	the parametric 1-dimensional surface defining the object.

29.324.2.2 Go::Param2FunctionInt::Param2FunctionInt (shared_ptr< ParamSurface > *surf*, Param2FunctionInt * *parent*) [explicit]

Constructor.

Parameters

surf	the parametric 1-dimensional surface defining the object.
parent	the parent object to this object.

29.324.2.3 virtual Go::Param2FunctionInt::~Param2FunctionInt ( ) [inline], [virtual]

Destructor.

Definition at line 72 of file Param2FunctionInt.h.

29.324.3 Member Function Documentation

29.324.3.1 void Go::Param2FunctionInt::assureInRange (int *pardir*, double & *t*)

Make sure that the input parameter lies inside the range of the parametric surface. Set t equal to umin/vmin if it lies below umin/vmin, or umax/vmax if it lies above umax/vmax.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
t	the input parameter

29.324.3.2 virtual bool Go::Param2FunctionInt::boundaryPoint (const double * *par*, double *eps*) const [virtual]

Return true if the specified point lies within eps from the boundary.

Parameters

par	the parameter in which to evaluate. Size of array should be equal to numParams().
eps	the tolerance defining boundary neighbourhood.

Implements Go::ParamObjectInt.

29.324.3.3 virtual bool Go::Param2FunctionInt::canDivide (int *pardir*) [virtual]

Return true if we are allowed to divide in the specified parameter direction.

Parameters

pardir	the parameter direction in question.

Implements Go::ParamObjectInt.

29.324.3.4 virtual CompositeBox Go::Param2FunctionInt::compositeBox ( ) const [virtual]

Return the CompositeBox for the parametric object.

Returns

The compositeBox for the parametric object.

Implements Go::ParamObjectInt.

29.324.3.5 void Go::Param2FunctionInt::derivs (double *u*, double *v*, Point & *deriv_u*, Point & *deriv_v*) const [inline]

Return the partial derivatives in the input parameter point.

Parameters

u	the u-parameter
v	the v-parameter
deriv_u	the partial derivative in the u-direction.
deriv_v	the partial derivative in the u-direction.

Definition at line 351 of file Param2FunctionInt.h.

29.324.3.6 int Go::Param2FunctionInt::dimension ( ) [inline]

Return the dimension of the geometric space.

Definition at line 278 of file Param2FunctionInt.h.

29.324.3.7 virtual double Go::Param2FunctionInt::endParam (int *pardir*) const [virtual]

Return the end parameter in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.8 Go::SplineCurve* Go::Param2FunctionInt::extractBdCurve (const Go::SplineSurface & , int *bdidx*, int & *pardir*, double & *tpar*) const [protected]

29.324.3.9 virtual void Go::Param2FunctionInt::getBoundaryObjects (std::vector< shared_ptr< BoundaryFunctionInt > > & *bd_objs*) [virtual]

Return the boundary objects of this object.

Parameters

bd_objs	the boundary objects of this object.

Implements Go::ParamFunctionInt.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.10 shared_ptr<ParamCurve> Go::Param2FunctionInt::getConstantParameterCurve (int *dir,* double *par*)

Return a curveOnSurface along the current surface in the given direction and parameter value

29.324.3.11 virtual std::vector<double> Go::Param2FunctionInt::getCriticalVals (int *pardir*) const [virtual]

Return the critical parameter values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.324.3.12 virtual std::vector<double> Go::Param2FunctionInt::getCriticalValsAndKnots (int *pardir*) const [virtual]

Return the critical parameter values and inner knots for the object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.13 virtual std::vector<double> Go::Param2FunctionInt::getInnerKnotVals (int *pardir,* bool *sort* = false) const [virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Implements Go::ParamObjectInt.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.14 shared_ptr<ParamCurve> Go::Param2FunctionInt::getIsoCurve (double *param_start,* double *param_end,* double *isoval,* bool *pardir_is_u*) const

Returns the specified isocurve.

Parameters

param_start	start parameter for the isocurve.
param_end	end parameter for the isocurve.
isoval	the value for the isoparameter.
pardir_is_u	if 'pardir_is_u' is 'true', then the first parameter is the running direction and the second parameter is the isoparameter; vice versa for 'pardir_is_u' equal to 'false'.

29.324.3.15 virtual void Go::Param2FunctionInt::getLengthAndWiggle (double * *length*, double * *wiggle*) [virtual]

Return an estimate on the size and wiggle of the object.

Parameters

length	the approximative length of the object in the corresponding parameter directions. The size of the array should be equal to numParams().
wiggle	a scalar representing the wiggle of the object in the corresponding parameter directions. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

29.324.3.16 virtual std::vector<double>::iterator Go::Param2FunctionInt::getMesh ( ) [virtual]

Return the geometric sample mesh for the parametric function.

Implements Go::ParamFunctionInt.

29.324.3.17 virtual int Go::Param2FunctionInt::getMeshSize (int *dir*) [virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamFunctionInt.

29.324.3.18 std::vector<double> Go::Param2FunctionInt::getMima ( ) const

Return the domain of the surface.

Returns

The returned vector consists of (umin, umax, vmin, vmax).

29.324.3.19 virtual Param2FunctionInt* Go::Param2FunctionInt::getParam2FunctionInt ( ) [virtual]

Return pointer to this object.

Reimplemented from Go::ParamFunctionInt.

29.324.3.20 shared_ptr<ParamSurface> Go::Param2FunctionInt::getParamSurface ( )

Return pointer to the parametric surface.

29.324.3.21 shared_ptr<const ParamSurface> Go::Param2FunctionInt::getParamSurface ( ) const

Return pointer to the parametric surface.

29.324.3.22 shared_ptr<ParamSurface> Go::Param2FunctionInt::getParentParamSurface (RectDomain & *domain*)

Return pointer to a subpart of the parent surface of this object. If a parent surface does not exist, return pointer to surface in this object. To reduce numerical noise we go straight to the source (undivided) surface.

29.324.3.23 shared_ptr<ParamSurface> Go::Param2FunctionInt::getParentParamSurface ( )

Return pointer to the parent-curve of this object. If a parent surface does not exist, return pointer to surface in this object. To reduce numerical noise we go straight to the source (undivided) surface.

29.324.3.24 shared_ptr<ParamSurface> Go::Param2FunctionInt::getSurface ( ) [inline]

Return pointer to the parametric surface.

Returns

The pointer to the parametric surface.

Definition at line 338 of file Param2FunctionInt.h.

29.324.3.25 shared_ptr<const ParamSurface> Go::Param2FunctionInt::getSurface ( ) const [inline]

Return pointer to the parametric surface.

Returns

The pointer to the parametric surface.

Definition at line 343 of file Param2FunctionInt.h.

29.324.3.26 virtual bool Go::Param2FunctionInt::hasCriticalVals (int *pardir*) const [virtual]

Return true if the object has any critical parameter values in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.324.3.27 virtual bool Go::Param2FunctionInt::hasCriticalValsOrKnots (int *pardir*) const [virtual]

Return true if the object has any critical parameter values or inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.28 virtual bool Go::Param2FunctionInt::hasInnerKnots (int *pardir*) const [virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.29 bool Go::Param2FunctionInt::isDegenerate (double *epsge*, int *pardir*)

Return true if the object is degenerate in the specified direction.

Parameters

epsge	the geometric tolerance defining degeneracy.
pardir	the parameter direction in question.

29.324.3.30 virtual bool Go::Param2FunctionInt::isDegenerate (double *epsge*, int *pardir*, double * *par*) [virtual]

Return true if the object is degenerate in the specified direction and parameter.

Parameters

epsge	the geometric tolerance defining degeneracy.
pardir	the parameter direction in question.
par	the parameter in which to evaluate. Size of array should be equal to numParams().

Reimplemented from Go::ParamObjectInt.

29.324.3.31 double Go::Param2FunctionInt::isolateDegPar (int *dir*, int *deg_edge*, double *threshold*)

Return info on parameter domain which needs special treatment near a degenerated edge.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
deg_edge	the degenerate edge
threshold	a tolerance

Returns

a safe parameter value that is isolated from the degenerate value

29.324.3.32 virtual int Go::Param2FunctionInt::knotIntervalFuzzy (int *pardir*, double & *t*, double *tol*) const [virtual]

Return the knot interval for which t lies inside, moving the value t if it lies close to a knot.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
t	the parameter value.
tol	the parametric tolerance deciding if the input parameter t should be moved.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.33 virtual shared_ptr<ParamFunctionInt> Go::Param2FunctionInt::makeIntFunction (shared_ptr< ParamSurface > *surf*) [virtual]

Return an intersection object for the input surface. This object is used as the parent for the intersection object.

Parameters

surf	the parametric surface defining the intersection object.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.34 virtual bool Go::Param2FunctionInt::monotone (Point & *dir*, double *tol* = 1.0e-15) const [virtual]

Return true if the surface is monotone in any direction.

Parameters

dir	the direction in which the surface is monotone. Pertains only if surface is monotone.

Returns

Whether or not the surface is monotone.

Implements Go::ParamFunctionInt.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.35 virtual double Go::Param2FunctionInt::nextSegmentVal (int *pardir*, double *par*, bool *forward*) const [virtual]

Return the value of the knot next to the input parameter par.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
par	the parameter value
forward	if true we return the closest knot to the right, otherwise the closest knot to the left.

Returns

The knot closest to the input parameter.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.36 virtual int Go::Param2FunctionInt::numParams ( ) const [virtual]

The number of parameters in the object.

Implements Go::ParamObjectInt.

29.324.3.37 virtual double Go::Param2FunctionInt::paramFromMesh (int *dir*, int *idx*) [virtual]

Return the corresponding mesh parameter.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Implements Go::ParamFunctionInt.

29.324.3.38 virtual void Go::Param2FunctionInt::point (Point & *res*, const double * *par*) const [inline], [virtual]

Evaluate the object in the input parameter.

Parameters

res	the Point to be returned.
par	the parameter in which to evaluate. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

Definition at line 78 of file Param2FunctionInt.h.

29.324.3.39 virtual void Go::Param2FunctionInt::point (std::vector< Point > & *pt*, const double * *tpar*, int *der*, const bool * *from_right* = 0, double *resolution* = 1.0e-12) const [inline], [virtual]

Evaluate the object in the input parameter, with the specified number of derivatives.

Parameters

pt	the vector of points to be returned.
tpar	the parameter in which to evaluate. The size of the array should be equal to numParams().
der	the number of derivatives to calculate.
from_right	if true the evaluation is to be performed from the right side of the parameter value.
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar: knot values in case of spline objects.

Implements Go::ParamObjectInt.

Definition at line 92 of file Param2FunctionInt.h.

29.324.3.40 virtual double Go::Param2FunctionInt::startParam (int *pardir*) const [virtual]

Return the start parameter value in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::Spline2FunctionInt.

29.324.3.41 virtual void Go::Param2FunctionInt::subdivide (int *pardir*, double *par*, std::vector< shared_ptr< ParamFunctionInt > > & *subdiv_objs*, std::vector< shared_ptr< ParamFunctionInt > > & *bd_objs*) [virtual]

Subdivide the object in the specified parameter direction and parameter value.

Parameters

pardir	direction in which to subdive. Indexing starts at 0.
par	parameter in which to subdivide.
subdiv_objs	The subparts of this object. Of the same geometric dimension as this object.
bd_objs	the boundaries between the returned *subdiv_objs*. Of geometric dimension 1 less than this object.

Implements Go::ParamFunctionInt.

29.324.4 Member Data Documentation

29.324.4.1 bool Go::Param2FunctionInt::bd_deg_[4] [protected]

Definition at line 380 of file Param2FunctionInt.h.

29.324.4.2 double Go::Param2FunctionInt::deg_tol_ [protected]

Definition at line 381 of file Param2FunctionInt.h.

29.324.4.3 int Go::Param2FunctionInt::dim_ [protected]

Definition at line 365 of file Param2FunctionInt.h.

29.324.4.4 RectDomain Go::Param2FunctionInt::domain_ [protected]

Definition at line 382 of file Param2FunctionInt.h.

29.324.4.5 std::vector<double> Go::Param2FunctionInt::mesh_ [mutable], [protected]

Definition at line 385 of file Param2FunctionInt.h.

29.324.4.6 int Go::Param2FunctionInt::nmesh_[2] [mutable], [protected]

Definition at line 384 of file Param2FunctionInt.h.

29.324.4.7 Param2FunctionInt* Go::Param2FunctionInt::parentfunction_ [protected]

Definition at line 367 of file Param2FunctionInt.h.

29.324.4.8 std::vector<std::pair<double, int> > Go::Param2FunctionInt::segment_[2] [protected]

Definition at line 370 of file Param2FunctionInt.h.

29.324.4.9 shared_ptr<ParamSurface> Go::Param2FunctionInt::surf_ [protected]

Definition at line 362 of file Param2FunctionInt.h.

29.324.4.10 std::vector<Point> Go::Param2FunctionInt::temp_point_array_ [mutable], [protected]

Definition at line 387 of file Param2FunctionInt.h.

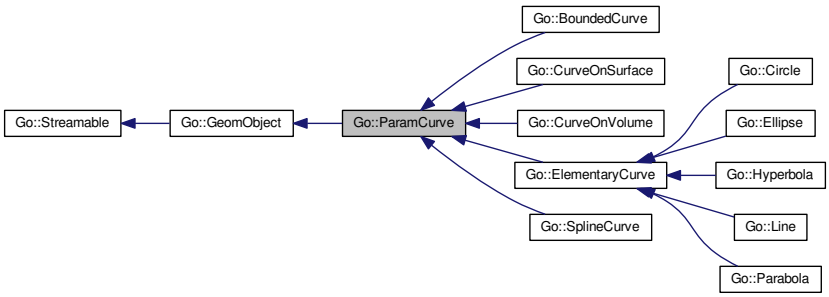
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Param2FunctionInt.h

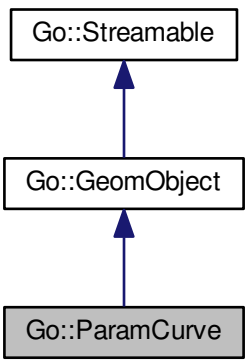
29.325 Go::ParamCurve Class Reference

`#include <ParamCurve.h>`

Inheritance diagram for Go::ParamCurve:



Collaboration diagram for Go::ParamCurve:



Public Member Functions

- virtual ~ParamCurve ()

  virtual destructor - ensures safe inheritance
- virtual void point (Point &pt, double tpar) const =0
- virtual void point (std::vector< Point > &pts, double tpar, int derivs, bool from_right=true) const =0
- Point point (double tpar) const
- std::vector< Point > point (double tpar, int derivs, bool from_right=true) const
- virtual void uniformEvaluator (int num, std::vector< Point > &points, std::vector< double > &param) const
- virtual double startparam () const =0
- virtual double endparam () const =0
- virtual void reverseParameterDirection (bool switchparam=false)=0
- virtual void setParameterInterval (double t1, double t2)=0

  Linear reparametrization. The meaning is changed for elementary curves.
- virtual SplineCurve * geometryCurve ()=0
- virtual bool isDegenerate (double degenerate_epsilon)=0
- virtual bool isClosed ()
- virtual ParamCurve * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMETER↩_EPSILON) const =0
- virtual std::vector< shared_ptr< ParamCurve > > split (double param, double fuzzy=DEFAULT_PARAM↩ETER_EPSILON) const

  Split curve in a specified parameter value.
- virtual ParamCurve * clone () const =0
- virtual DirectionCone directionCone () const =0
- virtual CompositeBox compositeBox () const
- virtual void appendCurve (ParamCurve *cv, bool reparam=true)=0
- virtual void appendCurve (ParamCurve *cv, int continuity, double &dist, bool reparam=true)=0
- double estimatedCurveLength (int numpts=4) const
- double estimatedCurveLength (double tmin, double tmax, int numpts=4) const
- virtual void closestPoint (const Point &pt, double tmin, double tmax, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const =0
- void closestPoint (const Point &pt, double &clo_t, Point &clo_pt, double &clo_dist) const
- virtual double nextSegmentVal (double par, bool forward, double tol) const
- virtual double length (double tol)=0
- virtual double length (double tol, double tstart, double tend)
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)
- virtual bool isLinear (Point &dir, double tol)

  Check if the curve is linear.
- virtual bool isInPlane (const Point &loc, const Point &axis, double eps, Point &normal) const

  Check if the curves lies in a plane passing through a given axis.
- virtual bool isInPlane (const Point &norm, double eps, Point &pos) const

  Check if the curve lies in a plane with a given normal.

Protected Member Functions

- void closestPointGeneric (const Point &pt, double tmin, double tmax, double guess_param, double &clo_t, Point &clo_pt, double &clo_dist) const
- void s1771 (Point pt, double aepsge, double astart, double aend, double anext, double &cpos, int *jstat) const
- void s1771_s9point (Point pt, std::vector< Point > val, Point diff, double astart, double aend, int max_it, double *cnext, double *ad, double adel, double *cdist, double aprev, int *jstat) const
- double s1771_s9del (double *eco, double *eco1, double *eco2, int idim) const

Additional Inherited Members

29.325.1 Detailed Description

Base class for parametric curves in Go

Definition at line 62 of file ParamCurve.h.

29.325.2 Constructor & Destructor Documentation

29.325.2.1 virtual Go::ParamCurve::~ParamCurve ( ) [virtual]

virtual destructor - ensures safe inheritance

29.325.3 Member Function Documentation

29.325.3.1 virtual void Go::ParamCurve::appendCurve (ParamCurve * *cv,* bool *reparam* = true) [pure virtual]

append a curve to this curve, with eventual reparametrization NB: This virtual member function currently only works for SplineCurves and CurveOnSurfaces. Moreover, 'this' curve and the 'cv' curve must be of the same type.

Parameters

cv	the curve to append to 'this' curve.
reparam	specify whether or not there should be reparametrization

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Circle, Go::Line, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.2 virtual void Go::ParamCurve::appendCurve (ParamCurve * *cv,* int *continuity,* double & *dist,* bool *reparam* = true) [pure virtual]

append a curve to this curve, with eventual reparmetrization

Parameters

cv	the curve to append to 'this' curve.
continuity	the required continuity at the transition. Can be G^(-1) and upwards.
dist	a measure of the local distorsion around the transition in order to achieve the specified continuity.
reparam	specify whether or not there should be reparametrization

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Circle, Go::Line, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.3 virtual ParamCurve* Go::ParamCurve::clone ( ) const [pure virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::GeomObject.

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Line, Go::Circle, Go::Hyperbola, Go::Parabola, Go::Ellipse, and Go::ElementaryCurve.

29.325.3.4 virtual void Go::ParamCurve::closestPoint (const Point & *pt,* double *tmin,* double *tmax,* double & *clo_t,* Point & *clo_pt,* double & *clo_dist,* double const * *seed* = 0) const [pure virtual]

Compute the closest point from an interval of this curve to a specified point.

Parameters

pt	point we want to find the closest point to
tmin	start parameter of search interval
tmax	end parameter of search interval
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.
seed	pointer to initial guess value, provided by the user (can be 0, for which the algorithm will determine a (hopefully) reasonable choice).

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Circle, Go::Line, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.5 void Go::ParamCurve::closestPoint (const Point & *pt,* double & *clo_t,* Point & *clo_pt,* double & *clo_dist*) const

Compute the closest point from this curve to a specified point, taking the whole curve into account (not just an interval of it).

Parameters

pt	point we want to find the closest point to
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.

29.325.3.6 void Go::ParamCurve::closestPointGeneric (const Point & *pt,* double *tmin,* double *tmax,* double *guess_param,* double & *clo_t,* Point & *clo_pt,* double & *clo_dist*) const [protected]

29.325.3.7 virtual CompositeBox Go::ParamCurve::compositeBox ( ) const [virtual]

Creates a composite box enclosing the curve. The composite box consists of an inner and an edge box. The inner box is supposed to be made from the interior of the curve, while the edge box is made from the start and end points.

The default implementation simply makes both boxes identical to the regular bounding box.

Returns

the CompositeBox enclosing the curve.

Reimplemented in Go::SplineCurve.

29.325.3.8 virtual DirectionCone Go::ParamCurve::directionCone ( ) const [pure virtual]

Creates a DirectionCone which covers all tangent directions of this curve.

Returns

the smallest DirectionCone containing all tangent directions of this curve.

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::BoundedCurve, Go::Circle, Go::Line, Go::Hyperbola, Go::Parabola, Go::Ellipse, and Go::CurveOnVolume.

29.325.3.9 virtual double Go::ParamCurve::endparam ( ) const [pure virtual]

Query the end parameter of the curve

Returns

the curve's end parameter

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Line, Go::Circle, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.10 double Go::ParamCurve::estimatedCurveLength (int *numpts* = 4) const

Estimate the length of the curve, by sampling it at a certain number of points and calculating the linear approximation to the curve through these points.

Parameters

numpts	number of sample points used

Returns

the estimated curve length

29.325.3.11 double Go::ParamCurve::estimatedCurveLength (double *tmin*, double *tmax*, int *numpts* = 4) const

Estimate the length of an interval of the curve, by sampling it at a certain number of points in the interval and calculating the linear approximation through these points.

Parameters

tmin	parameter at start of interval
tmax	parameter at end of interval
numpts	number of sample points used

Returns

the estimated curve length

29.325.3.12 virtual SplineCurve* Go::ParamCurve::geometryCurve ( ) [pure virtual]

If the definition of this ParamCurve contains a SplineCurve describing its spatial shape, then this function will return a pointer to this SplineCurve. Otherwise it will return a null pointer. The returned curve is NEWed, so the user is responsible for deleting it. This function may have side-effects.

Returns

a pointer to a SplineCurve representation of the ParamCurve, if it exists. Null pointer otherwise.

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Line, Go::Circle, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.13 virtual bool Go::ParamCurve::isAxisRotational (Point & *centre,* Point & *axis,* Point & *vec,* double & *angle*) [inline], [virtual]

Check if the curve is axis rotational. Only true if a connection to an axis rotational elementary curve exist The axis and rotational angle is only specified if the curve is actually rotational

Reimplemented in Go::SplineCurve, Go::CurveOnSurface, Go::Circle, and Go::BoundedCurve.

Definition at line 313 of file ParamCurve.h.

29.325.3.14 virtual bool Go::ParamCurve::isClosed ( ) [virtual]

Query whether the curve is closed. Periodic curves like circles and ellipses are closed.

Returns

`true` if the curve is closed, `false` otherwise.

29.325.3.15 virtual bool Go::ParamCurve::isDegenerate (double *degenerate_epsilon*) [pure virtual]

Query whether the curve is degenerate (collapsed into a single point).

Parameters

degenerate_epsilon	the tolerance used in determine whether the curve is degenerate. A curve is considered degenerate if its total length is shorter than this value.

Returns

`true` if the curve is degenerate, `false` otherwise.

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Circle, Go::Line, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.16 virtual bool Go::ParamCurve::isInPlane (const Point & *loc,* const Point & *axis,* double *eps,* Point & *normal*) const [virtual]

Check if the curves lies in a plane passing through a given axis.

Reimplemented in Go::SplineCurve, Go::CurveOnSurface, Go::Circle, Go::Line, and Go::BoundedCurve.

29.325.3.17 virtual bool Go::ParamCurve::isInPlane (const Point & *norm,* double *eps,* Point & *pos*) const [virtual]

Check if the curve lies in a plane with a given normal.

Reimplemented in Go::SplineCurve, Go::CurveOnSurface, Go::Circle, Go::Line, Go::Ellipse, Go::Hyperbola, and Go::Parabola.

29.325.3.18 virtual bool Go::ParamCurve::isLinear (Point & *dir,* double *tol*) [virtual]

Check if the curve is linear.

Reimplemented in Go::SplineCurve, Go::CurveOnSurface, Go::Line, and Go::BoundedCurve.

29.325.3.19 virtual double Go::ParamCurve::length (double *tol*) [pure virtual]

Compute the total length of this curve up to some tolerance

Parameters

tol	the relative tolerance when approximating the length, i.e. stop iteration when error becomes smaller than tol/(curve length)

Returns

the length calculated

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Circle, Go::Line, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.20 virtual double Go::ParamCurve::length (double *tol*, double *tstart*, double *tend*) [virtual]

Compute the length of a segment of this curve up to some tolerance

Parameters

tol	the relative tolerance when approximating the length, i.e. stop iteration when error becomes smaller than tol/(curve length)
tstart	the parameter value for the start point of the segment
tend	the parameter value for the end point of the segment

Returns

the length calculated

29.325.3.21 virtual double Go::ParamCurve::nextSegmentVal (double *par*, bool *forward*, double *tol*) const [virtual]

If the ParamCurve is divided up into logical segments, this function will return the parameter value of the "next segment", starting from a parameter given by the user. If no division into logical segments exist, then it is the start- or end parameter that is returned.

Parameters

par	the parameter from which we start the search for the next segment.
forward	whether to search forwards or backwards along the parameter domain.
tol	the tolerance to determine or not 'par' is already located on the start of the next segment.

Returns

the parameter value of the next segment.

Reimplemented in Go::SplineCurve, Go::CurveOnSurface, and Go::CurveOnVolume.

29.325.3.22 virtual void Go::ParamCurve::point (Point & *pt*, double *tpar*) const [pure virtual]

Evaluate the curve's position at a given parameter

Parameters

pt	the evaluated position will be written to this Point
tpar	the parameter for which we wish to evaluate the curve

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Line, Go::Circle, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.23 virtual void Go::ParamCurve::point (std::vector< Point > & *pts*, double *tpar*, int *derivs*, bool *from_right* = true) const [pure virtual]

Evaluate the curve's position and a certain number of derivatives at a given parameter.

Parameters

pts	the evaluated position and derivatives (tangent, curvature vector, etc.) will be written to this vector. The first entry will be the position, the second entry will be the first derivative, etc. The size of this vector must be set to 'derivs'+ 1 prior to calling this function.
tpar	the parameter for which we want to evaluate the curve
derivs	the number of derivatives we want to have calculated
from_right	specify whether we should calculate derivatives 'from the right' or 'from the left' (default is from the right). This matters only when the curve presents discontinuities in its derivatives.

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Line, Go::Circle, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.24 Point Go::ParamCurve::point (double *tpar*) const

Evaluate the curve's position at a certain parameter

Parameters

tpar	the parameter for which we want to evaluate the curve's position

Returns

the curve's position for the parameter 'tpar'. NB: This function is implemented in terms of the ParamCurve's virtual 'point(...)' functions, but is itself not virtual. If you make a concrete subclass and wish to make this function visible to the user, you must put a 'using ParamCurve::point' statement in the class definition.

29.325.3.25 std::vector<Point> Go::ParamCurve::point (double *tpar*, int *derivs*, bool *from_right* = true) const

Evaluate the curve's position and a certain number of derivatives at a given parameter.

Parameters

tpar	the parameter for which we want to evaluate the curve
derivs	the number of derivatives we want to have calculated
from_right	specify whether we should calculate derivatives 'from the right' or 'from the left' (default is from the right). This matters only when the curve presents discontinuities in its derivatives.

Returns

a STL vector containing the evaluated position and the specified number of derivatives. The first entry will be the position, the second entry will be the first derivative, etc. The total size of the returned vector will be 'derivs' + 1. NB: This function is implemented in terms of the ParamCurve's virtual 'point(...)' functions, but is

itself not virtual. If you make a concrete subclass and wish to make this function visible to the user, you must put a 'using ParamCurve::point' in the class definition.

29.325.3.26 virtual void Go::ParamCurve::reverseParameterDirection (bool *switchparam* = false) [pure virtual]

Set the parameter direction of the curve. The curve's parameter interval will always remain constant, but by flipping the parameter direction, the curve will be traced the opposite way when moving a parameter over the parameter interval.

Parameters

switchparam	if true, and the curve is 2D, the x and y coordinates should be swapped. This is used when turning the orientation of bounded (trimmed) surfaces.

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, and Go::ElementaryCurve.

29.325.3.27 void Go::ParamCurve::s1771 (Point *pt*, double *aepsge*, double *astart*, double *aend*, double *anext*, double & *cpos*, int * *jstat*) const [protected]

29.325.3.28 double Go::ParamCurve::s1771_s9del (double * *eco*, double * *eco1*, double * *eco2*, int *idim*) const [protected]

29.325.3.29 void Go::ParamCurve::s1771_s9point (Point *pt*, std::vector< Point > *val*, Point *diff*, double *astart*, double *aend*, int *max_it*, double * *cnext*, double * *ad*, double *adel*, double * *cdist*, double *aprev*, int * *jstat*) const [protected]

29.325.3.30 virtual void Go::ParamCurve::setParameterInterval (double *t1*, double *t2*) [pure virtual]

Linear reparametrization. The meaning is changed for elementary curves.

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Line, Go::Circle, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.31 virtual std::vector<shared_ptr<ParamCurve> > Go::ParamCurve::split (double *param*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Split curve in a specified parameter value.

Reimplemented in Go::SplineCurve, Go::CurveOnSurface, and Go::CurveOnVolume.

29.325.3.32 virtual double Go::ParamCurve::startparam ( ) const [pure virtual]

Query the start parameter of the curve

Returns

the curve's start parameter

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Line, Go::Circle, Go::Hyperbola, Go::Parabola, and Go::Ellipse.

29.325.3.33 virtual ParamCurve* Go::ParamCurve::subCurve (double *from_par,* double *to_par,* double *fuzzy =* DEFAULT_PARAMETER_EPSILON) const [pure virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implemented in Go::SplineCurve, Go::CurveOnSurface, Go::CurveOnVolume, Go::BoundedCurve, Go::Circle, Go::Line, Go::Hyperbola, Go::Parabola, Go::Ellipse, and Go::ElementaryCurve.

29.325.3.34 virtual void Go::ParamCurve::uniformEvaluator (int *num,* std::vector< Point > & *points,* std::vector< double > & *param*) const [virtual]

Evaluate points on a regular set of parameter values

Parameters

num	number of values to evaluate
points	upon function return, this vector holds all the evaluated points
param	upon function return, this vector holds all the numerical values where evaluation has taken place

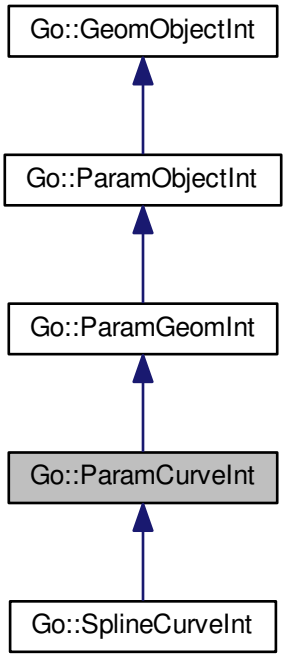
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/ParamCurve.h

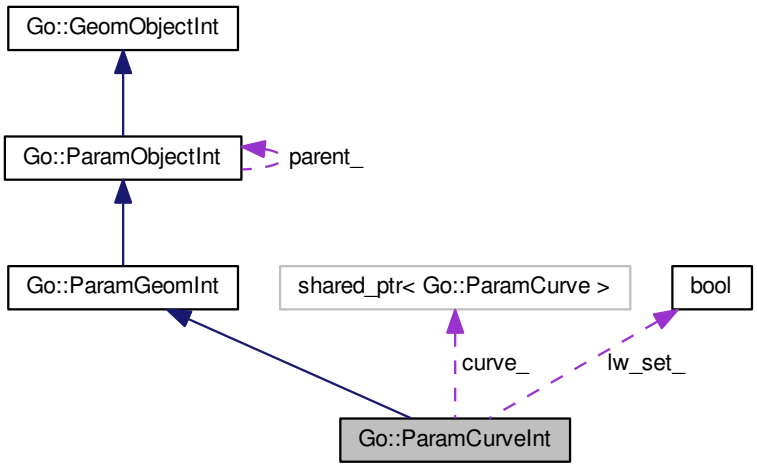
29.326 Go::ParamCurveInt Class Reference

#include <ParamCurveInt.h>

Inheritance diagram for Go::ParamCurveInt:



Collaboration diagram for Go::ParamCurveInt:



Public Member Functions

- ParamCurveInt (shared_ptr< ParamCurve > curve, ParamGeomInt *parent=0)

- virtual ~ParamCurveInt ()

  Destructor.
- virtual void point (Point &res, const double *par) const
- virtual void point (std::vector< Point > &res, const double *par, int der, const bool *from_right=0, double resolution=1.0e-12) const
- virtual ParamCurveInt * getParamCurveInt ()
- virtual ParamSurfaceInt * getParamSurfaceInt ()
- shared_ptr< ParamCurve > getParamCurve ()
- shared_ptr< const ParamCurve > getParamCurve () const
- shared_ptr< ParamCurve > getParentParamCurve (double &start, double &end)
- shared_ptr< ParamCurve > getParentParamCurve ()
- virtual shared_ptr< ParamCurveInt > makeIntObject (shared_ptr< ParamCurve > curve)
- virtual int numParams () const

  The number of parameters in the object.
- virtual void getLengthAndWiggle (double *length, double *wiggle)
- virtual bool hasInnerKnots (int pardir) const
- virtual bool hasCriticalVals (int pardir) const
- virtual void setCriticalVal (int pardir, double par)

  Set info about subdivision value.
- virtual bool hasCriticalValsOrKnots (int pardir) const
- virtual bool canDivide (int pardir)
- virtual std::vector< double > getCriticalVals (int pardir) const
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const
- virtual int getMeshSize (int dir)
- virtual double paramFromMesh (int dir, int idx)
- virtual std::vector< double >::iterator getMesh ()

  Return the geometric sample mesh for the parametric function.
- virtual double startParam (int pardir) const
- virtual double endParam (int pardir) const
- virtual bool boundaryPoint (const double *par, double eps) const
- virtual void subdivide (int pardir, double par, std::vector< shared_ptr< ParamGeomInt > > &subdiv_objs, std::vector< shared_ptr< ParamGeomInt > > &bd_objs)
- virtual CompositeBox compositeBox () const
- virtual DirectionCone directionCone () const
- virtual void getBoundaryObjects (std::vector< shared_ptr< BoundaryGeomInt > > &bd_objs)
- virtual int checkPeriodicity (int pardir=0) const
- virtual int dimension () const

  The dimension of the geometric space.
- double startparam () const
- double endparam () const
- void assureInRange (double &t)
- virtual int knotIntervalFuzzy (double &t, double tol) const
- virtual double nextSegmentVal (double par, bool forward, double tol) const
- virtual bool isDegenerate (double epsge, int dir, double *par)
- virtual bool isSpline ()
- virtual const SplineCurve * getSpline ()
- virtual double getOptimizedConeAngle (Point &axis1, Point &axis2)
- virtual RotatedBox getRotatedBox (std::vector< Point > &axis) const
- void axisFromEndpts (Point &axis) const

Protected Attributes

- shared_ptr< ParamCurve > curve_
- int dim_
- std::vector< std::pair< double, int > > segment_
- std::vector< double > mesh_
- bool lw_set_
- double length_
- double wiggle_

29.326.1 Detailed Description

This class represents the "intersection object" of a parametric curve.

Definition at line 56 of file ParamCurveInt.h.

29.326.2 Constructor & Destructor Documentation

29.326.2.1 Go::ParamCurveInt::ParamCurveInt (shared_ptr< ParamCurve > *curve*, ParamGeomInt * *parent* = 0) [explicit]

Constructor.

Parameters

curve	the parametric curve defining the intersection object.
parent	the parent object to this object. Can be either a curve or a surface.

29.326.2.2 virtual Go::ParamCurveInt::~ParamCurveInt ( ) [inline], [virtual]

Destructor.

Definition at line 67 of file ParamCurveInt.h.

29.326.3 Member Function Documentation

29.326.3.1 void Go::ParamCurveInt::assureInRange (double & *t*)

Make sure that the input parameter lies inside the range of the parametric curve. Set t equal to tmin if it lies below tmin, or tmax if it lies above tmax.

Parameters

t	the input parameter

29.326.3.2 void Go::ParamCurveInt::axisFromEndpts (Point & *axis*) const

Create an axis by interpolating the end points.

Returns

The created axis.

29.326.3.3 virtual bool Go::ParamCurveInt::boundaryPoint (const double * *par*, double *eps*) const [virtual]

Return true if the specified point lies within eps from the boundary.

Parameters

par	the parameter in which to evaluate. Size of array should be equal to numParams().
eps	the tolerance defining the boundary neighbourhood.

Implements Go::ParamObjectInt.

29.326.3.4 virtual bool Go::ParamCurveInt::canDivide (int *pardir*) [virtual]

Return true if we are allowed to divide in the specified parameter direction.

Parameters

pardir	the parameter direction in question.

Implements Go::ParamObjectInt.

29.326.3.5 virtual int Go::ParamCurveInt::checkPeriodicity (int *pardir* = 0) const [virtual]

Check if the object is periodic. Analyze periodicity of curve based on number of repeating knots and control points. The return value is -1 if the curve ends are disjoint, otherwise k if cv is C^k continuous. These are sufficient but not necessary conditions for periodicity, so it is possible that a higher degree of periodicity exists. Should not be called on this layer, should be overruled by inherited class.

Parameters

pardir	the parameter direction in question. Does not pertain to for a curve.

Returns

-1 if the curve ends are disjoint, or k if the curve is proven to be C^k continuous.

Reimplemented from Go::ParamGeomInt.

Reimplemented in Go::SplineCurveInt.

29.326.3.6 virtual CompositeBox Go::ParamCurveInt::compositeBox ( ) const [virtual]

Create the CompositeBox for the parametric object.

Returns

The CompositeBox for the parametric object.

Implements Go::ParamGeomInt.

29.326.3.7 virtual int Go::ParamCurveInt::dimension ( ) const [inline], [virtual]

The dimension of the geometric space.

Implements Go::ParamGeomInt.

Definition at line 273 of file ParamCurveInt.h.

29.326.3.8 virtual DirectionCone Go::ParamCurveInt::directionCone ( ) const [virtual]

A cone which contains all normals of the object.

Returns

A cone which contains all normals of the object.

Implements Go::ParamGeomInt.

29.326.3.9 virtual double Go::ParamCurveInt::endParam (int *pardir*) const [inline], [virtual]

Return the end parameter in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 222 of file ParamCurveInt.h.

29.326.3.10 double Go::ParamCurveInt::endparam ( ) const [inline]

The end parameter of the curve.

Returns

The end parameter of the curve.

Definition at line 283 of file ParamCurveInt.h.

29.326.3.11 virtual void Go::ParamCurveInt::getBoundaryObjects (std::vector< shared_ptr< BoundaryGeomInt > > & *bd_objs*) [virtual]

Return the boundary objects of this object.

Parameters

bd_objs	the boundary objects of this object.

Implements Go::ParamGeomInt.

29.326.3.12 virtual std::vector<double> Go::ParamCurveInt::getCriticalVals (int *pardir*) const [virtual]

Return the critical parameter values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.326.3.13 virtual std::vector<double> Go::ParamCurveInt::getCriticalValsAndKnots (int *pardir*) const [virtual]

Return the critical parameter values and inner knots for object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::SplineCurveInt.

29.326.3.14 virtual std::vector<double> Go::ParamCurveInt::getInnerKnotVals (int *pardir*, bool *sort* = false) const [virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Implements Go::ParamObjectInt.

Reimplemented in Go::SplineCurveInt.

29.326.3.15 virtual void Go::ParamCurveInt::getLengthAndWiggle (double * *length*, double * *wiggle*) [virtual]

Return an estimate on the size and wiggle of the object.

Parameters

length	the approximative length of the object in the corresponding parameter directions. The size of the array should be equal to numParams().
wiggle	a scalar representing the wiggle of the object in the corresponding parameter directions. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

29.326.3.16 virtual std::vector<double>::iterator Go::ParamCurveInt::getMesh ( ) [virtual]

Return the geometric sample mesh for the parametric function.

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineCurveInt.

29.326.3.17 virtual int Go::ParamCurveInt::getMeshSize (int *dir*) [virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineCurveInt.

29.326.3.18 virtual double Go::ParamCurveInt::getOptimizedConeAngle (Point & *axis1*, Point & *axis2*) [virtual]

We try to treat problems which will never result in a simple case by shrinking the domain slightly, resulting in smaller cones. This is useful for scenarios where the normals are parallell in a boundary point.

Parameters

axis1	first vector defining a projection plane
axis2	second vector defining a projection plane

Returns

The optimized cone angle

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineCurveInt.

29.326.3.19 shared_ptr<ParamCurve> Go::ParamCurveInt::getParamCurve ( )

Return pointer to the parametric curve defining this object.

Returns

Pointer to the parametric curve defining this object.

29.326.3.20 shared_ptr<const ParamCurve> Go::ParamCurveInt::getParamCurve ( ) const

Return pointer to the parametric curve defining this object.

Returns

Pointer to the parametric curve defining this object.

29.326.3.21 virtual ParamCurveInt* Go::ParamCurveInt::getParamCurveInt ( ) [virtual]

Return a pointer to this object.

Returns

Pointer to this object.

Reimplemented from Go::ParamObjectInt.

29.326.3.22 virtual ParamSurfaceInt* Go::ParamCurveInt::getParamSurfaceInt ( ) [inline], [virtual]

Return a NULL pointer (as this object is not of the correct type).

Returns

NULL pointer (as this object is not of the correct type).

Reimplemented from Go::ParamObjectInt.

Definition at line 106 of file ParamCurveInt.h.

29.326.3.23 shared_ptr<ParamCurve> Go::ParamCurveInt::getParentParamCurve (double & *start*, double & *end*)

Return pointer to a subcurve of the parent curve for this object. If no such curve exist, we use the curve of this object instead.

Parameters

start	the start parameter of the subcurve.
end	the end parameter of the subcurve.

Returns

Pointer to a subcurve of the parent curve for this object.

29.326.3.24 shared_ptr<ParamCurve> Go::ParamCurveInt::getParentParamCurve ( )

Return pointer to the parent curve for this object. If no such curve exist, we use the curve of this object instead.

Returns

Pointer to a subcurve of the parent curve for this object.

29.326.3.25 virtual RotatedBox Go::ParamCurveInt::getRotatedBox (std::vector< Point > & *axis*) const [virtual]

Create a box containing the geometric sample mesh in the input coordinate system.

Parameters

axis	the axis defining the coordinate system. The size of vector axis is 2, the last point is given as the cross product axis[0]axis[1].

Returns

The rotated box

Reimplemented in Go::SplineCurveInt.

29.326.3.26 virtual const SplineCurve* Go::ParamCurveInt::getSpline ( ) [inline], [virtual]

Reimplemented in Go::SplineCurveInt.

Definition at line 324 of file ParamCurveInt.h.

29.326.3.27 virtual bool Go::ParamCurveInt::hasCriticalVals (int *pardir*) const [virtual]

Return true if the object has any critical parameter values in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.326.3.28 virtual bool Go::ParamCurveInt::hasCriticalValsOrKnots (int *pardir*) const [virtual]

Return true if the object has any critical parameter values or inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::SplineCurveInt.

29.326.3.29 virtual bool Go::ParamCurveInt::hasInnerKnots (int *pardir*) const [virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::SplineCurveInt.

29.326.3.30 virtual bool Go::ParamCurveInt::isDegenerate (double *epsge*, int *dir*, double * *par*) [virtual]

Verfify whether the object is degenerate in the specified direction and parameter.

Parameters

epsge	the geometric tolerance defining degeneracy.
dir	the parameter direction in question.
par	the parameter in which to evaluate. Size of array should be equal to numParams().

Returns

True if the object is degenerate.

Implements Go::ParamGeomInt.

29.326.3.31 virtual bool Go::ParamCurveInt::isSpline ( ) [virtual]

Verify whether the object is a spline.

Returns

True if the object is a spline.

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineCurveInt.

29.326.3.32 virtual int Go::ParamCurveInt::knotIntervalFuzzy (double & *t*, double *tol*) const [virtual]

Find the knot interval for which t lies inside, moving the value t if it lies close to a knot.

Parameters

t	the parameter value
tol	the parametric tolerance deciding if the input parameter t should be moved.

Reimplemented in Go::SplineCurveInt.

29.326.3.33 virtual shared_ptr<ParamCurveInt> Go::ParamCurveInt::makeIntObject (shared_ptr< ParamCurve > *curve*) [virtual]

Return an intersection object for the input curve. This object is used as the parent for the intersection object.

Parameters

curve	the parametric curve defining the intersection object.

Reimplemented in Go::SplineCurveInt.

29.326.3.34 virtual double Go::ParamCurveInt::nextSegmentVal (double *par*, bool *forward*, double *tol*) const [virtual]

Return the value of the knot next to the input parameter par.

Parameters

par	the parameter value
forward	if true we return the closest knot to the right, otherwise the closest knot to the left.
tol	the tolerance to determine if *par* is already located on the start of the next segment.

Returns

The knot closest to the input parameter.

Reimplemented in Go::SplineCurveInt.

29.326.3.35 virtual int Go::ParamCurveInt::numParams ( ) const [virtual]

The number of parameters in the object.

Implements Go::ParamObjectInt.

29.326.3.36 virtual double Go::ParamCurveInt::paramFromMesh (int *dir*, int *idx*) [virtual]

Return the corresponding mesh parameter.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineCurveInt.

29.326.3.37 virtual void Go::ParamCurveInt::point (Point & *res*, const double * *par*) const [inline], [virtual]

Evaluate the object in the input parameter.

Parameters

res	the Point to be returned.
par	the parameter in which to evaluate. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

Definition at line 73 of file ParamCurveInt.h.

29.326.3.38 virtual void Go::ParamCurveInt::point (std::vector< Point > & *res*, const double * *par*, int *der*, const bool * *from_right* = 0, double *resolution* = 1.0e-12) const [inline], [virtual]

Evaluate the object in the input parameter, with the specified number of derivatives.

Parameters

res	the Point to be returned.
par	the parameter in which to evaluate. The size of the array should be equal to numParams().
der	the number of derivatives to calculate.
from_right	if true the evaluation is to be performed from the right side of the parameter value.
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar: knot values in case of spline objects.

Implements Go::ParamObjectInt.

Definition at line 87 of file ParamCurveInt.h.

29.326.3.39 virtual void Go::ParamCurveInt::setCriticalVal (int *pardir*, double *par*) [virtual]

Set info about subdivision value.

Reimplemented from Go::ParamObjectInt.

29.326.3.40 virtual double Go::ParamCurveInt::startParam (int *pardir*) const [inline], [virtual]

Return the start parameter value in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 216 of file ParamCurveInt.h.

29.326.3.41 double Go::ParamCurveInt::startparam ( ) const [inline]

The start parameter of the curve.

Returns

The start parameter of the curve.

Definition at line 278 of file ParamCurveInt.h.

29.326.3.42 virtual void Go::ParamCurveInt::subdivide (int *pardir*, double *par*, std::vector< shared_ptr< ParamGeomInt > > & *subdiv_objs*, std::vector< shared_ptr< ParamGeomInt > > & *bd_objs*) [virtual]

Subdivide the object in the specified parameter direction and parameter value.

Parameters

pardir	direction in which to subdive. Indexing starts at 0.
par	parameter in which to subdivide.
subdiv_objs	The subparts of this object. Of the same geometric dimension as this object.
bd_objs	the boundaries between the returned *subdiv_objs*. Of geometric dimension 1 less than this object.

Implements Go::ParamGeomInt.

29.326.4 Member Data Documentation

29.326.4.1 shared_ptr<ParamCurve> Go::ParamCurveInt::curve_ [protected]

Definition at line 350 of file ParamCurveInt.h.

29.326.4.2 int Go::ParamCurveInt::dim_ [protected]

Definition at line 352 of file ParamCurveInt.h.

29.326.4.3 double Go::ParamCurveInt::length_ [mutable], [protected]

Definition at line 360 of file ParamCurveInt.h.

29.326.4.4 bool Go::ParamCurveInt::lw_set_ [mutable], [protected]

Definition at line 359 of file ParamCurveInt.h.

29.326.4.5 std::vector<double> Go::ParamCurveInt::mesh_ [mutable], [protected]

Definition at line 357 of file ParamCurveInt.h.

29.326.4.6 std::vector<std::pair<double, int> > Go::ParamCurveInt::segment_ [protected]

Definition at line 354 of file ParamCurveInt.h.

29.326.4.7 double Go::ParamCurveInt::wiggle_ [mutable], [protected]

Definition at line 360 of file ParamCurveInt.h.

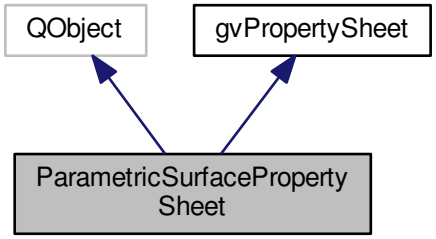
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/ParamCurveInt.h

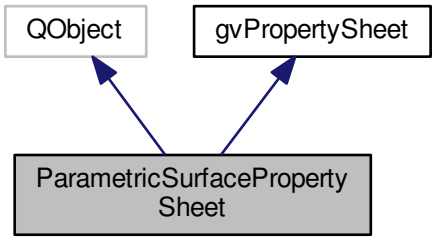
29.327 ParametricSurfacePropertySheet Class Reference

`#include <ParametricSurfacePropertySheet.h>`

Inheritance diagram for ParametricSurfacePropertySheet:



Collaboration diagram for ParametricSurfacePropertySheet:



Public Slots

- void apply ()

Public Member Functions

- ParametricSurfacePropertySheet ()
- ParametricSurfacePropertySheet (Go::ParametricSurfaceTesselator *tess, gvParametricSurfacePaintable *pable, shared_ptr< Go::ParamSurface > &surf)
- virtual ~ParametricSurfacePropertySheet ()
- virtual void createSheet (QWidget *parent, gvObserver *obs)

29.327.1 Detailed Description

Documentation ... etc

Definition at line 61 of file ParametricSurfacePropertySheet.h.

29.327.2 Constructor & Destructor Documentation

29.327.2.1 ParametricSurfacePropertySheet::ParametricSurfacePropertySheet ( ) [inline]

Definition at line 67 of file ParametricSurfacePropertySheet.h.

29.327.2.2 ParametricSurfacePropertySheet::ParametricSurfacePropertySheet (Go::ParametricSurfaceTesselator * *tess*, gvParametricSurfacePaintable * *pable*, shared_ptr< Go::ParamSurface > & *surf*) [inline]

Definition at line 70 of file ParametricSurfacePropertySheet.h.

29.327.2.3 virtual ParametricSurfacePropertySheet::~ParametricSurfacePropertySheet ( ) [virtual]

29.327.3 Member Function Documentation

29.327.3.1 void ParametricSurfacePropertySheet::apply ( ) [slot]

29.327.3.2 virtual void ParametricSurfacePropertySheet::createSheet (QWidget * *parent*, gvObserver * *obs*) [virtual]

Implements gvPropertySheet.

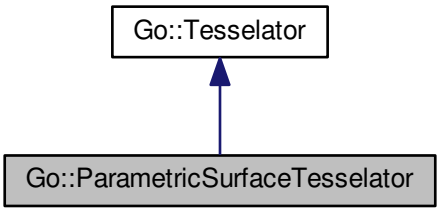
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/ParametricSurfacePropertySheet.h

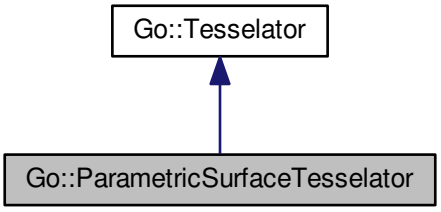
29.328 Go::ParametricSurfaceTesselator Class Reference

`#include <ParametricSurfaceTesselator.h>`

Inheritance diagram for Go::ParametricSurfaceTesselator:



Collaboration diagram for Go::ParametricSurfaceTesselator:



Public Member Functions

- ParametricSurfaceTesselator (const ParamSurface &surf)
- virtual ~ParametricSurfaceTesselator ()
- virtual void tesselate ()

  Perform tesselation.
- shared_ptr< GenericTriMesh > getMesh ()

  Fetch the resulting mesh.
- void changeRes (int n, int m)

  Change mesh size.
- void getRes (int &n, int &m)

  Fetch info about mesh size.

29.328.1 Detailed Description

ParametricSurfaceTesselator: create a mesh for a possibly trimmed surface with a suitable triangulation.

Definition at line 57 of file ParametricSurfaceTesselator.h.

29.328.2 Constructor & Destructor Documentation

29.328.2.1 Go::ParametricSurfaceTesselator::ParametricSurfaceTesselator (const ParamSurface & *surf*) [inline]

Constructor. Surface and mesh size are given. The mesh size relates to the underlying surface in the case of bounded surfaces.

Definition at line 62 of file ParametricSurfaceTesselator.h.

29.328.2.2 virtual Go::ParametricSurfaceTesselator::~ParametricSurfaceTesselator ( ) [virtual]

29.328.3 Member Function Documentation

29.328.3.1 void Go::ParametricSurfaceTesselator::changeRes (int *n*, int *m*)

Change mesh size.

29.328.3.2 shared_ptr<GenericTriMesh> Go::ParametricSurfaceTesselator::getMesh ( ) [inline]

Fetch the resulting mesh.

Definition at line 78 of file ParametricSurfaceTesselator.h.

29.328.3.3 void Go::ParametricSurfaceTesselator::getRes (int & *n*, int & *m*) [inline]

Fetch info about mesh size.

Definition at line 87 of file ParametricSurfaceTesselator.h.

29.328.3.4 virtual void Go::ParametricSurfaceTesselator::tesselate ( ) [virtual]

Perform tesselation.

Implements Go::Tesselator.

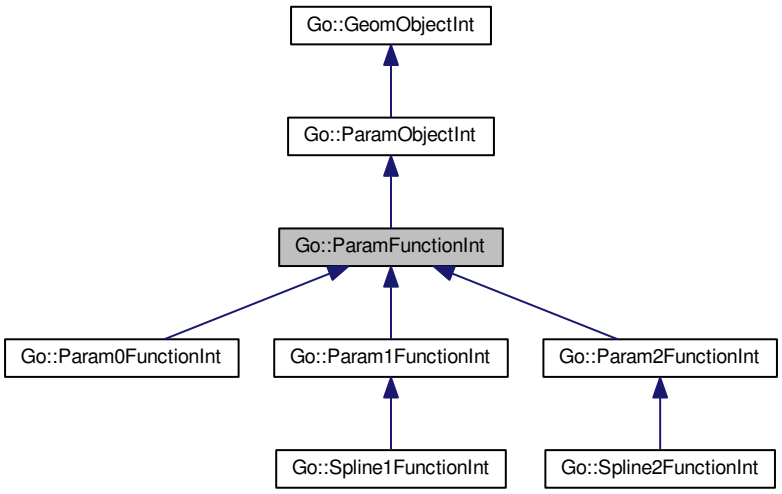
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/ParametricSurfaceTesselator.h

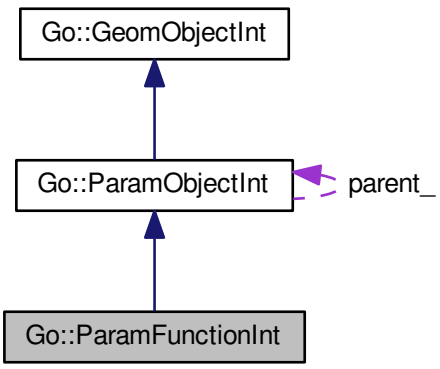
29.329 Go::ParamFunctionInt Class Reference

`#include <ParamFunctionInt.h>`

Inheritance diagram for Go::ParamFunctionInt:



Collaboration diagram for Go::ParamFunctionInt:



Public Member Functions

- virtual ~ParamFunctionInt ()

  Destructor.
- virtual Param0FunctionInt * getParam0FunctionInt ()

- virtual Param1FunctionInt * getParam1FunctionInt ()
- virtual Param2FunctionInt * getParam2FunctionInt ()
- virtual void subdivide (int pardir, double par, std::vector< shared_ptr< ParamFunctionInt > > &subdiv_objs, std::vector< shared_ptr< ParamFunctionInt > > &bd_objs)=0
- virtual bool monotone (Point &dir, double tol=1.0e-15) const =0
- virtual void getBoundaryObjects (std::vector< shared_ptr< BoundaryFunctionInt > > &bd_objs)=0
- virtual int getMeshSize (int dir)=0
- virtual double paramFromMesh (int dir, int idx)=0
- virtual std::vector< double >::iterator getMesh ()=0

  Return the geometric sample mesh for the parametric function.

Protected Attributes

- std::vector< shared_ptr< BoundaryFunctionInt > > boundary_obj_

29.329.1 Detailed Description

This class is a base class providing an interface to the parametric "intersection objects" with 1-dimensional range.

Definition at line 61 of file ParamFunctionInt.h.

29.329.2 Constructor & Destructor Documentation

29.329.2.1 virtual Go::ParamFunctionInt::~ParamFunctionInt ( ) [inline], [virtual]

Destructor.

Definition at line 64 of file ParamFunctionInt.h.

29.329.3 Member Function Documentation

29.329.3.1 virtual void Go::ParamFunctionInt::getBoundaryObjects (std::vector< shared_ptr< BoundaryFunctionInt > > & *bd_objs*) [pure virtual]

Return the boundary objects of this object.

Parameters

bd_objs	the boundary objects of this object.

Implemented in Go::Param2FunctionInt, Go::Param1FunctionInt, Go::Param0FunctionInt, and Go::Spline2FunctionInt.

29.329.3.2 virtual std::vector<double>::iterator Go::ParamFunctionInt::getMesh ( ) [pure virtual]

Return the geometric sample mesh for the parametric function.

Implemented in Go::Param2FunctionInt, Go::Param1FunctionInt, Go::Param0FunctionInt, and Go::Spline1↩FunctionInt.

29.329.3.3 virtual int Go::ParamFunctionInt::getMeshSize (int *dir*) [pure virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Implemented in Go::Param2FunctionInt, Go::Param1FunctionInt, Go::Param0FunctionInt, and Go::Spline1↩FunctionInt.

29.329.3.4 virtual Param0FunctionInt* Go::ParamFunctionInt::getParam0FunctionInt ( ) [inline], [virtual]

If the object is not of type Param0FunctionInt, return NULL, otherwise return the object.

Reimplemented in Go::Param0FunctionInt.

Definition at line 68 of file ParamFunctionInt.h.

29.329.3.5 virtual Param1FunctionInt* Go::ParamFunctionInt::getParam1FunctionInt ( ) [inline], [virtual]

If the object is not of type Param1FunctionInt, return NULL, otherwise return the object.

Reimplemented in Go::Param1FunctionInt.

Definition at line 73 of file ParamFunctionInt.h.

29.329.3.6 virtual Param2FunctionInt* Go::ParamFunctionInt::getParam2FunctionInt ( ) [inline], [virtual]

If the object is not of type Param2FunctionInt, return NULL, otherwise return the object.

Reimplemented in Go::Param2FunctionInt.

Definition at line 78 of file ParamFunctionInt.h.

29.329.3.7 virtual bool Go::ParamFunctionInt::monotone (Point & *dir*, double *tol* = 1.0e-15) const [pure virtual]

Returns true if the object is monotone in any direction.

Parameters

dir	the direction in which the object is monotone. Relevant only if object is monotone.

Implemented in Go::Param2FunctionInt, Go::Param1FunctionInt, Go::Param0FunctionInt, Go::Spline1FunctionInt, and Go::Spline2FunctionInt.

29.329.3.8 virtual double Go::ParamFunctionInt::paramFromMesh (int *dir,* int *idx*) [pure virtual]

Return the corresponding mesh parameter.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Implemented in Go::Param2FunctionInt, Go::Param1FunctionInt, Go::Param0FunctionInt, and Go::Spline1FunctionInt.

29.329.3.9 virtual void Go::ParamFunctionInt::subdivide (int *pardir,* double *par,* std::vector< shared_ptr< ParamFunctionInt > > & *subdiv_objs,* std::vector< shared_ptr< ParamFunctionInt > > & *bd_objs*) [pure virtual]

Subdivide the object in the specified parameter direction and parameter value.

Parameters

pardir	direction in which to subdive. Indexing starts at 0.
par	parameter in which to subdivide.
subdiv_objs	The subparts of this object. Of the same geometric dimension as this object.
bd_objs	the boundaries between the returned *subdiv_objs*. Of geometric dimension 1 less than this object.

Implemented in Go::Param2FunctionInt, Go::Param1FunctionInt, and Go::Param0FunctionInt.

29.329.4 Member Data Documentation

29.329.4.1 std::vector<shared_ptr<BoundaryFunctionInt> > Go::ParamFunctionInt::boundary_obj_ [protected]

Definition at line 125 of file ParamFunctionInt.h.

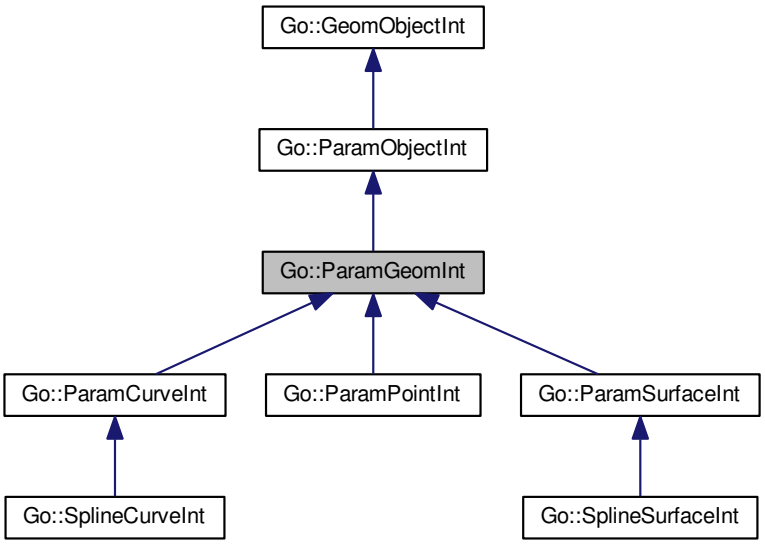
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/ParamFunctionInt.h

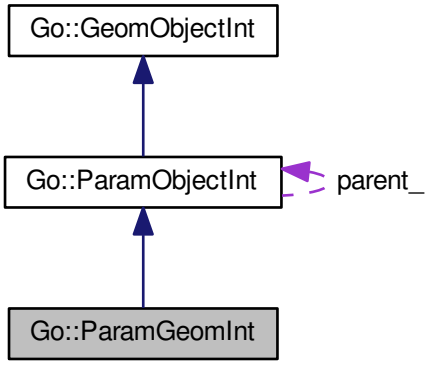
29.330 Go::ParamGeomInt Class Reference

`#include <ParamGeomInt.h>`

Inheritance diagram for Go::ParamGeomInt:



Collaboration diagram for Go::ParamGeomInt:



Public Member Functions

- ParamGeomInt (ParamGeomInt *parent=0)

- virtual ~ParamGeomInt ()

  Destructor.
- virtual int dimension () const =0

  The dimension of the geometric space.
- virtual int checkPeriodicity (int pardir) const
- virtual void subdivide (int pardir, double par, std::vector< shared_ptr< ParamGeomInt > > &subdiv_objs, std::vector< shared_ptr< ParamGeomInt > > &bd_objs)=0
- virtual CompositeBox compositeBox () const =0
- virtual DirectionCone directionCone () const =0
- bool coneLargerThanPi ()

  Check if the associated direction cone has an angle larger than pi.
- virtual DirectionCone reducedDirectionCone (bool reduce_at_bd[4], double epsge) const
- virtual void getBoundaryObjects (std::vector< shared_ptr< BoundaryGeomInt > > &bd_objs)=0
- virtual int getMeshSize (int dir)=0
- virtual double paramFromMesh (int dir, int idx)=0
- virtual std::vector< double >::iterator getMesh ()=0

  Return the geometric sample mesh for the parametric function.
- int nmbBdObj () const
- BoundaryGeomInt * getBoundaryObject (int bd_idx) const
- virtual int isDegenerate (double epsge, int dir)
- virtual bool isDegenerate (double epsge, int dir, double *par)=0
- virtual bool isLinear (double epsge)

  Check the linearity of the object.
- virtual bool isSpline ()=0
- virtual double getOptimizedConeAngle (Point &axis1, Point &axis2)=0

Protected Attributes

- std::vector< shared_ptr< BoundaryGeomInt > > boundary_obj_

29.330.1 Detailed Description

This class is a base class providing an interface to the parametric "intersection objects".

Definition at line 62 of file ParamGeomInt.h.

29.330.2 Constructor & Destructor Documentation

29.330.2.1 Go::ParamGeomInt::ParamGeomInt (ParamGeomInt * *parent* = 0) [inline]

Constructor

Parameters

parent	the parent to this intersection object.

Definition at line 66 of file ParamGeomInt.h.

29.330.2.2 virtual Go::ParamGeomInt::~ParamGeomInt ( ) [inline], [virtual]

Destructor.

Definition at line 69 of file ParamGeomInt.h.

29.330.3 Member Function Documentation

29.330.3.1 virtual int Go::ParamGeomInt::checkPeriodicity (int *pardir*) const [inline], [virtual]

Check if the object is periodic. Analyze periodicity of curve based on number of repeating knots and control points. The return value is -1 if the curve ends are disjoint, otherwise k if cv is C^k continuous. These are sufficient but not necessary conditions for periodicity, so it is possible that a higher degree of periodicity exists. Should not be called on this layer, should be overruled by inherited class.

Parameters

pardir	the parameter direction in question.

Returns

-1 if the curve ends are disjoint, or k if the curve is proven to be C^k continuous.

Reimplemented in Go::ParamSurfaceInt, Go::ParamCurveInt, Go::SplineSurfaceInt, and Go::SplineCurveInt.

Definition at line 84 of file ParamGeomInt.h.

29.330.3.2 virtual CompositeBox Go::ParamGeomInt::compositeBox ( ) const [pure virtual]

Return the CompositeBox for the parametric object.

Returns

The compositeBox for the parametric object.

Implements Go::ParamObjectInt.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, and Go::ParamPointInt.

29.330.3.3 bool Go::ParamGeomInt::coneLargerThanPi ( )

Check if the associated direction cone has an angle larger than pi.

29.330.3.4 virtual int Go::ParamGeomInt::dimension ( ) const [pure virtual]

The dimension of the geometric space.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, and Go::ParamPointInt.

29.330.3.5 virtual DirectionCone Go::ParamGeomInt::directionCone ( ) const [pure virtual]

A cone which contains all normals of the object.

Returns

A cone which contains all normals of the object.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, Go::ParamPointInt, and Go::SplineSurfaceInt.

29.330.3.6 BoundaryGeomInt* Go::ParamGeomInt::getBoundaryObject (int *bd_idx*) const [inline]

Return the specified boundary object.

Parameters

bd_idx	index of the boundary object.

Returns

The boundary object.

Definition at line 150 of file ParamGeomInt.h.

29.330.3.7 virtual void Go::ParamGeomInt::getBoundaryObjects (std::vector< shared_ptr< BoundaryGeomInt > > & *bd_objs*) [pure virtual]

Return the boundary objects of this object.

Parameters

bd_objs	the boundary objects of this object.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, Go::ParamPointInt, and Go::SplineSurfaceInt.

29.330.3.8 virtual std::vector<double>::iterator Go::ParamGeomInt::getMesh ( ) [pure virtual]

Return the geometric sample mesh for the parametric function.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, Go::ParamPointInt, Go::SplineSurfaceInt, and Go::SplineCurveInt.

29.330.3.9 virtual int Go::ParamGeomInt::getMeshSize (int *dir*) [pure virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, Go::ParamPointInt, Go::SplineSurfaceInt, and Go::SplineCurveInt.

29.330.3.10 virtual double Go::ParamGeomInt::getOptimizedConeAngle (Point & *axis1*, Point & *axis2*) [pure virtual]

We try to treat problems which will never result in a simple case by shrinking the domain slightly, resulting in smaller cones. This is useful for scenarios where the normals are parallell in a boundary point.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, Go::ParamPointInt, Go::SplineSurfaceInt, and Go::SplineCurveInt.

29.330.3.11 virtual int Go::ParamGeomInt::isDegenerate (double *epsge*, int *dir*) [inline], [virtual]

Return true if the object is degenerate in the specified direction. Specialized for surface

Parameters

epsge	the geometric tolerance defining degeneracy.
dir	the parameter direction in question.

Reimplemented in Go::ParamSurfaceInt.

Definition at line 160 of file ParamGeomInt.h.

29.330.3.12 virtual bool Go::ParamGeomInt::isDegenerate (double *epsge*, int *dir*, double * *par*) [pure virtual]

Return true if the object is degenerate in the specified direction and parameter.

Parameters

epsge	the geometric tolerance defining degeneracy.
dir	the parameter direction in question.
par	the parameter in which to evaluate. Size of array should be equal to numParams().

Reimplemented from Go::ParamObjectInt.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, and Go::ParamPointInt.

29.330.3.13 virtual bool Go::ParamGeomInt::isLinear (double *epsge*) [virtual]

Check the linearity of the object.

29.330.3.14 virtual bool Go::ParamGeomInt::isSpline ( ) [pure virtual]

Return whether or not the object is a spline.

Returns

True if the object is a spline.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, Go::ParamPointInt, Go::SplineSurfaceInt, and Go::SplineCurveInt.

29.330.3.15 int Go::ParamGeomInt::nmbBdObj ( ) const [inline]

Return the number of boundary objects.

Returns

The number of boundary objects.

Definition at line 144 of file ParamGeomInt.h.

29.330.3.16 virtual double Go::ParamGeomInt::paramFromMesh (int *dir*, int *idx*) [pure virtual]

Return the corresponding mesh parameter.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, Go::ParamPointInt, Go::SplineSurfaceInt, and Go::SplineCurveInt.

29.330.3.17 virtual DirectionCone Go::ParamGeomInt::reducedDirectionCone (bool *reduce_at_bd[4]*, double *epsge*) const [virtual]

Try to make a smaller direction cone.

Parameters

reduce_at_bd	indicates which boundaries the reduction attempt should be made
epsge	the geometric tolerancedefining degeneracy

Returns

A direction cone. This is either the same cone or a smaller one.

Reimplemented in Go::SplineSurfaceInt.

29.330.3.18 virtual void Go::ParamGeomInt::subdivide (int *pardir*, double *par*, std::vector< shared_ptr< ParamGeomInt > > & *subdiv_objs*, std::vector< shared_ptr< ParamGeomInt > > & *bd_objs*) [pure virtual]

Subdivide the object in the specified parameter direction and parameter value.

Parameters

pardir	direction in which to subdive. Indexing starts at 0.
par	parameter in which to subdivide.
subdiv_objs	The subparts of this object. Of the same geometric dimension as this object.
bd_objs	the boundaries between the returned *subdiv_objs*. Of geometric dimension 1 less than this object.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, and Go::ParamPointInt.

29.330.4 Member Data Documentation

29.330.4.1 std::vector<shared_ptr<BoundaryGeomInt> > Go::ParamGeomInt::boundary_obj_ [protected]

Definition at line 185 of file ParamGeomInt.h.

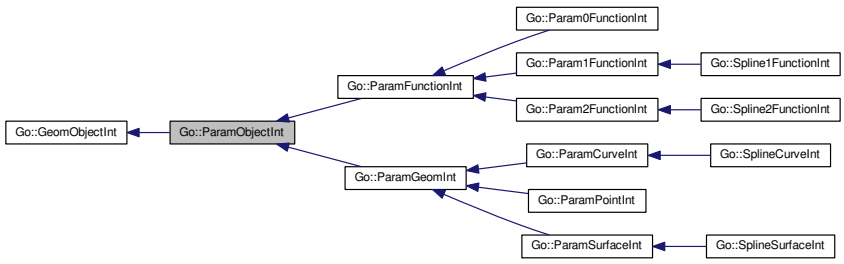
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/ParamGeomInt.h

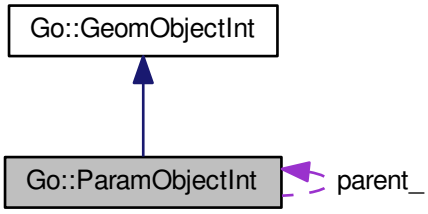
29.331 Go::ParamObjectInt Class Reference

`#include <ParamObjectInt.h>`

Inheritance diagram for Go::ParamObjectInt:



Collaboration diagram for Go::ParamObjectInt:



Public Member Functions

- ParamObjectInt (ParamObjectInt ∗parent=0)
- virtual ∼ParamObjectInt ()

  Destructor.
- virtual ParamPointInt ∗ getParamPointInt ()
- virtual ParamCurveInt ∗ getParamCurveInt ()
- virtual ParamSurfaceInt ∗ getParamSurfaceInt ()
- virtual void point (Point &pt, const double ∗tpar) const =0
- virtual void point (std::vector< Point > &pt, const double ∗tpar, int derivs, const bool ∗from_right=0, double resolution=1.0e-12) const =0
- virtual int numParams () const =0

  The number of parameters in the object.
- virtual void getLengthAndWiggle (double ∗length, double ∗wiggle)=0
- virtual bool hasInnerKnots (int pardir) const =0
- virtual bool hasCriticalVals (int pardir) const =0
- virtual void setCriticalVal (int pardir, double par)

  Set info about subdivision value.
- virtual bool hasCriticalValsOrKnots (int pardir) const =0
- virtual bool canDivide (int pardir)=0

- virtual bool canDivideTinyTriang (int pardir)
- virtual std::vector< double > getCriticalVals (int pardir) const =0
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const =0
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const =0
- virtual double startParam (int pardir) const =0
- virtual double endParam (int pardir) const =0
- virtual bool isDegenerate (double epsge, int dir, double *par)
- virtual bool boundaryPoint (const double *par, double eps) const =0
- void setParent (ParamObjectInt *parent)
- ParamObjectInt * getParent () const

  Return the parent of this object.
- virtual CompositeBox compositeBox () const =0

  Return the CompositeBox for the parametric object.
- const ParamObjectInt * getSameTypeAncestor () const
- virtual bool inCorner (const double *par, double epspar) const

Protected Attributes

- ParamObjectInt * parent_

29.331.1 Detailed Description

This class is a base class providing an interface to the "intersection objects". The object is parametric.

Definition at line 61 of file ParamObjectInt.h.

29.331.2 Constructor & Destructor Documentation

29.331.2.1 Go::ParamObjectInt::ParamObjectInt (ParamObjectInt * *parent* = 0) [inline]

Constructor.

Parameters

parent	is a parametric object for which this object constitues only a subpart (0 if there is no parent).

Definition at line 66 of file ParamObjectInt.h.

29.331.2.2 virtual Go::ParamObjectInt::~ParamObjectInt ( ) [inline], [virtual]

Destructor.

Definition at line 69 of file ParamObjectInt.h.

29.331.3 Member Function Documentation

29.331.3.1 virtual bool Go::ParamObjectInt::boundaryPoint (const double * *par*, double *eps*) const [pure virtual]

Return true if the specified point lies within eps from the boundary.

Parameters

par	the parameter in which to evaluate. Size of array should be equal to numParams().
eps	the tolerance defining boundary neighbourhood.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::ParamPointInt, and Go::Param0FunctionInt.

29.331.3.2 virtual bool Go::ParamObjectInt::canDivide (int *pardir*) [pure virtual]

Return true if we are allowed to divide in the specified parameter direction.

Parameters

pardir	the parameter direction in question.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::Param0FunctionInt, and Go::ParamPointInt.

29.331.3.3 virtual bool Go::ParamObjectInt::canDivideTinyTriang (int *pardir*) [inline], [virtual]

Reimplemented in Go::ParamSurfaceInt.

Definition at line 153 of file ParamObjectInt.h.

29.331.3.4 virtual CompositeBox Go::ParamObjectInt::compositeBox ( ) const [pure virtual]

Return the CompositeBox for the parametric object.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::Param1FunctionInt, Go::ParamCurveInt, Go::ParamPointInt, Go::Param0FunctionInt, and Go::ParamGeomInt.

29.331.3.5 virtual double Go::ParamObjectInt::endParam (int *pardir*) const [pure virtual]

Return the end parameter in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::ParamPointInt, Go::Param0FunctionInt, and Go::Spline2FunctionInt.

29.331.3.6 virtual std::vector<double> Go::ParamObjectInt::getCriticalVals (int *pardir*) const [pure virtual]

Return the critical parameter values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::ParamPointInt, and Go::Param0FunctionInt.

29.331.3.7 virtual std::vector<double> Go::ParamObjectInt::getCriticalValsAndKnots (int *pardir*) const [pure virtual]

Return the critical parameter values and inner knots for object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::ParamPointInt, Go::Param0FunctionInt, Go::SplineSurfaceInt, Go::Spline1FunctionInt, Go::SplineCurveInt, and Go::Spline2FunctionInt.

29.331.3.8 virtual std::vector<double> Go::ParamObjectInt::getInnerKnotVals (int *pardir*, bool *sort* = false) const [pure virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::ParamPointInt, Go::Param0FunctionInt, Go::SplineSurfaceInt, Go::Spline1FunctionInt, Go::SplineCurveInt, and Go::Spline2FunctionInt.

29.331.3.9 virtual void Go::ParamObjectInt::getLengthAndWiggle (double * *length*, double * *wiggle*) [pure virtual]

Return an estimate on the size and wiggle of the object.

Parameters

length	the approximative length of the object in the corresponding parameter directions. The size of the array should be equal to numParams().
wiggle	a scalar representing the wiggle of the object in the corresponding parameter directions. The size of the array should be equal to numParams().

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::ParamPointInt, and Go::Param0FunctionInt.

29.331.3.10 virtual ParamCurveInt* Go::ParamObjectInt::getParamCurveInt ( ) [inline], [virtual]

Return pointer to a parametric intersection curve.

Returns

Pointer to a parametric intersection curve. If that is not the class type for this object a NULL pointer is returned.

Reimplemented in Go::ParamCurveInt.

Definition at line 80 of file ParamObjectInt.h.

29.331.3.11 virtual ParamPointInt* Go::ParamObjectInt::getParamPointInt ( ) [inline], [virtual]

Return pointer to a parametric intersection point.

Returns

Pointer to a parametric intersection point. If that is not the class type for this object a NULL pointer is returned.

Reimplemented in Go::ParamPointInt.

Definition at line 74 of file ParamObjectInt.h.

29.331.3.12 virtual ParamSurfaceInt* Go::ParamObjectInt::getParamSurfaceInt ( ) [inline], [virtual]

Return pointer to a parametric intersection surface.

Returns

Pointer to a parametric intersection surface. If that is not the class type for this object a NULL pointer is returned.

Reimplemented in Go::ParamCurveInt, and Go::ParamSurfaceInt.

Definition at line 87 of file ParamObjectInt.h.

29.331.3.13 ParamObjectInt* Go::ParamObjectInt::getParent ( ) const [inline]

Return the parent of this object.

Definition at line 208 of file ParamObjectInt.h.

29.331.3.14 const ParamObjectInt* Go::ParamObjectInt::getSameTypeAncestor ( ) const [inline]

Return an ancestor of the same type. If the object has no parent, or if its parent has a higher number of parameters, return a pointer to itself. Else, call this function recursively on the parent.

Definition at line 218 of file ParamObjectInt.h.

29.331.3.15 virtual bool Go::ParamObjectInt::hasCriticalVals (int *pardir*) const [pure virtual]

Return true if the object has any critical parameter values in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::ParamPointInt, and Go::Param0FunctionInt.

29.331.3.16 virtual bool Go::ParamObjectInt::hasCriticalValsOrKnots (int *pardir*) const [pure virtual]

Return true if the object has any critical parameter values or inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::ParamPointInt, Go::Param0FunctionInt, Go::SplineSurfaceInt, Go::Spline1FunctionInt, Go::SplineCurveInt, and Go::Spline2FunctionInt.

29.331.3.17 virtual bool Go::ParamObjectInt::hasInnerKnots (int *pardir*) const [pure virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::ParamPointInt, Go::Param0FunctionInt, Go::SplineSurfaceInt, Go::Spline1FunctionInt, Go::SplineCurveInt, and

Go::Spline2FunctionInt.

29.331.3.18 virtual bool Go::ParamObjectInt::inCorner (const double * *par*, double *epspar*) const [inline], [virtual]

Check if parameter point lies close to a corner of the parameter domain.

Parameters

par	the input parameter point.
epspar	the parametric tolerance defining the neighbourhood.

Reimplemented in Go::ParamSurfaceInt.

Definition at line 232 of file ParamObjectInt.h.

29.331.3.19 virtual bool Go::ParamObjectInt::isDegenerate (double *epsge*, int *dir*, double * *par*) [inline], [virtual]

Return true if the object is degenerate in the specified direction and parameter.

Parameters

epsge	the geometric tolerance defining degeneracy.
dir	the parameter direction in question.
par	the parameter in which to evaluate. Size of array should be equal to numParams().

Reimplemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::ParamPointInt, and Go::ParamGeomInt.

Definition at line 192 of file ParamObjectInt.h.

29.331.3.20 virtual int Go::ParamObjectInt::numParams ( ) const [pure virtual]

The number of parameters in the object.

Implemented in Go::ParamSurfaceInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::Param2FunctionInt, Go::↩ ParamPointInt, and Go::Param0FunctionInt.

29.331.3.21 virtual void Go::ParamObjectInt::point (Point & *pt*, const double * *tpar*) const [pure virtual]

Evaluate the object in the input parameter.

Parameters

pt	the Point to be returned.
tpar	the parameter in which to evaluate. The size of the array should be equal to numParams().

Implemented in Go::Param2FunctionInt, Go::Param1FunctionInt, Go::ParamPointInt, Go::ParamSurfaceInt, Go::ParamCurveInt, and Go::Param0FunctionInt.

29.331.3.22 virtual void Go::ParamObjectInt::point (std::vector< Point > & *pt*, const double * *tpar*, int *derivs*, const bool * *from_right* = 0, double *resolution* = 1.0e-12) const [pure virtual]

Evaluate the object in the input parameter, with the specified number of derivatives.

Parameters

pt	the Point to be returned.
tpar	the parameter in which to evaluate. The size of the array should be equal to numParams().
derivs	the number of derivatives to calculate.
from_right	if true the evaluation is to be performed from the right of the parameter value.
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar: knot values in case of spline objects).

Implemented in Go::Param1FunctionInt, Go::Param2FunctionInt, Go::ParamPointInt, Go::ParamSurfaceInt, Go::ParamCurveInt, and Go::Param0FunctionInt.

29.331.3.23 virtual void Go::ParamObjectInt::setCriticalVal (int *pardir*, double *par*) [inline], [virtual]

Set info about subdivision value.

Reimplemented in Go::ParamCurveInt.

Definition at line 139 of file ParamObjectInt.h.

29.331.3.24 void Go::ParamObjectInt::setParent (ParamObjectInt * *parent*) [inline]

Set the parent of this object.

Parameters

parent	the parent of this object.

Definition at line 204 of file ParamObjectInt.h.

29.331.3.25 virtual double Go::ParamObjectInt::startParam (int *pardir*) const [pure virtual]

Return the start parameter value in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implemented in Go::ParamSurfaceInt, Go::Param2FunctionInt, Go::ParamCurveInt, Go::Param1FunctionInt, Go::↩ ParamPointInt, Go::Param0FunctionInt, and Go::Spline2FunctionInt.

29.331.4 Member Data Documentation

29.331.4.1 ParamObjectInt* Go::ParamObjectInt::parent_ [protected]

Definition at line 239 of file ParamObjectInt.h.

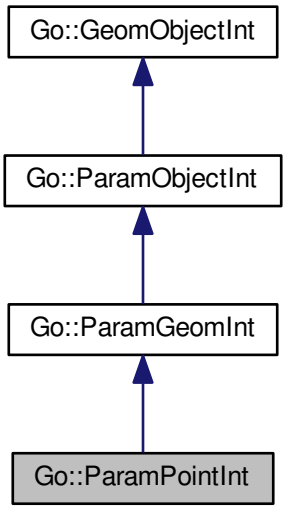
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/ParamObjectInt.h

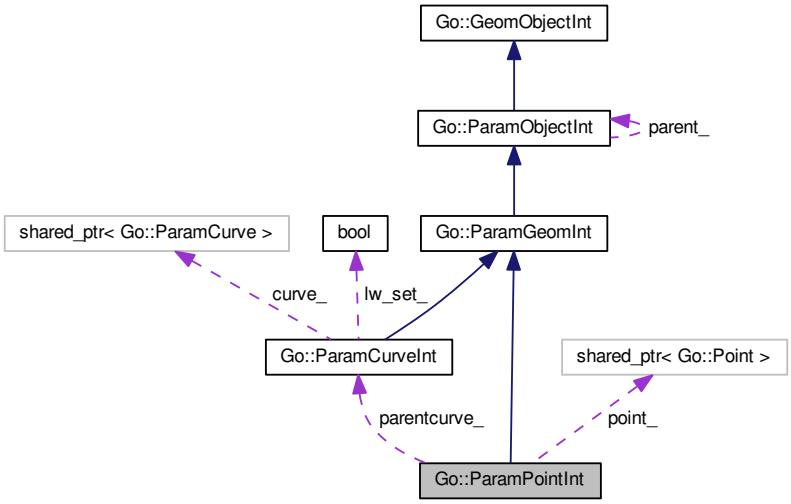
29.332 Go::ParamPointInt Class Reference

`#include <ParamPointInt.h>`

Inheritance diagram for Go::ParamPointInt:



Collaboration diagram for Go::ParamPointInt:



Public Member Functions

- ParamPointInt (shared_ptr< Point > point, ParamGeomInt *parent=0)
- virtual ~ParamPointInt ()

  Destructor.
- virtual void point (Point &pt, const double *tpar) const
- virtual void point (std::vector< Point > &pt, const double *tpar, int derivs, const bool *from_right=0, double resolution=1.0e-12) const
- virtual ParamPointInt * getParamPointInt ()
- virtual int numParams () const

  The number of parameters in the object.
- virtual void getLengthAndWiggle (double *length, double *wiggle)
- virtual bool hasInnerKnots (int pardir) const
- virtual bool hasCriticalVals (int pardir) const
- virtual bool hasCriticalValsOrKnots (int pardir) const
- virtual bool canDivide (int pardir)
- virtual std::vector< double > getCriticalVals (int pardir) const
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const
- virtual int getMeshSize (int dir)
- virtual double paramFromMesh (int dir, int idx)
- virtual std::vector< double >::iterator getMesh ()

  Return the geometric sample mesh for the parametric function.
- virtual double startParam (int pardir) const
- virtual double endParam (int pardir) const
- virtual bool boundaryPoint (const double *par, double eps) const
- virtual void subdivide (int pardir, double par, std::vector< shared_ptr< ParamGeomInt > > &subdiv_objs, std::vector< shared_ptr< ParamGeomInt > > &bd_objs)
- virtual CompositeBox compositeBox () const
- virtual DirectionCone directionCone () const

- virtual void getBoundaryObjects (std::vector< shared_ptr< BoundaryGeomInt > > &bd_objs)
- virtual int dimension () const

  The dimension of the geometric space.
- virtual bool isDegenerate (double epsge, int dir, double *par)
- virtual bool isSpline ()
- virtual double getOptimizedConeAngle (Point &axis1, Point &axis2)
- RotatedBox getRotatedBox (std::vector< Point > &axis) const

Protected Attributes

- shared_ptr< Point > point_
- int dim_
- ParamCurveInt * parentcurve_
- std::vector< double > coords_

29.332.1 Detailed Description

Class representing the "intersection object" of a parametric curve.

Definition at line 57 of file ParamPointInt.h.

29.332.2 Constructor & Destructor Documentation

29.332.2.1 Go::ParamPointInt::ParamPointInt (shared_ptr< Point > *point*, ParamGeomInt * *parent* = 0) [explicit]

Constructor.

Parameters

point	the point defining the intersection object.
parent	the parent object to this object. Can be either a curve or a surface.

29.332.2.2 virtual Go::ParamPointInt::~ParamPointInt ( ) [inline], [virtual]

Destructor.

Definition at line 68 of file ParamPointInt.h.

29.332.3 Member Function Documentation

29.332.3.1 virtual bool Go::ParamPointInt::boundaryPoint (const double * *par*, double *eps*) const [inline], [virtual]

Return true if the specified point lies within eps from the boundary.

Parameters

par	the parameter in which to evaluate. Size of array should be equal to numParams().
eps	the tolerance defining boundary neighbourhood.

Implements Go::ParamObjectInt.

Definition at line 219 of file ParamPointInt.h.

29.332.3.2 virtual bool Go::ParamPointInt::canDivide (int *pardir*) [inline], [virtual]

Return true if we are allowed to divide in the specified parameter direction.

Parameters

pardir	the parameter direction in question.

Implements Go::ParamObjectInt.

Definition at line 148 of file ParamPointInt.h.

29.332.3.3 virtual CompositeBox Go::ParamPointInt::compositeBox ( ) const [virtual]

Create the CompositeBox for the parametric object.

Returns

The CompositeBox for the parametric object.

Implements Go::ParamGeomInt.

29.332.3.4 virtual int Go::ParamPointInt::dimension ( ) const [inline], [virtual]

The dimension of the geometric space.

Implements Go::ParamGeomInt.

Definition at line 251 of file ParamPointInt.h.

29.332.3.5 virtual DirectionCone Go::ParamPointInt::directionCone ( ) const [virtual]

A cone which contains all normals of the object. As a normal is not defined for a point, the zero vector is returned.

Returns

A cone which contains all normals of the object.

Implements Go::ParamGeomInt.

29.332.3.6 virtual double Go::ParamPointInt::endParam (int *pardir*) const [inline], [virtual]

Return the end parameter in the specified direction. Does not apply to a point.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 211 of file ParamPointInt.h.

29.332.3.7 virtual void Go::ParamPointInt::getBoundaryObjects (std::vector< shared_ptr< BoundaryGeomInt > > & *bd_objs*) [virtual]

Return the boundary objects of this object.

Parameters

bd_objs	the boundary objects of this object.

Implements Go::ParamGeomInt.

29.332.3.8 virtual std::vector<double> Go::ParamPointInt::getCriticalVals (int *pardir*) const [inline], [virtual]

Return the critical parameter values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 154 of file ParamPointInt.h.

29.332.3.9 virtual std::vector<double> Go::ParamPointInt::getCriticalValsAndKnots (int *pardir*) const [inline], [virtual]

Return the critical parameter values and inner knots for object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 175 of file ParamPointInt.h.

29.332.3.10 virtual std::vector<double> Go::ParamPointInt::getInnerKnotVals (int *pardir*, bool *sort* = false) const [inline], [virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Implements Go::ParamObjectInt.

Definition at line 164 of file ParamPointInt.h.

29.332.3.11 virtual void Go::ParamPointInt::getLengthAndWiggle (double * *length*, double * *wiggle*) [inline], [virtual]

Return an estimate on the size and wiggle of the object. Does not apply to a point.

Parameters

length	the approximative length of the object in the corresponding parameter directions. The size of the array should be equal to numParams().
wiggle	a scalar representing the wiggle of the object in the corresponding parameter directions. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

Definition at line 122 of file ParamPointInt.h.

29.332.3.12 virtual std::vector<double>::iterator Go::ParamPointInt::getMesh ( ) [inline], [virtual]

Return the geometric sample mesh for the parametric function.

Implements Go::ParamGeomInt.

Definition at line 198 of file ParamPointInt.h.

29.332.3.13 virtual int Go::ParamPointInt::getMeshSize (int *dir*) [inline], [virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamGeomInt.

Definition at line 185 of file ParamPointInt.h.

29.332.3.14 virtual double Go::ParamPointInt::getOptimizedConeAngle (Point & *axis1*, Point & *axis2*) [inline], [virtual]

We try to treat problems which will never result in a simple case by shrinking the domain slightly, resulting in smaller cones. This is useful for scenarios where the normals are parallell in a boundary point.

Parameters

axis1	first vector defining a projection plane
axis2	second vector defining a projection plane

Returns

The optimized cone angle

Implements Go::ParamGeomInt.

Definition at line 275 of file ParamPointInt.h.

29.332.3.15 virtual ParamPointInt* Go::ParamPointInt::getParamPointInt ( ) [inline], [virtual]

Return a pointer to this object.

Returns

Pointer to this object.

Reimplemented from Go::ParamObjectInt.

Definition at line 106 of file ParamPointInt.h.

29.332.3.16 RotatedBox Go::ParamPointInt::getRotatedBox (std::vector< Point > & *axis*) const

Create a box containing the geometric sample mesh in the input coordinate system.

Parameters

axis	the axis defining the coordinate system. The size of vector axis is 2, the last point is given as the cross product axis[0]axis[1].

29.332.3.17 virtual bool Go::ParamPointInt::hasCriticalVals (int *pardir*) const [inline], [virtual]

Return true if the object has any critical parameter values in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 135 of file ParamPointInt.h.

29.332.3.18 virtual bool Go::ParamPointInt::hasCriticalValsOrKnots (int *pardir*) const [inline], [virtual]

Return true if the object has any critical parameter values or inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 142 of file ParamPointInt.h.

29.332.3.19 virtual bool Go::ParamPointInt::hasInnerKnots (int *pardir*) const [inline], [virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 128 of file ParamPointInt.h.

29.332.3.20 virtual bool Go::ParamPointInt::isDegenerate (double *epsge*, int *dir*, double * *par*) [inline], [virtual]

Verify whether or not the object is degenerate in the specified direction and parameter.

Parameters

epsge	the geometric tolerance defining degeneracy.
dir	the parameter direction in question.
par	the parameter in which to evaluate. Size of array should be equal to numParams().

Implements Go::ParamGeomInt.

Definition at line 260 of file ParamPointInt.h.

29.332.3.21 virtual bool Go::ParamPointInt::isSpline ( ) [inline], [virtual]

Verify whether the object is a spline.

Returns

True if the object is a spline.

Implements Go::ParamGeomInt.

Definition at line 265 of file ParamPointInt.h.

29.332.3.22 virtual int Go::ParamPointInt::numParams ( ) const [inline], [virtual]

The number of parameters in the object.

Implements Go::ParamObjectInt.

Definition at line 110 of file ParamPointInt.h.

29.332.3.23 virtual double Go::ParamPointInt::paramFromMesh (int *dir*, int *idx*) [inline], [virtual]

Return the corresponding mesh parameter. Does not apply to a point.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Implements Go::ParamGeomInt.

Definition at line 194 of file ParamPointInt.h.

29.332.3.24 virtual void Go::ParamPointInt::point (Point & *pt*, const double * *tpar*) const [inline], [virtual]

Evaluate the object in the input parameter.

Parameters

pt	the Point to be returned.
tpar	the parameter in which to evaluate. The parameter is not used as the parameter domain of a point is of dimension 0.

Implements Go::ParamObjectInt.

Definition at line 75 of file ParamPointInt.h.

29.332.3.25 virtual void Go::ParamPointInt::point (std::vector< Point > & *pt,* const double * *tpar,* int *derivs,* const bool * *from_right* = 0, double *resolution* = 1.0e-12) const [inline], [virtual]

Evaluate the object in the input parameter, with the specified number of derivatives.

Parameters

pt	the Point to be returned.
tpar	the parameter in which to evaluate. The parameter is not used as the parameter domain of a point is of dimension 0.
derivs	the number of derivatives to calculate. Should be 0.
from_right	if true the evaluation is to be performed from the right side of the parameter value. Not used.
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar: knot values in case of spline objects. Not used.

Implements Go::ParamObjectInt.

Definition at line 92 of file ParamPointInt.h.

29.332.3.26 virtual double Go::ParamPointInt::startParam (int *pardir*) const [inline], [virtual]

Return the start parameter value in the specified direction. Does not apply to a point.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Definition at line 204 of file ParamPointInt.h.

29.332.3.27 virtual void Go::ParamPointInt::subdivide (int *pardir,* double *par,* std::vector< shared_ptr< ParamGeomInt > > & *subdiv_objs,* std::vector< shared_ptr< ParamGeomInt > > & *bd_objs*) [inline], [virtual]

Subdivide the object in the specified parameter direction and parameter value. Does not apply to a point.

Parameters

pardir	direction in which to subdive. Indexing starts at 0.
par	parameter in which to subdivide.
subdiv_objs	The subparts of this object. Of the same geometric dimension as this object.
bd_objs	the boundaries between the returned *subdiv_objs*. Of geometric dimension 1 less than this object.

Implements Go::ParamGeomInt.

Definition at line 232 of file ParamPointInt.h.

29.332.4 Member Data Documentation

29.332.4.1 std::vector<double> Go::ParamPointInt::coords_ [mutable], [protected]

Definition at line 294 of file ParamPointInt.h.

29.332.4.2 int Go::ParamPointInt::dim_ [protected]

Definition at line 290 of file ParamPointInt.h.

29.332.4.3 ParamCurveInt* Go::ParamPointInt::parentcurve_ [protected]

Definition at line 292 of file ParamPointInt.h.

29.332.4.4 shared_ptr<Point> Go::ParamPointInt::point_ [protected]

Definition at line 288 of file ParamPointInt.h.

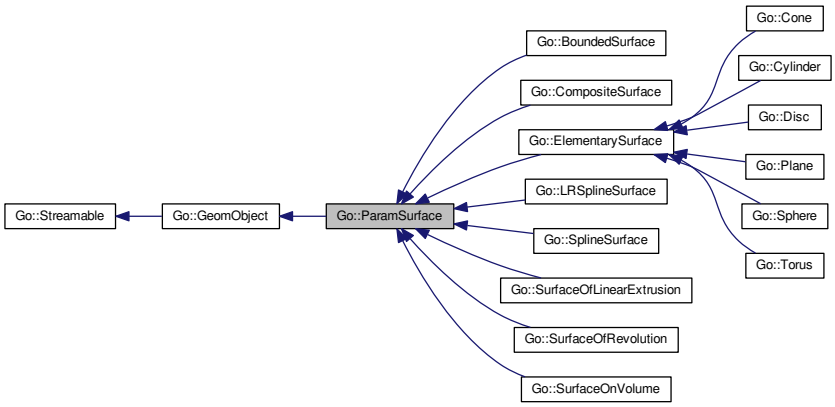
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/ParamPointInt.h

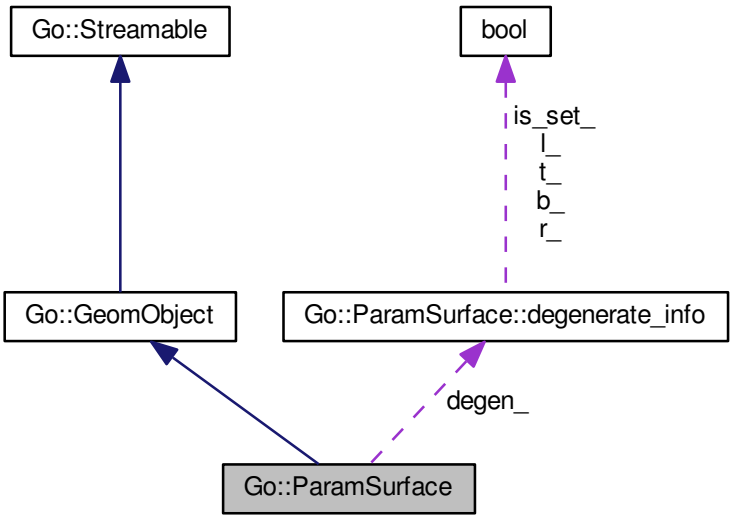
29.333 Go::ParamSurface Class Reference

`#include <ParamSurface.h>`

Inheritance diagram for Go::ParamSurface:



Collaboration diagram for Go::ParamSurface:



Classes

- struct degenerate_info

  Degeneracy information regarding one boundary surface of the current surface.

Public Member Functions

- virtual ~ParamSurface ()

  Virtual destructor, enables safe inheritance.
- virtual ParamSurface * clone () const =0
- virtual SplineSurface * asSplineSurface ()

  Return the spline surface represented by this surface, if any.
- virtual const Domain & parameterDomain () const =0
- virtual RectDomain containingDomain () const =0
- virtual bool inDomain (double u, double v, double eps=1.0e-4) const =0

  Check if a parameter pair lies inside the domain of this surface.
- virtual int inDomain2 (double u, double v, double eps=1.0e-4) const =0
- virtual bool onBoundary (double u, double v, double eps=1.0e-4) const =0

  Check if a parameter pair lies at the boundary of this surface.
- virtual Point closestInDomain (double u, double v) const =0
- virtual void setParameterDomain (double u1, double u2, double v1, double v2)
- virtual CurveLoop outerBoundaryLoop (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const =0
- virtual std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EP↩ SILON) const =0
- virtual ParamSurface * mirrorSurface (const Point &pos, const Point &norm) const

  Mirror a surface around a specified plane.
- virtual DirectionCone normalCone () const =0

- virtual DirectionCone tangentCone (bool pardir_is_u) const =0
- virtual CompositeBox compositeBox () const
- virtual void point (Point &pt, double upar, double vpar) const =0
- virtual void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_from_right=true, double resolution=1.0e-12) const =0
- Point point (double upar, double vpar) const
- std::vector< Point > point (double upar, double vpar, int derivs) const
- virtual void normal (Point &n, double upar, double vpar) const =0
- virtual void evalGrid (int num_u, int num_v, double umin, double umax, double vmin, double vmax, std::vector< double > &points, double nodata_val=-9999) const
- virtual Point getInternalPoint (double &u, double &v) const
- virtual std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const =0
- virtual std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const =0
- virtual double nextSegmentVal (int dir, double par, bool forward, double tol) const =0
- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, int maxiter, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- void singularity (double &sing_u, double &sing_v, Point &sing_pt, double &sing_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- virtual void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const =0
- virtual void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const =0
- virtual void turnOrientation ()=0

  Turns the direction of the normal of the surface.
- virtual void reverseParameterDirection (bool direction_is_u)=0
- virtual void swapParameterDirection ()=0

  Swaps the two parameter directions.
- virtual double area (double tol) const =0
- virtual bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const =0

  Check for parallel and anti-parallel partial derivatives in surface corners.
- virtual void getCornerPoints (std::vector< std::pair< Point, Point > > &corners) const =0
- virtual void setIterator (IteratorType type)
- virtual bool isIsoTrimmed (double tol) const

  Check if the current surface is trimmed along constant parameter curves.
- virtual bool isSpline () const

  Check if the surface is of type spline.
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)
- virtual bool isPlanar (Point &normal, double tol)

  Check if the surface is planar.
- virtual bool isLinear (Point &dir1, Point &dir2, double tol)

  Check if the surface is linear in one or both parameter directions.
- void estimateSfSize (double &u_size, double &v_size, int u_nmb=5, int v_nmb=5) const

  Estimate the size of the surface in the two parameter directions.
- virtual int ElementOnBoundary (int elem_ix, double eps)
- virtual int ElementBoundaryStatus (int elem_ix, double eps)

Protected Member Functions

- ParamSurface ()
- void s1773 (const double ppoint[ ], double aepsge, double estart[ ], double eend[ ], double enext[ ], double gpos[ ], int maxiter, int ∗jstat) const
- void s1773_s9corr (double gd[ ], double acoef1, double acoef2, double astart1, double aend1, double astart2, double aend2) const
- void s1773_s9dir (double ∗cdist, double ∗cdiff1, double ∗cdiff2, double PS[ ], const double ∗eval1, std↩ ::vector< Point > eval2, double aepsge, int idim, int ∗jstat) const

Protected Attributes

- degenerate_info degen_
- IteratorType iterator_

Additional Inherited Members

29.333.1 Detailed Description

Base class for parametric surfaces in Go

Definition at line 66 of file ParamSurface.h.

29.333.2 Constructor & Destructor Documentation

29.333.2.1 virtual Go::ParamSurface::∼ParamSurface ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.333.2.2 Go::ParamSurface::ParamSurface ( ) [inline], [protected]

Definition at line 519 of file ParamSurface.h.

29.333.3 Member Function Documentation

29.333.3.1 virtual std::vector<CurveLoop> Go::ParamSurface::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [pure virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Plane, Go::Cone, Go::Cylinder, and Go::Sphere.

29.333.3.2 virtual double Go::ParamSurface::area (double *tol*) const [pure virtual]

Compute the total area of this surface up to some tolerance

Parameters

tol	the relative tolerance when approximating the area, i.e. stop iteration when error becomes smaller than tol/(surface area)

Returns

the area calculated

Implemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, Go::CompositeSurface, Go::SurfaceOnVolume, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.3 virtual SplineSurface* Go::ParamSurface::asSplineSurface ( ) [inline], [virtual]

Return the spline surface represented by this surface, if any.

Reimplemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, and Go::ElementarySurface.

Definition at line 78 of file ParamSurface.h.

29.333.3.4 virtual ParamSurface* Go::ParamSurface::clone ( ) const [pure virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::GeomObject.

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::Disc, Go::Torus, Go::SurfaceOfRevolution, Go::CompositeSurface, Go::Plane, Go::Cone, Go::Cylinder, Go::Sphere, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.5 virtual void Go::ParamSurface::closestBoundaryPoint (const Point & *pt,* double & *clo_u,* double & *clo_v,* Point & *clo_pt,* double & *clo_dist,* double *epsilon,* const RectDomain * *rd* = NULL, double * *seed* = 0) const [pure virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Cone, Go::Cylinder, Go::Plane, and Go::Sphere.

29.333.3.6 virtual Point Go::ParamSurface::closestInDomain (double *u,* double *v*) const [pure virtual]

Fetch the parameter value in the parameter domain of the surface closest to the parameter pair (u,v)

Implemented in Go::CompositeSurface, Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.7 virtual void Go::ParamSurface::closestPoint (const Point & *pt,* double & *clo_u,* double & *clo_v,* Point & *clo_pt,* double & *clo_dist,* double *epsilon,* const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented in Go::SplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Cone, Go::Cylinder, Go::Plane, and Go::Sphere.

29.333.3.8 void Go::ParamSurface::closestPoint (const Point & *pt,* double & *clo_u,* double & *clo_v,* Point & *clo_pt,* double & *clo_dist,* double *epsilon,* int *maxiter,* const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const

29.333.3.9 virtual CompositeBox Go::ParamSurface::compositeBox ( ) const [virtual]

Creates a composite box enclosing the surface. The composite box consists of an inner and an edge box. The inner box is supposed to be made from the interior of the surface, while the edge box is made from the boundary curves. The default implementation simply makes both boxes identical to the regular bounding box.

Returns

the CompositeBox of the surface, as specified above

Reimplemented in Go::SplineSurface, Go::LRSplineSurface, Go::SurfaceOnVolume, and Go::CompositeSurface.

29.333.3.10 virtual std::vector<shared_ptr<ParamCurve> > Go::ParamSurface::constParamCurves (double *parameter*, bool *pardir_is_u*) const [pure virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Plane, Go::Cone, Go::Cylinder, and Go::Sphere.

29.333.3.11 virtual RectDomain Go::ParamSurface::containingDomain ( ) const [pure virtual]

Get a rectangular parameter domain that is guaranteed to contain the surface's parameterDomain(). It may be the same. There is no guarantee that this is the smallest domain containing the actual domain.

Returns

a RectDomain that is guaranteed to include the surface's total parameter domain.

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.12 virtual int Go::ParamSurface::ElementBoundaryStatus (int *elem_ix*, double *eps*) [inline], [virtual]

Check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries of this ftSurface, is inside or outside

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y
eps	Intersection tolerance

Returns

-1: Not a spline surface or element index out of range 0: Outside trimmed volume 1: On boundary (intersection with boundary found) 2: Internal to trimmed surfaces Note that a touch with the boundaries of the underlying surface is not consdered a boundary intersection while touching a trimming curve is seen as an intersection

Reimplemented in Go::SplineSurface, Go::BoundedSurface, and Go::SurfaceOnVolume.

Definition at line 493 of file ParamSurface.h.

29.333.3.13 virtual int Go::ParamSurface::ElementOnBoundary (int *elem_ix*, double *eps*) [inline], [virtual]

Check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries of this surface

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y
eps	Intersection tolerance

Returns

-1: Not a spline surface or element index out of range 0: Not on boundary or touching a boundary curve 1: On boundary (intersection with boundary found) Note that a touch with the boundaries of the underlying surfaces is not consdered a boundary intersection while touching a trimming curve is seen as an intersection

Reimplemented in Go::SplineSurface, Go::BoundedSurface, and Go::SurfaceOnVolume.

Definition at line 476 of file ParamSurface.h.

29.333.3.14 void Go::ParamSurface::estimateSfSize (double & *u_size*, double & *v_size*, int *u_nmb* = 5, int *v_nmb* = 5) const

Estimate the size of the surface in the two parameter directions.

29.333.3.15 virtual void Go::ParamSurface::evalGrid (int *num_u*, int *num_v*, double *umin*, double *umax*, double *vmin*, double *vmax*, std::vector< double > & *points*, double *nodata_val* = -9999) const [virtual]

Evaluate points in a grid. The nodata value is applicable for bounded surfaces and grid points outside the trimming loop(s) will get this value

Reimplemented in Go::SplineSurface, Go::BoundedSurface, and Go::LRSplineSurface.

29.333.3.16 virtual void Go::ParamSurface::getBoundaryInfo (Point & *pt1,* Point & *pt2,* double *epsilon,* SplineCurve *&* *cv,* SplineCurve *&* *crosscv,* double *knot_tol* = 1e-05) const [pure virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, Go::CompositeSurface, Go::SurfaceOnVolume, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Cone, Go::Cylinder, Go::Plane, and Go::Sphere.

29.333.3.17 virtual void Go::ParamSurface::getCornerPoints (std::vector< std::pair< Point, Point > > & *corners*) const [pure virtual]

Return surface corners, geometric and parametric points in that sequence

Implemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.18 virtual void Go::ParamSurface::getDegenerateCorners (std::vector< Point > & *deg_corners,* double *tol*) const [pure virtual]

Check for parallel and anti-parallel partial derivatives in surface corners.

Implemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, Go::CompositeSurface, Go::SurfaceOnVolume, Go::SurfaceOfRevolution, Go::Torus, Go::Disc, Go::SurfaceOfLinearExtrusion, Go::Sphere, Go::Cone, Go::Cylinder, and Go::Plane.

29.333.3.19 virtual Point Go::ParamSurface::getInternalPoint (double & *u,* double & *v*) const [virtual]

Fetch an arbitrary internal point in the surface Used for localization purposes

Reimplemented in Go::BoundedSurface.

29.333.3.20 virtual bool Go::ParamSurface::inDomain (double *u*, double *v*, double *eps* = 1.0e-4) const [pure virtual]

Check if a parameter pair lies inside the domain of this surface.

Implemented in Go::CompositeSurface, Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.21 virtual int Go::ParamSurface::inDomain2 (double *u*, double *v*, double *eps* = 1.0e-4) const [pure virtual]

Check if a parameter pair lies inside the domain of this surface return value = 0: outside = 1: internal = 2: at the boundary

Implemented in Go::CompositeSurface, Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.22 virtual bool Go::ParamSurface::isAxisRotational (Point & *centre*, Point & *axis*, Point & *vec*, double & *angle*) [inline], [virtual]

Check if the surface is axis rotational. Only true if a connection to an axis rotational elementary surface exist The axis and rotational angle is only specified if the surface is actually rotational

Reimplemented in Go::SplineSurface, Go::BoundedSurface, Go::Cone, Go::Cylinder, and Go::Sphere.

Definition at line 448 of file ParamSurface.h.

29.333.3.23 virtual bool Go::ParamSurface::isDegenerate (bool & *b*, bool & *r*, bool & *t*, bool & *l*, double *tolerance*) const [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::Disc, Go::Torus, Go::Sphere, Go::Cone, Go::Cylinder, and Go::Plane.

29.333.3.24 virtual bool Go::ParamSurface::isIsoTrimmed (double *tol*) const [inline], [virtual]

Check if the current surface is trimmed along constant parameter curves.

Reimplemented in Go::BoundedSurface, and Go::SurfaceOnVolume.

Definition at line 433 of file ParamSurface.h.

29.333.3.25 virtual bool Go::ParamSurface::isLinear (Point & *dir1,* Point & *dir2,* double *tol*) [virtual]

Check if the surface is linear in one or both parameter directions.

Reimplemented in Go::BoundedSurface, Go::SurfaceOnVolume, Go::Cylinder, and Go::Plane.

29.333.3.26 virtual bool Go::ParamSurface::isPlanar (Point & *normal,* double *tol*) [virtual]

Check if the surface is planar.

Reimplemented in Go::SplineSurface, Go::BoundedSurface, and Go::Plane.

29.333.3.27 virtual bool Go::ParamSurface::isSpline ( ) const [inline], [virtual]

Check if the surface is of type spline.

Reimplemented in Go::SplineSurface.

Definition at line 439 of file ParamSurface.h.

29.333.3.28 virtual ParamSurface* Go::ParamSurface::mirrorSurface (const Point & *pos,* const Point & *norm*) const [inline], [virtual]

Mirror a surface around a specified plane.

Reimplemented in Go::SplineSurface, and Go::LRSplineSurface.

Definition at line 142 of file ParamSurface.h.

29.333.3.29 virtual double Go::ParamSurface::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [pure virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Cone, Go::Cylinder, Go::Plane, and Go::Sphere.

29.333.3.30 virtual void Go::ParamSurface::normal (Point & *n,* double *upar,* double *vpar*) const [pure virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Plane, Go::Cone, Go::Cylinder, and Go::Sphere.

29.333.3.31 virtual DirectionCone Go::ParamSurface::normalCone ( ) const [pure virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::SurfaceOnVolume, Go::BoundedSurface, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Plane, Go::Cone, Go::Cylinder, and Go::Sphere.

29.333.3.32 virtual bool Go::ParamSurface::onBoundary (double *u,* double *v,* double *eps* = 1.0e-4) const [pure virtual]

Check if a parameter pair lies at the boundary of this surface.

Implemented in Go::CompositeSurface, Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.33 virtual CurveLoop Go::ParamSurface::outerBoundaryLoop (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [pure virtual]

Returns the anticlockwise, outer boundary loop of the surface.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a CurveLoop describing the anticlockwise, outer boundary loop of the surface. A negative degenerate_epsilon indicates that all curves, also the degenerate ones are wanted

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.34 virtual const Domain& Go::ParamSurface::parameterDomain ( ) const [pure virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::Disc, Go::Torus, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Plane, Go::Cone, Go::Cylinder, Go::Sphere, and Go::SurfaceOfLinearExtrusion.

29.333.3.35 virtual void Go::ParamSurface::point (Point & *pt*, double *upar*, double *vpar*) const [pure virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Plane, Go::Cone, Go::Cylinder, and Go::Sphere.

29.333.3.36 virtual void Go::ParamSurface::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = `1.0e-12`) const [pure virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Plane, Go::Cone, Go::Cylinder, and Go::Sphere.

29.333.3.37 Point Go::ParamSurface::point (double *upar,* double *vpar*) const

Evaluate the surface's position at a certain parameter pair

Parameters

upar	the first parameter
vpar	the second parameter

Returns

the surface's position for this parameter pair. NB: This function is implemented in terms of the ParamSurface's virtual 'point(...)' function, but is itself not virtual. If you make a concrete subclass and wish to make this function visible to the user, you must put a 'using ParamSurface::point' statement in the class definition.

29.333.3.38 std::vector<Point> Go::ParamSurface::point (double *upar,* double *vpar,* int *derivs*) const

Evaluate the surface's position and a certain number of derivatives at a given parameter.

Parameters

upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives

Returns

the vector containing the evaluated values. Its size will be equal to (derivs+1) * (derivs+2) / 2. Its first entry is the surface's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives. NB: This function is implemented in terms of the ParamSurface's virtual 'point(...)' functions, but is itself not virtual. If you make a concrete subclass and wish to make this function visible to the user, you must put a 'using ParamCurve::point' in the class definition.

29.333.3.39 virtual void Go::ParamSurface::reverseParameterDirection (bool *direction_is_u*) [pure virtual]

Reverses the direction of the basis in input direction.

Parameters

direction_is_u	if 'true', the first parameter direction will be reversed, otherwise, the second parameter direction will be reversed

Implemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, Go::CompositeSurface, Go::SurfaceOnVolume, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.40 void Go::ParamSurface::s1773 (const double *ppoint[ ]*, double *aepsge*, double *estart[ ]*, double *eend[ ]*, double *enext[ ]*, double *gpos[ ]*, int *maxiter*, int * *jstat*) const [protected]

29.333.3.41 void Go::ParamSurface::s1773_s9corr (double *gd[ ]*, double *acoef1*, double *acoef2*, double *astart1*, double *aend1*, double *astart2*, double *aend2*) const [protected]

29.333.3.42 void Go::ParamSurface::s1773_s9dir (double * *cdist*, double * *cdiff1*, double * *cdiff2*, double *PS[ ]*, const double * *eval1*, std::vector< Point > *eval2*, double *aepsge*, int *idim*, int * *jstat*) const [protected]

29.333.3.43 virtual void Go::ParamSurface::setIterator (IteratorType *type*) [inline], [virtual]

Set type of closest point iterator type == Iterator_parametric - use conjugate gradient iteration type == Iterator_geometric - sisl type geometric closest point iteration

Reimplemented in Go::BoundedSurface.

Definition at line 427 of file ParamSurface.h.

29.333.3.44 virtual void Go::ParamSurface::setParameterDomain (double *u1*, double *u2*, double *v1*, double *v2*) [virtual]

set the parameter domain to a given rectangle

Parameters

u1	new min. value of first parameter span
u2	new max. value of first parameter span
v1	new min. value of second parameter span
v2	new max. value of second parameter span

Reimplemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, and Go::CompositeSurface.

29.333.3.45 void Go::ParamSurface::singularity (double & *sing_u,* double & *sing_v,* Point & *sing_pt,* double & *sing_dist,* double *epsilon,* const RectDomain * *rd* = NULL, double * *seed* = 0) const

29.333.3.46 virtual std::vector<shared_ptr<ParamSurface> > Go::ParamSurface::subSurfaces (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [pure virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::BoundedSurface, Go::SurfaceOnVolume, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Cone, Go::Cylinder, Go::Plane, and Go::Sphere.

29.333.3.47 virtual void Go::ParamSurface::swapParameterDirection ( ) [pure virtual]

Swaps the two parameter directions.

Implemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, Go::CompositeSurface, Go::SurfaceOnVolume, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.3.48 virtual DirectionCone Go::ParamSurface::tangentCone (bool *pardir_is_u*) const [pure virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implemented in Go::SplineSurface, Go::LRSplineSurface, Go::SurfaceOnVolume, Go::BoundedSurface, Go::CompositeSurface, Go::SurfaceOfRevolution, Go::Disc, Go::Torus, Go::SurfaceOfLinearExtrusion, Go::Plane, Go::Cone, Go::Cylinder, and Go::Sphere.

29.333.3.49 virtual void Go::ParamSurface::turnOrientation ( ) [pure virtual]

Turns the direction of the normal of the surface.

Implemented in Go::SplineSurface, Go::BoundedSurface, Go::LRSplineSurface, Go::CompositeSurface, Go::SurfaceOnVolume, Go::SurfaceOfRevolution, Go::SurfaceOfLinearExtrusion, and Go::ElementarySurface.

29.333.4 Member Data Documentation

29.333.4.1 degenerate_info Go::ParamSurface::degen_ [mutable], [protected]

Definition at line 515 of file ParamSurface.h.

29.333.4.2 IteratorType Go::ParamSurface::iterator_ [protected]

Definition at line 517 of file ParamSurface.h.

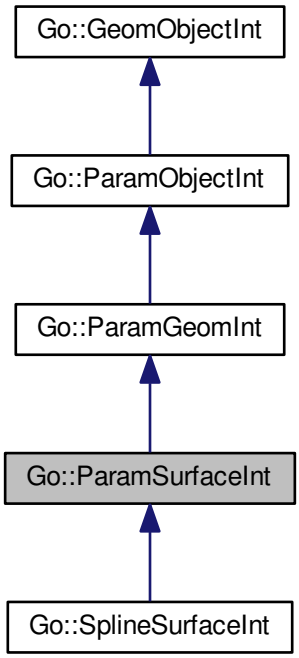
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/ParamSurface.h

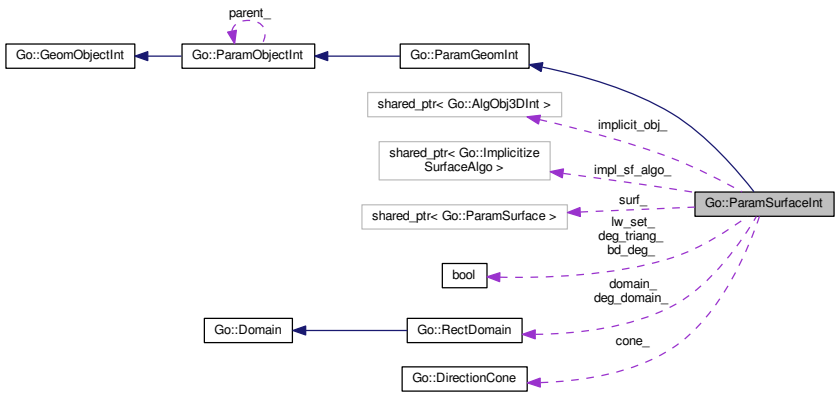
29.334 Go::ParamSurfaceInt Class Reference

`#include <ParamSurfaceInt.h>`

Inheritance diagram for Go::ParamSurfaceInt:



Collaboration diagram for Go::ParamSurfaceInt:



Public Member Functions

- ParamSurfaceInt (shared_ptr< ParamSurface > surf, ParamGeomInt *parent=0)
- virtual ~ParamSurfaceInt ()

  Destructor.

- virtual void point (Point &pt, const double *tpar) const
- virtual void point (std::vector< Point > &pt, const double *tpar, int derivs, const bool *from_right=0, double resolution=1.0e-12) const
- virtual ParamSurfaceInt * getParamSurfaceInt ()
- shared_ptr< ParamSurface > getParamSurface ()
- shared_ptr< const ParamSurface > getParamSurface () const
- shared_ptr< ParamSurface > getParentParamSurface (RectDomain &domain)
- shared_ptr< ParamSurface > getParentParamSurface ()
- virtual shared_ptr< ParamSurfaceInt > makeIntObject (shared_ptr< ParamSurface > surf)
- virtual shared_ptr< ParamCurveInt > makeIntCurve (shared_ptr< ParamCurve > crv, ParamGeomInt *parent)
- virtual int numParams () const

  The number of parameters in the object.
- shared_ptr< ParamCurve > getIsoCurve (double param_start, double param_end, double isoval, bool pardir_is_u) const
- shared_ptr< ParamCurve > getConstantParameterCurve (int dir, double par)
- shared_ptr< ParamCurve > getConstantParameterCurve (int dir, double par, double tmin, double tmax)
- void minimumAlongCurve (int dir, double par, double tmin, double tmax, Point &pnt, double &minpar, Point &minval, double &mindist)
- virtual void getLengthAndWiggle (double *length, double *wiggle)
- virtual bool hasInnerKnots (int pardir) const
- virtual bool hasCriticalVals (int pardir) const
- virtual bool hasCriticalValsOrKnots (int pardir) const
- virtual bool canDivide (int pardir)
- virtual bool canDivideTinyTriang (int pardir)
- virtual std::vector< double > getCriticalVals (int pardir) const
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const
- virtual int getMeshSize (int dir)
- virtual double paramFromMesh (int dir, int idx)
- virtual std::vector< double >::iterator getMesh ()

  Return the geometric sample mesh for the parametric function.
- virtual double startParam (int pardir) const
- virtual double endParam (int pardir) const
- virtual bool boundaryPoint (const double *par, double eps) const
- std::vector< double > getMima () const
- virtual bool inCorner (const double *par, double epspar) const
- bool atDegenerateBd (const double *par, double epsge, double epspar)
- virtual void subdivide (int pardir, double par, std::vector< shared_ptr< ParamGeomInt > > &subdiv_objs, std::vector< shared_ptr< ParamGeomInt > > &bd_objs)
- virtual std::vector< shared_ptr< ParamSurfaceInt > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy)
- virtual CompositeBox compositeBox () const
- virtual DirectionCone directionCone () const
- virtual void getBoundaryObjects (std::vector< shared_ptr< BoundaryGeomInt > > &bd_objs)
- virtual int checkPeriodicity (int pardir) const
- virtual int dimension () const

  The dimension of the geometric space.
- virtual const RectDomain & getDomain () const
- const RectDomain & getDegDomain (double epsge)
- virtual bool isSimple ()
- virtual bool isSpline ()
- virtual bool isIsoParametric (ParamCurveInt *curve, int dir, double par, double ptol, double tol)
- virtual double getOptimizedConeAngle (Point &axis1, Point &axis2)

- virtual void knotIntervalFuzzy (double &u, double &v, double utol, double vtol) const
- virtual double nextSegmentVal (int dir, double par, bool forward, double tol) const
- bool isDegenerate (double epsge)
- virtual int isDegenerate (double epsge, int dir)
- virtual bool isDegenerate (double epsge, int dir, double *par)
- double isolateDegPar (int dir, int deg_edge, double threshold, double *deg_factor=NULL)
- void setDegTriang ()
- bool getDegTriang ()
- double getParOffBd (int dir, bool atstart, double tol) const
- void first_fund_form (double u, double v, bool u_from_right, bool v_from_right, double &E, double &F, double &G) const
- void second_fund_form (double u, double v, bool u_from_right, bool v_from_right, double &L, double &M, double &N) const
- void derivs (double u, double v, Point &deriv_u, Point &deriv_v, bool from_right_1=true, bool from_right_2=true) const
- void normal (double u, double v, Point &normal, bool from_right_1=true, bool from_right_2=true) const
- virtual RotatedBox getRotatedBox (std::vector< Point > &axis) const
- void axisFromCorners (Point &axis1, Point &axis2) const
- virtual void splitAtG0 (double angtol, std::vector< shared_ptr< ParamSurfaceInt > > &subG1)
- void getSingularity (double eps, double sing_par[], Point &sing_pt, double &sing_val, double *seed)
- bool canSelfIntersect (double epsge) const
- virtual shared_ptr< ParamSurfaceInt > getNormalSurface () const
- virtual bool canImplicitize ()
- virtual bool implicitize (double tol)
- virtual bool getImplicit (double tol, double &tol2, AlgObj3DInt &alg_obj_3d_int)
- void maxCurvatures (bool dir_is_u, int nmb_params, double iso_from, double iso_to, double guess_param, std::vector< double > &max_curv_params, std::vector< double > &max_curvatures)

Protected Attributes

- shared_ptr< ParamSurface > surf_
- int dim_
- double deg_tol_
- bool deg_triang_
- std::vector< std::pair< double, int > > segment_ [2]
- bool bd_deg_ [4]
- RectDomain domain_
- RectDomain deg_domain_
- int nmesh_ [2]
- std::vector< double > mesh_
- DirectionCone cone_
- bool lw_set_
- double length_ [2]
- double wiggle_ [2]
- std::vector< Point > temp_point_array_
- shared_ptr< ImplicitizeSurfaceAlgo > impl_sf_algo_
- double implicit_tol_
- int impl_deg_
- shared_ptr< AlgObj3DInt > implicit_obj_
- double implicit_err_

29.334.1 Detailed Description

Class that represents the "intersection object" of a parametric surface.

Definition at line 59 of file ParamSurfaceInt.h.

29.334.2 Constructor & Destructor Documentation

29.334.2.1 Go::ParamSurfaceInt::ParamSurfaceInt (shared_ptr< ParamSurface > *surf*, ParamGeomInt * *parent* = 0) [explicit]

Constructor.

Parameters

surf	the parametric surface defining the intersection object.
parent	the parent object to this object.

29.334.2.2 virtual Go::ParamSurfaceInt::~ParamSurfaceInt ( ) [virtual]

Destructor.

29.334.3 Member Function Documentation

29.334.3.1 bool Go::ParamSurfaceInt::atDegenerateBd (const double * *par*, double *epsge*, double *epspar*)

29.334.3.2 void Go::ParamSurfaceInt::axisFromCorners (Point & *axis1*, Point & *axis2*) const

Use the corner points of the parameter domain to create axes.

Parameters

axis1	the first axis.
axis2	the second axis.

29.334.3.3 virtual bool Go::ParamSurfaceInt::boundaryPoint (const double * *par*, double *eps*) const [virtual]

Return true if the specified point lies within eps from the boundary.

Parameters

par	the parameter in which to evaluate. Size of array should be equal to numParams().
eps	the tolerance defining the boundary neighbourhood.

Implements Go::ParamObjectInt.

29.334.3.4 virtual bool Go::ParamSurfaceInt::canDivide (int *pardir*) [virtual]

Return true if we are allowed to divide in the specified parameter direction.

Parameters

pardir	the parameter direction in question.

Implements Go::ParamObjectInt.

29.334.3.5 virtual bool Go::ParamSurfaceInt::canDivideTinyTriang (int *pardir*) [virtual]

Reimplemented from Go::ParamObjectInt.

29.334.3.6 virtual bool Go::ParamSurfaceInt::canImplicitize ( ) [inline], [virtual]

Check whether the objects fulfills the requirements to implicitize.

Returns

Return true if we may implicitize the object.

Reimplemented in Go::SplineSurfaceInt.

Definition at line 621 of file ParamSurfaceInt.h.

29.334.3.7 bool Go::ParamSurfaceInt::canSelfIntersect (double *epsge*) const

Check if the current surface can selfintersect. Uses normal cone and tangent cones.

Parameters

epsge	a geometric tolerance

29.334.3.8 virtual int Go::ParamSurfaceInt::checkPeriodicity (int *pardir*) const [virtual]

Check if the object is periodic in the specified direction. Analyze periodicity of surface based on number of repeating knots and control points. The return value is -1 if the surface ends are disjoint, otherwise k if cv is C^k continuous. These are sufficient but not necessary conditions for periodicity, so it is possible that a higher degree of periodicity exists. Should not be called on this layer, should be overruled by inherited class.

Parameters

pardir	the parameter direction in question.

Returns

-1 if the curve ends are disjoint, or k if the surface is proven to be C^k continuous.

Reimplemented from Go::ParamGeomInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.9 virtual CompositeBox Go::ParamSurfaceInt::compositeBox ( ) const [virtual]

Create the CompositeBox for the parametric object.

Returns

The CompositeBox for the parametric object.

Implements Go::ParamGeomInt.

29.334.3.10 void Go::ParamSurfaceInt::derivs (double *u*, double *v*, Point & *deriv_u*, Point & *deriv_v*, bool *from_right_1* = true, bool *from_right_2* = true) const [inline]

Return the partial derivatives in the input parameter point.

Parameters

u	the first parameter value.
v	the second parameter value.
deriv_u	the partial derivative in the u-direction.
deriv_v	the partial derivative in the u-direction.
from_right_1	if true then calculate from the left int the first parameter parameter direction, otherwise from the right.
from_right_2	if true then calculate from the left int the second parameter parameter direction, otherwise from the right.

Definition at line 534 of file ParamSurfaceInt.h.

29.334.3.11 virtual int Go::ParamSurfaceInt::dimension ( ) const [inline], [virtual]

The dimension of the geometric space.

Implements Go::ParamGeomInt.

Definition at line 349 of file ParamSurfaceInt.h.

29.334.3.12 virtual DirectionCone Go::ParamSurfaceInt::directionCone ( ) const [virtual]

A cone which contains all normals of the object.

Returns

A cone which contains all normals of the object.

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.13 virtual double Go::ParamSurfaceInt::endParam (int *pardir*) const [virtual]

Return the end parameter in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.334.3.14 void Go::ParamSurfaceInt::first_fund_form (double *u*, double *v*, bool *u_from_right*, bool *v_from_right*, double & *E*, double & *F*, double & *G*) const [inline]

Return the coefficients necessary to calculate the first fundamental form of the surface in the parameter point.

Parameters

u	the first parameter value.
v	the second parameter value.
u_from_right	if true then evaluate from the right, otherwise from the left.
v_from_right	if true then evaluate from the right, otherwise from the left.
E	the first coefficient for the first fundamental form.
F	the second coefficient for the first fundamental form.
G	the third coefficient for the first fundamental form.

Definition at line 470 of file ParamSurfaceInt.h.

29.334.3.15 virtual void Go::ParamSurfaceInt::getBoundaryObjects (std::vector< shared_ptr< BoundaryGeomInt > > & *bd_objs*) [virtual]

Return the boundary objects of this object.

Parameters

bd_objs	the boundary objects of this object.

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.16 shared_ptr<ParamCurve> Go::ParamSurfaceInt::getConstantParameterCurve (int *dir*, double *par*)

Return a curveOnSurface along the current surface in the given direction and parameter value

Parameters

dir	the direction of the constant parameter curve. Indexing starts at 0.
par	the isoparameter for the curve.

29.334.3.17 shared_ptr<ParamCurve> Go::ParamSurfaceInt::getConstantParameterCurve (int *dir*, double *par*, double *tmin*, double *tmax*)

29.334.3.18 virtual std::vector<double> Go::ParamSurfaceInt::getCriticalVals (int *pardir*) const [virtual]

Return the critical parameter values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.334.3.19 virtual std::vector<double> Go::ParamSurfaceInt::getCriticalValsAndKnots (int *pardir*) const [virtual]

Return the critical parameter values and inner knots for object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.20 const RectDomain& Go::ParamSurfaceInt::getDegDomain (double *epsge*)

Return a rectangular domain of the surface which is slightly reduced in the degenerate case

Returns

Return the rectangular domain of the surface.

29.334.3.21 bool Go::ParamSurfaceInt::getDegTriang ( ) [inline]

Get deg_triang info. Variable useful for surfaces with degenerated edge(s).

Definition at line 446 of file ParamSurfaceInt.h.

29.334.3.22 virtual const RectDomain& Go::ParamSurfaceInt::getDomain ( ) const [inline], [virtual]

Return the rectangular domain of the surface.

Returns

Return the rectangular domain of the surface.

Definition at line 354 of file ParamSurfaceInt.h.

29.334.3.23 virtual bool Go::ParamSurfaceInt::getImplicit (double *tol*, double & *tol2*, AlgObj3DInt & *alg_obj_3d_int*) [inline], [virtual]

Get the implicit representation of the object. Garbage is returned if we are not able to implicitize.

Parameters

tol	geometric tolerance for the implicitization procedure.
tol2	geometric estimate for the accuracy of the implicitized object. Not yet in use!!!
alg_obj_3d_int	the algebraic object containing the implicitized surface.

Returns

True if the implicitization was a success.

Reimplemented in Go::SplineSurfaceInt.

Definition at line 640 of file ParamSurfaceInt.h.

29.334.3.24 virtual std::vector<double> Go::ParamSurfaceInt::getInnerKnotVals (int *pardir*, bool *sort* = false) const [virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Implements Go::ParamObjectInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.25 shared_ptr<ParamCurve> Go::ParamSurfaceInt::getIsoCurve (double *param_start*, double *param_end*, double *isoval*, bool *pardir_is_u*) const

Returns the specified isocurve.

Parameters

param_start	start parameter for the isocurve.
param_end	end parameter for the isocurve.
isoval	the value for the isoparameter.
pardir_is_u	if 'pardir_is_u' is 'true', then the first parameter is the running direction and the second parameter is the isoparameter; vice versa for 'pardir_is_u' equal to 'false'.

29.334.3.26 virtual void Go::ParamSurfaceInt::getLengthAndWiggle (double * *length*, double * *wiggle*) [virtual]

Return an estimate on the size and wiggle of the object.

Parameters

length	the approximative length of the object in the corresponding parameter directions. The size of the array should be equal to numParams().
wiggle	a scalar representing the wiggle of the object in the corresponding parameter directions. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

29.334.3.27 virtual std::vector<double>::iterator Go::ParamSurfaceInt::getMesh ( ) [virtual]

Return the geometric sample mesh for the parametric function.

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.28 virtual int Go::ParamSurfaceInt::getMeshSize (int *dir*) [virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.29 std::vector<double> Go::ParamSurfaceInt::getMima ( ) const

Return the domain of the surface.

Returns

The returned vector consists of (umin, umax, vmin, vmax).

29.334.3.30 virtual shared_ptr<ParamSurfaceInt> Go::ParamSurfaceInt::getNormalSurface ( ) const [inline], [virtual]

Returns the normal surface corresponding to this surface.

Returns

Pointer to the SplineSurface defining the normal surface. Not implemented for a general parametric surface.

Reimplemented in Go::SplineSurfaceInt.

Definition at line 612 of file ParamSurfaceInt.h.

29.334.3.31 virtual double Go::ParamSurfaceInt::getOptimizedConeAngle (Point & *axis1*, Point & *axis2*) [virtual]

We try to treat problems which will never result in a simple case by shrinking the domain slightly, resulting in smaller cones. This is useful for scenarios where the normals are parallell in a boundary point.

Parameters

axis1	first vector defining a projection plane
axis2	second vector defining a projection plane

Returns

The optimized cone angle

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.32 shared_ptr<ParamSurface> Go::ParamSurfaceInt::getParamSurface ( ) [inline]

Return pointer to the parametric surface defining this object.

Returns

Pointer to the parametric surface defining this object.

Definition at line 116 of file ParamSurfaceInt.h.

29.334.3.33 shared_ptr<const ParamSurface> Go::ParamSurfaceInt::getParamSurface ( ) const [inline]

Return pointer to the parametric surface defining this object.

Returns

Pointer to the parametric surface defining this object.

Definition at line 122 of file ParamSurfaceInt.h.

29.334.3.34 virtual ParamSurfaceInt* Go::ParamSurfaceInt::getParamSurfaceInt ( ) [virtual]

Return a pointer to this object.

Returns

Pointer to this object.

Reimplemented from Go::ParamObjectInt.

29.334.3.35 shared_ptr<ParamSurface> Go::ParamSurfaceInt::getParentParamSurface (RectDomain & *domain*)

Return pointer to a subsurface of the parent surface for this object. If no such surface exist, we use the surface of this object instead.

Parameters

domain	the parametric domain of the subsurface.

Returns

Pointer to a subsurface of the parent surface for this object.

29.334.3.36 shared_ptr<ParamSurface> Go::ParamSurfaceInt::getParentParamSurface ( )

Return pointer to the parent surface for this object. If no such surface exist, we use the surface of this object instead.

Returns

Pointer to a subsurface of the parent surface for this object.

29.334.3.37 double Go::ParamSurfaceInt::getParOffBd (int *dir,* bool *atstart,* double *tol*) const

Estimate the parameter value of a surface a specified distance from a given edge.

Parameters

dir	the parameter direction in question.
atstart	true if we are the start of the parameter interval, false otherwise.
tol	influencing how far from the edge we should move.

Returns

the computed parameter value.

29.334.3.38 virtual RotatedBox Go::ParamSurfaceInt::getRotatedBox (std::vector< Point > & *axis*) const [virtual]

Create a box containing the geometric sample mesh in the input coordinate system.

Parameters

axis	the axis defining the coordinate system. The size of vector axis is 2, the last point is given as the cross product axis[0]axis[1].

Returns

the rotated box

Reimplemented in Go::SplineSurfaceInt.

29.334.3.39 void Go::ParamSurfaceInt::getSingularity (double *eps*, double *sing_par[]*, Point & *sing_pt*, double & *sing_val*, double * *seed*)

Iterate for a surface singularity.

Parameters

eps	numerical tolerance
sing_par	parameters of the singularity
sing_pt	the singular point
sing_val	a number that measures the quality of the singularity
seed	initial guess for singularity in parameter plane

29.334.3.40 virtual bool Go::ParamSurfaceInt::hasCriticalVals (int *pardir*) const [virtual]

Return true if the object has any critical parameter values in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.334.3.41 virtual bool Go::ParamSurfaceInt::hasCriticalValsOrKnots (int *pardir*) const [virtual]

Return true if the object has any critical parameter values or inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.42 virtual bool Go::ParamSurfaceInt::hasInnerKnots (int *pardir*) const [virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.43 virtual bool Go::ParamSurfaceInt::implicitize (double *tol*) [inline], [virtual]

Implicitize the object.

Parameters

tol	the geoemtric tolerance for the implicitization.

Returns

True if the implicitization was a success.

Reimplemented in Go::SplineSurfaceInt.

Definition at line 627 of file ParamSurfaceInt.h.

29.334.3.44 virtual bool Go::ParamSurfaceInt::inCorner (const double * *par*, double *epspar*) const [virtual]

Check if parameter point lies close to a corner of the parameter domain.

Parameters

par	the input parameter point.
epspar	the parametric tolerance defining the neighbourhood.

Reimplemented from Go::ParamObjectInt.

29.334.3.45 bool Go::ParamSurfaceInt::isDegenerate (double *epsge*)

Verfify whether the object is degenerate.

Parameters

epsge	the geometric tolerance defining degeneracy.

29.334.3.46 virtual int Go::ParamSurfaceInt::isDegenerate (double *epsge*, int *dir*) [virtual]

Verfify whether the object is degenerate in the specified direction.

Parameters

epsge	the geometric tolerance defining degeneracy.
dir	the parameter direction in question.

Reimplemented from Go::ParamGeomInt.

29.334.3.47 virtual bool Go::ParamSurfaceInt::isDegenerate (double *epsge*, int *dir*, double * *par*) [virtual]

Verfify whether the object is degenerate in the specified direction and parameter.

Parameters

epsge	the geometric tolerance defining degeneracy.
dir	the parameter direction in question.
par	the parameter in which to evaluate. Size of array should be equal to numParams().

Implements Go::ParamGeomInt.

29.334.3.48 virtual bool Go::ParamSurfaceInt::isIsoParametric (ParamCurveInt * *curve*, int *dir*, double *par*, double *ptol*, double *tol*) [inline], [virtual]

Check if a curve is an iso parametric curve in the current surface. NB! Only valid for splines

Reimplemented in Go::SplineSurfaceInt.

Definition at line 374 of file ParamSurfaceInt.h.

29.334.3.49 double Go::ParamSurfaceInt::isolateDegPar (int *dir*, int *deg_edge*, double *threshold*, double * *deg_factor* = NULL)

Return info on parameter domain which needs special treatment near a degenerated edge.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
deg_edge	the degenerate edge
threshold	a tolerance

Returns

a safe parameter value that is isolated from the degenerate value

29.334.3.50 virtual bool Go::ParamSurfaceInt::isSimple ( ) [virtual]

Estimates if the current surface is simple enough for a singularity iteration. Checks the span of the normal cone and the size of the surface

Returns

True if the surface is characterized as simple.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.51 virtual bool Go::ParamSurfaceInt::isSpline ( ) [virtual]

Verify whether the object is a spline.

Returns

True if the object is a spline.

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.52 virtual void Go::ParamSurfaceInt::knotIntervalFuzzy (double & *u*, double & *v*, double *utol*, double *vtol*) const [virtual]

Find the knot intervals for which u and v lie inside, moving the value u or v if they lie close to a knot.

Parameters

u	the *u* parameter value
v	the *v* parameter value
utol	the parametric tolerance deciding if the input parameter u should be moved.
vtol	the parametric tolerance deciding if the input parameter v should be moved.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.53 virtual shared_ptr<ParamCurveInt> Go::ParamSurfaceInt::makeIntCurve (shared_ptr< ParamCurve > *crv*, ParamGeomInt * *parent*) [virtual]

Return an intersection object for the input curve, using parameter parent as parent.

Parameters

crv	the parametric curve defining the intersection object.
parent	the parent to the created intersection object.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.54 virtual shared_ptr<ParamSurfaceInt> Go::ParamSurfaceInt::makeIntObject (shared_ptr< ParamSurface > *surf*) [virtual]

Return an intersection object for the input surface, using this object as parent.

Parameters

surf	the parametric surface defining the intersection object.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.55 void Go::ParamSurfaceInt::maxCurvatures (bool *dir_is_u*, int *nmb_params*, double *iso_from*, double *iso_to*, double *guess_param*, std::vector< double > & *max_curv_params*, std::vector< double > & *max_curvatures*)

29.334.3.56 void Go::ParamSurfaceInt::minimumAlongCurve (int *dir*, double *par*, double *tmin*, double *tmax*, Point & *pnt*, double & *minpar*, Point & *minval*, double & *mindist*)

29.334.3.57 virtual double Go::ParamSurfaceInt::nextSegmentVal (int *dir*, double *par*, bool *forward*, double *tol*) const [virtual]

Return the value of the knot next to the input parameter par.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
par	the parameter value
forward	if true we return the closest knot to the right, otherwise the closest knot to the left.
tol	the tolerance to determine if *par* is already located on the start of the next segment.

Returns

The knot closest to the input parameter.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.58 void Go::ParamSurfaceInt::normal (double *u*, double *v*, Point & *normal*, bool *from_right_1* = true, bool *from_right_2* = true) const [inline]

Calculate the normal in the specified parameter point.

Parameters

u	the first parameter value.
v	the second parameter value.
normal	the calculated normal in the parameter point.
from_right_1	if true then calculate from the left int the first parameter parameter direction, otherwise from the right.
from_right_2	if true then calculate from the left int the second parameter parameter direction, otherwise from the right.

Definition at line 557 of file ParamSurfaceInt.h.

29.334.3.59 virtual int Go::ParamSurfaceInt::numParams ( ) const [inline], [virtual]

The number of parameters in the object.

Implements Go::ParamObjectInt.

Definition at line 155 of file ParamSurfaceInt.h.

29.334.3.60 virtual double Go::ParamSurfaceInt::paramFromMesh (int *dir*, int *idx*) [virtual]

Return the corresponding mesh parameter.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Implements Go::ParamGeomInt.

Reimplemented in Go::SplineSurfaceInt.

29.334.3.61 virtual void Go::ParamSurfaceInt::point (Point & *pt*, const double * *tpar*) const [inline], [virtual]

Evaluate the object in the input parameter.

Parameters

pt	the Point to be returned.
tpar	the parameter in which to evaluate. The size of the array should be equal to numParams().

Implements Go::ParamObjectInt.

Definition at line 75 of file ParamSurfaceInt.h.

29.334.3.62 virtual void Go::ParamSurfaceInt::point (std::vector< Point > & *pt*, const double * *tpar*, int *derivs*, const bool * *from_right* = 0, double *resolution* = 1.0e-12) const [inline], [virtual]

Evaluate the object in the input parameter, with the specified number of derivatives.

Parameters

pt	the vecotr of points to be returned.
tpar	the parameter in which to evaluate. The size of the array should be equal to numParams().
derivs	the number of derivatives to calculate.
from_right	if true the evaluation is to be performed from the right side of the parameter value.
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar: knot values in case of spline objects.

Implements Go::ParamObjectInt.

Definition at line 89 of file ParamSurfaceInt.h.

29.334.3.63 void Go::ParamSurfaceInt::second_fund_form (double *u*, double *v*, bool *u_from_right*, bool *v_from_right*, double & *L*, double & *M*, double & *N*) const [inline]

Return the coefficients necessary to calculate the second fundamental form of the surface in the parameter point.

Parameters

u	the first parameter value.
v	the second parameter value.
u_from_right	if true then evaluate from the right, otherwise from the left.
v_from_right	if true then evaluate from the right, otherwise from the left.
L	the first coefficient for the second fundamental form.
M	the second coefficient for the second fundamental form.
N	the third coefficient for the second fundamental form.

Definition at line 501 of file ParamSurfaceInt.h.

29.334.3.64 void Go::ParamSurfaceInt::setDegTriang ( ) [inline]

Set dege_triang info. Variable useful for surfaces with degenerated edge(s).

Definition at line 441 of file ParamSurfaceInt.h.

29.334.3.65 virtual void Go::ParamSurfaceInt::splitAtG0 (double *angtol*, std::vector< shared_ptr< ParamSurfaceInt > > & *subG1*) [virtual]

Requests from selfintersection computation. Split at G1 discontinuities

Parameters

angtol	angular tolerance defining G1 discontinuity
subG1	vector of subdivided patches that are G1

Reimplemented in Go::SplineSurfaceInt.

29.334.3.66 virtual double Go::ParamSurfaceInt::startParam (int *pardir*) const [virtual]

Return the start parameter value in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Implements Go::ParamObjectInt.

29.334.3.67 virtual void Go::ParamSurfaceInt::subdivide (int *pardir*, double *par*, std::vector< shared_ptr< ParamGeomInt > > & *subdiv_objs*, std::vector< shared_ptr< ParamGeomInt > > & *bd_objs*) [virtual]

Subdivide the object in the specified parameter direction and parameter value.

Parameters

pardir	direction in which to subdive. Indexing starts at 0.
par	parameter in which to subdivide.
subdiv_objs	The subparts of this object. Of the same geometric dimension as this object.
bd_objs	the boundaries between the returned *subdiv_objs*. Of geometric dimension 1 less than this object.

Implements Go::ParamGeomInt.

29.334.3.68 virtual std::vector<shared_ptr<ParamSurfaceInt> > Go::ParamSurfaceInt::subSurfaces (double *from_upar*, double *from_vpar*, double *to_upar*, double *to_vpar*, double *fuzzy*) [virtual]

Return the subsurface(s) on the input domain. For a trimmed surface there may be more than one surface, for a surface defined on a rectangular domain there will be only one.

Parameters

from_upar	start parameter in the first parameter direction.
from_vpar	start parameter in the second parameter direction.
to_upar	end parameter in the first parameter direction.

Parameters

to_vpar	end parameter in the second parameter direction.
fuzzy	allowed alteration of an input parameter value. Typically this applies to a spline surface, where we do not want knots to lie too close whilst not being equal.

29.334.4 Member Data Documentation

29.334.4.1 bool Go::ParamSurfaceInt::bd_deg_[4] [protected]

Definition at line 673 of file ParamSurfaceInt.h.

29.334.4.2 DirectionCone Go::ParamSurfaceInt::cone_ [mutable], [protected]

Definition at line 681 of file ParamSurfaceInt.h.

29.334.4.3 RectDomain Go::ParamSurfaceInt::deg_domain_ [protected]

Definition at line 675 of file ParamSurfaceInt.h.

29.334.4.4 double Go::ParamSurfaceInt::deg_tol_ [protected]

Definition at line 667 of file ParamSurfaceInt.h.

29.334.4.5 bool Go::ParamSurfaceInt::deg_triang_ [protected]

Definition at line 668 of file ParamSurfaceInt.h.

29.334.4.6 int Go::ParamSurfaceInt::dim_ [protected]

Definition at line 666 of file ParamSurfaceInt.h.

29.334.4.7 RectDomain Go::ParamSurfaceInt::domain_ [protected]

Definition at line 674 of file ParamSurfaceInt.h.

29.334.4.8 int Go::ParamSurfaceInt::impl_deg_ [protected]

Definition at line 699 of file ParamSurfaceInt.h.

29.334.4.9 shared_ptr<ImplicitizeSurfaceAlgo> Go::ParamSurfaceInt::impl_sf_algo_ [protected]

Definition at line 696 of file ParamSurfaceInt.h.

29.334.4.10 double Go::ParamSurfaceInt::implicit_err_ [protected]

Definition at line 701 of file ParamSurfaceInt.h.

29.334.4.11 shared_ptr<AlgObj3DInt> Go::ParamSurfaceInt::implicit_obj_ [protected]

Definition at line 700 of file ParamSurfaceInt.h.

29.334.4.12 double Go::ParamSurfaceInt::implicit_tol_ [protected]

Definition at line 697 of file ParamSurfaceInt.h.

29.334.4.13 double Go::ParamSurfaceInt::length_[2] [mutable], [protected]

Definition at line 684 of file ParamSurfaceInt.h.

29.334.4.14 bool Go::ParamSurfaceInt::lw_set_ [mutable], [protected]

Definition at line 683 of file ParamSurfaceInt.h.

29.334.4.15 std::vector<double> Go::ParamSurfaceInt::mesh_ [mutable], [protected]

Definition at line 679 of file ParamSurfaceInt.h.

29.334.4.16 int Go::ParamSurfaceInt::nmesh_[2] [mutable], [protected]

Definition at line 678 of file ParamSurfaceInt.h.

29.334.4.17 std::vector<std::pair<double, int> > Go::ParamSurfaceInt::segment_[2] [protected]

Definition at line 670 of file ParamSurfaceInt.h.

29.334.4.18 shared_ptr<ParamSurface> Go::ParamSurfaceInt::surf_ [protected]

Definition at line 665 of file ParamSurfaceInt.h.

29.334.4.19 std::vector<Point> Go::ParamSurfaceInt::temp_point_array_ [mutable],[protected]

Definition at line 693 of file ParamSurfaceInt.h.

29.334.4.20 double Go::ParamSurfaceInt::wiggle_[2] [mutable],[protected]

Definition at line 684 of file ParamSurfaceInt.h.

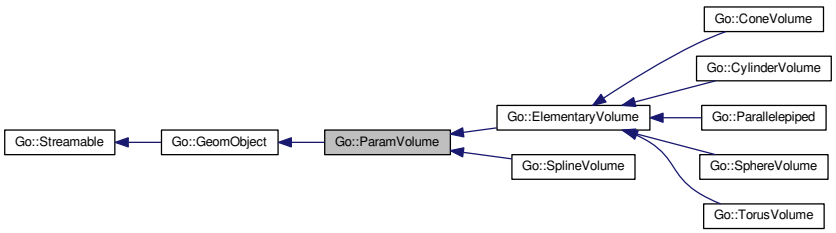
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/ParamSurfaceInt.h

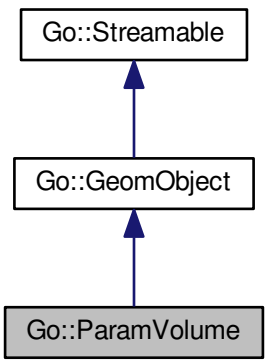
29.335 Go::ParamVolume Class Reference

`#include <ParamVolume.h>`

Inheritance diagram for Go::ParamVolume:



Collaboration diagram for Go::ParamVolume:



Public Member Functions

- virtual ~ParamVolume ()

  Virtual destructor, enables safe inheritance.
- virtual ParamVolume * clone () const =0
- virtual DirectionCone tangentCone (int pardir) const =0
- virtual const Array< double, 6 > parameterSpan () const =0
- virtual void point (Point &pt, double upar, double vpar, double wpar) const =0
- virtual void point (std::vector< Point > &pts, double upar, double vpar, double wpar, int derivs, bool u_from_right=true, bool v_from_right=true, bool w_from_right=true, double resolution=1.0e-12) const =0
- virtual double nextSegmentVal (int dir, double par, bool forward, double tol) const =0
- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, double &clo_w, Point &clo_pt, double &clo_dist, double epsilon, double *seed=0) const =0
- virtual void reverseParameterDirection (int pardir)=0
- virtual void swapParameterDirection (int pardir1, int pardir2)=0
- virtual std::vector< shared_ptr< ParamSurface > > getAllBoundarySurfaces () const =0

  Fetch all boundary surfaces corresponding to the volume.
- virtual ParamSurface * constParamSurface (double parameter, int pardir) const
- virtual bool isSpline () const

  Check if the volume is of type spline.
- virtual SplineVolume * asSplineVolume ()

  Return the spline volume represented by this volume, if any.
- virtual void translate (const Point &vec)=0

  Translate.

Additional Inherited Members

29.335.1 Detailed Description

Base class for parametric Volumes in Go

Definition at line 59 of file ParamVolume.h.

29.335.2 Constructor & Destructor Documentation

29.335.2.1 virtual Go::ParamVolume::~ParamVolume ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.335.3 Member Function Documentation

29.335.3.1 virtual SplineVolume* Go::ParamVolume::asSplineVolume ( ) [inline], [virtual]

Return the spline volume represented by this volume, if any.

Reimplemented in Go::SplineVolume.

Definition at line 202 of file ParamVolume.h.

29.335.3.2 virtual ParamVolume* Go::ParamVolume::clone ( ) const [pure virtual]

make a clone of this volume and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::GeomObject.

Implemented in Go::SplineVolume, Go::TorusVolume, Go::ConeVolume, Go::CylinderVolume, Go::SphereVolume, Go::Parallelepiped, and Go::ElementaryVolume.

29.335.3.3 virtual void Go::ParamVolume::closestPoint (const Point & *pt,* double & *clo_u,* double & *clo_v,* double & *clo_w,* Point & *clo_pt,* double & *clo_dist,* double *epsilon,* double * *seed* = 0) const [pure virtual]

Iterates to the closest point to pt on the volume.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_w	w parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
seed	pointer to parameter values where iteration starts.

Implemented in Go::SplineVolume, Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume, and Go::Parallelepiped.

29.335.3.4 virtual ParamSurface* Go::ParamVolume::constParamSurface (double *parameter,* int *pardir*) const [inline], [virtual]

Generate and return a ParamSurface that represents a constant parameter surface on the volume

Parameters

parameter	value of the fixed parameter
pardir	0 if the surface is constant in the u-parameter, 1 if the surface is constant in the v-parameter, 2 if the surface is constant in the w-parameter.

Returns

pointer to a newly constructed SplineSurface representing the specified constant parameter surface. It is the user's reponsibility to delete it when it is no longer needed.

Reimplemented in Go::SplineVolume.

Definition at line 188 of file ParamVolume.h.

29.335.3.5 virtual std::vector<shared_ptr<ParamSurface> > Go::ParamVolume::getAllBoundarySurfaces ( ) const [pure virtual]

Fetch all boundary surfaces corresponding to the volume.

Implemented in Go::SplineVolume, Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume, and Go::Parallelepiped.

29.335.3.6 virtual bool Go::ParamVolume::isSpline ( ) const [inline], [virtual]

Check if the volume is of type spline.

Reimplemented in Go::SplineVolume.

Definition at line 196 of file ParamVolume.h.

29.335.3.7 virtual double Go::ParamVolume::nextSegmentVal (int *dir*, double *par*, bool *forward*, double *tol*) const [pure virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0, 1 or 2)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implemented in Go::SplineVolume, Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume, and Go::Parallelepiped.

29.335.3.8 virtual const Array<double,6> Go::ParamVolume::parameterSpan ( ) const [pure virtual]

Return the parameter domain of the volume. This is an array containing the start and end parameter values. The spline's parameter i has its start value at the array position (2i) and its end parameter value at the array position (2i+1)

Returns

An array describing the parametric domain of the volume

Implemented in Go::SplineVolume, Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume, and Go::Parallelepiped.

29.335.3.9 virtual void Go::ParamVolume::point (Point & *pt,* double *upar,* double *vpar,* double *wpar*) const [pure virtual]

Evaluates the volume's position for a given parameter triple.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter
wpar	the third parameter

Implemented in Go::SplineVolume, Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume, and Go::Parallelepiped.

29.335.3.10 virtual void Go::ParamVolume::point (std::vector< Point > & *pts,* double *upar,* double *vpar,* double *wpar,* int *derivs,* bool *u_from_right* = true, bool *v_from_right* = true, bool *w_from_right* = true, double *resolution* = 1.0e-12) const [pure virtual]

Evaluates the volume's position and a certain number of derivatives for a given parameter triple.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function. Upon completion of the function, its first entry is the volume's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the volume tangents along the first, second and third parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dudw, dv2, dvdw, dw2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
wpar	the third parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
w_from_right	specify whether derivatives along the third parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implemented in Go::SplineVolume, Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume,

and Go::Parallelepiped.

29.335.3.11 virtual void Go::ParamVolume::reverseParameterDirection (int *pardir*) [pure virtual]

Reverses the direction of the basis in input direction.

Parameters

pardir	which parameter direction to reverse

Implemented in Go::SplineVolume, Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume, and Go::Parallelepiped.

29.335.3.12 virtual void Go::ParamVolume::swapParameterDirection (int *pardir1*, int *pardir2*) [pure virtual]

Swaps two parameter directions

Parameters

pardir1	One of the parameter directions (0, 1 or 2) to be swapped
pardir2	The other parameter direction (0, 1 or 2) to be swapped

Implemented in Go::SplineVolume, Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume, and Go::Parallelepiped.

29.335.3.13 virtual DirectionCone Go::ParamVolume::tangentCone (int *pardir*) const [pure virtual]

Creates a DirectionCone covering all tangents to this volume along a given parameter direction.

Parameters

pardir	if 1, the DirectionCone will be defined on basis of the volume's tangents along the first parameter direction. If 2, the second parameter direction will be used. If 3, the third parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this volume along the specified parameter direction.

Implemented in Go::SplineVolume, Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume, and Go::Parallelepiped.

29.335.3.14 virtual void Go::ParamVolume::translate (const Point & *vec*) [pure virtual]

Translate.

Implemented in Go::SplineVolume, Go::TorusVolume, Go::SphereVolume, Go::ConeVolume, Go::CylinderVolume, and Go::Parallelepiped.

The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/ParamVolume.h

29.336 PathType Class Reference

`#include <PrPathTriangleSeq.h>`

Public Member Functions

- void initPathType ()
- void funnelOfPath (PathType prec)

  Computes the funnel for the funnel algorithm.
- void modification_l_path_ (int new_pt, const vector< UnfNodeType > &nodes_unf)

  Modification of the left path in the funnel algorithm.
- void modification_r_path_ (int new_pt, const vector< UnfNodeType > &nodes_unf)

  Modification of the right path in the funnel algorithm.
- void print ()

Public Attributes

- std::vector< int > l_path_
- std::vector< int > r_path_
- std::vector< int > funnel_

29.336.1 Detailed Description

PathType - used in PrPathTriangleSeq

Definition at line 83 of file PrPathTriangleSeq.h.

29.336.2 Member Function Documentation

29.336.2.1 void PathType::funnelOfPath (PathType *prec*)

Computes the funnel for the funnel algorithm.

29.336.2.2 void PathType::initPathType ( )

29.336.2.3 void PathType::modification_l_path_ (int *new_pt,* const vector< UnfNodeType > & *nodes_unf*)

Modification of the left path in the funnel algorithm.

29.336.2.4 void PathType::modification_r_path_ (int *new_pt,* const vector< UnfNodeType > & *nodes_unf*)

Modification of the right path in the funnel algorithm.

29.336.2.5 void PathType::print ( )

29.336.3 Member Data Documentation

29.336.3.1 std::vector<int> PathType::funnel_

Definition at line 88 of file PrPathTriangleSeq.h.

29.336.3.2 std::vector<int> PathType::l_path_

Definition at line 86 of file PrPathTriangleSeq.h.

29.336.3.3 std::vector<int> PathType::r_path_

Definition at line 87 of file PrPathTriangleSeq.h.

The documentation for this class was generated from the following file:

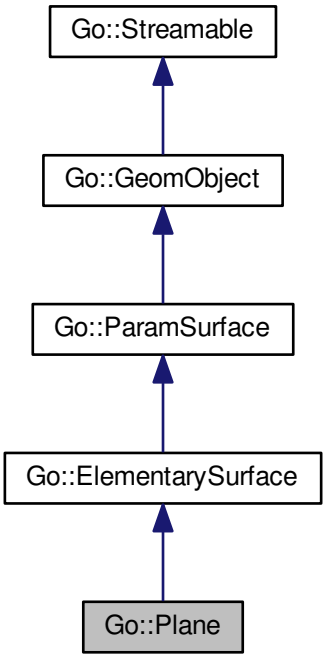
- parametrization/include/GoTools/parametrization/PrPathTriangleSeq.h

29.337 Go::Plane Class Reference

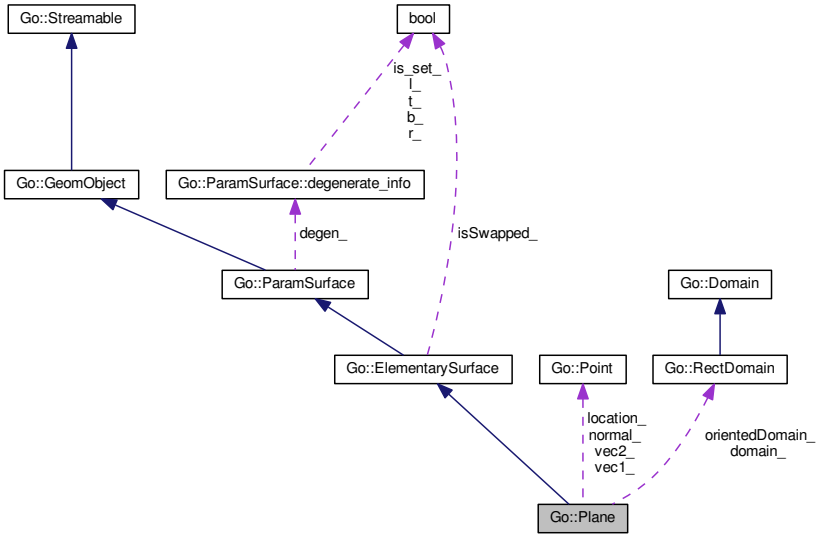
Class that represents a plane. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

`#include <Plane.h>`

Inheritance diagram for Go::Plane:



Collaboration diagram for Go::Plane:



Public Member Functions

- Plane ()

- Plane (Point location, Point normal, bool isSwapped=false)

  Constructor. Input is location and normal.
- Plane (Point location, Point normal, Point x_axis, bool isSwapped=false)
- Plane (double a, double b, double c, double d, bool isSwapped=false)
- virtual ~Plane ()

  virtual destructor - ensures safe inheritance
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return empty box if infinite plane.
- virtual Plane * clone () const
- const RectDomain & parameterDomain () const
- std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- DirectionCone normalCone () const
- DirectionCone tangentCone (bool pardir_is_u) const
- void point (Point &pt, double upar, double vpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_from_right=true, double resolution=1.0e-12) const
- void normal (Point &n, double upar, double vpar) const
- std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for paralell and anti paralell partial derivatives in surface corners.
- Point getPoint ()

  Point in plane.
- Point getNormal ()
- void getSpanningVectors (Point &axis1, Point &axis2)

  Vectors in plane.
- Point projectPoint (const Point &pnt) const

  Projection of the point pnt in the plane.
- double distance (const Point &pnt) const

  Distance between the point pnt and the plane.
- virtual void setParameterBounds (double from_upar, double from_vpar, double to_upar, double to_vpar)
- Plane * subSurface (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const

  Fetch a part of the plane.
- virtual SplineSurface * geometrySurface () const

  Create a SplineSurface representation of the Plane.
- virtual SplineSurface * createSplineSurface () const

Create a SplineSurface representation of the Plane.

- bool isBounded () const
- bool isClosed (bool &closed_dir_u, bool &closed_dir_v) const

  Check if the plane is closed. Virtual function - always false.
- Plane * intersect (const RotatedBox &bd_box) const
- virtual bool isPlanar (Point &normal, double tol)

  Confirm that the surface is a plane and return the plane normal.
- virtual bool isLinear (Point &dir1, Point &dir2, double tol)

Static Public Member Functions

- static ClassType classType ()

Protected Member Functions

- void setSpanningVectors ()
- void setSpanningVectorsSafe ()

Protected Attributes

- Point location_
- Point normal_
- Point vec1_
- Point vec2_
- RectDomain domain_
- RectDomain orientedDomain_

29.337.1 Detailed Description

Class that represents a plane. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

A Plane has a natural parametrization in terms of its location **C** and spanning vectors **x** and **y:** p(u, v) = C + ux + vy. This parametrization might be unbounded: - $\infty < u, v < \infty$.

Definition at line 63 of file Plane.h.

29.337.2 Constructor & Destructor Documentation

29.337.2.1 Go::Plane::Plane ( ) [inline]

Default constructor. Constructs an uninitialized Plane which can only be assigned to or read into.

Definition at line 68 of file Plane.h.

29.337.2.2 Go::Plane::Plane (Point *location,* Point *normal,* bool *isSwapped* = false)

Constructor. Input is location and normal.

29.337.2.3 Go::Plane::Plane (Point *location,* Point *normal,* Point *x_axis,* bool *isSwapped* = false)

Constructor. Input is location, normal and (local, approximate) x-axis

29.337.2.4 Go::Plane::Plane (double *a,* double *b,* double *c,* double *d,* bool *isSwapped* = false)

Constructor. Input is coefficients of implicit equation + point suggestion

29.337.2.5 virtual Go::Plane::~Plane ( ) [virtual]

virtual destructor - ensures safe inheritance

29.337.3 Member Function Documentation

29.337.3.1 std::vector<CurveLoop> Go::Plane::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.337.3.2 virtual BoundingBox Go::Plane::boundingBox ( ) const [virtual]

Return empty box if infinite plane.

Implements Go::GeomObject.

29.337.3.3 static ClassType Go::Plane::classType ( ) [inline], [static]

Definition at line 102 of file Plane.h.

29.337.3.4 virtual Plane* Go::Plane::clone ( ) const [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementarySurface.

29.337.3.5 void Go::Plane::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.337.3.6 void Go::Plane::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.337.3.7 std::vector<shared_ptr<ParamCurve> > Go::Plane::constParamCurves (double *parameter*, bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.337.3.8 virtual SplineSurface* Go::Plane::createSplineSurface ( ) const [virtual]

Create a SplineSurface representation of the Plane.

Implements Go::ElementarySurface.

29.337.3.9 virtual int Go::Plane::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.337.3.10 double Go::Plane::distance (const Point & *pnt*) const

Distance between the point pnt and the plane.

29.337.3.11 virtual SplineSurface* Go::Plane::geometrySurface ( ) const [virtual]

Create a SplineSurface representation of the Plane.

Implements Go::ElementarySurface.

29.337.3.12 void Go::Plane::getBoundaryInfo (Point & *pt1*, Point & *pt2*, double *epsilon*, SplineCurve *& *cv*, SplineCurve *& *crosscv*, double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The

Implements Go::ParamSurface.

29.337.3.13 virtual void Go::Plane::getDegenerateCorners (std::vector< Point > & *deg_corners*, double *tol*) const [virtual]

Check for paralell and anti paralell partial derivatives in surface corners.

Implements Go::ParamSurface.

29.337.3.14 Point Go::Plane::getNormal ( ) [inline]

Plane normal. NB: This function returns the "defining normal" and does not take swapped parameter directions into account! To get the "oriented normal", use Point::normal()

Definition at line 180 of file Plane.h.

29.337.3.15 Point Go::Plane::getPoint ( ) [inline]

Point in plane.

Definition at line 174 of file Plane.h.

29.337.3.16 void Go::Plane::getSpanningVectors (Point & *axis1*, Point & *axis2*) [inline]

Vectors in plane.

Definition at line 184 of file Plane.h.

29.337.3.17 virtual ClassType Go::Plane::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.337.3.18 Plane* Go::Plane::intersect (const RotatedBox & *bd_box*) const

Return the result from intersecting the unbounded plane with a rotated bounding box (having axis[0]=vec1_↩, axis[1]=vec2_, axis[2]=normal_). Useful for visualizing the (unbounded) plane. If intersection is empty, the returned plane is the NULL pointer. The rotated box may be created from a boundingbox by defining the coordinate system and the 8 corner points of the bd_box.

29.337.3.19 bool Go::Plane::isBounded ( ) const [virtual]

Query if parametrization is bounded. All four parameter bounds must be finite for this to be true.

Returns

true if bounded, *false* otherwise

Reimplemented from Go::ElementarySurface.

29.337.3.20 bool Go::Plane::isClosed (bool & *closed_dir_u,* bool & *closed_dir_v*) const [virtual]

Check if the plane is closed. Virtual function - always false.

Reimplemented from Go::ElementarySurface.

29.337.3.21 bool Go::Plane::isDegenerate (bool & *b,* bool & *r,* bool & *t,* bool & *l,* double *tolerance*) const [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

29.337.3.22 virtual bool Go::Plane::isLinear (Point & *dir1,* Point & *dir2,* double *tol*) [virtual]

The surface is linear in all directions. Fetch the parameter directions

Reimplemented from Go::ParamSurface.

29.337.3.23 virtual bool Go::Plane::isPlanar (Point & *normal,* double *tol*) [virtual]

Confirm that the surface is a plane and return the plane normal.

Reimplemented from Go::ParamSurface.

29.337.3.24 double Go::Plane::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.337.3.25 void Go::Plane::normal (Point & *n*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.337.3.26 DirectionCone Go::Plane::normalCone ( ) const [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.337.3.27 const RectDomain& Go::Plane::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.337.3.28 void Go::Plane::point (Point & *pt*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.337.3.29 void Go::Plane::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.337.3.30 Point Go::Plane::projectPoint (const Point & *pnt*) const

Projection of the point pnt in the plane.

29.337.3.31 virtual void Go::Plane::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.337.3.32 virtual void Go::Plane::setParameterBounds (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar*) [virtual]

Restrict the plane by restricting the parameter domain. It is initially infinite

Implements Go::ElementarySurface.

29.337.3.33 void Go::Plane::setSpanningVectors ( ) [protected]

29.337.3.34 void Go::Plane::setSpanningVectorsSafe ( ) [protected]

29.337.3.35 Plane* Go::Plane::subSurface (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

Fetch a part of the plane.

29.337.3.36 std::vector<shared_ptr<ParamSurface> > Go::Plane::subSurfaces (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.337.3.37 DirectionCone Go::Plane::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.337.3.38 virtual void Go::Plane::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.337.4 Member Data Documentation

29.337.4.1 RectDomain Go::Plane::domain_ [protected]

Definition at line 246 of file Plane.h.

29.337.4.2 Point Go::Plane::location_ [protected]

Definition at line 238 of file Plane.h.

29.337.4.3 Point Go::Plane::normal_ [protected]

Definition at line 242 of file Plane.h.

29.337.4.4 RectDomain Go::Plane::orientedDomain_ [mutable], [protected]

Definition at line 247 of file Plane.h.

29.337.4.5 Point Go::Plane::vec1_ [protected]

Definition at line 243 of file Plane.h.

29.337.4.6 Point Go::Plane::vec2_ [protected]

Definition at line 244 of file Plane.h.

The documentation for this class was generated from the following file:

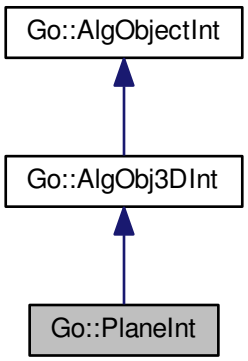
- gotools-core/include/GoTools/geometry/Plane.h

29.338 Go::PlaneInt Class Reference

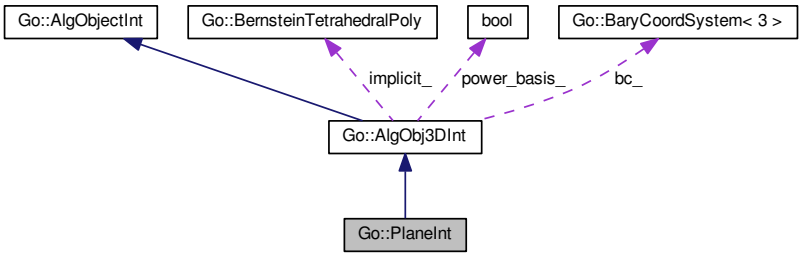
Class representing planar algebraic intersection objects.

`#include <PlaneInt.h>`

Inheritance diagram for Go::PlaneInt:



Collaboration diagram for Go::PlaneInt:



Public Member Functions

- PlaneInt ()
- PlaneInt (Point point, Point normal)
- PlaneInt (double a, double b, double c, double d)
- virtual ~PlaneInt ()

  Constructor.
- void read (std::istream &is)
- double a () const
- double b () const
- double c () const
- double d () const
- shared_ptr< SplineSurface > surface (Point mid_pt, double length_x, double length_y) const

Additional Inherited Members

29.338.1 Detailed Description

Class representing planar algebraic intersection objects.

Definition at line 57 of file PlaneInt.h.

29.338.2 Constructor & Destructor Documentation

29.338.2.1 Go::PlaneInt::PlaneInt ( )

Constructor. Used when reading from file.

29.338.2.2 Go::PlaneInt::PlaneInt (Point *point*, Point *normal*)

Constructor.

Parameters

point	reference point in the plane.
normal	normal to the plane.

29.338.2.3 Go::PlaneInt::PlaneInt (double *a*, double *b*, double *c*, double *d*)

Constructor. The plane is described by the expression $ax + by + cz + d = 0$.

Parameters

a	the x multiplicator.
b	the y multiplicator.
c	the z multiplicator.
d	the constant.

29.338.2.4 virtual Go::PlaneInt::~PlaneInt ( ) [virtual]

Constructor.

29.338.3 Member Function Documentation

29.338.3.1 double Go::PlaneInt::a ( ) const

Get the x multiplicator.

Returns

a The x multiplicator.

29.338.3.2 double Go::PlaneInt::b ( ) const

Get the y multiplicator.

Returns

b The y multiplicator.

29.338.3.3 double Go::PlaneInt::c ( ) const

Get the z multiplicator.

Returns

c The z multiplicator.

29.338.3.4 double Go::PlaneInt::d ( ) const

Get the constant.

Returns

d The constant.

29.338.3.5 void Go::PlaneInt::read (std::istream & *is*)

Read a plane description from file.

Parameters

is	the stream containing the plane description.

29.338.3.6 shared_ptr<SplineSurface> Go::PlaneInt::surface (Point *mid_pt,* double *length_x,* double *length_y*) const

Get a SplineSuface representing the plane. This can be used to visualize the object. Since the object is to be tesselated we make sure it is bounded.

Parameters

mid_pt	the intersection of the diagonals in a rectangle in the plane.

Parameters

length_x	the length of the rectangle in the x direction.
length_y	the length of the rectangle in the y direction.

Returns

The spline surface of the plane.

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/PlaneInt.h

29.339 Go::Point Class Reference

`#include <Point.h>`

Public Member Functions

- Point ()
- Point (int dim)
- Point (double x, double y)
- Point (double x, double y, double z)
- template<typename T , int Dim>
  Point (const Array< T, Dim > &v)
- template<typename RandomAccessIterator >
  Point (RandomAccessIterator first, RandomAccessIterator last)

  Constructor making a Point from an iterator range.
- Point (double *begin, double *end, bool own)
- Point (const Point &v)

  Copy constructor.
- Point & operator= (const Point &v)

  Assignment operator.
- ~Point ()

  Destructor.
- void swap (Point &other)

  Swaps two Point instances. Never throws.
- void read (std::istream &is)
- void write (std::ostream &os) const
- const double & operator[ ] (int i) const

  Read-only index access.
- double & operator[ ] (int i)

  Index access.
- const double * begin () const

  Get a read-only start iterator.
- double * begin ()

Get a start iterator.

- const double * end () const

  Get a read-only end iterator.

- double * end ()

  Get a end iterator.

- int size () const

  Get the dimension of the Point.

- int dimension () const

  Get the dimension of the Point. Same as size().

- void resize (int d)

  Changing dimension. This loses all info in the point.

- void setValue (double x, double y)

  Set function for 2D.

- void setValue (double x, double y, double z)

  Set function for 3D.

- void setValue (const double *array)
- void setValue (double val)
- void resetValue (int idx, double val)
- double length2 () const
- double length () const
- double lengthInf () const
- double dist2 (const Point &v) const
- double dist (const Point &v) const
- double distInf (const Point &v) const
- void normalize ()
- double normalize_checked ()
- Point operator+ (const Point &v) const

  The sum of two vectors.

- void operator+= (const Point &v)

  Add a vector to this vector.

- Point operator- (const Point &v) const

  The difference between two vectors.

- void operator-= (const Point &v)

  Subtract a vector from this vector.

- Point operator* (double d) const

  The product of a vector and a scalar.

- void operator*= (double d)

  Multiply this vector by a scalar.

- Point operator/ (double d) const

  A vector divided by a scalar.

- void operator/= (double d)

  Divide this vector with a scalar.

- Point operator- () const

  The negation of a vector.

- double operator* (const Point &v) const
- Point operator% (const Point &v) const
- Point cross (const Point &v) const
- void setToCrossProd (const Point &u, const Point &v)

  Set this Point to the cross product of two other Points.

- double cosAngle (const Point &v) const
- double angle (const Point &v) const

  The angle between this and another vector. Range is [0.0, M_PI].

- double angle2 (const Point &v) const

  The angle between this and another vector of dimension 2. Range is [0.0, 2∗M_PI].
- double angle_smallest (const Point &v) const

  of orientation. Range is [0.0, 0.5∗M_PI].

29.339.1 Detailed Description

Run-time sized point class. Encapsulates a point or vector with full value semantics, i.e. copying and assignment works as expected. The class has some vector algebra functionality, such as scalar product, multiplication by scalars etc, and objects will sometimes be called 'vectors' in the following. Based on double precision floating point numbers.

Definition at line 63 of file Point.h.

29.339.2 Constructor & Destructor Documentation

29.339.2.1 Go::Point::Point ( ) [inline]

Default constructor, does not initialize elements. The only functions you are allowed to use with a default constructed (0-dim) Point are the assignment operator, resize and setValue(...). This is not enforced.

Definition at line 75 of file Point.h.

29.339.2.2 Go::Point::Point (int *dim*) [inline], [explicit]

Constructor taking a dimension argument. Resulting point is of the specified dimension, but not initialized.

Definition at line 81 of file Point.h.

29.339.2.3 Go::Point::Point (double *x*, double *y*) [inline]

Constructor taking 2 arguments, makes the 2D-point (x,y).

Definition at line 86 of file Point.h.

29.339.2.4 Go::Point::Point (double *x*, double *y*, double *z*) [inline]

Constructor taking 3 arguments, makes the 3D-point (x,y,z).

Definition at line 94 of file Point.h.

29.339.2.5 template<typename T , int Dim> Go::Point::Point (const Array< T, Dim > & *v*) [inline], [explicit]

Constructor making a Point as a copy of an Array. The Array must have a value type convertible to double.

Definition at line 108 of file Point.h.

29.339.2.6 template<typename RandomAccessIterator > Go::Point::Point (RandomAccessIterator *first,* RandomAccessIterator *last*) [inline]

Constructor making a Point from an iterator range.

Definition at line 122 of file Point.h.

29.339.2.7 Go::Point::Point (double * *begin,* double * *end,* bool *own*) [inline]

Make a point from an existing range of doubles. If the own parmeter is false, the Point will refer to the input data, and not own them. If it is true, it will act as a regular point, owning its data.

Definition at line 162 of file Point.h.

29.339.2.8 Go::Point::Point (const Point & *v*) [inline]

Copy constructor.

Definition at line 178 of file Point.h.

29.339.2.9 Go::Point::~Point ( ) [inline]

Destructor.

Definition at line 198 of file Point.h.

29.339.3 Member Function Documentation

29.339.3.1 double Go::Point::angle (const Point & *v*) const [inline]

The angle between this and another vector. Range is [0.0, M_PI].

Definition at line 505 of file Point.h.

29.339.3.2 double Go::Point::angle2 (const Point & *v*) const [inline]

The angle between this and another vector of dimension 2. Range is [0.0, 2*M_PI].

Definition at line 511 of file Point.h.

29.339.3.3 double Go::Point::angle_smallest (const Point & *v*) const [inline]

of orientation. Range is [0.0, 0.5*M_PI].

The smallest angle between this and another vector regardless

Definition at line 526 of file Point.h.

29.339.3.4 const double* Go::Point::begin ( ) const [inline]

Get a read-only start iterator.

Definition at line 228 of file Point.h.

29.339.3.5 double* Go::Point::begin ( ) [inline]

Get a start iterator.

Definition at line 230 of file Point.h.

29.339.3.6 double Go::Point::cosAngle (const Point & *v*) const [inline]

The cosine of the angle between this and another vector.

Definition at line 489 of file Point.h.

29.339.3.7 Point Go::Point::cross (const Point & *v*) const [inline]

The cross product of two vectors. Throws if dimensions are not 3.

Definition at line 462 of file Point.h.

29.339.3.8 int Go::Point::dimension ( ) const [inline]

Get the dimension of the Point. Same as size().

Definition at line 238 of file Point.h.

29.339.3.9 double Go::Point::dist (const Point & *v*) const [inline]

Get the euclidian length of the difference between this vector and another vector.

Definition at line 333 of file Point.h.

29.339.3.10 double Go::Point::dist2 (const Point & *v*) const [inline]

Get the square of the euclidian length of the difference between this vector and another vector.

Definition at line 320 of file Point.h.

29.339.3.11 double Go::Point::distInf (const Point & *v*) const [inline]

Get the infinity-norm (or max-norm) length of the difference between this vector and another vector.

Definition at line 340 of file Point.h.

29.339.3.12 const double* Go::Point::end ( ) const [inline]

Get a read-only end iterator.

Definition at line 232 of file Point.h.

29.339.3.13 double* Go::Point::end ( ) [inline]

Get a end iterator.

Definition at line 234 of file Point.h.

29.339.3.14 double Go::Point::length ( ) const [inline]

Get the euclidian length of the vector.

Definition at line 303 of file Point.h.

29.339.3.15 double Go::Point::length2 ( ) const [inline]

Get the square of the euclidian length of the vector.

Definition at line 294 of file Point.h.

29.339.3.16 double Go::Point::lengthInf ( ) const [inline]

Get the infinity-norm (or max-norm) length of the vector.

Definition at line 309 of file Point.h.

29.339.3.17 void Go::Point::normalize ( ) [inline]

Normalize this vector, i.e. divide every element by length().

Definition at line 352 of file Point.h.

29.339.3.18 double Go::Point::normalize_checked ( ) [inline]

Definition at line 359 of file Point.h.

29.339.3.19 Point Go::Point::operator% (const Point & *v*) const [inline]

The cross product of two vectors. Dimensions should be 3.

Definition at line 451 of file Point.h.

29.339.3.20 Point Go::Point::operator∗ (double *d*) const [inline]

The product of a vector and a scalar.

Definition at line 401 of file Point.h.

29.339.3.21 double Go::Point::operator∗ (const Point & *v*) const [inline]

The scalar product (or inner product, or dot product) of two vectors.

Definition at line 439 of file Point.h.

29.339.3.22 void Go::Point::operator∗= (double *d*) [inline]

Multiply this vector by a scalar.

Definition at line 408 of file Point.h.

29.339.3.23 Point Go::Point::operator+ (const Point & *v*) const [inline]

The sum of two vectors.

Definition at line 370 of file Point.h.

29.339.3.24 void Go::Point::operator+= (const Point & *v*) [inline]

Add a vector to this vector.

Definition at line 377 of file Point.h.

29.339.3.25 Point Go::Point::operator- (const Point & *v*) const [inline]

The difference between two vectors.

Definition at line 386 of file Point.h.

29.339.3.26 Point Go::Point::operator- ( ) const [inline]

The negation of a vector.

Definition at line 429 of file Point.h.

29.339.3.27 void Go::Point::operator-= (const Point & *v*) [inline]

Subtract a vector from this vector.

Definition at line 393 of file Point.h.

29.339.3.28 Point Go::Point::operator/ (double *d*) const [inline]

A vector divided by a scalar.

Definition at line 415 of file Point.h.

29.339.3.29 void Go::Point::operator/= (double *d*) [inline]

Divide this vector with a scalar.

Definition at line 422 of file Point.h.

29.339.3.30 Point& Go::Point::operator= (const Point & *v*) [inline]

Assignment operator.

Definition at line 190 of file Point.h.

29.339.3.31 const double& Go::Point::operator[ ] (int *i*) const [inline]

Read-only index access.

Definition at line 224 of file Point.h.

29.339.3.32 double& Go::Point::operator[ ] (int *i*) [inline]

Index access.

Definition at line 226 of file Point.h.

29.339.3.33 void Go::Point::read (std::istream & *is*)

Reads a Point elementwise from a standard istream. The Point must already be initialized with the correct dimension.

29.339.3.34 void Go::Point::resetValue (int *idx,* double *val*) [inline]

Definition at line 285 of file Point.h.

29.339.3.35 void Go::Point::resize (int *d*) [inline]

Changing dimension. This loses all info in the point.

Definition at line 241 of file Point.h.

29.339.3.36 void Go::Point::setToCrossProd (const Point & *u*, const Point & *v*) [inline]

Set this Point to the cross product of two other Points.

Definition at line 468 of file Point.h.

29.339.3.37 void Go::Point::setValue (double *x*, double *y*) [inline]

Set function for 2D.

Definition at line 252 of file Point.h.

29.339.3.38 void Go::Point::setValue (double *x*, double *y*, double *z*) [inline]

Set function for 3D.

Definition at line 259 of file Point.h.

29.339.3.39 void Go::Point::setValue (const double * *array*) [inline]

Set function that copies values from an input array. Dimension must already be initialized!

Definition at line 269 of file Point.h.

29.339.3.40 void Go::Point::setValue (double *val*) [inline]

Set function that sets all elements equal to the input. Dimension must already be initialized!

Definition at line 278 of file Point.h.

29.339.3.41 int Go::Point::size ( ) const [inline]

Get the dimension of the Point.

Definition at line 236 of file Point.h.

29.339.3.42 void Go::Point::swap (Point & *other*) [inline]

Swaps two Point instances. Never throws.

Definition at line 204 of file Point.h.

29.339.3.43 void Go::Point::write (std::ostream & *os*) const

Writes a Point elementwise to a standard ostream. Precision is set to 16 by this function. Dimension is not stored.

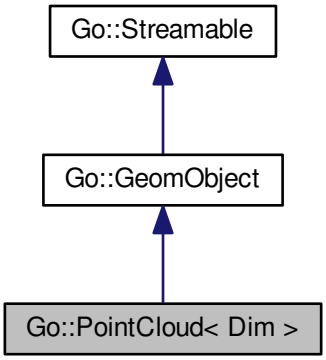
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/Point.h

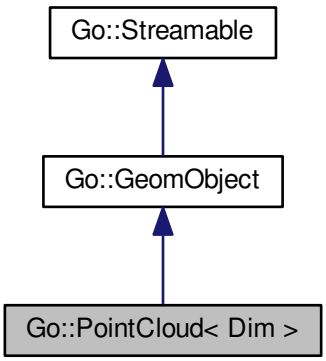
29.340 Go::PointCloud< Dim > Class Template Reference

`#include <PointCloud.h>`

Inheritance diagram for Go::PointCloud< Dim >:



Collaboration diagram for Go::PointCloud< Dim >:



Public Member Functions

- PointCloud ()
- template<typename ForwardIterator >
  PointCloud (ForwardIterator start, int numpoints)
- PointCloud (std::vector< Array< double, Dim > > &points)

  Constructor specifying a PointCloud from an Array of points.
- virtual ~PointCloud ()

  Virtual destructor, enables safe inheritance.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Query the dimension of the space where the PointCloud lies.
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual PointCloud * clone () const

  Clone the GeomObject and return a pointer to the clone.
- int numPoints () const
- Array< double, Dim > & point (int i)
- const Array< double, Dim > & point (int i) const
- double * rawData ()
- const double * rawData () const
- const std::vector< Array< double, Dim > > & pointVector ()
- void translate (Array< double, Dim > vec)
- void rotate (const Vector3D &p, const Vector3D &q)
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const

Static Public Member Functions

- static ClassType classType ()

29.340.1 Detailed Description

template<int Dim>
class Go::PointCloud< Dim >

Represent a cloud of points in 'Dim'-dimensional space.

Definition at line 61 of file PointCloud.h.

29.340.2 Constructor & Destructor Documentation

29.340.2.1 template<int Dim> Go::PointCloud< Dim >::PointCloud ( ) [inline]

Constructor for an empty PointCloud that can only be assigned to or read(...) into.

Definition at line 65 of file PointCloud.h.

29.340.2.2 template<int Dim> template<typename ForwardIterator > Go::PointCloud< Dim >::PointCloud (ForwardIterator *start,* int *numpoints*) [inline]

start is supposed to point to the start of the array to be copied, its valuetype should be convertible to double Constructor specifying a PointCloud from a number of predefined points.

Parameters

start	iterator to the beginning of an array where the defining points are stored (these will be copied to the objects internal datastructure).
numpoints	number of points to be read into the PointCloud

Definition at line 77 of file PointCloud.h.

29.340.2.3 template<int Dim> Go::PointCloud< Dim >::PointCloud (std::vector< Array< double, Dim > > & *points*) [inline]

Constructor specifying a PointCloud from an Array of points.

Definition at line 88 of file PointCloud.h.

29.340.2.4 template<int Dim> virtual Go::PointCloud< Dim >::~PointCloud ( ) [inline], [virtual]

Virtual destructor, enables safe inheritance.

Definition at line 93 of file PointCloud.h.

29.340.3 Member Function Documentation

29.340.3.1 template<int Dim> virtual BoundingBox Go::PointCloud< Dim >::boundingBox ( ) const [inline], [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

Definition at line 97 of file PointCloud.h.

29.340.3.2 template<int Dim> static ClassType Go::PointCloud< Dim >::classType ( ) [inline], [static]

Definition at line 113 of file PointCloud.h.

29.340.3.3 template<int Dim> virtual PointCloud* Go::PointCloud< Dim >::clone ( ) const [inline], [virtual]

Clone the GeomObject and return a pointer to the clone.

Implements Go::GeomObject.

Definition at line 126 of file PointCloud.h.

29.340.3.4 template<int Dim> virtual int Go::PointCloud< Dim >::dimension ( ) const [inline], [virtual]

Query the dimension of the space where the PointCloud lies.

Implements Go::GeomObject.

Definition at line 105 of file PointCloud.h.

29.340.3.5 template<int Dim> virtual ClassType Go::PointCloud< Dim >::instanceType ( ) const [inline], [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

Definition at line 109 of file PointCloud.h.

29.340.3.6 template<int Dim> int Go::PointCloud< Dim >::numPoints ( ) const [inline]

Query the number of points in the PointCloud

Returns

the number of points in the PointCloud

Definition at line 132 of file PointCloud.h.

29.340.3.7 template<int Dim> Array<double, Dim>& Go::PointCloud< Dim >::point (int *i*) [inline]

Get the coordinates of a point in the point cloud

Parameters

i	the index of the requested point

Returns

a reference to the Array containing the coordinates of the requested point

Definition at line 139 of file PointCloud.h.

29.340.3.8 template<int Dim> const Array<double, Dim>& Go::PointCloud< Dim >::point (int *i*) const [inline]

Get the coordinates of a point in the point cloud (const-version)

Parameters

i	the index of the requested point

Returns

a const reference to the Array containing the coordinates of the requested point

Definition at line 146 of file PointCloud.h.

29.340.3.9 template<int Dim> const std::vector<Array<double, Dim> >& Go::PointCloud< Dim >::pointVector ( ) [inline]

Get a reference to the vector where the points are stored

Returns

a reference to the point coordinate vector

Definition at line 163 of file PointCloud.h.

29.340.3.10 template<int Dim> double* Go::PointCloud< Dim >::rawData ( ) [inline]

Get a pointer to the memory area where the point coordinates are (consecutively) stored.

Returns

a pointer to the coordinate storage area.

Definition at line 152 of file PointCloud.h.

29.340.3.11 template<int Dim> const double* Go::PointCloud< Dim >::rawData ( ) const [inline]

Get a const pointer to the memory area where the point coordinates are (consecutively) stored.

Returns

a constant pointer to the coordinate storage area

Definition at line 158 of file PointCloud.h.

29.340.3.12 template<int Dim> virtual void Go::PointCloud< Dim >::read (std::istream & *is*) [inline], [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

Definition at line 192 of file PointCloud.h.

29.340.3.13 template<int Dim> void Go::PointCloud< Dim >::rotate (const Vector3D & *p*, const Vector3D & *q*) [inline]

Rotate by multiplying all points with a matrix that takes vector p to vector q Only for Dim == 3

Definition at line 177 of file PointCloud.h.

29.340.3.14 template<int Dim> void Go::PointCloud< Dim >::translate (Array< double, Dim > *vec*) [inline]

Definition at line 166 of file PointCloud.h.

29.340.3.15 template<int Dim> virtual void Go::PointCloud< Dim >::write (std::ostream & *os*) const [inline], [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

Definition at line 228 of file PointCloud.h.

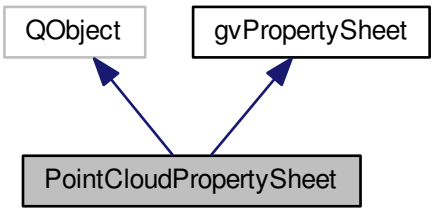
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/PointCloud.h

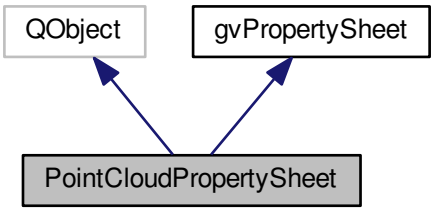
29.341 PointCloudPropertySheet Class Reference

`#include <PointCloudPropertySheet.h>`

Inheritance diagram for PointCloudPropertySheet:



Collaboration diagram for PointCloudPropertySheet:



Public Slots

- void apply ()

Public Member Functions

- PointCloudPropertySheet (gvPointCloudPaintable ∗pable)
- virtual void createSheet (QWidget ∗parent, gvObserver ∗obs)

29.341.1 Detailed Description

Documentation ... The property sheet for PointCloud.

Definition at line 57 of file PointCloudPropertySheet.h.

29.341.2 Constructor & Destructor Documentation

29.341.2.1 PointCloudPropertySheet::PointCloudPropertySheet (gvPointCloudPaintable * *pable*)

29.341.3 Member Function Documentation

29.341.3.1 void PointCloudPropertySheet::apply ( ) [slot]

29.341.3.2 virtual void PointCloudPropertySheet::createSheet (QWidget * *parent,* gvObserver * *obs*) [virtual]

Implements gvPropertySheet.

The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/PointCloudPropertySheet.h

29.342 Go::PointOnCurve Class Reference

`#include <PointOnCurve.h>`

Public Member Functions

- PointOnCurve ()
  Default constructor.
- PointOnCurve (shared_ptr< ParamCurve > curve, double par)
  Constructor taking a curve and a parameter value.
- PointOnCurve (shared_ptr< ParamCurve > curve, Point pnt)
  Constructor taking a curve and a point.
- ~PointOnCurve ()
  Destructor.
- Point getPos () const
- shared_ptr< ParamCurve > getCurve () const
  Fetch the curve associated to the point.
- double getPar () const
  Fetch the curve parameter associated to the point.
- void evaluate (int der, std::vector< Point > &deriv) const
  The curve is evaluated including der derivatives.
- void setParInterval (double start, double end)
  Add limiting information to the current curve.

29.342.1 Detailed Description

Represents a point on a curve. Lean functionality for the time being, but should be extended to cover for instance curvature computations

Definition at line 53 of file PointOnCurve.h.

29.342.2 Constructor & Destructor Documentation

29.342.2.1 Go::PointOnCurve::PointOnCurve ( )

Default constructor.

29.342.2.2 Go::PointOnCurve::PointOnCurve (shared_ptr< ParamCurve > *curve,* double *par*)

Constructor taking a curve and a parameter value.

29.342.2.3 Go::PointOnCurve::PointOnCurve (shared_ptr< ParamCurve > *curve,* Point *pnt*)

Constructor taking a curve and a point.

29.342.2.4 Go::PointOnCurve::~PointOnCurve ( )

Destructor.

29.342.3 Member Function Documentation

29.342.3.1 void Go::PointOnCurve::evaluate (int *der,* std::vector< Point > & *deriv*) const

The curve is evaluated including der derivatives.

29.342.3.2 shared_ptr<ParamCurve> Go::PointOnCurve::getCurve ( ) const [inline]

Fetch the curve associated to the point.

Definition at line 74 of file PointOnCurve.h.

29.342.3.3 double Go::PointOnCurve::getPar ( ) const [inline]

Fetch the curve parameter associated to the point.

Definition at line 80 of file PointOnCurve.h.

29.342.3.4 Point Go::PointOnCurve::getPos ( ) const

Evaluate If an input point is given, this is the point that will be returned even if it does not lie exactly on the curve

29.342.3.5 void Go::PointOnCurve::setParInterval (double *start,* double *end*)

Add limiting information to the current curve.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/PointOnCurve.h

29.343 Go::PointOnEdge Class Reference

`#include <PointOnEdge.h>`

Public Member Functions

- PointOnEdge (ftEdge *edge, double par)
- ~PointOnEdge ()
  Destructor.
- const Point & position () const
  Point position.
- ftEdge * edge () const
  Associated edge.
- double par () const
  Associated edge parameter.

29.343.1 Detailed Description

PointOnEdge - represents a point lying on an edge. Storage.

Definition at line 56 of file PointOnEdge.h.

29.343.2 Constructor & Destructor Documentation

29.343.2.1 Go::PointOnEdge::PointOnEdge (ftEdge * *edge,* double *par*)

Constructor

Parameters

the	edge on which the point lies
par	associated edge parameter

29.343.2.2 Go::PointOnEdge::~PointOnEdge ( )

Destructor.

29.343.3 Member Function Documentation

29.343.3.1 ftEdge* Go::PointOnEdge::edge ( ) const [inline]

Associated edge.

Definition at line 71 of file PointOnEdge.h.

29.343.3.2 double Go::PointOnEdge::par ( ) const [inline]

Associated edge parameter.

Definition at line 73 of file PointOnEdge.h.

29.343.3.3 const Point& Go::PointOnEdge::position ( ) const [inline]

Point position.

Definition at line 69 of file PointOnEdge.h.

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/PointOnEdge.h

29.344 Go::PointSequence Class Reference

`#include <PointSequence.h>`

Public Member Functions

- PointSequence ()
  Default constructor.
- template<typename RandomIterator >
  PointSequence (int dim, int nmb_pts, RandomIterator coefs_start, PointSequenceType pst=PSTPoint)
  Constructor given a sequence of points of a specified type.
- template<typename RandomIterator >
  PointSequence (int dim, int nmb_pts_1, int nmb_pts_2, RandomIterator coefs_start, PointSequenceType pst=PSTPoint)
- template<typename RandomIterator >
  PointSequence (int dim, int nmb_pts_1, int nmb_pts_2, int nmb_pts_3, RandomIterator coefs_start, PointSequenceType pst=PSTPoint)
  Constructor given a 3 dimensional grid of points of a specified type.
- virtual ~PointSequence ()
- int dimension () const
  Point dimension.
- int grid_dimension () const
  Dimension of grid.
- int grid_length (int i) const

Length of grid in the given direction.

- PointSequenceType type () const

  Point type.

- std::vector< double >::iterator coefs_begin ()

  Iterator to grid start.

- std::vector< double >::iterator coefs_end ()

  Iterator to grid end.

- std::vector< double >::const_iterator coefs_begin () const

  Constant iterator to grid start.

- std::vector< double >::const_iterator coefs_end () const

  Constant iterator to grid end.

29.344.1 Detailed Description

Definition at line 64 of file PointSequence.h.

29.344.2 Constructor & Destructor Documentation

29.344.2.1 Go::PointSequence::PointSequence ( ) [inline]

Default constructor.

Definition at line 70 of file PointSequence.h.

29.344.2.2 template<typename RandomIterator > Go::PointSequence::PointSequence (int *dim*, int *nmb_pts*, RandomIterator *coefs_start*, PointSequenceType *pst* = PSTPoint) [inline]

Constructor given a sequence of points of a specified type.

Definition at line 78 of file PointSequence.h.

29.344.2.3 template<typename RandomIterator > Go::PointSequence::PointSequence (int *dim*, int *nmb_pts_1*, int *nmb_pts_2*, RandomIterator *coefs_start*, PointSequenceType *pst* = PSTPoint) [inline]

Constructor given a number of sequences of points of a specified type, Each point sequence must contain the same number of points, i.e. two dimensional grid

Definition at line 105 of file PointSequence.h.

29.344.2.4 template<typename RandomIterator > Go::PointSequence::PointSequence (int *dim*, int *nmb_pts_1*, int *nmb_pts_2*, int *nmb_pts_3*, RandomIterator *coefs_start*, PointSequenceType *pst* = PSTPoint) [inline]

Constructor given a 3 dimensional grid of points of a specified type.

Definition at line 132 of file PointSequence.h.

29.344.2.5 virtual Go::PointSequence::~PointSequence ( ) [inline], [virtual]

Definition at line 160 of file PointSequence.h.

29.344.3 Member Function Documentation

29.344.3.1 std::vector<double>::iterator Go::PointSequence::coefs_begin ( ) [inline]

Iterator to grid start.

Definition at line 176 of file PointSequence.h.

29.344.3.2 std::vector<double>::const_iterator Go::PointSequence::coefs_begin ( ) const [inline]

Constant iterator to grid start.

Definition at line 184 of file PointSequence.h.

29.344.3.3 std::vector<double>::iterator Go::PointSequence::coefs_end ( ) [inline]

Iterator to grid end.

Definition at line 180 of file PointSequence.h.

29.344.3.4 std::vector<double>::const_iterator Go::PointSequence::coefs_end ( ) const [inline]

Constant iterator to grid end.

Definition at line 188 of file PointSequence.h.

29.344.3.5 int Go::PointSequence::dimension ( ) const

Point dimension.

29.344.3.6 int Go::PointSequence::grid_dimension ( ) const

Dimension of grid.

29.344.3.7 int Go::PointSequence::grid_length (int *i*) const

Length of grid in the given direction.

29.344.3.8 PointSequenceType Go::PointSequence::type ( ) const

Point type.

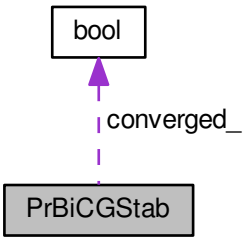
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/PointSequence.h

29.345 PrBiCGStab Class Reference

`#include <PrBiCGStab.h>`

Collaboration diagram for PrBiCGStab:



Public Member Functions

- PrBiCGStab ()
  Constructor.
- ~PrBiCGStab ()
  Destructor.
- void setTolerance (double tolerance=1.0e-6)
  Set the tolerance for the residual.
- void setMaxIterations (int max_iterations)
  Set the maximum number of iterations.
- void solve (const PrMatrix &A, PrVec &x, const PrVec &b)
  Solve the linear system, replacing the start vector with the solution.
- int getItCount ()
  Get the number of iterations spent for the last call of 'solve()'.
- double getCPUTime ()
  Get the CPU time spent for the last call of 'solve()'.
- bool converged ()
  Check if the last call of 'solve()' managed to converge to a solution.

Protected Attributes

- double tolerance_
- int max_iterations_
- int it_count_
- double cpu_time_
- bool converged_

29.345.1 Detailed Description

PrBiCGStab - Implements the BiCGStab method for solving sparse linear systems.

Definition at line 51 of file PrBiCGStab.h.

29.345.2 Constructor & Destructor Documentation

29.345.2.1 PrBiCGStab::PrBiCGStab ( )

Constructor.

29.345.2.2 PrBiCGStab::~PrBiCGStab ( ) [inline]

Destructor.

Definition at line 66 of file PrBiCGStab.h.

29.345.3 Member Function Documentation

29.345.3.1 bool PrBiCGStab::converged ( ) [inline]

Check if the last call of 'solve()' managed to converge to a solution.

Definition at line 84 of file PrBiCGStab.h.

29.345.3.2 double PrBiCGStab::getCPUTime ( ) [inline]

Get the CPU time spent for the last call of 'solve()'.

Definition at line 81 of file PrBiCGStab.h.

29.345.3.3 int PrBiCGStab::getItCount ( ) [inline]

Get the number of iterations spent for the last call of 'solve()'.

Definition at line 78 of file PrBiCGStab.h.

29.345.3.4 void PrBiCGStab::setMaxIterations (int *max_iterations*) [inline]

Set the maximum number of iterations.

Definition at line 72 of file PrBiCGStab.h.

29.345.3.5 void PrBiCGStab::setTolerance (double *tolerance* = 1.0e-6) [inline]

Set the tolerance for the residual.

Definition at line 69 of file PrBiCGStab.h.

29.345.3.6 void PrBiCGStab::solve (const PrMatrix & *A*, PrVec & *x*, const PrVec & *b*)

Solve the linear system, replacing the start vector with the solution.

29.345.4 Member Data Documentation

29.345.4.1 bool PrBiCGStab::converged_ [protected]

Definition at line 60 of file PrBiCGStab.h.

29.345.4.2 double PrBiCGStab::cpu_time_ [protected]

Definition at line 59 of file PrBiCGStab.h.

29.345.4.3 int PrBiCGStab::it_count_ [protected]

Definition at line 58 of file PrBiCGStab.h.

29.345.4.4 int PrBiCGStab::max_iterations_ [protected]

Definition at line 56 of file PrBiCGStab.h.

29.345.4.5 double PrBiCGStab::tolerance_ [protected]

Definition at line 55 of file PrBiCGStab.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrBiCGStab.h

29.346 PrCellStructure Class Reference

`#include <PrCellStructure.h>`

Public Member Functions

- PrCellStructure ()

  Default constructor.
- PrCellStructure (int n, double *xyz_points, int max_no_cells=10)
- virtual ~PrCellStructure ()

  Destructor.
- void attach (int n, const double *xyz_points)
- void setNumCells (int max_no_cells)
- int getNumCells () const
- int getNumNodes () const

  Get the number of points (nodes) stored in the cell structure.
- Vector3D get3dNode (int i) const

  Get a specific point (node) in the PrCellStructure by its index.
- void set3dNode (int i, const Vector3D &p)
- void getBall (const Vector3D &p, double radius, vector< int > &neighbours, int notP=0) const
- void getKNearest (const Vector3D &p, int k, vector< int > &neighbours, int notP=0) const
- int getI (int i, int j, int k) const

  Get the index of the cell positioned at 'i', 'j', 'k'.
- void getIJK (int ii, int &i, int &j, int &k) const

  Get the 'i', 'j', 'k'-position of the cell indexed 'ii'.
- void whichCell (const Vector3D &xyz, int &i, int &j, int &k) const
- void print (ostream &os)

  write points to stream
- void scan (istream &is)

  read points from stream and regenerate cell structure.

29.346.1 Detailed Description

PrCellStructure - Represents a set of points in three dimensions and a cell structure: a 3D grid of cubical cells each with a local list of those points which lie inside it. This allows one to perform various queries, such as finding all points in a ball, very efficiently. Creating the cell structure requires only O(N) operations, where *N* is the number of points.

Definition at line 60 of file PrCellStructure.h.

29.346.2 Constructor & Destructor Documentation

29.346.2.1 PrCellStructure::PrCellStructure ( ) [inline]

Default constructor.

Definition at line 77 of file PrCellStructure.h.

29.346.2.2 PrCellStructure::PrCellStructure (int *n*, double * *xyz_points*, int *max_no_cells* = 10)

Constructor

Parameters

n	total number of points
xyz_points	pointer to an array of points stored xyz-wise (The points will be copied to internal data structure.
max_no_cells	indicate maximum number of cells along the X, Y and Z axis.

29.346.2.3 virtual PrCellStructure::~PrCellStructure ( ) [inline], [virtual]

Destructor.

Definition at line 87 of file PrCellStructure.h.

29.346.3 Member Function Documentation

29.346.3.1 void PrCellStructure::attach (int *n*, const double * *xyz_points*)

Reset the PrCellStructure to a set of new points, deleting old content.

Parameters

n	number of points
xyz_points	pointer to the array of stored points. (The points will be copied to internal data structure).

29.346.3.2 Vector3D PrCellStructure::get3dNode (int *i*) const [inline]

Get a specific point (node) in the PrCellStructure by its index.

Definition at line 108 of file PrCellStructure.h.

29.346.3.3 void PrCellStructure::getBall (const Vector3D & *p*, double *radius*, vector< int > & *neighbours*, int *notP* = 0) const

Return all points within the ball of radius radius around the point p. Don't include p itself if notP = 1.

Parameters

p	the center of the ball
radius	the radius of the ball

Return values

neighbours	will be filled with the indexes of the neighbour points.

Parameters

notP	if != 0, 'p' itself will not be included in the list of returned points.

29.346.3.4 int PrCellStructure::getI (int *i,* int *j,* int *k*) const [inline]

Get the index of the cell positioned at 'i', 'j', 'k'.

Definition at line 139 of file PrCellStructure.h.

29.346.3.5 void PrCellStructure::getIJK (int *ii,* int & *i,* int & *j,* int & *k*) const

Get the 'i', 'j', 'k'-position of the cell indexed 'ii'.

29.346.3.6 void PrCellStructure::getKNearest (const Vector3D & *p,* int *k,* vector< int > & *neighbours,* int *notP* = 0) const

Return k nearest points to the point p. Don't include p itself if notP = 1.

Parameters

p	the point for which we seek the k nearest neighbours
k	the number of neighbours we seek

Return values

neighbours	will be filled with the indexes of the neighbour points.

Parameters

notP	if != 0, 'p' itself will not be included in the list of returned points.

29.346.3.7 int PrCellStructure::getNumCells ( ) const [inline]

Get the previously set limit for the maximum number of cells in the X, Y and Z direction.

Definition at line 102 of file PrCellStructure.h.

29.346.3.8 int PrCellStructure::getNumNodes ( ) const [inline]

Get the number of points (nodes) stored in the cell structure.

Definition at line 105 of file PrCellStructure.h.

29.346.3.9 void PrCellStructure::print (ostream & *os*)

write points to stream

29.346.3.10 void PrCellStructure::scan (istream & *is*)

read points from stream and regenerate cell structure.

29.346.3.11 void PrCellStructure::set3dNode (int *i*, const Vector3D & *p*) [inline]

Change the coordinates of a specific point in the PrCellStructure.

Parameters

i	index of node to change
p	the new coordinates

Definition at line 113 of file PrCellStructure.h.

29.346.3.12 void PrCellStructure::setNumCells (int *max_no_cells*) [inline]

Set the maximum number of cells in X, Y and Z direction to 'max_no_cells'. This must be set before the cells are generated (ie. before the 'attach()' command.

Definition at line 98 of file PrCellStructure.h.

29.346.3.13 void PrCellStructure::whichCell (const Vector3D & *xyz*, int & *i*, int & *j*, int & *k*) const

Locate the cell which contains the coordinate 'xyz'

Parameters

xyz	we want to find the cell containing these coordinates

Return values

i	i-position of the located cell
j	j-position of the located cell
k	k-position of the located cell

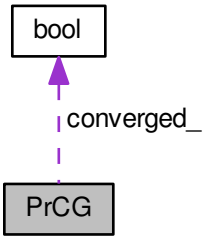
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrCellStructure.h

29.347 PrCG Class Reference

`#include <PrCG.h>`

Collaboration diagram for PrCG:



Public Member Functions

- PrCG ()
  Constructor.
- ~PrCG ()
  Destructor.
- void setTolerance (double tolerance=1.0e-6)
  Set the tolerance for the residual.
- void setMaxIterations (int max_iterations)
  Set the maximum number of iterations.
- void solve (const PrMatrix &A, PrVec &x, const PrVec &b)
  Solve the linear system, replacing the start vector with the solution.
- int getItCount ()
  Get the number of iterations spent for the last call of 'solve()'.
- double getCPUTime ()
  Get the CPU time spent for the last call of 'solve()'.
- bool converged ()
  Check if the last call of 'solve()' managed to converge to a solution.

Protected Attributes

- double tolerance_
- int max_iterations_
- int it_count_
- double cpu_time_
- bool converged_

29.347.1 Detailed Description

PrCG - This class implements the (unpreconditioned) CG method for solving sparse symmetric positive definite linear systems.

Definition at line 51 of file PrCG.h.

29.347.2 Constructor & Destructor Documentation

29.347.2.1 PrCG::PrCG ( )

Constructor.

29.347.2.2 PrCG::~PrCG ( ) [inline]

Destructor.

Definition at line 66 of file PrCG.h.

29.347.3 Member Function Documentation

29.347.3.1 bool PrCG::converged ( ) [inline]

Check if the last call of 'solve()' managed to converge to a solution.

Definition at line 83 of file PrCG.h.

29.347.3.2 double PrCG::getCPUTime ( ) [inline]

Get the CPU time spent for the last call of 'solve()'.

Definition at line 80 of file PrCG.h.

29.347.3.3 int PrCG::getItCount ( ) [inline]

Get the number of iterations spent for the last call of 'solve()'.

Definition at line 77 of file PrCG.h.

29.347.3.4 void PrCG::setMaxIterations (int *max_iterations*) [inline]

Set the maximum number of iterations.

Definition at line 71 of file PrCG.h.

29.347.3.5 void PrCG::setTolerance (double *tolerance* = 1.0e-6) [inline]

Set the tolerance for the residual.

Definition at line 69 of file PrCG.h.

29.347.3.6 void PrCG::solve (const PrMatrix & *A*, PrVec & *x*, const PrVec & *b*)

Solve the linear system, replacing the start vector with the solution.

29.347.4 Member Data Documentation

29.347.4.1 bool PrCG::converged_ [protected]

Definition at line 60 of file PrCG.h.

29.347.4.2 double PrCG::cpu_time_ [protected]

Definition at line 59 of file PrCG.h.

29.347.4.3 int PrCG::it_count_ [protected]

Definition at line 58 of file PrCG.h.

29.347.4.4 int PrCG::max_iterations_ [protected]

Definition at line 56 of file PrCG.h.

29.347.4.5 double PrCG::tolerance_ [protected]

Definition at line 55 of file PrCG.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrCG.h

29.348 Go::preEvaluationSf Struct Reference

`#include <SfSolution.h>`

Public Attributes

- std::vector< double > gauss_par1_
- std::vector< double > gauss_par2_
- std::vector< double > basisvals_u_
- std::vector< double > basisvals_v_
- std::vector< int > left_u_
- std::vector< int > left_v_
- std::vector< double > points_
- std::vector< double > deriv_u_
- std::vector< double > deriv_v_

29.348.1 Detailed Description

Definition at line 58 of file SfSolution.h.

29.348.2 Member Data Documentation

29.348.2.1 std::vector<double> Go::preEvaluationSf::basisvals_u_

Definition at line 63 of file SfSolution.h.

29.348.2.2 std::vector<double> Go::preEvaluationSf::basisvals_v_

Definition at line 64 of file SfSolution.h.

29.348.2.3 std::vector<double> Go::preEvaluationSf::deriv_u_

Definition at line 72 of file SfSolution.h.

29.348.2.4 std::vector<double> Go::preEvaluationSf::deriv_v_

Definition at line 73 of file SfSolution.h.

29.348.2.5 std::vector<double> Go::preEvaluationSf::gauss_par1_

Definition at line 61 of file SfSolution.h.

29.348.2.6 std::vector<double> Go::preEvaluationSf::gauss_par2_

Definition at line 62 of file SfSolution.h.

29.348.2.7 std::vector<int> Go::preEvaluationSf::left_u_

Definition at line 67 of file SfSolution.h.

29.348.2.8 std::vector<int> Go::preEvaluationSf::left_v_

Definition at line 68 of file SfSolution.h.

29.348.2.9 std::vector<double> Go::preEvaluationSf::points_

Definition at line 71 of file SfSolution.h.

The documentation for this struct was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/SfSolution.h

29.349 Go::preEvaluationVol Struct Reference

`#include <VolSolution.h>`

Public Attributes

- std::vector< double > gauss_par1_
- std::vector< double > gauss_par2_
- std::vector< double > gauss_par3_
- std::vector< double > basisvals_u_
- std::vector< double > basisvals_v_
- std::vector< double > basisvals_w_
- std::vector< int > left_u_
- std::vector< int > left_v_
- std::vector< int > left_w_
- std::vector< double > points_
- std::vector< double > deriv_u_
- std::vector< double > deriv_v_
- std::vector< double > deriv_w_

29.349.1 Detailed Description

Definition at line 60 of file VolSolution.h.

29.349.2 Member Data Documentation

29.349.2.1 std::vector<double> Go::preEvaluationVol::basisvals_u_

Definition at line 66 of file VolSolution.h.

29.349.2.2 std::vector<double> Go::preEvaluationVol::basisvals_v_

Definition at line 67 of file VolSolution.h.

29.349.2.3 std::vector<double> Go::preEvaluationVol::basisvals_w_

Definition at line 68 of file VolSolution.h.

29.349.2.4 std::vector<double> Go::preEvaluationVol::deriv_u_

Definition at line 76 of file VolSolution.h.

29.349.2.5 std::vector<double> Go::preEvaluationVol::deriv_v_

Definition at line 77 of file VolSolution.h.

29.349.2.6 std::vector<double> Go::preEvaluationVol::deriv_w_

Definition at line 78 of file VolSolution.h.

29.349.2.7 std::vector<double> Go::preEvaluationVol::gauss_par1_

Definition at line 63 of file VolSolution.h.

29.349.2.8 std::vector<double> Go::preEvaluationVol::gauss_par2_

Definition at line 64 of file VolSolution.h.

29.349.2.9 std::vector<double> Go::preEvaluationVol::gauss_par3_

Definition at line 65 of file VolSolution.h.

29.349.2.10 std::vector<int> Go::preEvaluationVol::left_u_

Definition at line 69 of file VolSolution.h.

29.349.2.11 std::vector<int> Go::preEvaluationVol::left_v_

Definition at line 70 of file VolSolution.h.

29.349.2.12 std::vector<int> Go::preEvaluationVol::left_w_

Definition at line 71 of file VolSolution.h.

29.349.2.13 std::vector<double> Go::preEvaluationVol::points_

Definition at line 75 of file VolSolution.h.

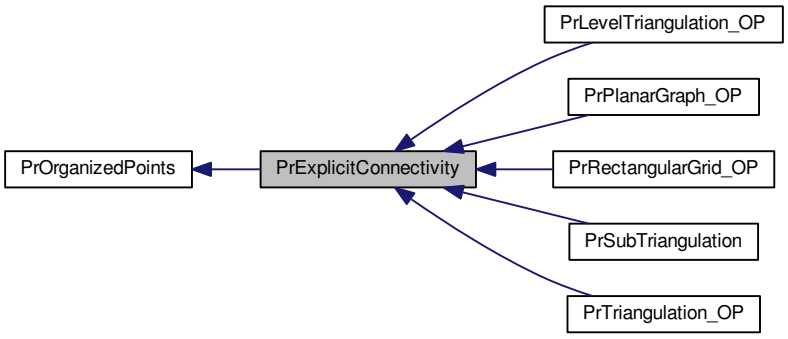
The documentation for this struct was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/VolSolution.h

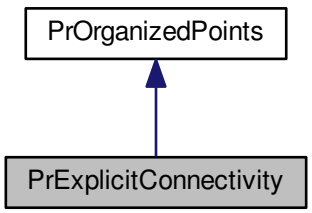
29.350 PrExplicitConnectivity Class Reference

`#include <PrExplicitConnectivity.h>`

Inheritance diagram for PrExplicitConnectivity:



Collaboration diagram for PrExplicitConnectivity:



Public Member Functions

- virtual int findNumFaces () const

  count the number of faces in the graph
- void findFace (int i, int j, std::vector< int > &neighbours, std::vector< int > &face) const
- int findGenus () const

  Compute the genus of the planar graph.
- bool isTriangulation () const

  Check if the planar graph is a triangulation.
- virtual void printXYZFaces (std::ostream &os) const

  Print out the faces of the graph.
- virtual void printXYZFacesML (std::ostream &os) const

  Print out the faces of the graph, ML format.
- virtual void printXYZFacesVRML (std::ostream &os) const

  Print out the faces of the graph, VRML format.
- virtual void printUVFaces (std::ostream &os) const

  Print out the faces of the parameterization.
- void findNextEdgeInFace (int &i, int &j, std::vector< int > &neighbours) const
- virtual void printInfo (std::ostream &os) const

  Print general information about this PrOrganizedPoints object (number of nodes, etc.)
- virtual void printTexture (std::ostream &os) const

Additional Inherited Members

29.350.1 Detailed Description

PrExplicitConnectivity - This class implements an interface to a planar graph embedded in R^2 or R^3, where connectivity is explicitly defined. The two common examples are a triangulation and a topologically rectangular grid. What differentiates this class from PrOrganizedPoints is that for PrExplicitConnectivity, it is possible to directly identify faces. The methods in this class are used by PrParametrize.

Definition at line 55 of file PrExplicitConnectivity.h.

29.350.2 Member Function Documentation

29.350.2.1 void PrExplicitConnectivity::findFace (int *i*, int *j*, std::vector< int > & *neighbours*, std::vector< int > & *face*) const

Find the face of the graph which lies to the left of the directed edge whose end points are the node i and its j-th neighbour. The nodes of the face, starting with i, will be filled out in the list vector<int> face. The vector<int> neighbours is used for temporarily storing neighbours (for efficiency when calling this routine many times).

Parameters

i	the index of the node specifying the directed edge
j	the 'j'th neighbour of 'i' will be the second node specifying the edge

Return values

neighbours	a temporary vector holding the neighbours of the last node examined by the implementation (might not always be needed; its presence in the parameter list is mainly an efficiency issue).
face	upon function return, will contain the indexes of the nodes in the requested face (anticlockwise order).

29.350.2.2 int PrExplicitConnectivity::findGenus ( ) const

Compute the genus of the planar graph.

29.350.2.3 void PrExplicitConnectivity::findNextEdgeInFace (int & *i*, int & *j*, std::vector< int > & *neighbours*) const

Find the next edge in the face which lies to the left of the directed edge whose end points are the node 'i' and its j-th neighbour.

Parameters

i	the index of the node specifying the directed edge. Upon function return, it will contain the corresponding value for the next edge in the face.
j	the 'j'th neighbour of 'i' will be the second node specifying the edge. Upon function return, it will contain the contain the corresponding value for the next edge in the face.
neighbours	when calling the function, this vector should contain the indexes of the neighbour nodes of node 'i'. Upon function return, it will contain the corresponding value for the next node in the face.

29.350.2.4 virtual int PrExplicitConnectivity::findNumFaces ( ) const [virtual]

count the number of faces in the graph

Reimplemented in PrTriangulation_OP, and PrLevelTriangulation_OP.

29.350.2.5 bool PrExplicitConnectivity::isTriangulation ( ) const

Check if the planar graph is a triangulation.

29.350.2.6 virtual void PrExplicitConnectivity::printInfo (std::ostream & *os*) const [virtual]

Print general information about this PrOrganizedPoints object (number of nodes, etc.)

Reimplemented from PrOrganizedPoints.

29.350.2.7 virtual void PrExplicitConnectivity::printTexture (std::ostream & *os*) const [virtual]

29.350.2.8 virtual void PrExplicitConnectivity::printUVFaces (std::ostream & *os*) const [virtual]

Print out the faces of the parameterization.

29.350.2.9 virtual void PrExplicitConnectivity::printXYZFaces (std::ostream & *os*) const [virtual]

Print out the faces of the graph.

29.350.2.10 virtual void PrExplicitConnectivity::printXYZFacesML (std::ostream & *os*) const [virtual]

Print out the faces of the graph, ML format.

29.350.2.11 virtual void PrExplicitConnectivity::printXYZFacesVRML (std::ostream & *os*) const [virtual]

Print out the faces of the graph, VRML format.

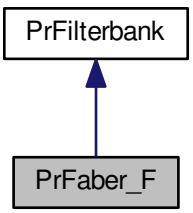
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrExplicitConnectivity.h

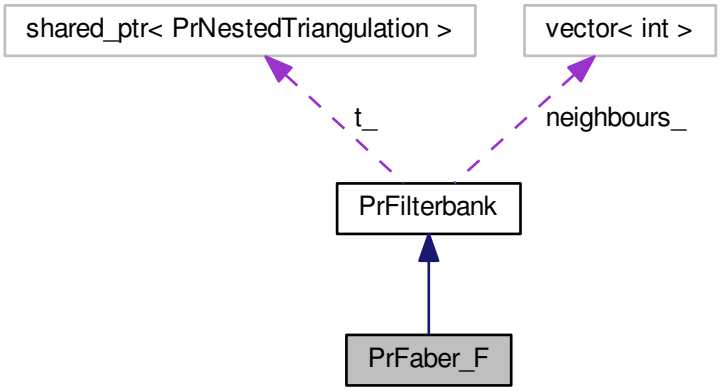
29.351 PrFaber_F Class Reference

```
#include <PrFaber_F.h>
```

Inheritance diagram for PrFaber_F:



Collaboration diagram for PrFaber_F:



Public Member Functions

- PrFaber_F ()

  Constructor.
- virtual ~PrFaber_F ()

  Destructor.
- virtual void decompose (int jlev, int dim=1)
- virtual void compose (int jlev, int dim=1)

Additional Inherited Members

29.351.1 Detailed Description

- Implements algorithms for composing and decomposing piecewise linear functions over nested triangulations, using Faber decomposition. For a comparison with prewavelets, see

```
M. S. Floater, E. G. Quak and M. Reimers,
Filter Bank Algorithms for Piecewise Linear
Prewavelets on Arbitrary Triangulations,
J. Comp. Appl. Math. \e 119 (2000), 185--207.
```

Definition at line 57 of file PrFaber_F.h.

29.351.2 Constructor & Destructor Documentation

29.351.2.1 PrFaber_F::PrFaber_F ( ) [inline]

Constructor.

Definition at line 63 of file PrFaber_F.h.

29.351.2.2 virtual PrFaber_F::~PrFaber_F ( ) [inline], [virtual]

Destructor.

Definition at line 65 of file PrFaber_F.h.

29.351.3 Member Function Documentation

29.351.3.1 virtual void PrFaber_F::compose (int *jlev*, int *dim* = 1) [virtual]

The nodes in the triangulation belonging to V^j form a piecewise linear function f^j in the space S^j. This routines composes f^j from f^{j-1} + g^{j-1} where $f^{j-1} \in S^{j-1}$ and $g^{j-1} \in W^{j-1}$. Use dim = 1 for explicit triangulations and dim = 3 for non-explicit. Default is dim = 1.

Implements PrFilterbank.

29.351.3.2 virtual void PrFaber_F::decompose (int *jlev*, int *dim* = 1) [virtual]

The nodes in the triangulation belonging to V^j form a piecewise linear function f^j in the space S^j (where j = level). This routines decomposes f^j into $f^{j-1} + g^{j-1}$ where $f^{j-1} \in S^{j-1}$ and $g^{j-1} \in W^{j-1}$. Use dim = 1 for explicit triangulations and dim = 3 for non-explicit. Default is dim = 1.

Implements PrFilterbank.

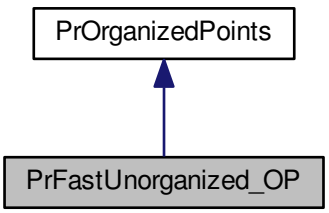
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrFaber_F.h

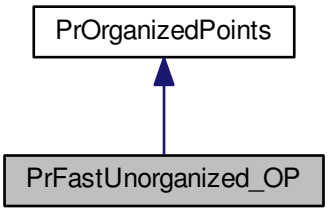
29.352 PrFastUnorganized_OP Class Reference

```
#include <PrFastUnorganized_OP.h>
```

Inheritance diagram for PrFastUnorganized_OP:



Collaboration diagram for PrFastUnorganized_OP:



Public Member Functions

- PrFastUnorganized_OP (int num_cells=10)

  Constructor.
- PrFastUnorganized_OP (int n, int n_int, double *xyz_points, int num_cells=10)

  Constructor.
- ~PrFastUnorganized_OP ()

  Destructor.
- void initNeighbours ()
- virtual int getNumNodes () const

  Return the number of nodes in the graph.
- virtual Vector3D get3dNode (int i) const

  Return the i-th node in the graph if the nodes are three-dimensional.
- virtual void set3dNode (int i, const Vector3D &p)
- virtual void getNeighbours (int i, vector< int > &neighbours) const
- virtual bool isBoundary (int i) const

  Is 'i' a boundary node or interior node?
- virtual double getU (int i) const

  return the u parameter value of the i-th node.
- virtual double getV (int i) const

  return the v parameter value of the i-th node.
- virtual void setU (int i, double u)

  reset the u parameter value of the i-th node.
- virtual void setV (int i, double v)

  reset the v parameter value of the i-th node.
- double getRadius ()

  get the specified radius for defining neighbours by distance
- void setRadius (double radius)

  specify the radius for defining neighbourhood by distance
- int getKNearest ()
- void setKNearest (int knearest)
- void useK ()
- void useRadius ()

  Use an euclidean distance to define the neighbourhood of a point.
- void print (ostream &os)

  Write contents to stream.
- void scanRawData (istream &is, int num_cells=10, double noise=0.0)

Additional Inherited Members

29.352.1 Detailed Description

- PrFastUnorganized_OP represents a set of points in three dimensions. All we know about them is their boundary in sequence. No other topology is given. This kind of data can be parametrized by PrParametrize↩ Bdy and PrParametrizeInt. The major difference to the class PrUnorganized_OP is that this class stores the neighbours for each vertex. Note that this requires the call of "initNeighbours" first!

Definition at line 59 of file PrFastUnorganized_OP.h.

29.352.2 Constructor & Destructor Documentation

29.352.2.1 PrFastUnorganized_OP::PrFastUnorganized_OP (int *num_cells* = 10)

Constructor.

29.352.2.2 PrFastUnorganized_OP::PrFastUnorganized_OP (int *n*, int *n_int*, double * *xyz_points*, int *num_cells* = 10)

Constructor.

29.352.2.3 PrFastUnorganized_OP::~PrFastUnorganized_OP ( ) [inline]

Destructor.

Definition at line 82 of file PrFastUnorganized_OP.h.

29.352.3 Member Function Documentation

29.352.3.1 virtual Vector3D PrFastUnorganized_OP::get3dNode (int *i*) const [inline], [virtual]

Return the i-th node in the graph if the nodes are three-dimensional.

Implements PrOrganizedPoints.

Definition at line 94 of file PrFastUnorganized_OP.h.

29.352.3.2 int PrFastUnorganized_OP::getKNearest ( ) [inline]

get the specified number for defining neighbourhoods by a fixed number of neighbours

Definition at line 127 of file PrFastUnorganized_OP.h.

29.352.3.3 virtual void PrFastUnorganized_OP::getNeighbours (int *i*, vector< int > & *neighbours*) const [virtual]

Return the indices of the neighbours of the i-th node. (here there is no ordering: it's not a planar graph.)

29.352.3.4 virtual int PrFastUnorganized_OP::getNumNodes ( ) const [inline], [virtual]

Return the number of nodes in the graph.

Implements PrOrganizedPoints.

Definition at line 92 of file PrFastUnorganized_OP.h.

29.352.3.5 double PrFastUnorganized_OP::getRadius ( ) [inline]

get the specified radius for defining neighbours by distance

Definition at line 115 of file PrFastUnorganized_OP.h.

29.352.3.6 virtual double PrFastUnorganized_OP::getU (int *i*) const [inline], [virtual]

return the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 109 of file PrFastUnorganized_OP.h.

29.352.3.7 virtual double PrFastUnorganized_OP::getV (int *i*) const [inline], [virtual]

return the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 110 of file PrFastUnorganized_OP.h.

29.352.3.8 void PrFastUnorganized_OP::initNeighbours ( )

Compute (and internally store) information about the neighbours of each point. Neighbours are defined either by the *k* nearest points or by all points within a specified radius. Use the member functions useK() and useRadius() to specify this.

29.352.3.9 virtual bool PrFastUnorganized_OP::isBoundary (int *i*) const [inline], [virtual]

Is 'i' a boundary node or interior node?

Implements PrOrganizedPoints.

Definition at line 107 of file PrFastUnorganized_OP.h.

29.352.3.10 void PrFastUnorganized_OP::print (ostream & *os*)

Write contents to stream.

29.352.3.11 void PrFastUnorganized_OP::scanRawData (istream & *is*, int *num_cells* = 10, double *noise* = 0.0)

Read in points from a stream and regenerate internal structures (no parameterization of the points).

Parameters

is	The stream containing the points. The format of the stream must be: • first: the total number of points • then: the number of interior points (not boundary points) • then: all internal point coordinates listed as xyz xyz, etc. • finally: the boundary point coordinates
num_cells	number of cells in each spatial direction when dividing up the space containing the points.
noise	magnitude of noise added to the internal points. Zero by default.

29.352.3.12 virtual void PrFastUnorganized_OP::set3dNode (int *i,* const Vector3D & *p*) [inline], [virtual]

This inherited member function does not apply to this derived class. As of now, it will throw if you try to run it.

Implements PrOrganizedPoints.

Definition at line 97 of file PrFastUnorganized_OP.h.

29.352.3.13 void PrFastUnorganized_OP::setKNearest (int *knearest*) [inline]

specify a number for defining neighbourhoods by a fixed number of neighbours.

Definition at line 130 of file PrFastUnorganized_OP.h.

29.352.3.14 void PrFastUnorganized_OP::setRadius (double *radius*) [inline]

specify the radius for defining neighbourhood by distance

Definition at line 124 of file PrFastUnorganized_OP.h.

29.352.3.15 virtual void PrFastUnorganized_OP::setU (int *i,* double *u*) [inline], [virtual]

reset the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 111 of file PrFastUnorganized_OP.h.

29.352.3.16 virtual void PrFastUnorganized_OP::setV (int *i,* double *v*) [inline], [virtual]

reset the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 112 of file PrFastUnorganized_OP.h.

29.352.3.17 void PrFastUnorganized_OP::useK ( ) [inline]

Use a fixed number of neighbours to define the neighbourhood of a point.

Definition at line 133 of file PrFastUnorganized_OP.h.

29.352.3.18 void PrFastUnorganized_OP::useRadius ( ) [inline]

Use an euclidean distance to define the neighbourhood of a point.

Definition at line 135 of file PrFastUnorganized_OP.h.

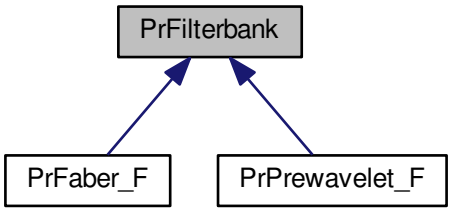
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrFastUnorganized_OP.h

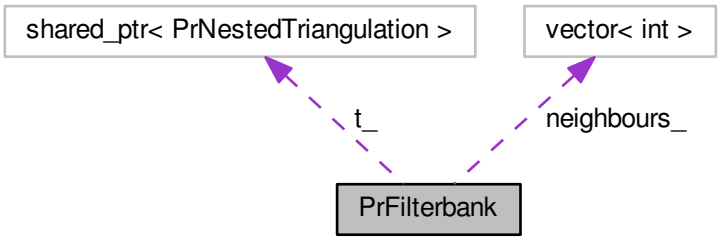
29.353 PrFilterbank Class Reference

`#include <PrFilterbank.h>`

Inheritance diagram for PrFilterbank:



Collaboration diagram for PrFilterbank:



Public Member Functions

- virtual void decompose (int jlev, int dim=1)=0
- virtual void compose (int jlev, int dim=1)=0
- virtual ~PrFilterbank ()

  Destructor.
- void attach (shared_ptr< PrNestedTriangulation > t)

  Set the graph.
- void decomposeAll (int dim=1)
- void decomposeFrom (int jlev, int dim=1)
- void composeAll (int dim=1)
- void composeUpTo (int jlev, int dim=1)

Protected Attributes

- shared_ptr< PrNestedTriangulation > t_
- vector< int > neighbours_

29.353.1 Detailed Description

PrFilterbank - implements an algorithm for decomposing a piecewise linear function f^k over a nested triangulation T^k into the sum $f^0 + g^0 + g^1 + ... + g^{k-1}$ where $f^0 \in S^0$ and $g^0 \in W^0, ...g^{k-1} \in W^{k-1}$. Here the set of nodes V^k of T^k satisfy $V^0 \subset V^1 \subset ... \subset V^k$ and the corresponding spaces of piecewise linear $S^0 \subset S^1 \subset ... \subset S^k$. The space W^{j-1} is a complement space of $S^{j-1} \in S^j$. Examples are prewavelet and Faber decomposition.

Definition at line 66 of file PrFilterbank.h.

29.353.2 Constructor & Destructor Documentation

29.353.2.1 virtual PrFilterbank::~PrFilterbank ( ) [virtual]

Destructor.

29.353.3 Member Function Documentation

29.353.3.1 void PrFilterbank::attach (shared_ptr< PrNestedTriangulation > *t*)

Set the graph.

29.353.3.2 virtual void PrFilterbank::compose (int *jlev*, int *dim* = 1) [pure virtual]

The nodes in the triangulation belonging to V^j form a piecewise linear function f^j in the space S^j. This routines composes f^j from $f^{j-1} + g^{j-1}$ where $f^{j-1} \in S^{j-1}$ and $g^{j-1} \in W^{j-1}$. Use dim = 1 for explicit triangulations dim = 3 for non-explicit. Default is dim = 1.

Implemented in PrPrewavelet_F, and PrFaber_F.

29.353.3.3 void PrFilterbank::composeAll (int *dim* = 1)

The coarsest triangulation is a piecewise linear function f^0 in the space S^0. This routines composes f^k from $f^0 + g^0 + g^1 + ... + g^{k-1}$ where $f^k \in S^k, g^0 \in W^0, ...g^{k-1} \in W^{k-1}$. Use dim = 1 for explicit triangulations and dim = 3 for non-explicit. Default is dim = 1.

29.353.3.4 void PrFilterbank::composeUpTo (int *jlev,* int *dim* = 1)

29.353.3.5 virtual void PrFilterbank::decompose (int *jlev,* int *dim* = 1) [pure virtual]

The nodes in the triangulation belonging to V^j form a piecewise linear function f^j in the space S^j (where j = level). This routines decomposes f^j into $f^{j-1} + g^{j-1}$ where $f^{j-1} \in S^{j-1}$ and $g^{j-1} \in W^{j-1}$. Use dim = 1 for explicit triangulations and dim = 3 for non-explicit. Default is dim = 1.

Implemented in PrPrewavelet_F, and PrFaber_F.

29.353.3.6 void PrFilterbank::decomposeAll (int *dim* = 1)

The triangulation is a piecewise linear function f^k in the space S^k. This routines decomposes f^k into $f^0 + g^0 + g^1 + ... + g^{k-1}$ where $f^0 \in S^0, g^0 \in W^0, ...g^{k-1} \in W^{k-1}$. Use dim = 1 for explicit triangulations and dim = 3 for non-explicit. Default is dim = 1.

29.353.3.7 void PrFilterbank::decomposeFrom (int *jlev,* int *dim* = 1)

29.353.4 Member Data Documentation

29.353.4.1 vector<int> PrFilterbank::neighbours_ [protected]

Definition at line 71 of file PrFilterbank.h.

29.353.4.2 shared_ptr<PrNestedTriangulation> PrFilterbank::t_ [protected]

Definition at line 70 of file PrFilterbank.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrFilterbank.h

29.354 PrHeap Class Reference

```
#include <PrHeap.h>
```

Public Member Functions

- PrHeap ()

  Default constructor.
- PrHeap (int maxsize)
- PrHeap (int *elms, int n)

  Constructor. Not implemented.
- PrHeap (const PrHeap &heap)

  Copy constructor.Not implemented, generates a warning.
- ~PrHeap ()

  Destructor. Deletes arrays.
- void redim (int size)
- int getMaxSize () const

  return max. size for the heap.
- int getSize () const

  return size for the heap.
- void push (double key, int element)

  Inserts an element with a key in the heap.
- void modify (double new_key, int element)

  Modifies an elements key and restores the heap property.
- int pop ()

  Extracts the best element from the heap.
- void pop (double &key, int &element)

  Extracts the best element from the heap.
- void emptyHeap ()

  Restarts the heap.
- void print (std::ostream &os) const

  print to stream

29.354.1 Detailed Description

PrHeap - This is a class for minimum heaps. The PrHeap's functionality is to store prioritized elements. It has a function for adding elements, a function for returning (and removing from the heap) the element with the "best" priority (least key) and a function for modifying elements. These functions are implemented in a way making sure that they are very fast in run time. All functions run in O(log n) time.

Definition at line 55 of file PrHeap.h.

29.354.2 Constructor & Destructor Documentation

29.354.2.1 PrHeap::PrHeap ( )

Default constructor.

29.354.2.2 PrHeap::PrHeap (int *maxsize*)

Constructor. Creates a heap wich is able to store maxsize elements. maxsize will typically be set to the total number of elements (here total number of vertices).

29.354.2.3 PrHeap::PrHeap (int * *elms,* int *n*)

Constructor. Not implemented.

29.354.2.4 PrHeap::PrHeap (const PrHeap & *heap*)

Copy constructor.Not implemented, generates a warning.

29.354.2.5 PrHeap::~PrHeap ( )

Destructor. Deletes arrays.

29.354.3 Member Function Documentation

29.354.3.1 void PrHeap::emptyHeap ( )

Restarts the heap.

29.354.3.2 int PrHeap::getMaxSize ( ) const [inline]

return max. size for the heap.

Definition at line 86 of file PrHeap.h.

29.354.3.3 int PrHeap::getSize ( ) const [inline]

return size for the heap.

Definition at line 89 of file PrHeap.h.

29.354.3.4 void PrHeap::modify (double *new_key,* int *element*)

Modifies an elements key and restores the heap property.

29.354.3.5 int PrHeap::pop ( )

Extracts the best element from the heap.

29.354.3.6 void PrHeap::pop (double & *key,* int & *element*)

Extracts the best element from the heap.

29.354.3.7 void PrHeap::print (std::ostream & *os*) const

print to stream

29.354.3.8 void PrHeap::push (double *key*, int *element*)

Inserts an element with a key in the heap.

29.354.3.9 void PrHeap::redim (int *size*)

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrHeap.h

29.355 PrintCounter Class Reference

Public Member Functions

- ~PrintCounter ()
- PrintCounter (const char *sx)
- void operator++ ()

29.355.1 Detailed Description

Definition at line 18 of file tmt.cpp.

29.355.2 Constructor & Destructor Documentation

29.355.2.1 PrintCounter::~PrintCounter ( )

Definition at line 31 of file tmt.cpp.

29.355.2.2 PrintCounter::PrintCounter (const char * *sx*) [inline]

Definition at line 24 of file tmt.cpp.

29.355.3 Member Function Documentation

29.355.3.1 void PrintCounter::operator++ ( ) [inline]

Definition at line 25 of file tmt.cpp.

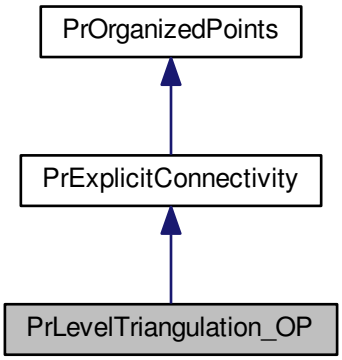
The documentation for this class was generated from the following file:

- newmat/app/tmt.cpp

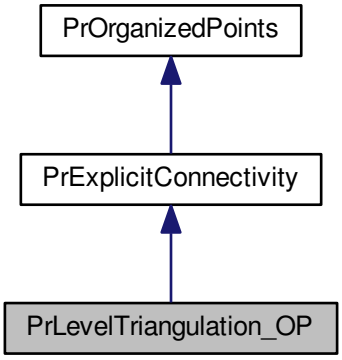
29.356 PrLevelTriangulation_OP Class Reference

`#include <PrLevelTriangulation_OP.h>`

Inheritance diagram for PrLevelTriangulation_OP:



Collaboration diagram for PrLevelTriangulation_OP:



Public Member Functions

- PrLevelTriangulation_OP ()

  Empty default constructor.
- PrLevelTriangulation_OP (vector< PrNestedNode > *node, vector< PrTriangle > &nt, int level=0)
- ~PrLevelTriangulation_OP ()

  Empty default destructor.

Derived from base class

- virtual int getNumNodes () const
  Return the number of nodes in the graph.
- virtual Vector3D get3dNode (int i) const
  Return the i-th node in the graph.
- virtual void set3dNode (int i, const Vector3D &p)
- virtual void getNeighbours (int i, vector< int > &neighbours) const
- virtual bool isBoundary (int i) const
  Is i a boundary node or interior node?
- virtual double getU (int i) const
  return the u parameter value of the i-th node.
- virtual double getV (int i) const
  return the v parameter value of the i-th node.
- virtual void setU (int i, double u)
  reset the u parameter value of the i-th node.
- virtual void setV (int i, double v)
  reset the v parameter value of the i-th node.
- virtual int findNumFaces () const
  count the number of faces in the graph

Other functions

- PrNestedNode & getPrNestedNode (int i)
  Grab internal structure for doing thinning.
- PrTriangle & getPrTriangle (int i)
  Grab internal structure for doing thinning.
- void printXYZTriangles (ostream &os, bool num=false)
- void printUVTriangles (ostream &os, bool num=false)
- void print (ostream &os)
  print whole class
- void printRawData (ostream &os)
  print without neighbourhood information
- void printUV (ostream &os)
  for converting uv to xyz with z=0

Additional Inherited Members

29.356.1 Detailed Description

PrLevelTriangulation_OP - This class represents a triangulation of points in R^3 with or without parameter points in R^2. It implements the virtual functions in PrOrganizedPoints. This kind of triangulation can be parametrized by PrParametrize.

Definition at line 55 of file PrLevelTriangulation_OP.h.

29.356.2 Constructor & Destructor Documentation

29.356.2.1 PrLevelTriangulation_OP::PrLevelTriangulation_OP ( ) [inline]

Empty default constructor.

Definition at line 68 of file PrLevelTriangulation_OP.h.

29.356.2.2 PrLevelTriangulation_OP::PrLevelTriangulation_OP (vector< PrNestedNode > * *node*, vector< PrTriangle > & *nt*, int *level* = 0)

Constructor.

Parameters

node	pointer to a vector of nodes. The vector will not be copied internally.
nt	vector or triangles. Will be copied internally
level	specify the level represented by this triangulation

29.356.2.3 PrLevelTriangulation_OP::~PrLevelTriangulation_OP ( ) [inline]

Empty default destructor.

Definition at line 81 of file PrLevelTriangulation_OP.h.

29.356.3 Member Function Documentation

29.356.3.1 virtual int PrLevelTriangulation_OP::findNumFaces ( ) const [inline], [virtual]

count the number of faces in the graph

Reimplemented from PrExplicitConnectivity.

Definition at line 115 of file PrLevelTriangulation_OP.h.

29.356.3.2 virtual Vector3D PrLevelTriangulation_OP::get3dNode (int *i*) const [inline], [virtual]

Return the i-th node in the graph.

Implements PrOrganizedPoints.

Definition at line 90 of file PrLevelTriangulation_OP.h.

29.356.3.3 virtual void PrLevelTriangulation_OP::getNeighbours (int *i,* vector< int > & *neighbours*) const [virtual]

Return the indices of the neighbours of the i-th node in:

1. any anticlockwise order if i is an interior node
2. the unique anticlockwise order if i is a boundary node.

29.356.3.4 virtual int PrLevelTriangulation_OP::getNumNodes ( ) const [inline], [virtual]

Return the number of nodes in the graph.

Implements PrOrganizedPoints.

Definition at line 87 of file PrLevelTriangulation_OP.h.

29.356.3.5 PrNestedNode& PrLevelTriangulation_OP::getPrNestedNode (int *i*) [inline]

Grab internal structure for doing thinning.

Definition at line 123 of file PrLevelTriangulation_OP.h.

29.356.3.6 PrTriangle& PrLevelTriangulation_OP::getPrTriangle (int *i*) [inline]

Grab internal structure for doing thinning.

Definition at line 125 of file PrLevelTriangulation_OP.h.

29.356.3.7 virtual double PrLevelTriangulation_OP::getU (int *i*) const [inline], [virtual]

return the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 104 of file PrLevelTriangulation_OP.h.

29.356.3.8 virtual double PrLevelTriangulation_OP::getV (int *i*) const [inline], [virtual]

return the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 107 of file PrLevelTriangulation_OP.h.

29.356.3.9 virtual bool PrLevelTriangulation_OP::isBoundary (int *i*) const [virtual]

Is i a boundary node or interior node?

Implements PrOrganizedPoints.

29.356.3.10 void PrLevelTriangulation_OP::print (ostream & *os*)

print whole class

29.356.3.11 void PrLevelTriangulation_OP::printRawData (ostream & *os*)

print without neighbourhood information

29.356.3.12 void PrLevelTriangulation_OP::printUV (ostream & *os*)

for converting uv to xyz with z=0

29.356.3.13 void PrLevelTriangulation_OP::printUVTriangles (ostream & *os,* bool *num* = false)

Print out the uv triangles of the graph, useful for plotting. If num = 1, print first the number of triangles.

29.356.3.14 void PrLevelTriangulation_OP::printXYZTriangles (ostream & *os,* bool *num* = false)

Print out the triangles of the graph, useful for plotting. If num = 1, print first the number of triangles.

29.356.3.15 virtual void PrLevelTriangulation_OP::set3dNode (int *i,* const Vector3D & *p*) [inline], [virtual]

set the coordinates of the i-th node in the graph if the nodes are three-dimensional.

Implements PrOrganizedPoints.

Definition at line 91 of file PrLevelTriangulation_OP.h.

29.356.3.16 virtual void PrLevelTriangulation_OP::setU (int *i,* double *u*) [inline], [virtual]

reset the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 110 of file PrLevelTriangulation_OP.h.

29.356.3.17 virtual void PrLevelTriangulation_OP::setV (int *i,* double *v*) [inline], [virtual]

reset the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 113 of file PrLevelTriangulation_OP.h.

The documentation for this class was generated from the following file:

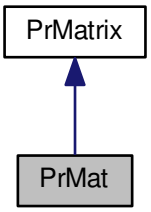
- parametrization/include/GoTools/parametrization/PrLevelTriangulation_OP.h

29.357 PrMat Class Reference

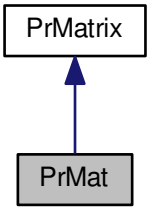
This class implements a matrix.

`#include <PrMat.h>`

Inheritance diagram for PrMat:



Collaboration diagram for PrMat:



Public Member Functions

Derived from base class

- virtual int rows () const
  Number of rows.
- virtual int colmns () const
  Number of columns.
- virtual double operator() (int i, int j) const
  value of matrix element
- virtual void prod (const PrVec &x, PrVec &y) const
  Find y = Ax.
- virtual void read (std::istream &is)
  read contents from stream
- virtual ~PrMat ()

Other functions

- PrMat (int m, int n, double val=0.0)
- PrMat ()
  Empty default constructor.
- double & operator() (int i, int j)
  access element (i, j)
- void redim (int m, int n)
  change size of matrix

Protected Attributes

- std::vector< double > a_
- int m_
- int n_

29.357.1 Detailed Description

This class implements a matrix.

Definition at line 53 of file PrMat.h.

29.357.2 Constructor & Destructor Documentation

29.357.2.1 virtual PrMat::~PrMat ( ) [virtual]

29.357.2.2 PrMat::PrMat (int *m*, int *n*, double *val* = 0.0)

Constructor

Parameters

m	number of columns
n	number of rows

29.357.2.3 PrMat::PrMat ( ) [inline]

Empty default constructor.

Definition at line 80 of file PrMat.h.

29.357.3 Member Function Documentation

29.357.3.1 virtual int PrMat::colmns ( ) const [inline], [virtual]

Number of columns.

Implements PrMatrix.

Definition at line 64 of file PrMat.h.

29.357.3.2 virtual double PrMat::operator() (int *i,* int *j*) const [virtual]

value of matrix element

Implements PrMatrix.

29.357.3.3 double & PrMat::operator() (int *i,* int *j*) [inline]

access element (i, j)

Definition at line 91 of file PrMat.h.

29.357.3.4 virtual void PrMat::prod (const PrVec & *x,* PrVec & *y*) const [virtual]

Find y = Ax.

Implements PrMatrix.

29.357.3.5 virtual void PrMat::read (std::istream & *is*) [virtual]

read contents from stream

Implements PrMatrix.

29.357.3.6 void PrMat::redim (int *m,* int *n*)

change size of matrix

29.357.3.7 virtual int PrMat::rows ( ) const [inline], [virtual]

Number of rows.

Implements PrMatrix.

Definition at line 63 of file PrMat.h.

29.357.4 Member Data Documentation

29.357.4.1 std::vector<double> PrMat::a_ [protected]

Definition at line 57 of file PrMat.h.

29.357.4.2 int PrMat::m_ [protected]

Definition at line 58 of file PrMat.h.

29.357.4.3 int PrMat::n_ [protected]

Definition at line 58 of file PrMat.h.

The documentation for this class was generated from the following file:

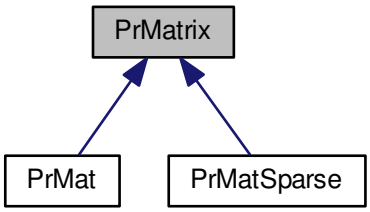
- parametrization/include/GoTools/parametrization/PrMat.h

29.358 PrMatrix Class Reference

This class implements a matrix.

`#include <PrMatrix.h>`

Inheritance diagram for PrMatrix:



Public Member Functions

- virtual int rows () const =0

  Number of rows.
- virtual int colmns () const =0

  Number of columns.
- virtual double operator() (int i, int j) const =0

  value of matrix element
- virtual void prod (const PrVec &x, PrVec &y) const =0

  Multiply matrix with 'x' and return result in 'y'. (y = Ax)
- virtual ~PrMatrix ()

  Virtual destructor.
- virtual void print (std::ostream &os)

  print contents to stream
- virtual void read (std::istream &is)=0

  read contents from stream

29.358.1 Detailed Description

This class implements a matrix.

Definition at line 49 of file PrMatrix.h.

29.358.2 Constructor & Destructor Documentation

29.358.2.1 virtual PrMatrix::~PrMatrix ( ) [virtual]

Virtual destructor.

29.358.3 Member Function Documentation

29.358.3.1 virtual int PrMatrix::colmns ( ) const [pure virtual]

Number of columns.

Implemented in PrMatSparse, and PrMat.

29.358.3.2 virtual double PrMatrix::operator() (int *i,* int *j*) const [pure virtual]

value of matrix element

Implemented in PrMatSparse, and PrMat.

29.358.3.3 virtual void PrMatrix::print (std::ostream & *os*) [virtual]

print contents to stream

Reimplemented in PrMatSparse.

29.358.3.4 virtual void PrMatrix::prod (const PrVec & *x,* PrVec & *y*) const [pure virtual]

Multiply matrix with 'x' and return result in 'y'. (y = Ax)

Implemented in PrMatSparse, and PrMat.

29.358.3.5 virtual void PrMatrix::read (std::istream & *is*) [pure virtual]

read contents from stream

Implemented in PrMatSparse, and PrMat.

29.358.3.6 virtual int PrMatrix::rows ( ) const [pure virtual]

Number of rows.

Implemented in PrMatSparse, and PrMat.

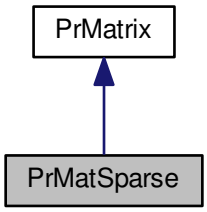
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrMatrix.h

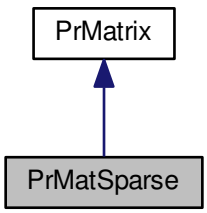
29.359 PrMatSparse Class Reference

`#include <PrMatSparse.h>`

Inheritance diagram for PrMatSparse:



Collaboration diagram for PrMatSparse:



Public Member Functions

Derived from base class

- virtual int rows () const
  Number of rows.
- virtual int colmns () const
  Number of columns.
- virtual double operator() (int i, int j) const
  value of matrix element
- virtual void prod (const PrVec &x, PrVec &y) const
  Find y = Ax.
- virtual void print (std::ostream &os)
  print contents to stream
- virtual void read (std::istream &is)
  read contents from stream
- virtual ~PrMatSparse ()
  virtual destructor

Other functions

- void matProd (PrMatSparse &B, PrMatSparse &C) const
- void scalProd (double d)
  multiply all elements with 'd'
- void printFull (std::ostream &os)
  print the matrix to stream in 'full' (not sparse) format
- PrMatSparse ()
  constructor for a sparse matrix of zero size.
- PrMatSparse (int m, int n, int num_nonzero)
  constructor for an (m x n) matrix with 'num_nonzero' nonzero elements
- PrMatSparse (int m, int n, int num_nonzero, const int *irow, const int *jcol, const double *data)
  Set to sparse matrix given by irow, jcol and data.
- void redim (int m, int n, int num_nonzero)
  resize matrix to (m x n), with 'num_nonzero' nonzero elements
- void setToMatrix (const PrMatrix &m, double tol=0.0)
  Set equal to another matrix, sparsify if entries <= tol.
- int & irow (int k)
  < 0 <= k <= m_ (last element is past-the-end index of a_)
- const int & irow (int k) const
  < 0 <= k <= m_ (last element is past-the-end index of a_)
- int & jcol (int k)
  < 0 <= k <= p_-1
- const int & jcol (int k) const
  < 0 <= k <= p_-1
- double & operator() (int k)
  < 0 <= k <= p_-1
- const double & operator() (int k) const
  < 0 <= k <= p_-1

29.359.1 Detailed Description

Definition at line 49 of file PrMatSparse.h.

29.359.2 Constructor & Destructor Documentation

29.359.2.1 virtual PrMatSparse::~PrMatSparse ( ) [virtual]

virtual destructor

29.359.2.2 PrMatSparse::PrMatSparse ( ) [inline]

constructor for a sparse matrix of zero size.

Definition at line 87 of file PrMatSparse.h.

29.359.2.3 PrMatSparse::PrMatSparse (int *m*, int *n*, int *num_nonzero*)

constructor for an (m x n) matrix with 'num_nonzero' nonzero elements

29.359.2.4 PrMatSparse::PrMatSparse (int *m*, int *n*, int *num_nonzero*, const int * *irow*, const int * *jcol*, const double * *data*)

Set to sparse matrix given by irow, jcol and data.

29.359.3 Member Function Documentation

29.359.3.1 virtual int PrMatSparse::colmns ( ) const [virtual]

Number of columns.

Implements PrMatrix.

29.359.3.2 int & PrMatSparse::irow (int *k*) [inline]

< 0 <= k <= m_ (last element is past-the-end index of a_)

Definition at line 134 of file PrMatSparse.h.

29.359.3.3 const int & PrMatSparse::irow (int *k*) const [inline]

< 0 <= k <= m_ (last element is past-the-end index of a_)

Definition at line 127 of file PrMatSparse.h.

29.359.3.4 int & PrMatSparse::jcol (int *k*) [inline]

< 0 <= k <= p_-1

Definition at line 148 of file PrMatSparse.h.

29.359.3.5 const int & PrMatSparse::jcol (int *k*) const [inline]

< 0 <= k <= p_-1

Definition at line 141 of file PrMatSparse.h.

29.359.3.6 void PrMatSparse::matProd (PrMatSparse & *B*, PrMatSparse & *C*) const

find C = A∗B. Multiplies two sparse matrices, "A=(this)" times "B" and stores the result in "C"

29.359.3.7 virtual double PrMatSparse::operator() (int *i*, int *j*) const [virtual]

value of matrix element

Implements PrMatrix.

29.359.3.8 double & PrMatSparse::operator() (int *k*) [inline]

< 0 <= k <= p_-1

Definition at line 162 of file PrMatSparse.h.

29.359.3.9 const double & PrMatSparse::operator() (int *k*) const [inline]

< 0 <= k <= p_-1

Definition at line 155 of file PrMatSparse.h.

29.359.3.10 virtual void PrMatSparse::print (std::ostream & *os*) [virtual]

print contents to stream

Reimplemented from PrMatrix.

29.359.3.11 void PrMatSparse::printFull (std::ostream & *os*)

print the matrix to stream in 'full' (not sparse) format

29.359.3.12 virtual void PrMatSparse::prod (const PrVec & *x*, PrVec & *y*) const [virtual]

Find y = Ax.

Implements PrMatrix.

29.359.3.13 virtual void PrMatSparse::read (std::istream & *is*) [virtual]

read contents from stream

Implements PrMatrix.

29.359.3.14 void PrMatSparse::redim (int *m,* int *n,* int *num_nonzero*)

resize matrix to (m x n), with 'num_nonzero' nonzero elements

29.359.3.15 virtual int PrMatSparse::rows ( ) const [virtual]

Number of rows.

Implements PrMatrix.

29.359.3.16 void PrMatSparse::scalProd (double *d*) [inline]

multiply all elements with 'd'

Definition at line 117 of file PrMatSparse.h.

29.359.3.17 void PrMatSparse::setToMatrix (const PrMatrix & *m,* double *tol* = 0.0)

Set equal to another matrix, sparsify if entries <= tol.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrMatSparse.h

29.360 PrNestedNode Class Reference

`#include <PrNestedNode.h>`

Public Member Functions

- PrNestedNode ()

  Empty default constructor.
- PrNestedNode (double x, double y, double z, double u, double v, int level)

  Constructor.
- ~PrNestedNode ()

  Empty default destructor.
- void init (double x, double y, double z, double u, double v, int level)
- const Vector3D & pnt () const
- const double & x () const
- const double & y () const
- const double & z () const
- const double & u () const
- const double & v () const
- const int & level () const
- const int & tr (int i) const
- Vector3D & pnt ()
- double & x ()
- double & y ()
- double & z ()
- double & u ()
- double & v ()
- int & level ()
- int & tr (int i)
- void addTrianglePtr (int t)
- void print (ostream &os)
- void printXYZ (ostream &os)
- void printUV (ostream &os)

29.360.1 Detailed Description

This class represents a node for use in PrLevelTriangulation_OP and PrNestedTriangulation. It has double x,y,z values and double u and v values (parameter values). It also has the index of its "first" incident triangle at each triangulation level. If the node is interior then tr[j] is any incident triangle. Otherwise the node is a boundary node, in which case tr[j] is the incident triangle which is the first one in the anticlockwise direction around the node (equivalently the only triangle containing the node whose right neighbour from the point of view of the node is 0).

Definition at line 64 of file PrNestedNode.h.

29.360.2 Constructor & Destructor Documentation

29.360.2.1 PrNestedNode::PrNestedNode ( ) [inline]

Empty default constructor.

Definition at line 76 of file PrNestedNode.h.

29.360.2.2 PrNestedNode::PrNestedNode (double *x,* double *y,* double *z,* double *u,* double *v,* int *level*) [inline]

Constructor.

Definition at line 78 of file PrNestedNode.h.

29.360.2.3 PrNestedNode::~PrNestedNode ( ) [inline]

Empty default destructor.

Definition at line 84 of file PrNestedNode.h.

29.360.3 Member Function Documentation

29.360.3.1 void PrNestedNode::addTrianglePtr (int *t*) [inline]

Definition at line 110 of file PrNestedNode.h.

29.360.3.2 void PrNestedNode::init (double *x,* double *y,* double *z,* double *u,* double *v,* int *level*) [inline]

Definition at line 121 of file PrNestedNode.h.

29.360.3.3 const int & PrNestedNode::level ( ) const [inline]

Definition at line 178 of file PrNestedNode.h.

29.360.3.4 int & PrNestedNode::level ( ) [inline]

Definition at line 237 of file PrNestedNode.h.

29.360.3.5 const Vector3D & PrNestedNode::pnt ( ) const [inline]

Definition at line 136 of file PrNestedNode.h.

29.360.3.6 Vector3D & PrNestedNode::pnt ( ) [inline]

Definition at line 195 of file PrNestedNode.h.

29.360.3.7 void PrNestedNode::print (ostream & *os*)

29.360.3.8 void PrNestedNode::printUV (ostream & *os*)

29.360.3.9 void PrNestedNode::printXYZ (ostream & *os*)

29.360.3.10 const int & PrNestedNode::tr (int *i*) const [inline]

Definition at line 185 of file PrNestedNode.h.

29.360.3.11 int & PrNestedNode::tr (int *i*) [inline]

Definition at line 244 of file PrNestedNode.h.

29.360.3.12 const double & PrNestedNode::u ( ) const [inline]

Definition at line 164 of file PrNestedNode.h.

29.360.3.13 double & PrNestedNode::u ( ) [inline]

Definition at line 223 of file PrNestedNode.h.

29.360.3.14 const double & PrNestedNode::v ( ) const [inline]

Definition at line 171 of file PrNestedNode.h.

29.360.3.15 double & PrNestedNode::v ( ) [inline]

Definition at line 230 of file PrNestedNode.h.

29.360.3.16 const double & PrNestedNode::x ( ) const [inline]

Definition at line 143 of file PrNestedNode.h.

29.360.3.17 double & PrNestedNode::x ( ) [inline]

Definition at line 202 of file PrNestedNode.h.

29.360.3.18 const double & PrNestedNode::y ( ) const [inline]

Definition at line 150 of file PrNestedNode.h.

29.360.3.19 double & PrNestedNode::y ( ) [inline]

Definition at line 209 of file PrNestedNode.h.

29.360.3.20 const double & PrNestedNode::z ( ) const [inline]

Definition at line 157 of file PrNestedNode.h.

29.360.3.21 double & PrNestedNode::z ( ) [inline]

Definition at line 216 of file PrNestedNode.h.

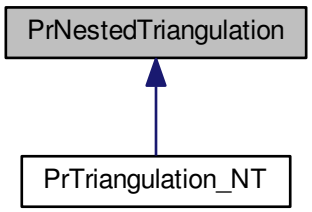
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrNestedNode.h

29.361 PrNestedTriangulation Class Reference

`#include <PrNestedTriangulation.h>`

Inheritance diagram for PrNestedTriangulation:



Public Member Functions

Pure virtual functions...

- virtual int getFinestLevel ()=0
- virtual int getNumNodes (int jlev)=0
  return the number of nodes in $V^j, j = 0, 1, ..., k$.
- virtual double getX (int i)=0
  return the x coeff. of the i-th node in the triangulation.
- virtual double getY (int i)=0
  return the y coeff. of the i-th node in the triangulation.
- virtual double getZ (int i)=0
  return the z coeff. of the i-th node in the triangulation.

- virtual void setX (int i, const double &x)=0
  set the x coeff. of the i-th node in the triangulation.
- virtual void setY (int i, const double &y)=0
  set the y coeff. of the i-th node in the triangulation.
- virtual void setZ (int i, const double &z)=0
  set the z coeff. of the i-th node in the triangulation.
- virtual void getNeighbours (int i, int jlev, vector< int > &neighbours)=0
- virtual bool isBoundary (int i)=0
  is the i-th node a boundary node or interior node?

Other functions

- virtual ~PrNestedTriangulation ()
  Empty virtual default destructor.
- void getParents (int i, int jlev, int &p1, int &p2)

29.361.1 Detailed Description

This class implements a set of nested triangulations. The methods in this class are used by PrFilterBank.

Definition at line 51 of file PrNestedTriangulation.h.

29.361.2 Constructor & Destructor Documentation

29.361.2.1 virtual PrNestedTriangulation::~PrNestedTriangulation ( ) [inline], [virtual]

Empty virtual default destructor.

Definition at line 93 of file PrNestedTriangulation.h.

29.361.3 Member Function Documentation

29.361.3.1 virtual int PrNestedTriangulation::getFinestLevel ( ) [pure virtual]

Return the finest level in the hiearchy, i.e. k if the vertices are arranged $V^0 \subset V^1 \subset ... \subset V^k$.

Implemented in PrTriangulation_NT.

29.361.3.2 virtual void PrNestedTriangulation::getNeighbours (int *i*, int *jlev*, vector< int > & *neighbours*) [pure virtual]

Return the indices of the neighbours of the i-th node with respect to V^j. This routine assumes that node i also belongs to V^j. The order of the neighbours returned will be

1. any anticlockwise order if i is an interior node
2. the unique anticlockwise order if i is a boundary node.

Implemented in PrTriangulation_NT.

29.361.3.3 virtual int PrNestedTriangulation::getNumNodes (int *jlev*) [pure virtual]

return the number of nodes in $V^j, j = 0, 1, ..., k$.

Implemented in PrTriangulation_NT.

29.361.3.4 void PrNestedTriangulation::getParents (int *i,* int *jlev,* int & *p1,* int & *p2*)

Assuming that node i belongs to V^j^{j-1} and that jlev >= 1, find i's two parent nodes in V^{j-1} p1 and p2.

29.361.3.5 virtual double PrNestedTriangulation::getX (int *i*) [pure virtual]

return the x coeff. of the i-th node in the triangulation.

Implemented in PrTriangulation_NT.

29.361.3.6 virtual double PrNestedTriangulation::getY (int *i*) [pure virtual]

return the y coeff. of the i-th node in the triangulation.

Implemented in PrTriangulation_NT.

29.361.3.7 virtual double PrNestedTriangulation::getZ (int *i*) [pure virtual]

return the z coeff. of the i-th node in the triangulation.

Implemented in PrTriangulation_NT.

29.361.3.8 virtual bool PrNestedTriangulation::isBoundary (int *i*) [pure virtual]

is the i-th node a boundary node or interior node?

Implemented in PrTriangulation_NT.

29.361.3.9 virtual void PrNestedTriangulation::setX (int *i,* const double & *x*) [pure virtual]

set the x coeff. of the i-th node in the triangulation.

Implemented in PrTriangulation_NT.

29.361.3.10 virtual void PrNestedTriangulation::setY (int *i,* const double & *y*) [pure virtual]

set the y coeff. of the i-th node in the triangulation.

Implemented in PrTriangulation_NT.

29.361.3.11 virtual void PrNestedTriangulation::setZ (int *i,* const double & *z*) [pure virtual]

set the z coeff. of the i-th node in the triangulation.

Implemented in PrTriangulation_NT.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrNestedTriangulation.h

29.362 PrNode Class Reference

`#include <PrNode.h>`

Public Member Functions

- PrNode ()
- PrNode (double x, double y, double z, double u, double v, int tr)
- void init (double x, double y, double z, double u, double v, int tr)
- const Vector3D & point () const
- const double & u () const
- const double & v () const
- const double & x () const
- const double & y () const
- const double & z () const
- const int & tr () const
- double & u ()
- double & v ()
- double & x ()
- double & y ()
- double & z ()
- int & tr ()
- void print (std::ostream &os) const
- void printXYZ (std::ostream &os) const
- void printUV (std::ostream &os) const
- void scan (std::istream &is)

29.362.1 Detailed Description

This class represents a node for use in PrTriangulation_OP. It has double x,y,z values contained in its parent class Vector3D. It also has double u and v values (parameter values) and the index of its "first" incident triangle tr. If the node is interior then tr is any incident triangle. Otherwise the node is a boundary node, in which case tr is the incident triangle which is the first one in the anticlockwise direction around the node (equivalently the only triangle containing the node whose right neighbour from the point of view of the node is 0).

Definition at line 60 of file PrNode.h.

29.362.2 Constructor & Destructor Documentation

29.362.2.1 PrNode::PrNode ( ) [inline]

Definition at line 68 of file PrNode.h.

29.362.2.2 PrNode::PrNode (double *x,* double *y,* double *z,* double *u,* double *v,* int *tr*) [inline]

Definition at line 71 of file PrNode.h.

29.362.3 Member Function Documentation

29.362.3.1 void PrNode::init (double *x,* double *y,* double *z,* double *u,* double *v,* int *tr*) [inline]

Definition at line 104 of file PrNode.h.

29.362.3.2 const Vector3D& PrNode::point ( ) const [inline]

Definition at line 78 of file PrNode.h.

29.362.3.3 void PrNode::print (std::ostream & *os*) const

29.362.3.4 void PrNode::printUV (std::ostream & *os*) const

29.362.3.5 void PrNode::printXYZ (std::ostream & *os*) const

29.362.3.6 void PrNode::scan (std::istream & *is*)

29.362.3.7 const int & PrNode::tr ( ) const [inline]

Definition at line 130 of file PrNode.h.

29.362.3.8 int & PrNode::tr ( ) [inline]

Definition at line 151 of file PrNode.h.

29.362.3.9 const double & PrNode::u ( ) const [inline]

Definition at line 116 of file PrNode.h.

29.362.3.10 double & PrNode::u ( ) [inline]

Definition at line 137 of file PrNode.h.

29.362.3.11 const double & PrNode::v ( ) const [inline]

Definition at line 123 of file PrNode.h.

29.362.3.12 double & PrNode::v ( ) [inline]

Definition at line 144 of file PrNode.h.

29.362.3.13 const double & PrNode::x ( ) const [inline]

Definition at line 158 of file PrNode.h.

29.362.3.14 double & PrNode::x ( ) [inline]

Definition at line 165 of file PrNode.h.

29.362.3.15 const double & PrNode::y ( ) const [inline]

Definition at line 172 of file PrNode.h.

29.362.3.16 double & PrNode::y ( ) [inline]

Definition at line 179 of file PrNode.h.

29.362.3.17 const double & PrNode::z ( ) const [inline]

Definition at line 186 of file PrNode.h.

29.362.3.18 double & PrNode::z ( ) [inline]

Definition at line 193 of file PrNode.h.

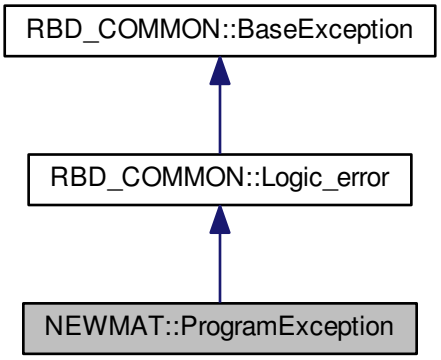
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrNode.h

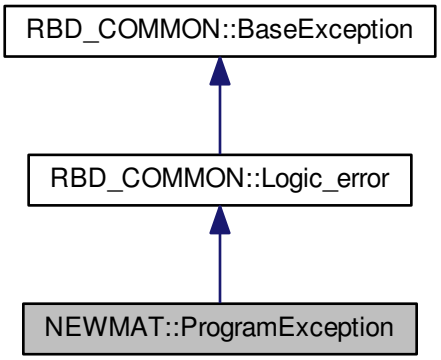
29.363 NEWMAT::ProgramException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::ProgramException:



Collaboration diagram for NEWMAT::ProgramException:



Public Member Functions

- ProgramException (const char *c)
- ProgramException (const char *c, const GeneralMatrix &)
- ProgramException (const char *c, const GeneralMatrix &, const GeneralMatrix &)
- ProgramException (const char *c, MatrixType, MatrixType)

Static Public Attributes

- static unsigned long Select

Protected Member Functions

- ProgramException ()

Additional Inherited Members

29.363.1 Detailed Description

Definition at line 1624 of file newmat.h.

29.363.2 Constructor & Destructor Documentation

29.363.2.1 NEWMAT::ProgramException::ProgramException ( ) [protected]

29.363.2.2 ProgramException::ProgramException (const char * *c*)

Definition at line 88 of file newmatex.cpp.

29.363.2.3 NEWMAT::ProgramException::ProgramException (const char * *c*, const GeneralMatrix &)

29.363.2.4 NEWMAT::ProgramException::ProgramException (const char * *c*, const GeneralMatrix &, const GeneralMatrix &)

29.363.2.5 NEWMAT::ProgramException::ProgramException (const char * *c*, MatrixType, MatrixType)

29.363.3 Member Data Documentation

29.363.3.1 unsigned long ProgramException::Select [static]

Definition at line 1629 of file newmat.h.

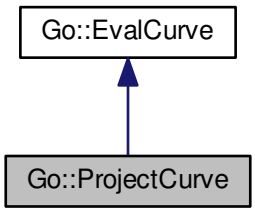
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

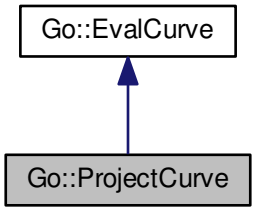
29.364 Go::ProjectCurve Class Reference

`#include <ProjectCurve.h>`

Inheritance diagram for Go::ProjectCurve:



Collaboration diagram for Go::ProjectCurve:



Public Member Functions

- ProjectCurve (shared_ptr< Go::ParamCurve > &space_crv, shared_ptr< Go::ParamSurface > &surf, shared_ptr< Go::Point > &start_par_pt, shared_ptr< Go::Point > &end_par_pt, double epsgeo1, const RectDomain *domain_of_interest=NULL)
- virtual ~ProjectCurve ()

  virtual destructor ensures safe inheritance
- virtual Go::Point eval (double t) const
- Go::Point eval (double t, Go::Point seed) const

  Evaluate point, given seed for the closest point iteration involved.
- virtual void eval (double t, int n, Go::Point der[]) const
- virtual double start () const
- virtual double end () const
- virtual int dim () const
- virtual bool approximationOK (double par, Go::Point approxpos, double tol1, double tol2) const

29.364.1 Detailed Description

This class represents the curve obtained by projecting a given 3D curve onto a given part of a given 3D surface.

Definition at line 58 of file ProjectCurve.h.

29.364.2 Constructor & Destructor Documentation

29.364.2.1 Go::ProjectCurve::ProjectCurve (shared_ptr< Go::ParamCurve > & *space_crv,* shared_ptr< Go::ParamSurface > & *surf,* shared_ptr< Go::Point > & *start_par_pt,* shared_ptr< Go::Point > & *end_par_pt,* double *epsgeo1,* const RectDomain * *domain_of_interest* = NULL)

Constructor, taking one 3D curve and one 3D surface. The user may additionally provide explicit values for the start and end points of the curve (supposedly on the surface) as well as specifying the parameter domain of interest of the surface.

Parameters

space_crv	the 3D space curve that will be projected onto a surface
surf	the 3D surface that we will project the space curve onto. Assuming that the surface is k-regular.
start_par_pt	explicit position of start point (can be a zero pointer, in which case the start point will be evaluated by projection, just like any other point).
end_par_pt	explicit position of end point (can be a zero pointer, in which case the start point will be evaluated by projection, just like any other point).
epsgeo1	geometric tolerance to use when projecting curve onto surface, and when using the approximationOK() function, max dist from exact proj.
epsgeo2	geometric tolerance when using the approximationOK() function, max dist from space_crv. Negative = ignored.
domain_of_interest	if the user wants to limit the surface to a certain parametric domain, it can be specified here.

29.364.2.2 virtual Go::ProjectCurve::~ProjectCurve ( ) [virtual]

virtual destructor ensures safe inheritance

29.364.3 Member Function Documentation

29.364.3.1 virtual bool Go::ProjectCurve::approximationOK (double *par,* Go::Point *approxpos,* double *tol1,* double *tol2*) const [virtual]

Inherited from EvalCurve::approximationOK(). For this class, the specified tolerances are not used; the internally stored 'epsgeo' value is used as tolerance (this value was specified in the constructor).

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	unused
tol2	unused

Returns

'true' if the curve approximates the point at the parameter, 'false' otherwise.

Implements Go::EvalCurve.

29.364.3.2 virtual int Go::ProjectCurve::dim ( ) const [virtual]

Inherited from EvalCurve::dim(). For this class, the returned dimension will be that of the surface parameter domain, ie. 2, NOT that of the space curve.

Implements Go::EvalCurve.

29.364.3.3 virtual double Go::ProjectCurve::end ( ) const [virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implements Go::EvalCurve.

29.364.3.4 virtual Go::Point Go::ProjectCurve::eval (double *t*) const [virtual]

Evaluate a point on the curve for a given parameter

Parameters

t	the parameter for which to evaluate the curve.

Returns

the evaluated point

Implements Go::EvalCurve.

29.364.3.5 Go::Point Go::ProjectCurve::eval (double *t*, Go::Point *seed*) const

Evaluate point, given seed for the closest point iteration involved.

29.364.3.6 virtual void Go::ProjectCurve::eval (double *t*, int *n*, Go::Point *der[ ]*) const [virtual]

Evaluate a point and a certain number of derivatives on the curve for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalCurve', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implements Go::EvalCurve.

29.364.3.7 virtual double Go::ProjectCurve::start ( ) const [virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implements Go::EvalCurve.

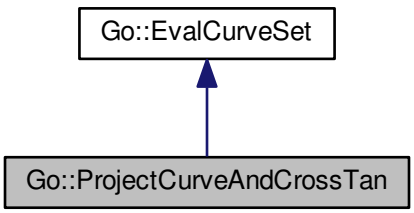
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/ProjectCurve.h

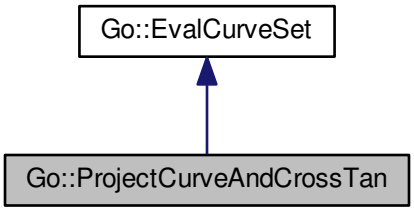
29.365 Go::ProjectCurveAndCrossTan Class Reference

`#include <ProjectCurveAndCrossTan.h>`

Inheritance diagram for Go::ProjectCurveAndCrossTan:



Collaboration diagram for Go::ProjectCurveAndCrossTan:



Public Member Functions

- ProjectCurveAndCrossTan (const SplineCurve &space_crv, const SplineCurve &crosstan_crv, const SplineSurface &surf, const Point *start_par_pt, const Point *end_par_pt, double epsgeo, const RectDomain *domain_of_interest=NULL)
- virtual ~ProjectCurveAndCrossTan ()

  Destructor.
- virtual std::vector< Go::Point > eval (double t)
- virtual void eval (double t, int n, std::vector< std::vector< Go::Point > > &ders)
- virtual double start ()
- virtual double end ()
- virtual int dim ()
- virtual bool approximationOK (double par, const std::vector< Go::Point > &approxpos, double tol1, double tol2)
- virtual int nmbCvs ()

29.365.1 Detailed Description

Evaluator class representing the projection and and tangent curve given a set of input curves. In total 3 points are computed: the parameter point of the projection on an input surface, the corresponding space pt and the projected cross tangent point.

Definition at line 60 of file ProjectCurveAndCrossTan.h.

29.365.2 Constructor & Destructor Documentation

29.365.2.1 Go::ProjectCurveAndCrossTan::ProjectCurveAndCrossTan (const SplineCurve & *space_crv,* const SplineCurve & *crosstan_crv,* const SplineSurface & *surf,* const Point * *start_par_pt,* const Point * *end_par_pt,* double *epsgeo,* const RectDomain * *domain_of_interest* = NULL)

Constructor.

Parameters

space_crv	the input space curve to project.

Parameters

crosstan_crv	the cross tangent curve associated with space_crv.
surf	the parametric surface onto which to project the two curves.
start_par_pt	We may require that the projected curve shall start in a specific point in the parameter domain (input pointer may be NULL).
end_par_pt	We may require that the projected curve shall end in a specific point in the parameter domain (input pointer may be NULL).
epsgeo	geometric tolerance for the projection.
domain_of_interest	if not null, specifies the part of the SplineSurface s parametric domain that will be considered.

29.365.2.2 virtual Go::ProjectCurveAndCrossTan::~ProjectCurveAndCrossTan ( ) [virtual]

Destructor.

29.365.3 Member Function Documentation

29.365.3.1 virtual bool Go::ProjectCurveAndCrossTan::approximationOK (double *par*, const std::vector< Go::Point > & *approxpos*, double *tol1*, double *tol2*) [virtual]

Whether the approximation is within tolerances in input parameter.

Parameters

par	parameter in which to evaluate.
approxpos	whether the input points are within tolerance from the evaluated points (as given by eval()).
tol1	tolerance used to decide approximation accuracy.
tol2	tolerance used to decide approximation accuracy.

Returns

whether the approximation is within tolerances in input parameter.

29.365.3.2 virtual int Go::ProjectCurveAndCrossTan::dim ( ) [virtual]

Dimension of space (parameter domain, i.e. 2).

Returns

geometric dimension of the space.

Implements Go::EvalCurveSet.

29.365.3.3 virtual double Go::ProjectCurveAndCrossTan::end ( ) [virtual]

End parameter of domain.

Returns

end parameter of domain.

Implements Go::EvalCurveSet.

29.365.3.4 virtual std::vector<Go::Point> Go::ProjectCurveAndCrossTan::eval (double *t*) [virtual]

Evaluate the curve set.

Parameters

t	parameter in which to evaluate.

Returns

the evaluated points in the input parameter, size of vector is 3.

Implements Go::EvalCurveSet.

29.365.3.5 virtual void Go::ProjectCurveAndCrossTan::eval (double *t*, int *n*, std::vector< std::vector< Go::Point > > & *ders*) [virtual]

Evaluate derivatives in the curve set.

Parameters

t	parameter in which to evaluate.
n	the number of derivatives to evaluate.
ders	the evaluated points in the input parameter. Size of vector is 3, each holding 'n + 1' points.

29.365.3.6 virtual int Go::ProjectCurveAndCrossTan::nmbCvs ( ) [virtual]

The number of curves in the curve set.

Returns

the number of curves in the curve set, i.e. 3.

Implements Go::EvalCurveSet.

29.365.3.7 virtual double Go::ProjectCurveAndCrossTan::start ( ) [virtual]

Start parameter of domain.

Returns

start parameter of domain.

Implements Go::EvalCurveSet.

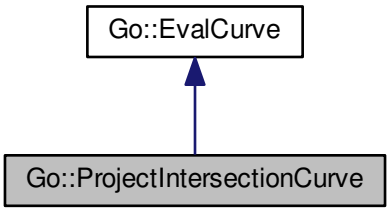
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/ProjectCurveAndCrossTan.h

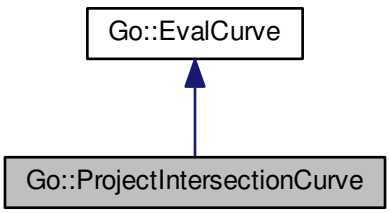
29.366 Go::ProjectIntersectionCurve Class Reference

`#include <ProjectIntersectionCurve.h>`

Inheritance diagram for Go::ProjectIntersectionCurve:



Collaboration diagram for Go::ProjectIntersectionCurve:



Public Member Functions

- ProjectIntersectionCurve (shared_ptr< SplineCurve > &inters_crv, shared_ptr< SplineCurve > &p_crv, shared_ptr< SplineCurve > &other_p_crv, shared_ptr< ParamSurface > &surf, shared_ptr< ParamSurface > &other_surf, double offset_dist, double other_offset_dist, double epsgeo)
- virtual ~ProjectIntersectionCurve ()

  Destructor.
- virtual Point eval (double t) const
- virtual void eval (double t, int n, Point der[ ]) const
- virtual double start () const
- virtual double end () const
- virtual int dim () const
- virtual bool approximationOK (double par, Point approxpos, double tol1, double tol2) const

29.366.1 Detailed Description

This class provides an interface to a curve that can be evaluated. This evaluator based class computes the projected point in the first surface of the offset point defined by input.

Definition at line 58 of file ProjectIntersectionCurve.h.

29.366.2 Constructor & Destructor Documentation

29.366.2.1 Go::ProjectIntersectionCurve::ProjectIntersectionCurve (shared_ptr< SplineCurve > & *inters_crv,* shared_ptr< SplineCurve > & *p_crv,* shared_ptr< SplineCurve > & *other_p_crv,* shared_ptr< ParamSurface > & *surf,* shared_ptr< ParamSurface > & *other_surf,* double *offset_dist,* double *other_offset_dist,* double *epsgeo*)

Constructor.

Parameters

inters_crv	the space intersection curve between surf & other_surf.
p_crv	the corresponding parameter curve in surf.
other_p_crv	the corresponding parameter curve in other_surf.
surf	the first input surface.
other_surf	the second input surface.
offset_dist	the offset distance in surf.
other_offset_dist	the offset distance in other_surf.
epsgeo	the geometrical tolerance (for closes point evaluations).

29.366.2.2 virtual Go::ProjectIntersectionCurve::~ProjectIntersectionCurve ( ) [virtual]

Destructor.

29.366.3 Member Function Documentation

29.366.3.1 virtual bool Go::ProjectIntersectionCurve::approximationOK (double *par,* Point *approxpos,* double *tol1,* double *tol2*) const [virtual]

Whether the evaluated point in par is close enough to approxpos.

Parameters

par	the parameter in which to evaluate.
approxpos	postition to check for accuracy.
tol1	currently not used.
tol2	currently not used.

Returns

whether approxpos is within satisfactory accuracy (i.e. epsgeo_).

Implements Go::EvalCurve.

29.366.3.2 virtual int Go::ProjectIntersectionCurve::dim ( ) const [virtual]

Dimension of inters_crv_.

Returns

the dimension of the evaluator point.

Implements Go::EvalCurve.

29.366.3.3 virtual double Go::ProjectIntersectionCurve::end ( ) const [virtual]

End parameter of curve.

Returns

the end parameter.

Implements Go::EvalCurve.

29.366.3.4 virtual Point Go::ProjectIntersectionCurve::eval (double *t*) const [virtual]

The evaluator part of the class, returns the projected offset point in the first surface.

Parameters

t	the parameter in which to evaluate.

Implements Go::EvalCurve.

29.366.3.5 virtual void Go::ProjectIntersectionCurve::eval (double *t*, int *n*, Point *der[ ]*) const [virtual]

The evaluator part of the class, returns the projected offset point in the first surface. For n == 1 the tangent in the projected offset curve is also computed.

Parameters

t	the parameter in which to evaluate.
n	the number of derivatives to compute (at most 1).
der	the evaluated point. Size of array is 'n + 1'.

Implements Go::EvalCurve.

29.366.3.6 virtual double Go::ProjectIntersectionCurve::start ( ) const [virtual]

Start parameter of curve.

Returns

the start parameter.

Implements Go::EvalCurve.

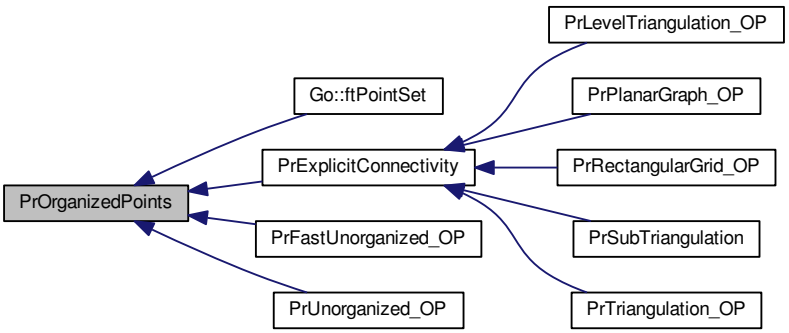
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/ProjectIntersectionCurve.h

29.367 PrOrganizedPoints Class Reference

`#include <PrOrganizedPoints.h>`

Inheritance diagram for PrOrganizedPoints:



Public Member Functions

Pure virtual functions...

- virtual int getNumNodes () const =0
  return the number of nodes in the graph.
- virtual Vector3D get3dNode (int i) const =0
  return the i-th node in the graph if the nodes are three-dimensional
- virtual void set3dNode (int i, const Vector3D &p)=0
- virtual void getNeighbours (int i, std::vector< int > &neighbours) const =0
- virtual bool isBoundary (int i) const =0
  is the i-th node a boundary node or interior node?
- virtual double getU (int i) const =0
  return the u parameter value of the i-th node.
- virtual double getV (int i) const =0
  return the v parameter value of the i-th node.
- virtual void setU (int i, double u)=0
  reset the u parameter value of the i-th node.
- virtual void setV (int i, double v)=0
  reset the v parameter value of the i-th node.
- virtual ~PrOrganizedPoints ()
  Empty default destructor.

Print routines

- virtual void printXYZNodes (std::ostream &os, bool num=0) const
  Print out the XYZ nodes of the graph. If num = true, print first the number of nodes.
- virtual void printUVNodes (std::ostream &os, bool num=0) const
  Print out the UV nodes of the graph. If num = 1, print first the number of nodes.
- virtual void printUVXYZNodes (std::ostream &os, bool num=0) const
  Print out the nodes of the graph. If num = 1, print first the number of nodes.
- virtual void printXYZEdges (std::ostream &os) const
  Print out the edges of the graph.
- virtual void printUVEdges (std::ostream &os) const
  Print out the edges of the parametrization.
- virtual void printInfo (std::ostream &os) const
  Print general information about this PrOrganizedPoints object (number of nodes, etc.)

Other functions

- virtual int findNumBdyNodes () const
  count the number of boundary nodes in the graph.
- virtual int findNumEdges () const
  count the number of edges in the graph
- int findNumComponents () const
  Compute the number of connected components of the graph.
- void labelNode (int i, int ic, std::vector< int > &component) const
- int findNumBdyComponents () const
  Compute the number of separate boundaries of the graph.
- void labelBdyNode (int i, int ic, std::vector< int > &component) const
- int indexComponents (std::vector< int > &component, std::vector< int > &newIndex) const
- void labelNode (int i, int ic, int &index, std::vector< int > &component, std::vector< int > &newIndex) const
- int findIndex (Vector3D &point) const
- void topologicalDistToBdy (std::vector< int > &label) const
- void getCommonNeighbours (int j, int k, std::vector< int > &neighbours) const
  Return the common neighbours of the j-th and k-th node in some arbitrary order.
- void get2Neighbours (int i, std::vector< int > &neighbours) const
  Get the 2-neighbours of the node 'i'.
- static bool isMinimum (int i, std::vector< int > &face)

29.367.1 Detailed Description

PrOrganizedPoints - This class implements an interface to a planar graph embedded in R^2 or R^3. The two common examples are a triangulation and a topologically rectangular grid, but it can also represent point clouds with no explicit connectivity, as long as the boundary is identified. The methods in this class are used by PrParametrize.

Definition at line 60 of file PrOrganizedPoints.h.

29.367.2 Constructor & Destructor Documentation

29.367.2.1 virtual PrOrganizedPoints::~PrOrganizedPoints ( ) [virtual]

Empty default destructor.

29.367.3 Member Function Documentation

29.367.3.1 int PrOrganizedPoints::findIndex (Vector3D & *point*) const

find the index of the node whose (x,y,z) point is exactly equal to the given point. This can be useful for relocating "corner" points after triangulating (if the graph is a triangulation).

29.367.3.2 int PrOrganizedPoints::findNumBdyComponents ( ) const

Compute the number of separate boundaries of the graph.

29.367.3.3 virtual int PrOrganizedPoints::findNumBdyNodes ( ) const [virtual]

count the number of boundary nodes in the graph.

Reimplemented in PrSubTriangulation.

29.367.3.4 int PrOrganizedPoints::findNumComponents ( ) const

Compute the number of connected components of the graph.

29.367.3.5 virtual int PrOrganizedPoints::findNumEdges ( ) const [virtual]

count the number of edges in the graph

29.367.3.6 void PrOrganizedPoints::get2Neighbours (int *i,* std::vector< int > & *neighbours*) const

Get the 2-neighbours of the node 'i'.

29.367.3.7 virtual Vector3D PrOrganizedPoints::get3dNode (int *i*) const [pure virtual]

return the i-th node in the graph if the nodes are three-dimensional

Implemented in Go::ftPointSet, PrTriangulation_OP, PrSubTriangulation, PrPlanarGraph_OP, PrFastUnorganized↩_OP, PrRectangularGrid_OP, and PrLevelTriangulation_OP.

29.367.3.8 void PrOrganizedPoints::getCommonNeighbours (int *j,* int *k,* std::vector< int > & *neighbours*) const

Return the common neighbours of the j-th and k-th node in some arbitrary order.

29.367.3.9 virtual void PrOrganizedPoints::getNeighbours (int *i,* std::vector< int > & *neighbours*) const [pure virtual]

Return the indices of the neighbours of the i-th node in:

1. Any anticlockwise order if i is an interior node.
2. The unique anticlockwise order if i is a boundary node. This routine should be implemented in any derived class by first calling clear() followed successively by push_back() on the neighbours vector.

Implemented in Go::ftPointSet, and PrTriangulation_OP.

29.367.3.10 virtual int PrOrganizedPoints::getNumNodes ( ) const [pure virtual]

return the number of nodes in the graph.

Implemented in Go::ftPointSet, PrTriangulation_OP, PrSubTriangulation, PrPlanarGraph_OP, PrFastUnorganized↩_OP, PrRectangularGrid_OP, and PrLevelTriangulation_OP.

29.367.3.11 virtual double PrOrganizedPoints::getU (int *i*) const [pure virtual]

return the u parameter value of the i-th node.

Implemented in Go::ftPointSet, PrTriangulation_OP, PrPlanarGraph_OP, PrSubTriangulation, PrFastUnorganized↩_OP, PrLevelTriangulation_OP, and PrRectangularGrid_OP.

29.367.3.12 virtual double PrOrganizedPoints::getV (int *i*) const [pure virtual]

return the v parameter value of the i-th node.

Implemented in Go::ftPointSet, PrPlanarGraph_OP, PrTriangulation_OP, PrSubTriangulation, PrFastUnorganized↩_OP, PrLevelTriangulation_OP, and PrRectangularGrid_OP.

29.367.3.13 int PrOrganizedPoints::indexComponents (std::vector< int > & *component,* std::vector< int > & *newIndex*) const

Locate all connected components of the graph, give each of them an unique index (starting from 0), and giving all nodes of each component "local" indexes pertaining to that component.

Return values

component	will be resized to number of nodes. Each entry will contain the index of the component in which the corresponding node is located
newIndex	will be resized to number of nodes. Each entry will contain the LOCAL index of the corresponding node in the component it belongs to.

29.367.3.14 virtual bool PrOrganizedPoints::isBoundary (int *i*) const [pure virtual]

is the i-th node a boundary node or interior node?

Implemented in Go::ftPointSet, PrTriangulation_OP, PrPlanarGraph_OP, PrSubTriangulation, PrFastUnorganized_OP, PrLevelTriangulation_OP, and PrRectangularGrid_OP.

29.367.3.15 static bool PrOrganizedPoints::isMinimum (int *i*, std::vector< int > & *face*) [static]

Check if there are any elements of the vector 'face' that are inferior to the value of 'i'.

29.367.3.16 void PrOrganizedPoints::labelBdyNode (int *i*, int *ic*, std::vector< int > & *component*) const

Locate all nodes on the same boundary as the node 'i' (supposedly a boundary node) and mark their corresponding entry in the vector 'component' with the value 'ic'.

Parameters

i	index specifying a boundary node
ic	the 'label value' to write to the concerned entries in the 'component' vector

Return values

component	the vector where the labels will be written. Its size should be equal to the number of nodes in the PrOrganizedPoints object before calling this function.

29.367.3.17 void PrOrganizedPoints::labelNode (int *i*, int *ic*, std::vector< int > & *component*) const

Locate all nodes connnected to node 'i', and mark their corresponding entry in the vector 'component' with the value 'ic'.

Parameters

i	index specifying the node
ic	the 'label value' to write to the concerned entries in the 'component' vector

Return values

component	the vector where the labels will be written. Its size should be equal to the number of nodes in the PrOrganizedPoints object before calling this function.

29.367.3.18 void PrOrganizedPoints::labelNode (int *i*, int *ic*, int & *index*, std::vector< int > & *component*, std::vector< int > & *newIndex*) const

Locate all nodes in the same connected component as the node 'i', and label their corresponding entries in the vector 'component' with the value 'ic'. These nodes are also given "local" indexes for that coponent. These indexes will be written to the corresponding entries of the 'newIndex' vector.

Parameters

i	the index of the node specifying the connected component to examine.
ic	the label to give to the entries in the 'component'-vector that correspond with nodes in the specified connected component.
index	start value for local indexing of nodes within the component.

Return values

component	this vector is where the labeling is written. Before calling the function, the user should ensure that its size is equal to the total number of nodes in the graph.
newIndex	this vector is where the new local coordinates are written. Before calling the function, the user should ensure that its size is equal to the total number of nodes in the graph.

29.367.3.19 virtual void PrOrganizedPoints::printInfo (std::ostream & *os*) const [virtual]

Print general information about this PrOrganizedPoints object (number of nodes, etc.)

Reimplemented in PrExplicitConnectivity.

29.367.3.20 virtual void PrOrganizedPoints::printUVEdges (std::ostream & *os*) const [virtual]

Print out the edges of the parametrization.

29.367.3.21 virtual void PrOrganizedPoints::printUVNodes (std::ostream & *os*, bool *num* = 0) const [virtual]

Print out the UV nodes of the graph. If num = 1, print first the number of nodes.

29.367.3.22 virtual void PrOrganizedPoints::printUVXYZNodes (std::ostream & *os*, bool *num* = 0) const [virtual]

Print out the nodes of the graph. If num = 1, print first the number of nodes.

29.367.3.23 virtual void PrOrganizedPoints::printXYZEdges (std::ostream & *os*) const [virtual]

Print out the edges of the graph.

29.367.3.24 virtual void PrOrganizedPoints::printXYZNodes (std::ostream & *os*, bool *num* = 0) const [virtual]

Print out the XYZ nodes of the graph. If num = true, print first the number of nodes.

29.367.3.25 virtual void PrOrganizedPoints::set3dNode (int *i*, const Vector3D & *p*) [pure virtual]

set the coordinates of the i-th node in the graph if the nodes are three-dimensional.

Implemented in PrTriangulation_OP, PrPlanarGraph_OP, PrSubTriangulation, PrFastUnorganized_OP, PrRectangularGrid_OP, PrLevelTriangulation_OP, and PrUnorganized_OP.

29.367.3.26 virtual void PrOrganizedPoints::setU (int *i*, double *u*) [pure virtual]

reset the u parameter value of the i-th node.

Implemented in Go::ftPointSet, PrPlanarGraph_OP, PrTriangulation_OP, PrSubTriangulation, PrFastUnorganized_OP, PrLevelTriangulation_OP, PrUnorganized_OP, and PrRectangularGrid_OP.

29.367.3.27 virtual void PrOrganizedPoints::setV (int *i*, double *v*) [pure virtual]

reset the v parameter value of the i-th node.

Implemented in Go::ftPointSet, PrPlanarGraph_OP, PrTriangulation_OP, PrSubTriangulation, PrLevelTriangulation_OP, PrFastUnorganized_OP, PrUnorganized_OP, and PrRectangularGrid_OP.

29.367.3.28 void PrOrganizedPoints::topologicalDistToBdy (std::vector< int > & *label*) const

Compute for each node the number of edges that must be traversed in order to reach the boundary (For boundary edges, this number is 0).

Return values

label	this vector will contain the computed number for each node. Its size will therefore be equal to the number of nodes.

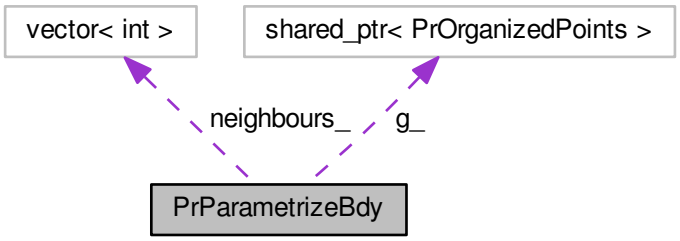
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrOrganizedPoints.h

29.368 PrParametrizeBdy Class Reference

`#include <PrParametrizeBdy.h>`

Collaboration diagram for PrParametrizeBdy:



Public Member Functions

- PrParametrizeBdy ()

  Default constructor.
- virtual ~PrParametrizeBdy ()

  Empty default constructor.
- virtual void attach (shared_ptr< PrOrganizedPoints > graph)

  Set the graph.
- void setParamKind (PrBdyParamKind bdyparamtype=PrCHORDLENGTHBDY)
- double boundaryLength (int i1, int i2)
- bool parametrize ()
- bool parametrizeSide (int i1, int i2)
- bool parametrize (int c1, int c2, int c3, int c4, double umin=0.0, double umax=1.0, double vmin=0.0, double vmax=1.0)
- void findCornersFromXYZ (int *c)
- void findCornersFromUV (int *c)
- int findBdyNode ()

  Find the bounday node with the least index.
- int getNextBdyNode (int i)

Protected Member Functions

- double chord (const Vector3D &a, const Vector3D &b)

  Return "length" of chord between two points in R^3.

Protected Attributes

- PrBdyParamKind bdyparamtype_
- shared_ptr< PrOrganizedPoints > g_
- vector< int > neighbours_

29.368.1 Detailed Description

This class implements an algorithm for parametrizing the boundary of a planar graph in R^3. Typical choices are uniform and chord length, either round the whole boundary or along each "side".

Definition at line 60 of file PrParametrizeBdy.h.

29.368.2 Constructor & Destructor Documentation

29.368.2.1 PrParametrizeBdy::PrParametrizeBdy ( )

Default constructor.

29.368.2.2 virtual PrParametrizeBdy::~PrParametrizeBdy ( ) [virtual]

Empty default constructor.

29.368.3 Member Function Documentation

29.368.3.1 virtual void PrParametrizeBdy::attach (shared_ptr< PrOrganizedPoints > *graph*) [virtual]

Set the graph.

29.368.3.2 double PrParametrizeBdy::boundaryLength (int *i1*, int *i2*)

Calculate the "length" of the section of the xyz boundary between nodes boundary i and j according to the kind of parametrization specified by setParamKind(). Choices are PrCHORDLENGTHBDY, PrCENTRIPETAL and PrUN↩ IFBDY.

29.368.3.3 double PrParametrizeBdy::chord (const Vector3D & *a*, const Vector3D & *b*) [protected]

Return "length" of chord between two points in R^3.

29.368.3.4 int PrParametrizeBdy::findBdyNode ( )

Find the bounday node with the least index.

29.368.3.5 void PrParametrizeBdy::findCornersFromUV (int * *c*)

Find the indices c[0],c[1],c[2],c[3] of the four vertices of the graph whose (u,v) points are the furthest SW, SE, NE, and NW in that order. The array c should be allocated outside with length 4.

29.368.3.6 void PrParametrizeBdy::findCornersFromXYZ (int * *c*)

Find four corner nodes c[0],c[1],c[2],c[3] by taking c[0] to be an arbitrary boundary node and choosing c[1],c[2],c[3] so that the lengths of four boundary curves delimited by c[0],c[1],c[2],c[3] are as equal in "chord" length (defined by setParamKind()) as possible. The array c should be allocated outside with length 4.

29.368.3.7 int PrParametrizeBdy::getNextBdyNode (int *i*)

Given a boundary node i, return the next boundary node in an anticlockwise direction around the boundary.

29.368.3.8 bool PrParametrizeBdy::parametrize ( )

Parametrize the boundary of the planar graph. The parameter domain will be the unit circle.

29.368.3.9 bool PrParametrizeBdy::parametrize (int *c1,* int *c2,* int *c3,* int *c4,* double *umin* = 0.0, double *umax* = 1.0, double *vmin* = 0.0, double *vmax* = 1.0)

Parametrize the boundary of the given planar graph. The parameter domain will be the rectangle [umin,umax]*[vmin,vmax]. Node c1 will be mapped to (umin,vmin), c2 to (umax,vmin), c3 to (umax,vmax) and c4 to (umin,vmax). The nodes c1,c2,c3,c4 should be boundary nodes and should be in anticlockwise sequence around the boundary. The kind of parametrization along the four sides of the square will be specified by setParamKind().

29.368.3.10 bool PrParametrizeBdy::parametrizeSide (int *i1,* int *i2*)

Parametrize the boundary nodes between two boundary nodes i1,i2 of a given planar graph by chord length. The two nodes i1 and i2 are assumed to be have u and v values. The boundary parameter points between i1 and i2, starting from i1 in an anticlockwise direction around the boundary, will be placed along the straight line between the two parameter points.

29.368.3.11 void PrParametrizeBdy::setParamKind (PrBdyParamKind *bdyparamtype* = PrCHORDLENGTHBDY) [inline]

Set type of parametrization to be used along the boundary. Unless you have a strong reason to do so you should set the parametrization to "PrCHORDLENGTHBDY". (Other choices are PrCENTRIPETAL and PrUNIFBDY).

Definition at line 88 of file PrParametrizeBdy.h.

29.368.4 Member Data Documentation

29.368.4.1 PrBdyParamKind PrParametrizeBdy::bdyparamtype_ [protected]

Definition at line 64 of file PrParametrizeBdy.h.

29.368.4.2 shared_ptr<PrOrganizedPoints> PrParametrizeBdy::g_ [protected]

Definition at line 65 of file PrParametrizeBdy.h.

29.368.4.3 vector<int> PrParametrizeBdy::neighbours_ [protected]

Definition at line 66 of file PrParametrizeBdy.h.

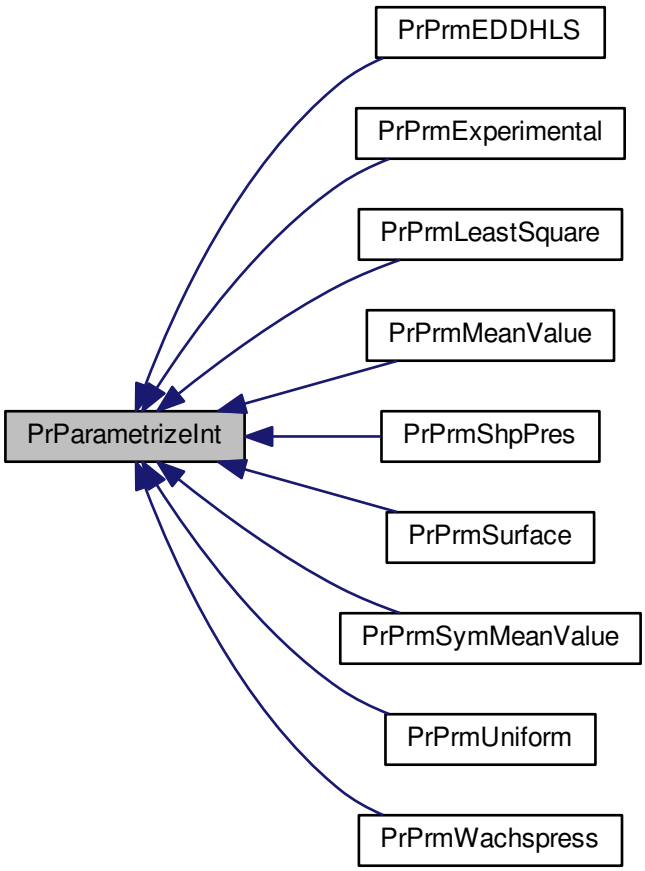
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrParametrizeBdy.h

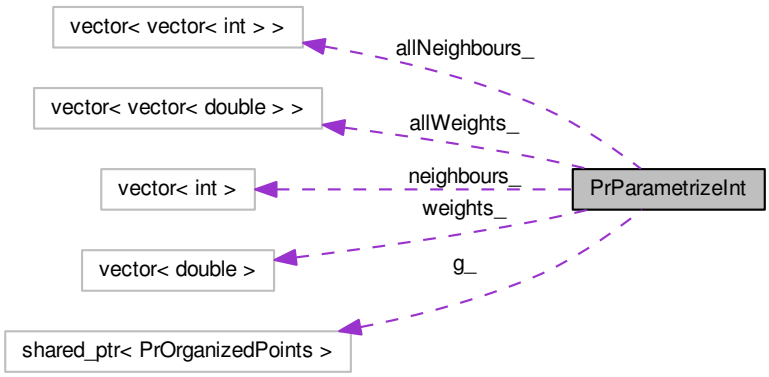
29.369 PrParametrizeInt Class Reference

`#include <PrParametrizeInt.h>`

Inheritance diagram for PrParametrizeInt:



Collaboration diagram for PrParametrizeInt:



Public Member Functions

- PrParametrizeInt ()

  Default constructor.
- virtual ~PrParametrizeInt ()

  Empty default destructor.
- void attach (shared_ptr< PrOrganizedPoints > graph)

  Set the graph.
- void setStartVectorKind (PrParamStartVector svtype=PrBARYCENTRE)
- void setBiCGTolerance (double tolerance=1.0e-6)

  Set tolerance for Bi-CGSTAB.
- bool parametrize ()

  Parametrize the given planar graph.
- bool parametrize3d (vector< int > &, vector< double > &)
- bool new_parametrize3d (vector< int > &, vector< double > &)
- void findFixedPntsFromXYZ (vector< int > &fixedPnts)
- void smooth (int nmb, vector< int > &fixedPnts)

  performs "nmb" Gauss-Seidel smoothing steps on the sphere
- void computeWeights ()

  computes and stores the weights for each node

Protected Member Functions

- int getNumIntNghrs (int i)
- int getNumInt2Nghrs (int i, vector< int > &)
- void findBarycentre (double &ucentre, double &vcentre)
- bool isFixed (int, vector< int > &)
- virtual bool makeWeights (int i)=0
- const vector< vector< double > > & getAllWeights () const
- const vector< vector< int > > & getAllNeighbours () const

Protected Attributes

- double tolerance_
- PrParamStartVector startvectortype_
- shared_ptr< PrOrganizedPoints > g_
- vector< int > neighbours_
- vector< double > weights_
- vector< vector< double > > allWeights_
- vector< vector< int > > allNeighbours_

29.369.1 Detailed Description

This class implements an algorithm for creating a parametrization in R^2 of the interior of a given embedding of a planar graph in R^3. The method is described in the paper: M. S. Floater, "Parametrization and smooth approximation of surface triangulations", CAGD 14 (1997), 231-250. The method sets u and v values to each interior node of the graph. The class PrParametrizeInt is an abstract base class. One must call one of its derived classes in order to choose a particular method of parametrization. We recommend the shape preserving parametrization implemented in PrPrmShpPres.

Definition at line 67 of file PrParametrizeInt.h.

29.369.2 Constructor & Destructor Documentation

29.369.2.1 PrParametrizeInt::PrParametrizeInt ( )

Default constructor.

29.369.2.2 virtual PrParametrizeInt::~PrParametrizeInt ( ) [virtual]

Empty default destructor.

29.369.3 Member Function Documentation

29.369.3.1 void PrParametrizeInt::attach (shared_ptr< PrOrganizedPoints > *graph*)

Set the graph.

29.369.3.2 void PrParametrizeInt::computeWeights ( )

computes and stores the weights for each node

29.369.3.3 void PrParametrizeInt::findBarycentre (double & *ucentre,* double & *vcentre*) [protected]

29.369.3.4 void PrParametrizeInt::findFixedPntsFromXYZ (vector< int > & *fixedPnts*)

This is a simple routine which finds the indices fixedPnts $[0...3]$ of the four vertices of the graph whose (x,y,z) points are the furthest in the directions (-1/-1/1), (1/1/1), (-1/1/-1), and (1/-1/-1) in that order. The indices can be used as fixed points for parametrising in 3D.

29.369.3.5 const vector< vector<int> >& PrParametrizeInt::getAllNeighbours ( ) const [inline], [protected]

Definition at line 96 of file PrParametrizeInt.h.

29.369.3.6 const vector< vector<double> >& PrParametrizeInt::getAllWeights ( ) const [inline], [protected]

Definition at line 92 of file PrParametrizeInt.h.

29.369.3.7 int PrParametrizeInt::getNumInt2Nghrs (int *i*, vector< int > &) [protected]

29.369.3.8 int PrParametrizeInt::getNumIntNghrs (int *i*) [protected]

29.369.3.9 bool PrParametrizeInt::isFixed (int , vector< int > &) [protected]

29.369.3.10 virtual bool PrParametrizeInt::makeWeights (int *i*) [protected], [pure virtual]

Implemented in PrPrmMeanValue, PrPrmShpPres, PrPrmLeastSquare, PrPrmSymMeanValue, PrPrmEDDHLS, PrPrmExperimental, and PrPrmWachspress.

29.369.3.11 bool PrParametrizeInt::new_parametrize3d (vector< int > & , vector< double > &)

Parametrize the nodes of the 3D graph g_ except those with indices in "fixedPnts". The parameterization is done in 3D and the result is returned as vector "uvw"

29.369.3.12 bool PrParametrizeInt::parametrize ( )

Parametrize the given planar graph.

29.369.3.13 bool PrParametrizeInt::parametrize3d (vector< int > & , vector< double > &)

Parametrize the nodes of the 3D graph g_ except those with indices in "fixedPnts". The parameterization is done in 3D and the result is returned as vector "uvw"

29.369.3.14 void PrParametrizeInt::setBiCGTolerance (double *tolerance* = 1.0e-6) [inline]

Set tolerance for Bi-CGSTAB.

Definition at line 116 of file PrParametrizeInt.h.

29.369.3.15 void PrParametrizeInt::setStartVectorKind (PrParamStartVector *svtype* = PrBARYCENTRE) [inline]

Choose how to initialize the solution vector when running the internal solver. Choices are PrBARYCENTRE or PrFROMUV.

Definition at line 112 of file PrParametrizeInt.h.

29.369.3.16 void PrParametrizeInt::smooth (int *nmb,* vector< int > & *fixedPnts*)

performs "nmb" Gauss-Seidel smoothing steps on the sphere

29.369.4 Member Data Documentation

29.369.4.1 vector< vector<int> > PrParametrizeInt::allNeighbours_ [protected]

Definition at line 80 of file PrParametrizeInt.h.

29.369.4.2 vector< vector<double> > PrParametrizeInt::allWeights_ [protected]

Definition at line 79 of file PrParametrizeInt.h.

29.369.4.3 shared_ptr<PrOrganizedPoints> PrParametrizeInt::g_ [protected]

Definition at line 74 of file PrParametrizeInt.h.

29.369.4.4 vector<int> PrParametrizeInt::neighbours_ [protected]

Definition at line 76 of file PrParametrizeInt.h.

29.369.4.5 PrParamStartVector PrParametrizeInt::startvectortype_ [protected]

Definition at line 72 of file PrParametrizeInt.h.

29.369.4.6 double PrParametrizeInt::tolerance_ [protected]

Definition at line 71 of file PrParametrizeInt.h.

29.369.4.7 vector<double> PrParametrizeInt::weights_ [protected]

Definition at line 77 of file PrParametrizeInt.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrParametrizeInt.h

29.370 PrParametrizeMesh Class Reference

`#include <PrParametrizeMesh.h>`

Public Member Functions

- PrParametrizeMesh ()
  Default constructor.
- virtual ~PrParametrizeMesh ()
  Default destructor.
- void attach (PrTriangulation_OP *mesh, PrTriangulation_OP *basemesh)
- PrParamTriangulation * parametrize ()
- void makeSubTriangulationFromTriangle (int i, PrSubTriangulation &subtri, std::vector< int > &corners)
- bool makePolygon (PrTriangulation_OP &triangulation, const std::vector< int > &nodes, std::vector< int > &polygon)
- bool makePath (PrTriangulation_OP &triangulation, int n1, int n2, std::vector< int > &path)
- bool makeSubTriangulation (PrTriangulation_OP &triangulation, const vector< int > &nodes, PrSub↩Triangulation &subtriangulation)
- bool makeSubTriangulationInsidePolygon (PrTriangulation_OP &triangulation, const std::vector< int > &polygon, PrSubTriangulation &subtriangulation)
- bool getConnectedNodes (PrTriangulation_OP &triangulation, const std::vector< int > &polygon, std::set< int > &nodes)
- int getLeftNode (PrTriangulation_OP &triangulation, int n1, int n2)
- void parametrizeSubTriangulation (shared_ptr< PrSubTriangulation > sub_tri, std::vector< int > &corners)
- void getInteriorNeighbours (int v, const std::vector< int > &neighbours, const std::vector< int > &boundary, std::vector< int > &new_nbrs)
- bool edgeInPolygon (int n1, int n2, const std::vector< int > &polygon)
- int castRay (PrTriangulation_OP &triangulation, int vs, double angle, double dMax, const std::set< int > &T, std::vector< int > &t_path, std::vector< Vector3D > &v_path)
- bool getNextV (const Vector3D &p1, const Vector3D &p2, const Vector3D &p3, const Vector3D &p4, double a, double b, bool f, double &c)

Static Public Member Functions

- static double getIsoline (const PrTriangulation_OP &triangulation, int vs, int vd, std::vector< int > &t_path, std::vector< Vector3D > &v_path)
- static void convertAngle (const PrTriangulation_OP &triangulation, double theta, int v, double &bc, int &t)

29.370.1 Detailed Description

PrParametrizeMesh - Short description. Detailed description.

Definition at line 58 of file PrParametrizeMesh.h.

29.370.2 Constructor & Destructor Documentation

29.370.2.1 PrParametrizeMesh::PrParametrizeMesh ( )

Default constructor.

29.370.2.2 virtual PrParametrizeMesh::~PrParametrizeMesh ( ) [virtual]

Default destructor.

29.370.3 Member Function Documentation

29.370.3.1 void PrParametrizeMesh::attach (PrTriangulation_OP * *mesh,* PrTriangulation_OP * *basemesh*) [inline]

Definition at line 76 of file PrParametrizeMesh.h.

29.370.3.2 int PrParametrizeMesh::castRay (PrTriangulation_OP & *triangulation,* int *vs,* double *angle,* double *dMax,* const std::set< int > & *T,* std::vector< int > & *t_path,* std::vector< Vector3D > & *v_path*)

Casts a ray from the vertex "vs" into the direction of "angle". angle = 0 is the direction to the ccw node in vs's leading triangle (remark: that is also the first node in the result of the "getNeighbours" routine). The ray is cast as long as its length does not exceed "dMax" and no triangle in "T" is visited. The triangles visited are stored in "t_path". If the path does not hit a triangle in "T", the return value is -1, otherwise it is the triangle index "v_path" contains the vertices of the path.

29.370.3.3 static void PrParametrizeMesh::convertAngle (const PrTriangulation_OP & *triangulation,* double *theta,* int *v,* double & *bc,* int & *t*) [static]

Converts the direction indicated by "theta" around the node "v" into a (double,int) pair. The "int" value is the index of the triangle around "v" in direction "theta", the "double" value is the barycentric coordinate of the intersection point of a ray in direction "theta" with the edge opposite to "v" in the triangle w.r.t to the vertices of that edge.

29.370.3.4 bool PrParametrizeMesh::edgeInPolygon (int *n1,* int *n2,* const std::vector< int > & *polygon*)

29.370.3.5 bool PrParametrizeMesh::getConnectedNodes (PrTriangulation_OP & *triangulation,* const std::vector< int > & *polygon,* std::set< int > & *nodes*)

Assume the vertices in polygon is a closed oriented polygon on triangulation. Returns the indices of the vertices interior to polygon. If the orientation is reversed it returns the exterior If the polygon is open and does not split triangulation all nodes will be found

29.370.3.6 void PrParametrizeMesh::getInteriorNeighbours (int *v,* const std::vector< int > & *neighbours,* const std::vector< int > & *boundary,* std::vector< int > & *new_nbrs*)

29.370.3.7 static double PrParametrizeMesh::getIsoline (const PrTriangulation_OP & *triangulation,* int *vs,* int *vd,* std::vector< int > & *t_path,* std::vector< Vector3D > & *v_path*) [static]

runs the Dijkstra algorithm from source point "vs" to destination point "vd" and determines the iso-distance-line of vd. The vertices of that isoline are stored in "v_path", whereas the indices of the triangles visited by that line are stored in "t_path". Return value is the distance from "vs" to "vd".

29.370.3.8 int PrParametrizeMesh::getLeftNode (PrTriangulation_OP & *triangulation,* int *n1,* int *n2*)

Find the third node of the triangle with nodes n1, n2 in anti-clockwise order (i.e. the triangle to the "left")

29.370.3.9 bool PrParametrizeMesh::getNextV (const Vector3D & *p1,* const Vector3D & *p2,* const Vector3D & *p3,* const Vector3D & *p4,* double *a,* double *b,* bool *f,* double & *c*)

Determine barycentric coordinates (r,s,t) of p4 w.r.t (p1,p2,p3) after flattening

29.370.3.10 bool PrParametrizeMesh::makePath (PrTriangulation_OP & *triangulation,* int *n1,* int *n2,* std::vector< int > & *path*)

29.370.3.11 bool PrParametrizeMesh::makePolygon (PrTriangulation_OP & *triangulation,* const std::vector< int > & *nodes,* std::vector< int > & *polygon*)

Given a "triangulation" and a (ordered) set of "nodes", this routine returns a "polygon", consisting of those nodes (ordered) who form the shortest paths between the given nodes in the triangulation

i.e.: given a triangle (or arbitrary polygon) in the coarse mesh, this algorithm finds the corresponding triangle (polygon) in the original (fine) mesh

29.370.3.12 bool PrParametrizeMesh::makeSubTriangulation (PrTriangulation_OP & *triangulation,* const vector< int > & *nodes,* PrSubTriangulation & *subtriangulation*)

Make a subtriangulation of triang along the polygon induced by the shortest paths between the nodes in nodes. Use the same nodeset ?

29.370.3.13 void PrParametrizeMesh::makeSubTriangulationFromTriangle (int *i,* PrSubTriangulation & *subtri,* std::vector< int > & *corners*)

29.370.3.14 bool PrParametrizeMesh::makeSubTriangulationInsidePolygon (PrTriangulation_OP & *triangulation,* const std::vector< int > & *polygon,* PrSubTriangulation & *subtriangulation*)

Make a subtriangulation of triang inside polygon. Assume polygon to be a closed ring of neighbouring nodes

29.370.3.15 PrParamTriangulation* PrParametrizeMesh::parametrize ( )

29.370.3.16 void PrParametrizeMesh::parametrizeSubTriangulation (shared_ptr< PrSubTriangulation > *sub_tri,* std::vector< int > & *corners*)

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrParametrizeMesh.h

29.371 PrParamTriangulation Class Reference

`#include <PrParamTriangulation.h>`

Public Member Functions

- PrParamTriangulation ()
  Empty default constructor.
- virtual ~PrParamTriangulation ()
  Empty default destructor.
- void open (istream &is)
  Read from stream.
- void save (ostream &os)
  Write to stream.
- PrTriangulation_OP * getFineMesh ()
  Get a pointer to the fine mesh.
- PrTriangulation_OP * getCoarseMesh ()
  Get a pointer to the coarse mesh.
- void attach (PrTriangulation_OP *mesh, PrTriangulation_OP *basemesh)
- void makeCorrespondences (int idx, PrSubTriangulation &sub_tri)
- void printBaseTriangles ()
  (Print out debug information)
- Vector3D getParamPoint (int i)
- void findTriangleContainingPoint (int coarseT, const Vector3D &coarseBC, int &fineT, Vector3D &fineBC)
- void getUV (int node, int tri, double &u, double &v)
- bool triangleContainsPoint (int fineTri, int coarseTri, const Vector3D &coarseBC, Vector3D &fineBC)
- Vector3D getSurfPoint (int coarseTri, const Vector3D &coarseBC)

Static Public Member Functions

- static Vector3D evaluator (PrTriangulation_OP &mesh, int idx, Vector3D &bc)

29.371.1 Detailed Description

This class represents a fine triangulation embedded in a coarser one. The points on the faces on the coarser triangulation can be seen as parametrizing the points on the finer triangulation.

Definition at line 54 of file PrParamTriangulation.h.

29.371.2 Constructor & Destructor Documentation

29.371.2.1 PrParamTriangulation::PrParamTriangulation ( ) [inline]

Empty default constructor.

Definition at line 63 of file PrParamTriangulation.h.

29.371.2.2 virtual PrParamTriangulation::~PrParamTriangulation ( ) [inline],[virtual]

Empty default destructor.

Definition at line 66 of file PrParamTriangulation.h.

29.371.3 Member Function Documentation

29.371.3.1 void PrParamTriangulation::attach (PrTriangulation_OP * *mesh,* PrTriangulation_OP * *basemesh*)

Reset this objects to handle the fine/coarse triangulation pair represented by 'mesh' and 'basemesh'.

29.371.3.2 static Vector3D PrParamTriangulation::evaluator (PrTriangulation_OP & *mesh,* int *idx,* Vector3D & *bc*) [static]

Evaluate a point on a given mesh by specifying a triangle on the mesh and the barycentric coordinates within this triangle. The point is computed by linear interpolation of the triangle's corner nodes.

29.371.3.3 void PrParamTriangulation::findTriangleContainingPoint (int *coarseT,* const Vector3D & *coarseBC,* int & *fineT,* Vector3D & *fineBC*)

Given a triangle on the coarse mesh and the barycentric coordinates of a point in this triangle, find the triangle on the fine mesh that contains this point.

Parameters

coarseT	index of the triangle on the coarse mesh
coarseBC	barycentric coordinates of the point with respect to the triangle on the coarse mesh

Return values

fineT	gives the index to the triangle on the fine mesh containing the specified point
fineBC	gives the barycentric coordinates of the point with respect to the triangle on the fine mesh.

29.371.3.4 PrTriangulation_OP* PrParamTriangulation::getCoarseMesh ( ) [inline]

Get a pointer to the coarse mesh.

Definition at line 78 of file PrParamTriangulation.h.

29.371.3.5 PrTriangulation_OP* PrParamTriangulation::getFineMesh ( ) [inline]

Get a pointer to the fine mesh.

Definition at line 75 of file PrParamTriangulation.h.

29.371.3.6 Vector3D PrParamTriangulation::getParamPoint (int *i*)

Get the 'parameter point' of a certain node on the fine mesh. By this we mean to find its "corresponding" point on the coarse mesh.

Parameters

i	index to the node on the fine mesh

Returns

a 3D point on the coarse mesh that corresponds to this node

29.371.3.7 Vector3D PrParamTriangulation::getSurfPoint (int *coarseTri,* const Vector3D & *coarseBC*)

Given a base triangle (triangle on the coarse mesh) and barycentric coordinates with respect to this triangle, compute the corresponding point on the fine mesh.

Parameters

coarseTri	index of the base triangle in question
coarseBC	the barycentric coordinates

Returns

a 3D point on the fine mesh corresponding to (parameterized by) the point on the coarse mesh specified by 'coarseTri' and 'coarseBC'.

29.371.3.8 void PrParamTriangulation::getUV (int *node,* int *tri,* double & *u,* double & *v*)

Returns the barycentric coordinates of node with respect to a triangle on the fine mesh. Usually, these are the uv-values obtained by the parameterization, but the handling becomes more complicated on edges.

Parameters

node	index to a node on the fine mesh, for which we want to determine the barycentric coordinates
tri	index to a base triangle (ie. triangle on the coarse mesh), for with we want to find the barycentric coordinates of the node given by 'node'.

Return values

u	the u-coordinate of the node
v	the v-coordinate of the node (the w-coordinate is given by 1-u-v).

29.371.3.9 void PrParamTriangulation::makeCorrespondences (int *idx,* PrSubTriangulation & *sub_tri*)

Set all triangles contained in a sub-triangulation of the fine mesh to "correspond" to a certain triangle in the coarse mesh.

Parameters

idx	index to the triangle in the coarse mesh
sub_tri	a sub-triangulation that represents those triangles in the fine mesh that are to be associated with the 'idx' triangle in the coarse mesh.

29.371.3.10 void PrParamTriangulation::open (istream & *is*)

Read from stream.

29.371.3.11 void PrParamTriangulation::printBaseTriangles ( )

(Print out debug information)

29.371.3.12 void PrParamTriangulation::save (ostream & *os*)

Write to stream.

29.371.3.13 bool PrParamTriangulation::triangleContainsPoint (int *fineTri,* int *coarseTri,* const Vector3D & *coarseBC,* Vector3D & *fineBC*)

Determine whether a given triangle on the fine mesh contains a point specified by its barycentric coordinates on the underlying coarse triangle.

Parameters

fineTri	index of the triangle on the fine mesh
coarseTri	index of the triangle on the coarse mesh
coarseBC	barycentric coordinates of the point on the triangle in the coarse mesh

Return values

fineBC	if the triangle on the fine mesh was found to contain the point in question, its barycentric coordinates with respect to this triangle will be returned here

Returns

'true' if the specified point is contained n the triangle on the fine mesh, 'false' otherwise.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrParamTriangulation.h

29.372 PrPGNode Class Reference

`#include <PrPGNode.h>`

Public Member Functions

- PrPGNode ()
  Empty default constructor.
- PrPGNode (double x, double y, double z, double u, double v, int end)
  Constructor.
- PrPGNode (const PrPGNode &p)
  Copy constructor.
- ~PrPGNode ()
  Empty destructor.
- void init (double x, double y, double z, double u, double v, int end)
- const Vector3D & pnt () const
- const double & x () const
- const double & y () const
- const double & z () const
- const double & u () const
- const double & v () const
- const int & end () const
- Vector3D & pnt ()
- double & x ()
- double & y ()
- double & z ()
- double & u ()
- double & v ()
- int & end ()
- void print (std::ostream &os)
- void printXYZ (std::ostream &os)
- void printUV (std::ostream &os)
- void scan (std::istream &is)

29.372.1 Detailed Description

PrPGNode - This class represents a node for use in PrPlanarGraph_OP. It has double x,y,z coordinate values. It also has double u and v values (parameter values) and the index of its last neighbour in the adj_ array of PrPlanar↩ Graph_OP.

Definition at line 52 of file PrPGNode.h.

29.372.2 Constructor & Destructor Documentation

29.372.2.1 PrPGNode::PrPGNode ( ) [inline]

Empty default constructor.

Definition at line 61 of file PrPGNode.h.

29.372.2.2 PrPGNode::PrPGNode (double *x*, double *y*, double *z*, double *u*, double *v*, int *end*) [inline]

Constructor.

Definition at line 63 of file PrPGNode.h.

29.372.2.3 PrPGNode::PrPGNode (const PrPGNode & *p*) [inline]

Copy constructor.

Definition at line 66 of file PrPGNode.h.

29.372.2.4 PrPGNode::~PrPGNode ( ) [inline]

Empty destructor.

Definition at line 69 of file PrPGNode.h.

29.372.3 Member Function Documentation

29.372.3.1 const int & PrPGNode::end ( ) const [inline]

Definition at line 162 of file PrPGNode.h.

29.372.3.2 int & PrPGNode::end ( ) [inline]

Definition at line 214 of file PrPGNode.h.

29.372.3.3 void PrPGNode::init (double *x*, double *y*, double *z*, double *u*, double *v*, int *end*) [inline]

Definition at line 103 of file PrPGNode.h.

29.372.3.4 const Vector3D & PrPGNode::pnt ( ) const [inline]

Definition at line 117 of file PrPGNode.h.

29.372.3.5 Vector3D & PrPGNode::pnt ( ) [inline]

Definition at line 169 of file PrPGNode.h.

29.372.3.6 void PrPGNode::print (std::ostream & *os*)

29.372.3.7 void PrPGNode::printUV (std::ostream & *os*)

29.372.3.8 void PrPGNode::printXYZ (std::ostream & *os*)

29.372.3.9 void PrPGNode::scan (std::istream & *is*)

29.372.3.10 const double & PrPGNode::u ( ) const [inline]

Definition at line 148 of file PrPGNode.h.

29.372.3.11 double & PrPGNode::u ( ) [inline]

Definition at line 200 of file PrPGNode.h.

29.372.3.12 const double & PrPGNode::v ( ) const [inline]

Definition at line 155 of file PrPGNode.h.

29.372.3.13 double & PrPGNode::v ( ) [inline]

Definition at line 207 of file PrPGNode.h.

29.372.3.14 const double & PrPGNode::x ( ) const [inline]

Definition at line 124 of file PrPGNode.h.

29.372.3.15 double & PrPGNode::x ( ) [inline]

Definition at line 176 of file PrPGNode.h.

29.372.3.16 const double & PrPGNode::y ( ) const [inline]

Definition at line 132 of file PrPGNode.h.

29.372.3.17 double & PrPGNode::y ( ) [inline]

Definition at line 184 of file PrPGNode.h.

29.372.3.18 const double & PrPGNode::z ( ) const [inline]

Definition at line 140 of file PrPGNode.h.

29.372.3.19 double & PrPGNode::z ( ) [inline]

Definition at line 192 of file PrPGNode.h.

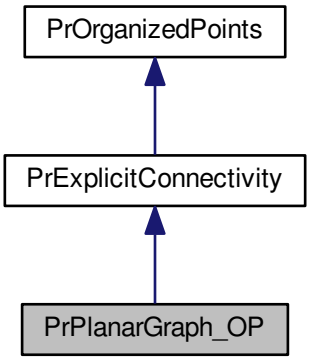
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPGNode.h

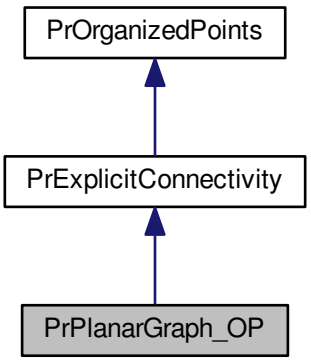
29.373 PrPlanarGraph_OP Class Reference

`#include <PrPlanarGraph_OP.h>`

Inheritance diagram for PrPlanarGraph_OP:



Collaboration diagram for PrPlanarGraph_OP:



Public Member Functions

- PrPlanarGraph_OP ()

  Empty default constructor.
- PrPlanarGraph_OP (int npts, double ∗xyz_nodes, double ∗uv_nodes, int ∗end, int ∗adj)
- PrPlanarGraph_OP (int npts, double ∗xyz_nodes, int ∗end, int ∗adj)
- PrPlanarGraph_OP (PrOrganizedPoints &op)

  Constructor. Construct the PrPlanarGraph_OP from a PrOrganizedPoints class.
- ∼PrPlanarGraph_OP ()

  Empty destructor.
- virtual int getNumNodes () const

  Return the number of nodes in the graph.
- virtual Vector3D get3dNode (int i) const

  Return the i-th node in the graph.
- virtual void set3dNode (int i, const Vector3D &p)

  Doesn't really do anything. But needed anyway.
- virtual void getNeighbours (int i, vector< int > &neighbours) const
- virtual bool isBoundary (int i) const

  Is i a boundary node or interior node?
- virtual double getU (int i) const

  Return the u parameter value of the i-th node.
- virtual double getV (int i) const

  Return the v parameter value of the i-th node.
- virtual void setU (int i, double u)

  Reset the u parameter value of the i-th node.
- virtual void setV (int i, double v)

  Reset the v parameter value of the i-th node.
- void print (std::ostream &os)
- void scan (std::istream &is)
- void scan2 (std::istream &is)

  alternative scan, reading the end array after points

Additional Inherited Members

29.373.1 Detailed Description

PrPlanarGraph_OP - This class represents a planar graph of points in R^3 with or without parameter points in R^2. It implements the virtual functions in PrOrganizedPoints. This kind of planar graph can be parametrized by Pr↩ Parametrize.

Definition at line 53 of file PrPlanarGraph_OP.h.

29.373.2 Constructor & Destructor Documentation

29.373.2.1 PrPlanarGraph_OP::PrPlanarGraph_OP ( ) [inline]

Empty default constructor.

Definition at line 64 of file PrPlanarGraph_OP.h.

29.373.2.2 PrPlanarGraph_OP::PrPlanarGraph_OP (int *npts*, double * *xyz_nodes*, double * *uv_nodes*, int * *end*, int * *adj*)

Constructor. Construct the PrPlanarGraph_OP from an array of nodes and an array of adjacency lists. The length of the arrays xyz_nodes and uv_nodes should be 3*npts and 2*npts respectively. The length of the array end should be npts. The length of the array adj should be end[npts]. If node 1 is an interior node, its neighbours are adj[1],...,adj[end[1]] in any anticlockwise sequence. If node 1 is a boundary node, its neighbours are adj[1],...,adj[end[1]-1] in the unique anticlockwise sequence. and adj[end[1]] = 0 to indicate that node 1 is on the boundary. For i=2,...,n: If node i is an interior node, its neighbours are adj[end[i-1]],...,adj[end[i]] in any anticlockwise sequence. If node i is a boundary node, its neighbours are adj[end[i-1]],...,adj[end[i]-1] in the unique anticlockwise sequence. and adj[end[i]] = 0 to indicate that node i is on the boundary. This is the data structure proposed by Cline and Renka.

29.373.2.3 PrPlanarGraph_OP::PrPlanarGraph_OP (int *npts*, double * *xyz_nodes*, int * *end*, int * *adj*)

Constructor. Construct the PrPlanarGraph_OP from an array of nodes and an array of adjacency lists. Like the previous constructor, only we set the uv's to zero.

29.373.2.4 PrPlanarGraph_OP::PrPlanarGraph_OP (PrOrganizedPoints & *op*)

Constructor. Construct the PrPlanarGraph_OP from a PrOrganizedPoints class.

29.373.2.5 PrPlanarGraph_OP::~PrPlanarGraph_OP ( ) [inline]

Empty destructor.

Definition at line 100 of file PrPlanarGraph_OP.h.

29.373.3 Member Function Documentation

29.373.3.1 virtual Vector3D PrPlanarGraph_OP::get3dNode (int *i*) const [inline], [virtual]

Return the i-th node in the graph.

Implements PrOrganizedPoints.

Definition at line 108 of file PrPlanarGraph_OP.h.

29.373.3.2 virtual void PrPlanarGraph_OP::getNeighbours (int *i*, vector< int > & *neighbours*) const [virtual]

Return the indices of the neighbours of the i-th node in:

1. any anticlockwise order if i is an interior node
2. the unique anticlockwise order if i is a boundary node.

29.373.3.3 virtual int PrPlanarGraph_OP::getNumNodes ( ) const [inline], [virtual]

Return the number of nodes in the graph.

Implements PrOrganizedPoints.

Definition at line 105 of file PrPlanarGraph_OP.h.

29.373.3.4 virtual double PrPlanarGraph_OP::getU (int *i*) const [inline], [virtual]

Return the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 123 of file PrPlanarGraph_OP.h.

29.373.3.5 virtual double PrPlanarGraph_OP::getV (int *i*) const [inline], [virtual]

Return the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 126 of file PrPlanarGraph_OP.h.

29.373.3.6 virtual bool PrPlanarGraph_OP::isBoundary (int *i*) const [virtual]

Is i a boundary node or interior node?

Implements PrOrganizedPoints.

29.373.3.7 void PrPlanarGraph_OP::print (std::ostream & *os*)

29.373.3.8 void PrPlanarGraph_OP::scan (std::istream & *is*)

29.373.3.9 void PrPlanarGraph_OP::scan2 (std::istream & *is*)

alternative scan, reading the end array after points

29.373.3.10 virtual void PrPlanarGraph_OP::set3dNode (int *i,* const Vector3D & *p*) [inline], [virtual]

Doesn't really do anything. But needed anyway.

Implements PrOrganizedPoints.

Definition at line 111 of file PrPlanarGraph_OP.h.

29.373.3.11 virtual void PrPlanarGraph_OP::setU (int *i,* double *u*) [inline], [virtual]

Reset the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 129 of file PrPlanarGraph_OP.h.

29.373.3.12 virtual void PrPlanarGraph_OP::setV (int *i,* double *v*) [inline], [virtual]

Reset the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 132 of file PrPlanarGraph_OP.h.

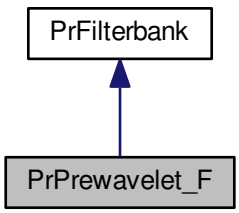
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPlanarGraph_OP.h

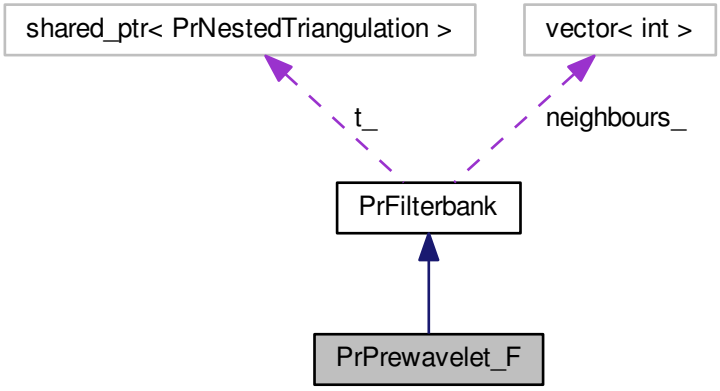
29.374 PrPrewavelet_F Class Reference

```
#include <PrPrewavelet_F.h>
```

Inheritance diagram for PrPrewavelet_F:



Collaboration diagram for PrPrewavelet_F:



Public Member Functions

- PrPrewavelet_F ()
  Default constructor.
- virtual ~PrPrewavelet_F ()
  Empty destructor.
- void setCGTolerance (double tolerance=1.0e-6)
- virtual void decompose (int jlev, int dim=1)
- virtual void compose (int jlev, int dim=1)

Additional Inherited Members

29.374.1 Detailed Description

PrPrewavelet _ This class implements algorithms for decomposing and decomposing piecewise linear functions over nested triangulations. The complemenet spaces are taken here to be wavelet spaces with the prewavelet basis constructed in

M. S. Floater and E. G. Quak, Piecewise Linear Prewavelets on Arbitrary Triangulations, Numer. Math. **82** (1999), 221–252.

Definition at line 60 of file PrPrewavelet_F.h.

29.374.2 Constructor & Destructor Documentation

29.374.2.1 PrPrewavelet_F::PrPrewavelet_F ( ) [inline]

Default constructor.

Definition at line 77 of file PrPrewavelet_F.h.

29.374.2.2 virtual PrPrewavelet_F::~PrPrewavelet_F ( ) [virtual]

Empty destructor.

29.374.3 Member Function Documentation

29.374.3.1 virtual void PrPrewavelet_F::compose (int *jlev*, int *dim* = 1) [virtual]

The nodes in the triangulation belonging to V^j form a piecewise linear function f^j in the space S^j. This routines composes f^j from f^{j-1} + g^{j-1} where $f^{j-1} \in S^{j-1}$ and $g^{j-1} \in W^{j-1}$. Use dim = 1 for explicit triangulations and dim = 3 for non-explicit. Default is dim = 1.

Implements PrFilterbank.

29.374.3.2 virtual void PrPrewavelet_F::decompose (int *jlev*, int *dim* = 1) [virtual]

The nodes in the triangulation belonging to V^j form a piecewise linear function f^j in the space S^j (where j = level). This routines decomposes f^j into $f^{j-1} + g^{j-1}$ where $f^{j-1} \in S^{j-1}$ and $g^{j-1} \in W^{j-1}$. Use dim = 1 for explicit triangulations and dim = 3 for non-explicit. Default is dim = 1.

Implements PrFilterbank.

29.374.3.3 void PrPrewavelet_F::setCGTolerance (double *tolerance* = 1.0e-6) [inline]

Set the numerical tolerance used for internal computations with the conjugated gradient algorithm.

Definition at line 83 of file PrPrewavelet_F.h.

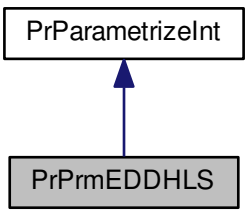
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPrewavelet_F.h

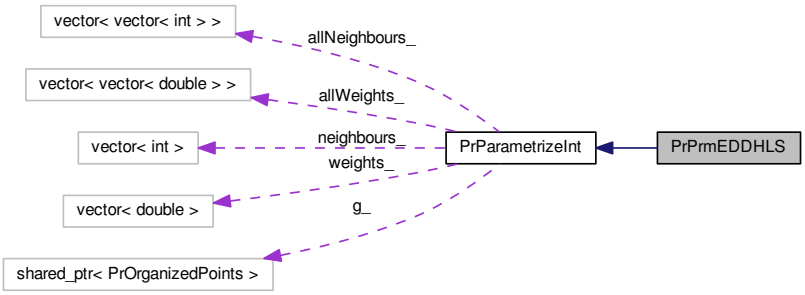
29.375 PrPrmEDDHLS Class Reference

`#include <PrPrmEDDHLS.h>`

Inheritance diagram for PrPrmEDDHLS:



Collaboration diagram for PrPrmEDDHLS:



Public Member Functions

- PrPrmEDDHLS ()

  Default constructor.
- virtual ~PrPrmEDDHLS ()

  Empty destructor.

Protected Member Functions

- virtual bool makeWeights (int i)

Additional Inherited Members

29.375.1 Detailed Description

PrPrmEDDHLS - Implement the EDDHLS parametrization by implementing the virtual function makeWeights

Definition at line 50 of file PrPrmEDDHLS.h.

29.375.2 Constructor & Destructor Documentation

29.375.2.1 PrPrmEDDHLS::PrPrmEDDHLS ( )

Default constructor.

29.375.2.2 virtual PrPrmEDDHLS::~PrPrmEDDHLS ( ) [virtual]

Empty destructor.

29.375.3 Member Function Documentation

29.375.3.1 virtual bool PrPrmEDDHLS::makeWeights (int *i*) [protected], [virtual]

Implements PrParametrizeInt.

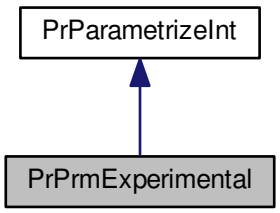
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPrmEDDHLS.h

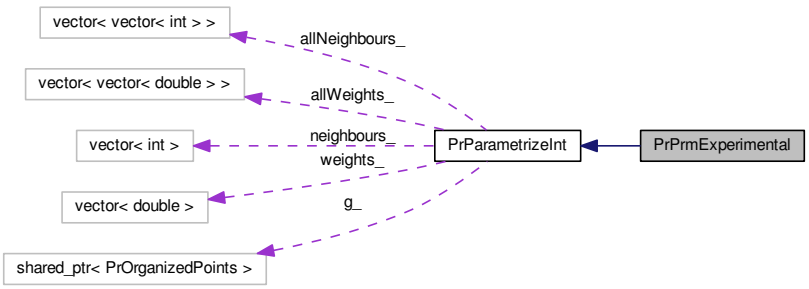
29.376 PrPrmExperimental Class Reference

`#include <PrPrmExperimental.h>`

Inheritance diagram for PrPrmExperimental:



Collaboration diagram for PrPrmExperimental:



Public Member Functions

- PrPrmExperimental ()

  Default constructor.
- virtual ~PrPrmExperimental ()

  Empty destructor.

Protected Member Functions

- virtual bool makeWeights (int i)

Additional Inherited Members

29.376.1 Detailed Description

PrPrmExperimental - Implement the experimental parametrization by implementing the virtual function make↩ Weights

Definition at line 48 of file PrPrmExperimental.h.

29.376.2 Constructor & Destructor Documentation

29.376.2.1 PrPrmExperimental::PrPrmExperimental ( )

Default constructor.

29.376.2.2 virtual PrPrmExperimental::~PrPrmExperimental ( ) [virtual]

Empty destructor.

29.376.3 Member Function Documentation

29.376.3.1 virtual bool PrPrmExperimental::makeWeights (int *i*) [protected], [virtual]

Implements PrParametrizeInt.

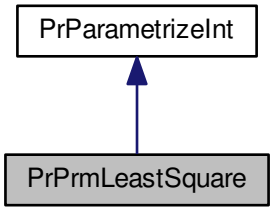
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPrmExperimental.h

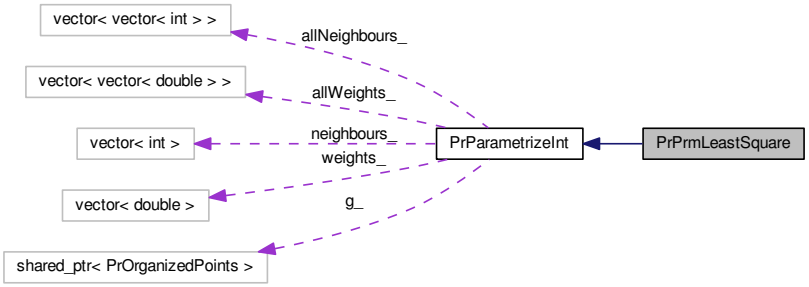
29.377 PrPrmLeastSquare Class Reference

`#include <PrPrmLeastSquare.h>`

Inheritance diagram for PrPrmLeastSquare:



Collaboration diagram for PrPrmLeastSquare:



Public Member Functions

- PrPrmLeastSquare ()

  Default constructor.
- virtual ~PrPrmLeastSquare ()

  Empty destructor.

Protected Member Functions

- virtual bool makeWeights (int i)

Additional Inherited Members

29.377.1 Detailed Description

PrPrmLeastSquare - Implement the reciprocal least square parametrization by implementing the virtual function makeWeights

Definition at line 50 of file PrPrmLeastSquare.h.

29.377.2 Constructor & Destructor Documentation

29.377.2.1 PrPrmLeastSquare::PrPrmLeastSquare ( )

Default constructor.

29.377.2.2 virtual PrPrmLeastSquare::~PrPrmLeastSquare ( ) [virtual]

Empty destructor.

29.377.3 Member Function Documentation

29.377.3.1 virtual bool PrPrmLeastSquare::makeWeights (int *i*) [protected], [virtual]

Implements PrParametrizeInt.

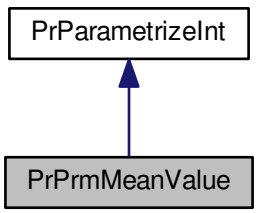
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPrmLeastSquare.h

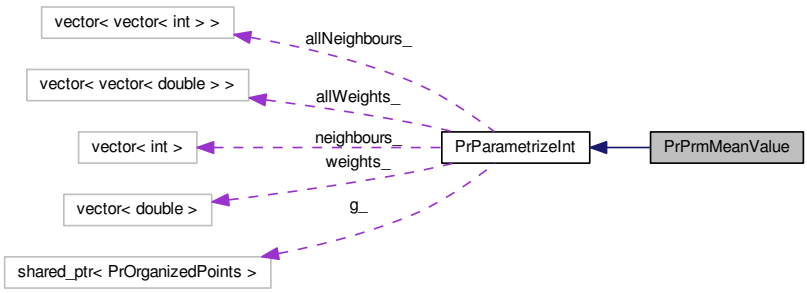
29.378 PrPrmMeanValue Class Reference

`#include <PrPrmMeanValue.h>`

Inheritance diagram for PrPrmMeanValue:



Collaboration diagram for PrPrmMeanValue:



Public Member Functions

- PrPrmMeanValue ()

  Default constructor.
- virtual ~PrPrmMeanValue ()

  Empty destructor.

Protected Member Functions

- virtual bool makeWeights (int i)

Additional Inherited Members

29.378.1 Detailed Description

PrPrmMeanValue - Implement the mean value parametrization by implementing the virtual function makeWeights. See preprint "Mean Value Coordinates", M.S. Floater. This method is now THE recommended method. The mapped points of the mean value parameterization depend infinitely smoothly on the original data points, unlike the shape-preserving parameterization. However, in many examples that have been tested, the two methods give similar results. (MF. August 2002).

Definition at line 58 of file PrPrmMeanValue.h.

29.378.2 Constructor & Destructor Documentation

29.378.2.1 PrPrmMeanValue::PrPrmMeanValue ( )

Default constructor.

29.378.2.2 virtual PrPrmMeanValue::~PrPrmMeanValue ( ) [virtual]

Empty destructor.

29.378.3 Member Function Documentation

29.378.3.1 virtual bool PrPrmMeanValue::makeWeights (int *i*) [protected], [virtual]

Implements PrParametrizeInt.

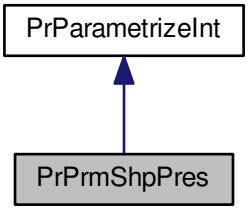
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPrmMeanValue.h

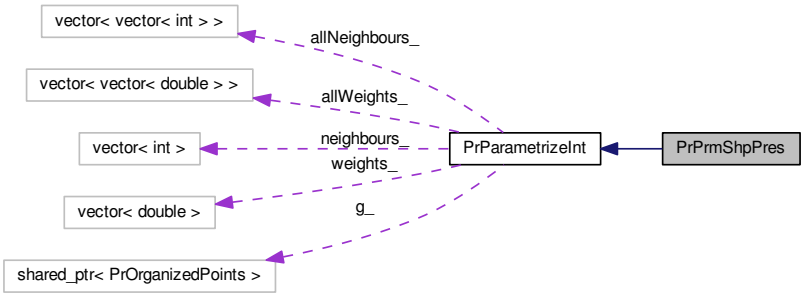
29.379 PrPrmShpPres Class Reference

`#include <PrPrmShpPres.h>`

Inheritance diagram for PrPrmShpPres:



Collaboration diagram for PrPrmShpPres:



Public Member Functions

- PrPrmShpPres ()
  Default constructor.
- virtual ~PrPrmShpPres ()
  Empty destructor.

Protected Member Functions

- virtual bool makeWeights (int i)
- bool localParam (int i)

Protected Attributes

- std::vector< double > u_
- std::vector< double > v_
- std::vector< double > alpha_
- std::vector< double > len_

29.379.1 Detailed Description

PrPrmShpPres - Implement the shape-preserving parametrization by implementing the virtual function makeWeights

Definition at line 50 of file PrPrmShpPres.h.

29.379.2 Constructor & Destructor Documentation

29.379.2.1 PrPrmShpPres::PrPrmShpPres ( )

Default constructor.

29.379.2.2 virtual PrPrmShpPres::~PrPrmShpPres ( ) [virtual]

Empty destructor.

29.379.3 Member Function Documentation

29.379.3.1 bool PrPrmShpPres::localParam (int *i*) [protected]

29.379.3.2 virtual bool PrPrmShpPres::makeWeights (int *i*) [protected], [virtual]

Implements PrParametrizeInt.

29.379.4 Member Data Documentation

29.379.4.1 std::vector<double> PrPrmShpPres::alpha_ [protected]

Definition at line 55 of file PrPrmShpPres.h.

29.379.4.2 std::vector<double> PrPrmShpPres::len_ [protected]

Definition at line 56 of file PrPrmShpPres.h.

29.379.4.3 std::vector<double> PrPrmShpPres::u_ [protected]

Definition at line 53 of file PrPrmShpPres.h.

29.379.4.4 std::vector<double> PrPrmShpPres::v_ [protected]

Definition at line 54 of file PrPrmShpPres.h.

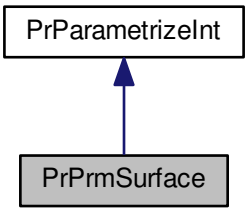
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPrmShpPres.h

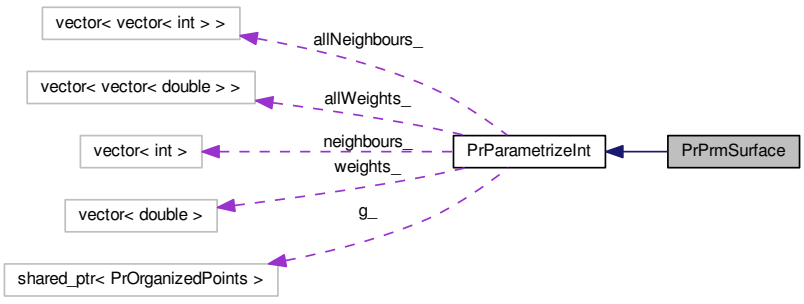
29.380 PrPrmSurface Class Reference

`#include <PrPrmSurface.h>`

Inheritance diagram for PrPrmSurface:



Collaboration diagram for PrPrmSurface:



Public Member Functions

- PrPrmSurface ()
  Default constructor.
- virtual ~PrPrmSurface ()
  Empty destructor.

Additional Inherited Members

29.380.1 Detailed Description

PrPrmSurface - Implement the shape-preserving parametrization by implementing the virtual function makeWeights

Definition at line 50 of file PrPrmSurface.h.

29.380.2 Constructor & Destructor Documentation

29.380.2.1 PrPrmSurface::PrPrmSurface ( )

Default constructor.

29.380.2.2 virtual PrPrmSurface::~PrPrmSurface ( ) [virtual]

Empty destructor.

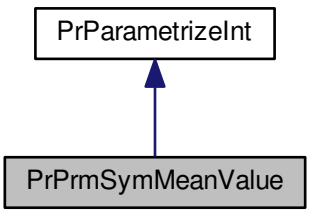
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPrmSurface.h

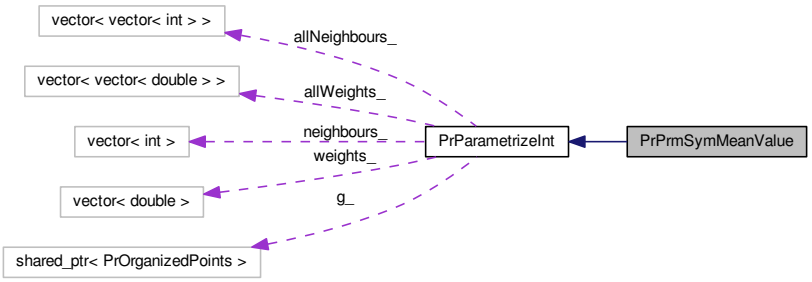
29.381 PrPrmSymMeanValue Class Reference

`#include <PrPrmSymMeanValue.h>`

Inheritance diagram for PrPrmSymMeanValue:



Collaboration diagram for PrPrmSymMeanValue:



Public Member Functions

- PrPrmSymMeanValue ()

  Default constructor.
- ~PrPrmSymMeanValue ()

  Empty destructor.

Protected Member Functions

- virtual bool makeWeights (int i)
- double tanThetaOverTwo (Vector3D &a, Vector3D &b, Vector3D &c)

Additional Inherited Members

29.381.1 Detailed Description

PrPrmSymMeanValue - Implements the virtual function makeWeights. This is an attempt to improve the mean value method of PrPrmMeanValue by making it symmetric.

Definition at line 51 of file PrPrmSymMeanValue.h.

29.381.2 Constructor & Destructor Documentation

29.381.2.1 PrPrmSymMeanValue::PrPrmSymMeanValue ( )

Default constructor.

29.381.2.2 PrPrmSymMeanValue::~PrPrmSymMeanValue ( )

Empty destructor.

29.381.3 Member Function Documentation

29.381.3.1 virtual bool PrPrmSymMeanValue::makeWeights (int *i*) [protected], [virtual]

Implements PrParametrizeInt.

29.381.3.2 double PrPrmSymMeanValue::tanThetaOverTwo (Vector3D & *a*, Vector3D & *b*, Vector3D & *c*) [protected]

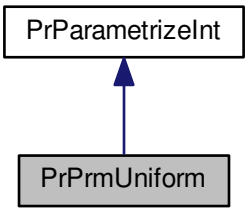
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPrmSymMeanValue.h

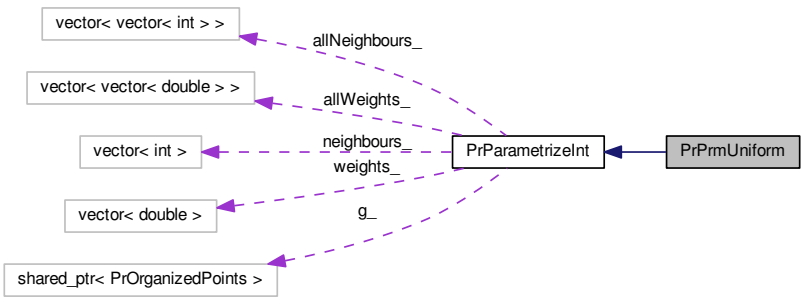
29.382 PrPrmUniform Class Reference

`#include <PrPrmUniform.h>`

Inheritance diagram for PrPrmUniform:



Collaboration diagram for PrPrmUniform:



Public Member Functions

- PrPrmUniform ()

  Default constructor.
- virtual ~PrPrmUniform ()

  Empty destructor.

Additional Inherited Members

29.382.1 Detailed Description

PrPrmUniform - Implement the uniform parametrization by implementing the virtual function makeWeights

Definition at line 50 of file PrPrmUniform.h.

29.382.2 Constructor & Destructor Documentation

29.382.2.1 PrPrmUniform::PrPrmUniform ( )

Default constructor.

29.382.2.2 virtual PrPrmUniform::~PrPrmUniform ( ) [virtual]

Empty destructor.

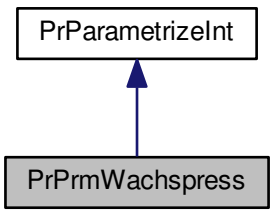
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPrmUniform.h

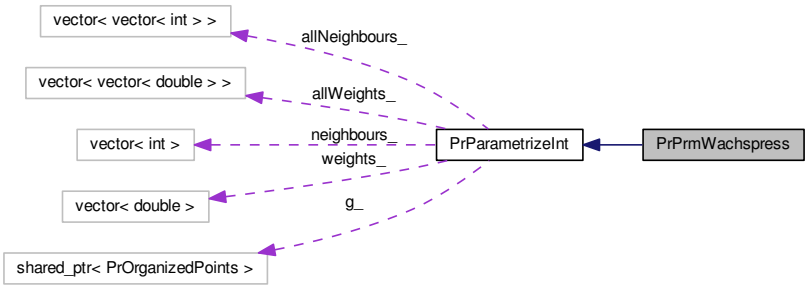
29.383 PrPrmWachspress Class Reference

`#include <PrPrmWachspress.h>`

Inheritance diagram for PrPrmWachspress:



Collaboration diagram for PrPrmWachspress:



Public Member Functions

- PrPrmWachspress ()

  Default constructor.
- virtual ~PrPrmWachspress ()

  Empty destructor.

Protected Member Functions

- virtual bool makeWeights (int i)
- double tanThetaOverTwo (Vector3D &a, Vector3D &b, Vector3D &c)

Additional Inherited Members

29.383.1 Detailed Description

PrPrmWachspress - Implement the Wachspress parametrization by implementing the virtual function makeWeights

Definition at line 49 of file PrPrmWachspress.h.

29.383.2 Constructor & Destructor Documentation

29.383.2.1 PrPrmWachspress::PrPrmWachspress ( )

Default constructor.

29.383.2.2 virtual PrPrmWachspress::~PrPrmWachspress ( ) [virtual]

Empty destructor.

29.383.3 Member Function Documentation

29.383.3.1 virtual bool PrPrmWachspress::makeWeights (int *i*) [protected], [virtual]

Implements PrParametrizeInt.

29.383.3.2 double PrPrmWachspress::tanThetaOverTwo (Vector3D & *a*, Vector3D & *b*, Vector3D & *c*) [protected]

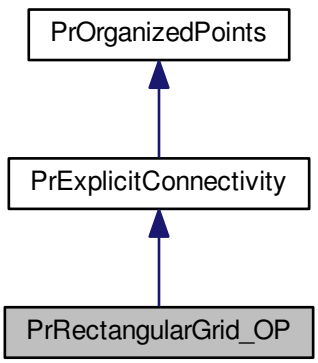
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPrmWachspress.h

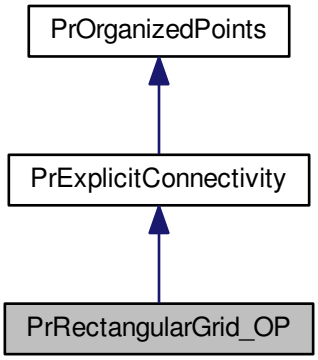
29.384 PrRectangularGrid_OP Class Reference

```
#include <PrRectangularGrid_OP.h>
```

Inheritance diagram for PrRectangularGrid_OP:



Collaboration diagram for PrRectangularGrid_OP:



Public Member Functions

- PrRectangularGrid_OP ()
  Default constructor.
- PrRectangularGrid_OP (int numcols, int numrows, const double *grid)
  Constructor. Construct the PrRectangularGrid_OP from an array of nodes.
- PrRectangularGrid_OP (int numcols, int numrows, const double *grid, const double *uvgrid)
  Constructor. Construct the PrRectangularGrid_OP from an array of nodes.
- virtual ~PrRectangularGrid_OP ()
  Default destructor.
- int gridToGraph (int col, int row) const
  compute the index of the point located at column 'col' and row 'row'.
- void graphToGrid (int index, int &col, int &row) const
  Get the column and row position of the point indexed 'index'.
- void print (std::ostream &os)
  print object to stream
- void scan (std::istream &is)
  read object from stream
- void printRawData (std::ostream &os)
  print raw data to stream (no parameterization involved)
- void scanRawData (std::istream &is)
  scan raw data from stream (no parameterization involved)
- double * uvData ()
- double * xyzData ()
- const double * uvData () const
- const double * xyzData () const

Derived from base class

- virtual int getNumNodes () const
  return the number of nodes in the graph.

- virtual Vector3D get3dNode (int i) const
  return the i-th node in the graph if the nodes are three-dimensional
- virtual void set3dNode (int i, const Vector3D &p)
- virtual void getNeighbours (int i, vector< int > &neighbours) const
- virtual bool isBoundary (int i) const
  is the i-th node a boundary node or interior node?
- virtual double getU (int i) const
  return the u parameter value of the i-th node.
- virtual double getV (int i) const
  return the v parameter value of the i-th node.
- virtual void setU (int i, double u)
  reset the u parameter value of the i-th node.
- virtual void setV (int i, double v)
  reset the v parameter value of the i-th node.

Other routines

- void setDim (int numcols, int numrows)
  Set the dimensions of the grid.
- void setXYZVertices (const double *grid)
  Reset all the xyz points from an array.
- void setUVVertices (const double *grid)
  Reset all the uv points from an array.
- void getDim (int &numcols, int &numrows) const
  Get the dimensions of the grid.
- double getU (int i, int j) const
  Get U value for gridpoint (i,j)
- double getV (int i, int j) const
  Get V value for gridpoint (i,j)
- void getCorners (int &c1, int &c2, int &c3, int &c4) const
- bool getUVTriangle (double u, double v, int &i, int &j, bool &right, double &tau0, double &tau1, double &tau2) const
- bool getUVTriangle (double &u, double &v, int ilast, int jlast, int &i, int &j, bool &right, double &tau0, double &tau1, double &tau2) const
- bool getTriangle (double u, double v, int ii, int jj, bool &right, double &tau0, double &tau1, double &tau2) const

Additional Inherited Members

29.384.1 Detailed Description

PrRectangularGrid_OP - This class represents a (topologically) rectagular grid of points in R^3 with or without parameter points in R^2. It implements the virtual functions in PrOrganizedPoints specific to a grid. This kind of grid can be parametrized by PrParametrize.

Definition at line 55 of file PrRectangularGrid_OP.h.

29.384.2 Constructor & Destructor Documentation

29.384.2.1 PrRectangularGrid_OP::PrRectangularGrid_OP ( ) [inline]

Default constructor.

Definition at line 70 of file PrRectangularGrid_OP.h.

29.384.2.2 PrRectangularGrid_OP::PrRectangularGrid_OP (int *numcols,* int *numrows,* const double * *grid*)

Constructor. Construct the PrRectangularGrid_OP from an array of nodes.

29.384.2.3 PrRectangularGrid_OP::PrRectangularGrid_OP (int *numcols,* int *numrows,* const double * *grid,* const double * *uvgrid*)

Constructor. Construct the PrRectangularGrid_OP from an array of nodes.

29.384.2.4 virtual PrRectangularGrid_OP::~PrRectangularGrid_OP ( ) [virtual]

Default destructor.

29.384.3 Member Function Documentation

29.384.3.1 virtual Vector3D PrRectangularGrid_OP::get3dNode (int *i*) const [inline], [virtual]

return the i-th node in the graph if the nodes are three-dimensional

Implements PrOrganizedPoints.

Definition at line 92 of file PrRectangularGrid_OP.h.

29.384.3.2 void PrRectangularGrid_OP::getCorners (int & *c1,* int & *c2,* int & *c3,* int & *c4*) const

Get the indices of the four corner nodes in an anticlockwise direction, starting with the bottom left hand corner.

29.384.3.3 void PrRectangularGrid_OP::getDim (int & *numcols,* int & *numrows*) const [inline]

Get the dimensions of the grid.

Definition at line 112 of file PrRectangularGrid_OP.h.

29.384.3.4 virtual void PrRectangularGrid_OP::getNeighbours (int *i,* vector< int > & *neighbours*) const [virtual]

29.384.3.5 virtual int PrRectangularGrid_OP::getNumNodes ( ) const [inline], [virtual]

return the number of nodes in the graph.

Implements PrOrganizedPoints.

Definition at line 91 of file PrRectangularGrid_OP.h.

29.384.3.6 bool PrRectangularGrid_OP::getTriangle (double *u,* double *v,* int *ii,* int *jj,* bool & *right,* double & *tau0,* double & *tau1,* double & *tau2*) const

Check if the parameter point (u,v) can be found in one of the two triangles specified by the nodes at indexes (ii, jj), (ii+1, jj), (ii, jj+1) and (ii+1, jj+1). In that case, return its barycentric coordinates with respect to that triangle

Parameters

u	u-coordinate of the specified point
v	v-coordinate of the specified point
ii	row-index of the "lower left" node of the rectangle specifying the two triangles where we want to look for the point
jj	column-index of the "lower left" node of the rectangle specifying the two triangles where we want to look for the point

Return values

right	if the point was found to be in the triangle specified by the nodes (ii,jj), (ii+1, jj) and (ii+1, jj+1), then the value of 'right' will be set to 'true'. It the point was found to be in the triangle specified by the nodes (ii, jj), (ii, jj+1) and (ii+1, jj+1), then the value of 'right' will be set to 'false'. Otherwise, the value of this parameter will remain unchanged
tau0	first barycentric coordinate of the point in the located triangle
tau1	second barycentric coordinate of the point in the located triangle
tau2	third barycentric coordinate of the point in the located triangle

Returns

'true' if the parameter point was found to be within one of the two triangles.

29.384.3.7 virtual double PrRectangularGrid_OP::getU (int *i*) const [inline], [virtual]

return the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 97 of file PrRectangularGrid_OP.h.

29.384.3.8 double PrRectangularGrid_OP::getU (int *i*, int *j*) const [inline]

Get U value for gridpoint (i,j)

Definition at line 116 of file PrRectangularGrid_OP.h.

29.384.3.9 bool PrRectangularGrid_OP::getUVTriangle (double *u*, double *v*, int & *i*, int & *j*, bool & *right*, double & *tau0*, double & *tau1*, double & *tau2*) const

Locate the triangle in the parameter plane that contains the point (u,v). Report back the indexes of the "lower left" node of this triangle, as well as the point's barycentric coordinates in this triangle

Parameters

u	u-coordinate of the specified point
v	v-coordinate of the specified point

Return values

i	if triangle found, this will be the row index of the node in the "lower left" corner of the triangle.
j	if triangle found, this will be the column index of the node in the "lower left" corner of the triangle.
right	if the triangle was found, this variable reports wether the triangle consist of the "right" or "left" part of a quad in the grid. (Where the right part is defined as (i, j), (i+1, j) (i+1, j+1), whereas the left part is defined as (i, j), (i, j+1) (i+1, j+1).
tau0	if triangle found, this parameter is set to the first barycentric coordinate of the point (u,v) in the triangle.
tau1	if triangle found, this parameter is set to the second barycentric coordinate of the point (u,v) in the triangle.
tau2	if triangle found, this parameter is set to the third barycentric coordinate of the point (u,v) in the triangle.

Returns

'true' if the triangle was located, 'false' otherwise

29.384.3.10 bool PrRectangularGrid_OP::getUVTriangle (double & *u,* double & *v,* int *ilast,* int *jlast,* int & *i,* int & *j,* bool & *right,* double & *tau0,* double & *tau1,* double & *tau2*) const

This function behaves as the other getUVTriangle() function, with the difference that the user can specify two additional parameters, 'ilast' and 'jlast' as a suggestion for where to start the search for a triangle.

29.384.3.11 virtual double PrRectangularGrid_OP::getV (int *i*) const [inline], [virtual]

return the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 98 of file PrRectangularGrid_OP.h.

29.384.3.12 double PrRectangularGrid_OP::getV (int *i,* int *j*) const [inline]

Get V value for gridpoint (i,j)

Definition at line 118 of file PrRectangularGrid_OP.h.

29.384.3.13 void PrRectangularGrid_OP::graphToGrid (int *index,* int & *col,* int & *row*) const [inline]

Get the column and row position of the point indexed 'index'.

Definition at line 86 of file PrRectangularGrid_OP.h.

29.384.3.14 int PrRectangularGrid_OP::gridToGraph (int *col,* int *row*) const [inline]

compute the index of the point located at column 'col' and row 'row'.

Definition at line 83 of file PrRectangularGrid_OP.h.

29.384.3.15 virtual bool PrRectangularGrid_OP::isBoundary (int *i*) const [virtual]

is the i-th node a boundary node or interior node?

Implements PrOrganizedPoints.

29.384.3.16 void PrRectangularGrid_OP::print (std::ostream & *os*)

print object to stream

29.384.3.17 void PrRectangularGrid_OP::printRawData (std::ostream & *os*)

print raw data to stream (no parameterization involved)

29.384.3.18 void PrRectangularGrid_OP::scan (std::istream & *is*)

read object from stream

29.384.3.19 void PrRectangularGrid_OP::scanRawData (std::istream & *is*)

scan raw data from stream (no parameterization involved)

29.384.3.20 virtual void PrRectangularGrid_OP::set3dNode (int *i,* const Vector3D & *p*) [inline], [virtual]

set the coordinates of the i-th node in the graph if the nodes are three-dimensional.

Implements PrOrganizedPoints.

Definition at line 93 of file PrRectangularGrid_OP.h.

29.384.3.21 void PrRectangularGrid_OP::setDim (int *numcols,* int *numrows*)

Set the dimensions of the grid.

29.384.3.22 virtual void PrRectangularGrid_OP::setU (int *i,* double *u*) [inline], [virtual]

reset the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 99 of file PrRectangularGrid_OP.h.

29.384.3.23 void PrRectangularGrid_OP::setUVVertices (const double * *grid*)

Reset all the uv points from an array.

29.384.3.24 virtual void PrRectangularGrid_OP::setV (int *i*, double *v*) [inline], [virtual]

reset the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 100 of file PrRectangularGrid_OP.h.

29.384.3.25 void PrRectangularGrid_OP::setXYZVertices (const double * *grid*)

Reset all the xyz points from an array.

29.384.3.26 double* PrRectangularGrid_OP::uvData ( ) [inline]

Definition at line 195 of file PrRectangularGrid_OP.h.

29.384.3.27 const double* PrRectangularGrid_OP::uvData ( ) const [inline]

Definition at line 203 of file PrRectangularGrid_OP.h.

29.384.3.28 double* PrRectangularGrid_OP::xyzData ( ) [inline]

Definition at line 199 of file PrRectangularGrid_OP.h.

29.384.3.29 const double* PrRectangularGrid_OP::xyzData ( ) const [inline]

Definition at line 207 of file PrRectangularGrid_OP.h.

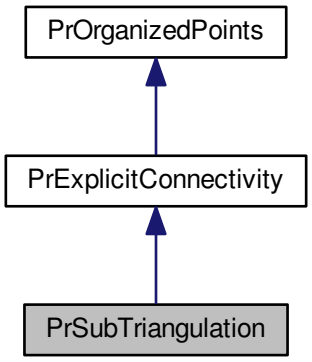
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrRectangularGrid_OP.h

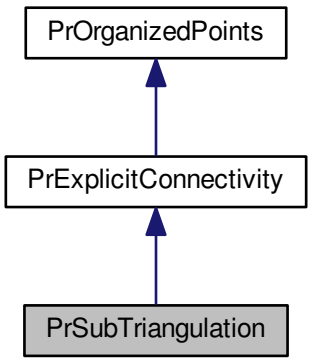
29.385 PrSubTriangulation Class Reference

`#include <PrSubTriangulation.h>`

Inheritance diagram for PrSubTriangulation:



Collaboration diagram for PrSubTriangulation:



Public Member Functions

- PrSubTriangulation ()

  Default constructor.
- PrSubTriangulation (PrTriangulation_OP *graph, vector< int > boundary, vector< int > interior)
- ~PrSubTriangulation ()

  Empty destructor.

- void attach (PrTriangulation_OP *graph)

  Set the top-level triangulation to 'graph'.
- void initialize (vector< int > boundary, vector< int > interior)

Derived from base class

- virtual int getNumNodes () const

  return the number of nodes in the graph.
- virtual int findNumBdyNodes () const

  count the number of boundary nodes in the graph.
- virtual Vector3D get3dNode (int i) const

  return the i-th node in the graph if the nodes are three-dimensional
- virtual void set3dNode (int i, const Vector3D &p)
- virtual void getNeighbours (int i, vector< int > &neighbours) const
- virtual bool isBoundary (int i) const

  is the i-th node a boundary node or interior node?
- virtual double getU (int i) const

  return the u parameter value of the i-th node.
- virtual double getV (int i) const

  return the v parameter value of the i-th node.
- virtual void setU (int i, double u)

  reset the u parameter value of the i-th node.
- virtual void setV (int i, double v)

  reset the v parameter value of the i-th node.

Other routines

- int getGlobalIndex (int i) const

  get the global index of the node with local index 'i'.
- int getLocalIndex (int i) const

  get the local index of the node with global index 'i'.
- bool triangleInThis (int i) const
- void getNeighbourTriangles (int i, vector< int > &neighbours) const
- void getTriangleIndices (vector< int > &indices) const

Additional Inherited Members

29.385.1 Detailed Description

PrSubTriangulation - This class represents a sub-triangulation of another triangulation, using a permutation vector to access the nodes and triangles of the other triangulation It implements the virtual functions in PrOrganizedPoints. This kind of triangulation can be parametrized by PrParametrize.

The internal indices of the vertices are [0..numBdy_-1] for the boundary nodes and [numBdy_..numBdy_+numInt_-1] for the interior nodes. They are referred to as "new" indices, whereas the indices in the associated PrTriangulation_OP are called "old" indices. Therefore, "new2old_" provides a mapping from [0..numBdy_+numInt_-1] to the "old" indices and "old2new_" is its inverse.

We assume the boundary vertices to be ordered anticlockwise.

Definition at line 71 of file PrSubTriangulation.h.

29.385.2 Constructor & Destructor Documentation

29.385.2.1 PrSubTriangulation::PrSubTriangulation ( ) [inline]

Default constructor.

Definition at line 82 of file PrSubTriangulation.h.

29.385.2.2 PrSubTriangulation::PrSubTriangulation (PrTriangulation_OP * *graph*, vector< int > *boundary*, vector< int > *interior*)

Constructor. Construct the PrSubTriangulation from an array with the indices of the "boundary" nodes and another carrying the indices of the "interior" nodes. All indices are relative to the indexing in the associated PrTriangulation↩ _OP "graph"

29.385.2.3 PrSubTriangulation::~PrSubTriangulation ( ) [inline]

Empty destructor.

Definition at line 92 of file PrSubTriangulation.h.

29.385.3 Member Function Documentation

29.385.3.1 void PrSubTriangulation::attach (PrTriangulation_OP * *graph*) [inline]

Set the top-level triangulation to 'graph'.

Definition at line 95 of file PrSubTriangulation.h.

29.385.3.2 virtual int PrSubTriangulation::findNumBdyNodes ( ) const [inline], [virtual]

count the number of boundary nodes in the graph.

Reimplemented from PrOrganizedPoints.

Definition at line 108 of file PrSubTriangulation.h.

29.385.3.3 virtual Vector3D PrSubTriangulation::get3dNode (int *i*) const [inline], [virtual]

return the i-th node in the graph if the nodes are three-dimensional

Implements PrOrganizedPoints.

Definition at line 109 of file PrSubTriangulation.h.

29.385.3.4 int PrSubTriangulation::getGlobalIndex (int *i*) const [inline]

get the global index of the node with local index 'i'.

Definition at line 125 of file PrSubTriangulation.h.

29.385.3.5 int PrSubTriangulation::getLocalIndex (int *i*) const [inline]

get the local index of the node with global index 'i'.

Definition at line 127 of file PrSubTriangulation.h.

29.385.3.6 virtual void PrSubTriangulation::getNeighbours (int *i,* vector< int > & *neighbours*) const [virtual]

29.385.3.7 void PrSubTriangulation::getNeighbourTriangles (int *i,* vector< int > & *neighbours*) const

Get all the neighbour triangles in the global triangulation of a node 'i'. (i is global index).

29.385.3.8 virtual int PrSubTriangulation::getNumNodes ( ) const [inline], [virtual]

return the number of nodes in the graph.

Implements PrOrganizedPoints.

Definition at line 107 of file PrSubTriangulation.h.

29.385.3.9 void PrSubTriangulation::getTriangleIndices (vector< int > & *indices*) const

Get all indices of triangles made up of interior points in the global triangulation, as well as those made up of boundary/interior points and equally belong to the sub-triangulation.

29.385.3.10 virtual double PrSubTriangulation::getU (int *i*) const [inline], [virtual]

return the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 116 of file PrSubTriangulation.h.

29.385.3.11 virtual double PrSubTriangulation::getV (int *i*) const [inline], [virtual]

return the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 117 of file PrSubTriangulation.h.

29.385.3.12 void PrSubTriangulation::initialize (vector< int > *boundary*, vector< int > *interior*)

Initialize the PrSubTriangulation. The attach() function should already have been called in order to define the PrTriangulation_OP that constitutes the base triangulation. The 'boundary' vector specifies the indexes of the boundary nodes, and the 'interior' vector specifies the indexes of the interior nodes. All indices are relative to the indexing in the associated PrTriangulation_OP.

29.385.3.13 virtual bool PrSubTriangulation::isBoundary (int *i*) const [inline], [virtual]

is the i-th node a boundary node or interior node?

Implements PrOrganizedPoints.

Definition at line 114 of file PrSubTriangulation.h.

29.385.3.14 virtual void PrSubTriangulation::set3dNode (int *i*, const Vector3D & *p*) [inline], [virtual]

set the coordinates of the i-th node in the graph if the nodes are three-dimensional.

Implements PrOrganizedPoints.

Definition at line 111 of file PrSubTriangulation.h.

29.385.3.15 virtual void PrSubTriangulation::setU (int *i*, double *u*) [inline], [virtual]

reset the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 118 of file PrSubTriangulation.h.

29.385.3.16 virtual void PrSubTriangulation::setV (int *i*, double *v*) [inline], [virtual]

reset the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 119 of file PrSubTriangulation.h.

29.385.3.17 bool PrSubTriangulation::triangleInThis (int *i*) const

Check if the triangle indexed 'i' in the global triangulation also exists in this sub-triangulation. This is true if all three nodes of the triangle can be found in the sub-triangulation.

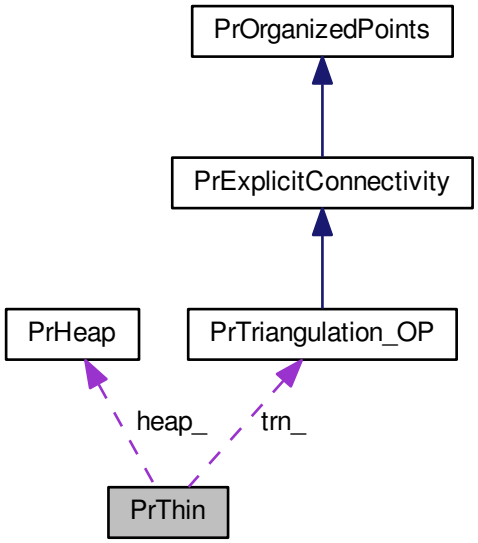
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrSubTriangulation.h

29.386 PrThin Class Reference

`#include <PrThin.h>`

Collaboration diagram for PrThin:



Public Member Functions

- PrThin ()

  Default constructor.
- virtual ~PrThin ()

  Empty destructor.
- void attach (PrTriangulation_OP *trn)

  Set the triangulation.
- void setError (double error)

  Set the tolerated error.
- void setStepNumber (int n)

  Set number of steps used for thinning.
- void findNearestNeighbour (int i, int &tr)
- void halfEdgeCollapse (int i)

  Remove the node i and retriangulate by collapsing one of its edges.
- void removePoint (int i)
- void thin ()

  Thin the points, until the error of further removals is above the threshold error_.
- void printHeap ()

Protected Member Functions

- void makeHeap ()
- double findError (int i)

Protected Attributes

- PrTriangulation_OP * trn_
- std::vector< PrNode > * nlist_ptr
- std::vector< PrTriangle > * tlist_ptr
- PrHeap * heap_
- double error_
- int steps_

29.386.1 Detailed Description

PrThin - This class implements an algorithm for thinning a triangulation.

Definition at line 50 of file PrThin.h.

29.386.2 Constructor & Destructor Documentation

29.386.2.1 PrThin::PrThin ( ) [inline]

Default constructor.

Definition at line 68 of file PrThin.h.

29.386.2.2 virtual PrThin::~PrThin ( ) [virtual]

Empty destructor.

29.386.3 Member Function Documentation

29.386.3.1 void PrThin::attach (PrTriangulation_OP * *trn*)

Set the triangulation.

29.386.3.2 double PrThin::findError (int *i*) [protected]

29.386.3.3 void PrThin::findNearestNeighbour (int *i*, int & *tr*)

Find nearest neighbour j to an interior node i (in 3D) and return the triangle tr which is left of the directed edge (i,j). Note that j is then tr.getAnticlockwiseNode(i).

29.386.3.4 void PrThin::halfEdgeCollapse (int *i*)

Remove the node i and retriangulate by collapsing one of its edges.

29.386.3.5 void PrThin::makeHeap ( ) [protected]

29.386.3.6 void PrThin::printHeap ( )

29.386.3.7 void PrThin::removePoint (int *i*)

Remove the node i from the triangulation and update heap. It is assumed that i is not in the heap

29.386.3.8 void PrThin::setError (double *error*) [inline]

Set the tolerated error.

Definition at line 76 of file PrThin.h.

29.386.3.9 void PrThin::setStepNumber (int *n*) [inline]

Set number of steps used for thinning.

Definition at line 79 of file PrThin.h.

29.386.3.10 void PrThin::thin ( )

Thin the points, until the error of further removals is above the threshold error_.

29.386.4 Member Data Documentation

29.386.4.1 double PrThin::error_ [protected]

Definition at line 60 of file PrThin.h.

29.386.4.2 PrHeap* PrThin::heap_ [protected]

Definition at line 58 of file PrThin.h.

29.386.4.3 std::vector<PrNode>* PrThin::nlist_ptr [protected]

Definition at line 55 of file PrThin.h.

29.386.4.4 int PrThin::steps_ [protected]

Definition at line 61 of file PrThin.h.

29.386.4.5 std::vector<PrTriangle>* PrThin::tlist_ptr [protected]

Definition at line 56 of file PrThin.h.

29.386.4.6 PrTriangulation_OP* PrThin::trn_ [protected]

Definition at line 54 of file PrThin.h.

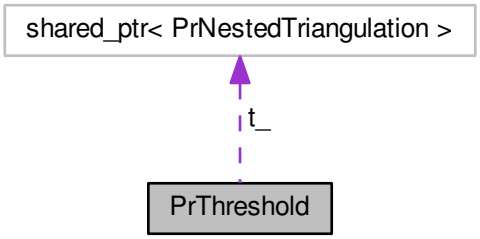
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrThin.h

29.387 PrThreshold Class Reference

`#include <PrThreshold.h>`

Collaboration diagram for PrThreshold:



Public Member Functions

- PrThreshold ()
  Default constructor.
- virtual ~PrThreshold ()
  Empty destructor.
- virtual void attach (shared_ptr< PrNestedTriangulation > t)
- void setThreshold (double threshold=0.0)
- void threshold (double &comp_rate, double &wavelet_comp_rate, int error_out=0)
- double findThreshold (double &wavelet_comp_rate)
- void thresholdByCompRate (double &wavelet_comp_rate, int error_out=0)

Threshold by given compression rate, e.g. 0.05.

- void truncateLevel (int jlev)

  Set all coeffs at level jlev to zero (0 <= jlev <= getFinestLevel).
- void leaveLevel (int jlev)

  Set all level zero coeffs to zero and all wavelet coeffs except those of level j.
- double maxNorm ()

  Calculate the max norm.
- double averageAbsValue ()

  Calculate the average absolute value.
- double weightedL2Norm ()
- double triangleNorm (int i, int j, int k)

Protected Attributes

- shared_ptr< PrNestedTriangulation > t_
- double threshold_

29.387.1 Detailed Description

PrThreshold - This class implements an algorithm for thresholding a linear combination of coarse nodal functions and wavelets over several levels.

Definition at line 54 of file PrThreshold.h.

29.387.2 Constructor & Destructor Documentation

29.387.2.1 PrThreshold::PrThreshold ( )

Default constructor.

29.387.2.2 virtual PrThreshold::~PrThreshold ( ) [inline], [virtual]

Empty destructor.

Definition at line 65 of file PrThreshold.h.

29.387.3 Member Function Documentation

29.387.3.1 virtual void PrThreshold::attach (shared_ptr< PrNestedTriangulation > *t*) [virtual]

29.387.3.2 double PrThreshold::averageAbsValue ( )

Calculate the average absolute value.

29.387.3.3 double PrThreshold::findThreshold (double & *wavelet_comp_rate*)

Find a threshold which will give the given compressiosn rate. E.g. if wavelet_comp_rate = 0.05 and there are n wavelets then we want a threshold so that m = int(0.05 $*$ n) are retained.

29.387.3.4 void PrThreshold::leaveLevel (int *jlev*)

Set all level zero coeffs to zero and all wavelet coeffs except those of level j.

29.387.3.5 double PrThreshold::maxNorm ( )

Calculate the max norm.

29.387.3.6 void PrThreshold::setThreshold (double *threshold* = `0.0`) `[inline]`

Definition at line 69 of file PrThreshold.h.

29.387.3.7 void PrThreshold::threshold (double & *comp_rate,* double & *wavelet_comp_rate,* int *error_out* = `0`)

Threshold the wavelet coefficients by setting those whose absolute value is less than the tolerance to 0. Return the compression rate: ratio of no. of coarse hats plus non-zero wavelets over no. of coarse hats plus all wavelets. Return the wavelet compression rate: ratio of no. of non-zero over no. of wavelets.

If error_out = 1, do the opposite of thresholding, i.e, retain only those wavelet coefficients which are smaller in absolute value than the tolerance. The resulting piecewise linear function represents the error after thresholding and can be used to find the l2 error, max error, etc.

29.387.3.8 void PrThreshold::thresholdByCompRate (double & *wavelet_comp_rate,* int *error_out* = `0`)

Threshold by given compression rate, e.g. 0.05.

29.387.3.9 double PrThreshold::triangleNorm (int *i,* int *j,* int *k*)

29.387.3.10 void PrThreshold::truncateLevel (int *jlev*)

Set all coeffs at level jlev to zero (0 <= jlev <= getFinestLevel).

29.387.3.11 double PrThreshold::weightedL2Norm ( )

29.387.4 Member Data Documentation

29.387.4.1 shared_ptr<PrNestedTriangulation> PrThreshold::t_ `[protected]`

Definition at line 58 of file PrThreshold.h.

29.387.4.2 double PrThreshold::threshold_ [protected]

Definition at line 59 of file PrThreshold.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrThreshold.h

29.388 PrTriangle Class Reference

`#include <PrTriangle.h>`

Public Member Functions

- PrTriangle ()
  Default constructor.
- PrTriangle (int n1, int n2, int n3, int t1, int t2, int t3)
  Constructor.
- PrTriangle (const PrTriangle &t)
  Constructor.
- ~PrTriangle ()
  Empty destructor.
- void init (int n1, int n2, int n3, int t1, int t2, int t3)
- const int & n1 () const
- const int & n2 () const
- const int & n3 () const
- const int & t1 () const
- const int & t2 () const
- const int & t3 () const
- int & n1 ()
- int & n2 ()
- int & n3 ()
- int & t1 ()
- int & t2 ()
- int & t3 ()
- int getOppositeTriangle (int node) const
  Return the neighbouring triangle which lies opposite to the given node.
- int getLeftTriangle (int node) const
  Return the neighbouring triangle which lies to the left of the given node.
- int getRightTriangle (int node) const
  Return the neighbouring triangle which lies to the right of the given node.
- int getAnticlockwiseNode (int node) const
- int getClockwiseNode (int node) const
  Return the node following "node" in a clockwise direction around the triangle.
- bool isVertex (int node) const
  Boolean routine: does "node" belong to the triangle?
- void replaceNode (int n1, int n2)
  If 'n1' is a node in the triangle, replace it with 'n2'.
- void replaceTriangle (int t1, int t2)
  If 't1' is a triangle linked to this triangle, replace it with 't2'.
- int getEdge (int triangle, int &n1, int &n2) const
- void print (std::ostream &os) const
  print contents to stream
- void scan (std::istream &is)
  read contents from stream

29.388.1 Detailed Description

PrTriangle - This class represents a triangle for use in PrTriangulation_OP. It has three indices of its three vertices in some anticlockwise order. Its three neighbouring triangles t1,t2,t3 are opposite to its vertices. Thus t1 is the triangle opposite n1, t2 is opposite n2 and t3 opposite n3. If any of the neighbouring triangles do not exist in the triangulation their index is -1 (which is out of range in the array of triangles in the triangulation).

Definition at line 57 of file PrTriangle.h.

29.388.2 Constructor & Destructor Documentation

29.388.2.1 PrTriangle::PrTriangle ( ) [inline]

Default constructor.

Definition at line 66 of file PrTriangle.h.

29.388.2.2 PrTriangle::PrTriangle (int *n1,* int *n2,* int *n3,* int *t1,* int *t2,* int *t3*) [inline]

Constructor.

Definition at line 68 of file PrTriangle.h.

29.388.2.3 PrTriangle::PrTriangle (const PrTriangle & *t*) [inline]

Constructor.

Definition at line 71 of file PrTriangle.h.

29.388.2.4 PrTriangle::~PrTriangle ( ) [inline]

Empty destructor.

Definition at line 75 of file PrTriangle.h.

29.388.3 Member Function Documentation

29.388.3.1 int PrTriangle::getAnticlockwiseNode (int *node*) const

Return the node following "node" in an anticlockwise direction around the triangle.

29.388.3.2 int PrTriangle::getClockwiseNode (int *node*) const

Return the node following "node" in a clockwise direction around the triangle.

29.388.3.3 int PrTriangle::getEdge (int *triangle,* int & *n1,* int & *n2*) const

if 'triangle' share an edge with this triangle, return the nodes on the shared edge.

29.388.3.4 int PrTriangle::getLeftTriangle (int *node*) const

Return the neighbouring triangle which lies to the left of the given node.

29.388.3.5 int PrTriangle::getOppositeTriangle (int *node*) const

Return the neighbouring triangle which lies opposite to the given node.

29.388.3.6 int PrTriangle::getRightTriangle (int *node*) const

Return the neighbouring triangle which lies to the right of the given node.

29.388.3.7 void PrTriangle::init (int *n1,* int *n2,* int *n3,* int *t1,* int *t2,* int *t3*) [inline]

Definition at line 133 of file PrTriangle.h.

29.388.3.8 bool PrTriangle::isVertex (int *node*) const

Boolean routine: does "node" belong to the triangle?

29.388.3.9 const int & PrTriangle::n1 ( ) const [inline]

Definition at line 145 of file PrTriangle.h.

29.388.3.10 int & PrTriangle::n1 ( ) [inline]

Definition at line 187 of file PrTriangle.h.

29.388.3.11 const int & PrTriangle::n2 ( ) const [inline]

Definition at line 152 of file PrTriangle.h.

29.388.3.12 int & PrTriangle::n2 ( ) [inline]

Definition at line 194 of file PrTriangle.h.

29.388.3.13 const int & PrTriangle::n3 ( ) const [inline]

Definition at line 159 of file PrTriangle.h.

29.388.3.14 int & PrTriangle::n3 ( ) [inline]

Definition at line 201 of file PrTriangle.h.

29.388.3.15 void PrTriangle::print (std::ostream & *os*) const

print contents to stream

29.388.3.16 void PrTriangle::replaceNode (int *n1,* int *n2*)

If 'n1' is a node in the triangle, replace it with 'n2'.

29.388.3.17 void PrTriangle::replaceTriangle (int *t1,* int *t2*)

If 't1' is a triangle linked to this triangle, replace it with 't2'.

29.388.3.18 void PrTriangle::scan (std::istream & *is*)

read contents from stream

29.388.3.19 const int & PrTriangle::t1 ( ) const [inline]

Definition at line 166 of file PrTriangle.h.

29.388.3.20 int & PrTriangle::t1 ( ) [inline]

Definition at line 208 of file PrTriangle.h.

29.388.3.21 const int & PrTriangle::t2 ( ) const [inline]

Definition at line 173 of file PrTriangle.h.

29.388.3.22 int & PrTriangle::t2 ( ) [inline]

Definition at line 215 of file PrTriangle.h.

29.388.3.23 const int & PrTriangle::t3 ( ) const [inline]

Definition at line 180 of file PrTriangle.h.

29.388.3.24 int & PrTriangle::t3 ( ) [inline]

Definition at line 222 of file PrTriangle.h.

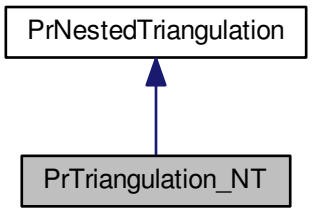
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrTriangle.h

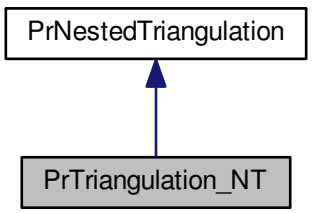
29.389 PrTriangulation_NT Class Reference

`#include <PrTriangulation_NT.h>`

Inheritance diagram for PrTriangulation_NT:



Collaboration diagram for PrTriangulation_NT:



Public Member Functions

- PrTriangulation_NT ()

  Default constructor.
- PrTriangulation_NT (PrTriangulation_OP &t)
- ∼PrTriangulation_NT ()

  Empty destructor.

Derived from base class

- virtual int getFinestLevel ()
- virtual int getNumNodes (int jlev)

  return the number of nodes in $V^j, j = 0, 1, ..., k$.
- virtual double getX (int i)

  return the x coeff. of the i-th node in the triangulation.
- virtual double getY (int i)

  return the y coeff. of the i-th node in the triangulation.
- virtual double getZ (int i)

  return the z coeff. of the i-th node in the triangulation.
- virtual void setX (int i, const double &x)

  set the x coeff. of the i-th node in the triangulation.
- virtual void setY (int i, const double &y)

  set the y coeff. of the i-th node in the triangulation.
- virtual void setZ (int i, const double &z)

  set the z coeff. of the i-th node in the triangulation.
- virtual void getNeighbours (int i, int jlev, vector< int > &neighbours)
- virtual bool isBoundary (int i)

  is the i-th node a boundary node or interior node?

Other functions

- void refine ()
- void lift (PrParamTriangulation ∗pt)
- PrLevelTriangulation_OP ∗ getLevel (int i)

  Get pointer to triangulation at level 'i'.
- PrLevelTriangulation_OP ∗ getTopLevel ()

  Get pointer to the finest triangulation.

29.389.1 Detailed Description

PrTriangulation_NT - This class represents a nested sequence of triangulations of points in R^3. It implements the virtual functions in PrNestedTriangulations.

Definition at line 53 of file PrTriangulation_NT.h.

29.389.2 Constructor & Destructor Documentation

29.389.2.1 PrTriangulation_NT::PrTriangulation_NT ( ) [inline]

Default constructor.

Definition at line 66 of file PrTriangulation_NT.h.

29.389.2.2 PrTriangulation_NT::PrTriangulation_NT (PrTriangulation_OP & *t*)

Constructor. Construct the PrTriangulation_NT from a PrTriangulation_OP, using just one level in the hierarchy. This can later be refined by refine().

29.389.2.3 PrTriangulation_NT::~PrTriangulation_NT ( ) [inline]

Empty destructor.

Definition at line 72 of file PrTriangulation_NT.h.

29.389.3 Member Function Documentation

29.389.3.1 virtual int PrTriangulation_NT::getFinestLevel ( ) [inline], [virtual]

Return the finest level in the hiearchy, i.e. k if the vertices are arranged $V^0 \subset V^1 \subset ... \subset V^k$.

Implements PrNestedTriangulation.

Definition at line 76 of file PrTriangulation_NT.h.

29.389.3.2 PrLevelTriangulation_OP* PrTriangulation_NT::getLevel (int *i*) [inline]

Get pointer to triangulation at level 'i'.

Definition at line 105 of file PrTriangulation_NT.h.

29.389.3.3 virtual void PrTriangulation_NT::getNeighbours (int *i*, int *jlev*, vector< int > & *neighbours*) [inline], [virtual]

Return the indices of the neighbours of the i-th node with respect to V^j. This routine assumes that node i also belongs to V^j. The order of the neighbours returned will be

1. any anticlockwise order if i is an interior node
2. the unique anticlockwise order if i is a boundary node.

Implements PrNestedTriangulation.

Definition at line 85 of file PrTriangulation_NT.h.

29.389.3.4 virtual int PrTriangulation_NT::getNumNodes (int *jlev*) [inline], [virtual]

return the number of nodes in $V^j, j = 0, 1, ..., k$.

Implements PrNestedTriangulation.

Definition at line 77 of file PrTriangulation_NT.h.

29.389.3.5 PrLevelTriangulation_OP* PrTriangulation_NT::getTopLevel ( ) [inline]

Get pointer to the finest triangulation.

Definition at line 108 of file PrTriangulation_NT.h.

29.389.3.6 virtual double PrTriangulation_NT::getX (int *i*) [inline], [virtual]

return the x coeff. of the i-th node in the triangulation.

Implements PrNestedTriangulation.

Definition at line 79 of file PrTriangulation_NT.h.

29.389.3.7 virtual double PrTriangulation_NT::getY (int *i*) [inline], [virtual]

return the y coeff. of the i-th node in the triangulation.

Implements PrNestedTriangulation.

Definition at line 80 of file PrTriangulation_NT.h.

29.389.3.8 virtual double PrTriangulation_NT::getZ (int *i*) [inline], [virtual]

return the z coeff. of the i-th node in the triangulation.

Implements PrNestedTriangulation.

Definition at line 81 of file PrTriangulation_NT.h.

29.389.3.9 virtual bool PrTriangulation_NT::isBoundary (int *i*) [inline], [virtual]

is the i-th node a boundary node or interior node?

Implements PrNestedTriangulation.

Definition at line 87 of file PrTriangulation_NT.h.

29.389.3.10 void PrTriangulation_NT::lift (PrParamTriangulation * *pt*)

Lift the vertices of the nested triangulation to some surface, using the parameterization defined by pt

29.389.3.11 void PrTriangulation_NT::refine ( )

Construct the PrTriangulation_NT from a PrTriangulation_OP, using just one level in the hierarchy. This can later be refined by refine().

29.389.3.12 virtual void PrTriangulation_NT::setX (int *i,* const double & *x*) [inline], [virtual]

set the x coeff. of the i-th node in the triangulation.

Implements PrNestedTriangulation.

Definition at line 82 of file PrTriangulation_NT.h.

29.389.3.13 virtual void PrTriangulation_NT::setY (int *i,* const double & *y*) [inline], [virtual]

set the y coeff. of the i-th node in the triangulation.

Implements PrNestedTriangulation.

Definition at line 83 of file PrTriangulation_NT.h.

29.389.3.14 virtual void PrTriangulation_NT::setZ (int *i,* const double & *z*) [inline], [virtual]

set the z coeff. of the i-th node in the triangulation.

Implements PrNestedTriangulation.

Definition at line 84 of file PrTriangulation_NT.h.

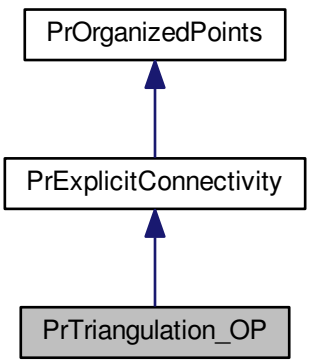
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrTriangulation_NT.h

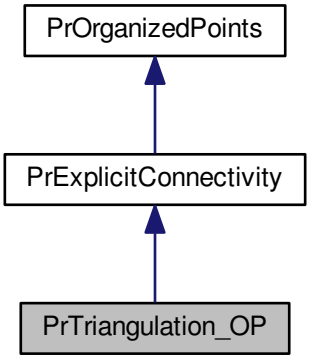
29.390 PrTriangulation_OP Class Reference

`#include <PrTriangulation_OP.h>`

Inheritance diagram for PrTriangulation_OP:



Collaboration diagram for PrTriangulation_OP:



Public Member Functions

- PrTriangulation_OP ()
  Default constructor.
- PrTriangulation_OP (const double *xyz_points, int np, const int *triangles, int nt)
- PrTriangulation_OP (const double *xyz_points, const double *uv_points, int np, const int *triangles, int nt)
- PrTriangulation_OP (PrExplicitConnectivity &op)
- ~PrTriangulation_OP ()

Derived from base class

- virtual int getNumNodes () const
  return the number of nodes in the graph.
- virtual Vector3D get3dNode (int i) const
  return the i-th node in the graph if the nodes are three-dimensional
- virtual void set3dNode (int i, const Vector3D &p)
- virtual void getNeighbours (int i, std::vector< int > &neighbours) const
- virtual bool isBoundary (int i) const
  is the i-th node a boundary node or interior node?
- virtual int findNumFaces () const
  count the number of faces in the graph
- virtual double getU (int i) const
  return the u parameter value of the i-th node.
- virtual double getV (int i) const
  return the v parameter value of the i-th node.
- virtual void setU (int i, double u)
  reset the u parameter value of the i-th node.
- virtual void setV (int i, double v)
  reset the v parameter value of the i-th node.

Other functions

- virtual void getTriangles (int i, Go::ScratchVect< int, 20 > &triangles) const
  Get all triangles that are incident with node 'i'.

- bool swapTriangles (int t1, int t2)
  swap triangle t1 and t2
- void swapNodes (int n1, int n2)
  swap node n1 and n2
- bool splitTriangles (int t1, int t2, Vector3D &v)
- bool splitVertex (int i, int j, std::vector< int > &new_nodes)
- PrNode & getPrNode (int i)
  Get reference to node indexed 'i'.
- const PrNode & getPrNode (int i) const
- const PrTriangle & getPrTriangle (int i) const
  Get reference to triangle indexed 'i'.
- PrTriangle & getPrTriangle (int i)
  Get reference to triangle indexed 'i'.
- std::vector< PrTriangle > & getTriangleArray ()
  Get reference to all triangles in the triangulation.
- std::vector< PrNode > & getNodeArray ()
  Get reference to all nodes in the triangulation.
- void printXYZTriangles (std::ostream &os, bool num=false) const
- void printUVTriangles (std::ostream &os, bool num=false) const
- void print (std::ostream &os) const
  print whole class
- void scan (std::istream &is)
  scan whole class
- void printRawData (std::ostream &os) const
  print minimum data
- void scanRawData (std::istream &is)
  scan minimum data
- void printUV (std::ostream &os) const
  for converting uv to xyz with z=0

Additional Inherited Members

29.390.1 Detailed Description

PrTriangulation_OP - This class represents a triangulation of points in R^3 with or without parameter points in R^2. It implements the virtual functions in PrOrganizedPoints. This kind of triangulation can be parametrized by Pr↩ Parametrize.

Definition at line 55 of file PrTriangulation_OP.h.

29.390.2 Constructor & Destructor Documentation

29.390.2.1 PrTriangulation_OP::PrTriangulation_OP ( ) [inline]

Default constructor.

Definition at line 66 of file PrTriangulation_OP.h.

29.390.2.2 PrTriangulation_OP::PrTriangulation_OP (const double * *xyz_points*, int *np*, const int * *triangles*, int *nt*)

Constructor.Construct the PrTriangulation_OP from an array of nodes and an array of triangles. The nodes array should contain x0,y0,z0,x1,y1,z1,x2,y2,z2,x3,... and the triangle array i0,j0,k0,i1,j1,k1,i2,j2,k2,i3,j3,.... where the i-th node is the 3D point (xi,yi,zi) and the r-th triangle has the three nodes indexed ir, jr, and kr in the node array. These nodes must be ordered anticlockwise (consistently throughout the triangulation). The length of the array "xyz_points" is 3 * np and the length of the array "triangles" is 3 * nt. The uv points for the nodes are set to zero.

The function buildTopology is called which finds the three neighbouring triangles of each triangle and the first triangle of each node.

29.390.2.3 PrTriangulation_OP::PrTriangulation_OP (const double * *xyz_points*, const double * *uv_points*, int *np*, const int * *triangles*, int *nt*)

Constructor.Construct the PrTriangulation_OP from an array of nodes and an array of triangles. The xyz_points array should contain x0,y0,z0,x1,y1,z1,x2,y2,z2,x3,... The uv_points array should contain u0,v0,u1,v1,u2,v2,u3,... and the triangle array i0,j0,k0,i1,j1,k1,i2,j2,k2,i3,j3,.... where the i-th node is the 3D point (xi,yi,zi) and the r-th triangle has the three nodes indexed ir, jr, and kr in the node array. These nodes must be ordered anticlockwise (consistently throughout the triangulation). The length of the array "xyzpoints" is 3 * np and The length of the array "uv_points" is 2 * np and the length of the array "triangles" is 3 * nt.

The function buildTopology is called which finds the three neighbouring triangles of each triangle and the first triangle of each node.

29.390.2.4 PrTriangulation_OP::PrTriangulation_OP (PrExplicitConnectivity & *op*)

Constructor. Construct the PrTriangulation_OP from a PrExplicitConnectivity class ASSUMING the PrOrganized↩ Points class is a triangulation (every face has three vertices).

29.390.2.5 PrTriangulation_OP::~PrTriangulation_OP ( ) [inline]

Definition at line 109 of file PrTriangulation_OP.h.

29.390.3 Member Function Documentation

29.390.3.1 virtual int PrTriangulation_OP::findNumFaces ( ) const [inline], [virtual]

count the number of faces in the graph

Reimplemented from PrExplicitConnectivity.

Definition at line 124 of file PrTriangulation_OP.h.

29.390.3.2 virtual Vector3D PrTriangulation_OP::get3dNode (int *i*) const [inline], [virtual]

return the i-th node in the graph if the nodes are three-dimensional

Implements PrOrganizedPoints.

Definition at line 114 of file PrTriangulation_OP.h.

29.390.3.3 virtual void PrTriangulation_OP::getNeighbours (int *i*, std::vector< int > & *neighbours*) const [virtual]

Return the indices of the neighbours of the i-th node in:

1. any anticlockwise order if i is an interior node
2. the unique anticlockwise order if i is a boundary node.

Implements PrOrganizedPoints.

29.390.3.4 std::vector<PrNode>& PrTriangulation_OP::getNodeArray ( ) [inline]

Get reference to all nodes in the triangulation.

Definition at line 161 of file PrTriangulation_OP.h.

29.390.3.5 virtual int PrTriangulation_OP::getNumNodes ( ) const [inline], [virtual]

return the number of nodes in the graph.

Implements PrOrganizedPoints.

Definition at line 113 of file PrTriangulation_OP.h.

29.390.3.6 PrNode& PrTriangulation_OP::getPrNode (int *i*) [inline]

Get reference to node indexed 'i'.

Definition at line 152 of file PrTriangulation_OP.h.

29.390.3.7 const PrNode& PrTriangulation_OP::getPrNode (int *i*) const [inline]

Definition at line 153 of file PrTriangulation_OP.h.

29.390.3.8 const PrTriangle& PrTriangulation_OP::getPrTriangle (int *i*) const [inline]

Get reference to triangle indexed 'i'.

Definition at line 155 of file PrTriangulation_OP.h.

29.390.3.9 PrTriangle& PrTriangulation_OP::getPrTriangle (int *i*) [inline]

Get reference to triangle indexed 'i'.

Definition at line 157 of file PrTriangulation_OP.h.

29.390.3.10 std::vector<PrTriangle>& PrTriangulation_OP::getTriangleArray ( ) [inline]

Get reference to all triangles in the triangulation.

Definition at line 159 of file PrTriangulation_OP.h.

29.390.3.11 virtual void PrTriangulation_OP::getTriangles (int *i*, Go::ScratchVect< int, 20 > & *triangles*) const [virtual]

Get all triangles that are incident with node 'i'.

29.390.3.12 virtual double PrTriangulation_OP::getU (int *i*) const [inline], [virtual]

return the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 125 of file PrTriangulation_OP.h.

29.390.3.13 virtual double PrTriangulation_OP::getV (int *i*) const [inline], [virtual]

return the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 126 of file PrTriangulation_OP.h.

29.390.3.14 virtual bool PrTriangulation_OP::isBoundary (int *i*) const [virtual]

is the i-th node a boundary node or interior node?

Implements PrOrganizedPoints.

29.390.3.15 void PrTriangulation_OP::print (std::ostream & *os*) const

print whole class

29.390.3.16 void PrTriangulation_OP::printRawData (std::ostream & *os*) const

print minimum data

29.390.3.17 void PrTriangulation_OP::printUV (std::ostream & *os*) const

for converting uv to xyz with z=0

29.390.3.18 void PrTriangulation_OP::printUVTriangles (std::ostream & *os,* bool *num* = false) const

Print out the uv triangles of the graph, useful for plotting If num = 1, print first the number of triangles.

29.390.3.19 void PrTriangulation_OP::printXYZTriangles (std::ostream & *os,* bool *num* = false) const

Print out the triangles of the graph, useful for plotting If num = 1, print first the number of triangles.

29.390.3.20 void PrTriangulation_OP::scan (std::istream & *is*)

scan whole class

29.390.3.21 void PrTriangulation_OP::scanRawData (std::istream & *is*)

scan minimum data

29.390.3.22 virtual void PrTriangulation_OP::set3dNode (int *i,* const Vector3D & *p*) [inline], [virtual]

set the coordinates of the i-th node in the graph if the nodes are three-dimensional.

Implements PrOrganizedPoints.

Definition at line 115 of file PrTriangulation_OP.h.

29.390.3.23 virtual void PrTriangulation_OP::setU (int *i,* double *u*) [inline], [virtual]

reset the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 127 of file PrTriangulation_OP.h.

29.390.3.24 virtual void PrTriangulation_OP::setV (int *i,* double *v*) [inline], [virtual]

reset the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 128 of file PrTriangulation_OP.h.

29.390.3.25 bool PrTriangulation_OP::splitTriangles (int *t1,* int *t2,* Vector3D & *v*)

splits the common edge of triangles t1 and t2 and inserts the new vertex v there.

29.390.3.26 bool PrTriangulation_OP::splitVertex (int *i*, int *j*, std::vector< int > & *new_nodes*)

Split the boundary vertex indexed 'i' into two, and replace the edge between 'i' and 'j' with two boundary edges. The requirements are that node 'i' should be on the boundary, and 'j' should share an edge with 'i'.

29.390.3.27 void PrTriangulation_OP::swapNodes (int *n1*, int *n2*)

swap node n1 and n2

29.390.3.28 bool PrTriangulation_OP::swapTriangles (int *t1*, int *t2*)

swap triangle t1 and t2

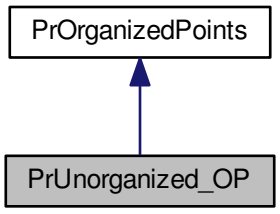
The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrTriangulation_OP.h

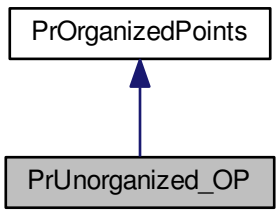
29.391 PrUnorganized_OP Class Reference

`#include <PrUnorganized_OP.h>`

Inheritance diagram for PrUnorganized_OP:



Collaboration diagram for PrUnorganized_OP:



Public Member Functions

- PrUnorganized_OP (int num_cells=10)
  Constructor.
- PrUnorganized_OP (int n, int n_int, double *xyz_points, int num_cells=10)
  Constructor.
- ~PrUnorganized_OP ()
  Empty destructor.

Derived from base class

- virtual int getNumNodes ()
  return the number of nodes in the graph.
- virtual Vector3D get3dNode (int i)
  return the i-th node in the graph if the nodes are three-dimensional
- virtual void set3dNode (int i, const Vector3D &p)
- virtual void getNeighbours (int i, vector< int > &neighbours)
- virtual bool isBoundary (int i)
  is the i-th node a boundary node or interior node?
- virtual double getU (int i)
  return the u parameter value of the i-th node.
- virtual double getV (int i)
  return the v parameter value of the i-th node.
- virtual void setU (int i, double u)
  reset the u parameter value of the i-th node.
- virtual void setV (int i, double v)
  reset the v parameter value of the i-th node.

Other functions

- double getRadius ()
  get the specified radius for defining neighbours by distance
- void setRadius (double radius)
  specify the radius for defining neighbourhood by distance
- void setKNearest (int knearest)
- void useK ()
- void useRadius ()
  Use an euclidean distance to define the neighbourhood of a point.
- void print (std::ostream &os)
  Write contents to stream.
- void scan (std::istream &is)
  read contents from stream
- void printRawData (std::ostream &os)
  print raw data (no parameterization)
- void scanRawData (std::istream &is, int num_cells, double noise)
  scan raw data (no parameterization)

Additional Inherited Members

29.391.1 Detailed Description

PrUnorganized_OP - This class represents a set of points in three dimensions. All we know about them is their boundary in sequence. No other topology is given. This kind of data can be parametrized by PrParametrizeBdy and PrParametrizeInt.

Definition at line 54 of file PrUnorganized_OP.h.

29.391.2 Constructor & Destructor Documentation

29.391.2.1 PrUnorganized_OP::PrUnorganized_OP (int *num_cells* = 10)

Constructor.

29.391.2.2 PrUnorganized_OP::PrUnorganized_OP (int *n,* int *n_int,* double * *xyz_points,* int *num_cells* = 10)

Constructor.

29.391.2.3 PrUnorganized_OP::~PrUnorganized_OP ( ) [inline]

Empty destructor.

Definition at line 73 of file PrUnorganized_OP.h.

29.391.3 Member Function Documentation

29.391.3.1 virtual Vector3D PrUnorganized_OP::get3dNode (int *i*) [inline], [virtual]

return the i-th node in the graph if the nodes are three-dimensional

Definition at line 82 of file PrUnorganized_OP.h.

29.391.3.2 virtual void PrUnorganized_OP::getNeighbours (int *i,* vector< int > & *neighbours*) [virtual]

Return the indices of the neighbours of the i-th node. (here there is no ordering: it's not a planar graph).

29.391.3.3 virtual int PrUnorganized_OP::getNumNodes ( ) [inline], [virtual]

return the number of nodes in the graph.

Definition at line 79 of file PrUnorganized_OP.h.

29.391.3.4 double PrUnorganized_OP::getRadius ( ) [inline]

get the specified radius for defining neighbours by distance

Definition at line 110 of file PrUnorganized_OP.h.

29.391.3.5 virtual double PrUnorganized_OP::getU (int *i*) [inline], [virtual]

return the u parameter value of the i-th node.

Definition at line 94 of file PrUnorganized_OP.h.

29.391.3.6 virtual double PrUnorganized_OP::getV (int *i*) [inline], [virtual]

return the v parameter value of the i-th node.

Definition at line 97 of file PrUnorganized_OP.h.

29.391.3.7 virtual bool PrUnorganized_OP::isBoundary (int *i*) [inline], [virtual]

is the i-th node a boundary node or interior node?

Definition at line 91 of file PrUnorganized_OP.h.

29.391.3.8 void PrUnorganized_OP::print (std::ostream & *os*)

Write contents to stream.

29.391.3.9 void PrUnorganized_OP::printRawData (std::ostream & *os*)

print raw data (no parameterization)

29.391.3.10 void PrUnorganized_OP::scan (std::istream & *is*)

read contents from stream

29.391.3.11 void PrUnorganized_OP::scanRawData (std::istream & *is,* int *num_cells,* double *noise*)

scan raw data (no parameterization)

29.391.3.12 virtual void PrUnorganized_OP::set3dNode (int *i,* const Vector3D & *p*) [inline], [virtual]

set the coordinates of the i-th node in the graph if the nodes are three-dimensional.

Implements PrOrganizedPoints.

Definition at line 84 of file PrUnorganized_OP.h.

29.391.3.13 void PrUnorganized_OP::setKNearest (int *knearest*) [inline]

specify a number for defining neighbourhoods by a fixed number of neighbours.

Definition at line 122 of file PrUnorganized_OP.h.

29.391.3.14 void PrUnorganized_OP::setRadius (double *radius*) [inline]

specify the radius for defining neighbourhood by distance

Definition at line 119 of file PrUnorganized_OP.h.

29.391.3.15 virtual void PrUnorganized_OP::setU (int *i,* double *u*) [inline], [virtual]

reset the u parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 100 of file PrUnorganized_OP.h.

29.391.3.16 virtual void PrUnorganized_OP::setV (int *i,* double *v*) [inline], [virtual]

reset the v parameter value of the i-th node.

Implements PrOrganizedPoints.

Definition at line 103 of file PrUnorganized_OP.h.

29.391.3.17 void PrUnorganized_OP::useK ( ) [inline]

Use a fixed number of neighbours to define the neighbourhood of a point.

Definition at line 125 of file PrUnorganized_OP.h.

29.391.3.18 void PrUnorganized_OP::useRadius ( ) [inline]

Use an euclidean distance to define the neighbourhood of a point.

Definition at line 127 of file PrUnorganized_OP.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrUnorganized_OP.h

29.392 PrVec Class Reference

`#include <PrVec.h>`

Public Member Functions

- PrVec ()
  Default constructor.
- PrVec (int n, double fill_with=0.0)
- template<typename InputIterator >
  PrVec (InputIterator begin, InputIterator end)
- void redim (int n, double fill_with=0.0)
  Change size of vector.
- int size () const
  Query size of vector.
- double & operator() (int i)
  Element access.
- const double & operator() (int i) const
  Element access.
- double & operator[ ] (int i)
  Element access.
- const double & operator[ ] (int i) const
  Element access.
- double inner (const PrVec &x)
  Compute inner product with another vector of the same length.
- void read (std::istream &is)
  Read vector elements from stream 'is'.
- void print (std::ostream &os)
  Write vector elements, separated with spaces, to stream 'os'.

Protected Attributes

- std::vector< double > a_

29.392.1 Detailed Description

PrVec - This class represents a vector.

Definition at line 51 of file PrVec.h.

29.392.2 Constructor & Destructor Documentation

29.392.2.1 PrVec::PrVec ( ) [inline]

Default constructor.

Definition at line 59 of file PrVec.h.

29.392.2.2 PrVec::PrVec (int *n*, double *fill_with* = 0.0) [inline]

Constructor. Constructs a vector with n elements initialized by fill_with.

Definition at line 63 of file PrVec.h.

29.392.2.3 template<typename InputIterator > PrVec::PrVec (InputIterator *begin,* InputIterator *end*) [inline]

Constructor generating av vector from a range of elements specified with two iterators.

Definition at line 70 of file PrVec.h.

29.392.3 Member Function Documentation

29.392.3.1 double PrVec::inner (const PrVec & *x*)

Compute inner product with another vector of the same length.

29.392.3.2 double& PrVec::operator() (int *i*) [inline]

Element access.

Definition at line 81 of file PrVec.h.

29.392.3.3 const double& PrVec::operator() (int *i*) const [inline]

Element access.

Definition at line 83 of file PrVec.h.

29.392.3.4 double& PrVec::operator[ ] (int *i*) [inline]

Element access.

Definition at line 85 of file PrVec.h.

29.392.3.5 const double& PrVec::operator[ ] (int *i*) const [inline]

Element access.

Definition at line 87 of file PrVec.h.

29.392.3.6 void PrVec::print (std::ostream & *os*)

Write vector elements, separated with spaces, to stream 'os'.

29.392.3.7 void PrVec::read (std::istream & *is*)

Read vector elements from stream 'is'.

29.392.3.8 void PrVec::redim (int *n,* double *fill_with* = 0.0)

Change size of vector.

29.392.3.9 int PrVec::size ( ) const [inline]

Query size of vector.

Definition at line 78 of file PrVec.h.

29.392.4 Member Data Documentation

29.392.4.1 std::vector<double> PrVec::a_ [protected]

Definition at line 55 of file PrVec.h.

The documentation for this class was generated from the following file:

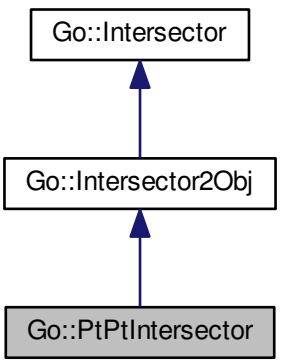
- parametrization/include/GoTools/parametrization/PrVec.h

29.393 Go::PtPtIntersector Class Reference

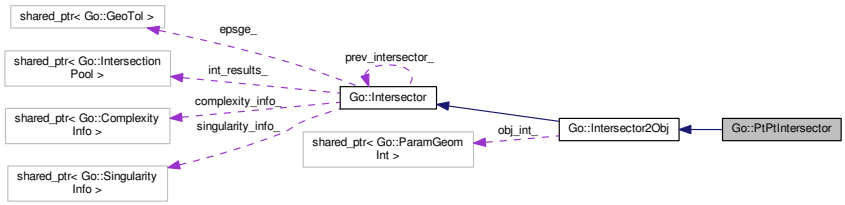
This class performs intersection between two points.

`#include <PtPtIntersector.h>`

Inheritance diagram for Go::PtPtIntersector:



Collaboration diagram for Go::PtPtIntersector:



Public Member Functions

- PtPtIntersector (shared_ptr< ParamGeomInt > point1, shared_ptr< ParamGeomInt > point2, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- PtPtIntersector (shared_ptr< ParamGeomInt > point1, shared_ptr< ParamGeomInt > point2, double epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~PtPtIntersector ()

  Destructor.
- virtual int numParams () const

Protected Member Functions

- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- virtual int linearCase ()
- virtual int doSubdivide ()

Additional Inherited Members

29.393.1 Detailed Description

This class performs intersection between two points.

Definition at line 52 of file PtPtIntersector.h.

29.393.2 Constructor & Destructor Documentation

29.393.2.1 Go::PtPtIntersector::PtPtIntersector (shared_ptr< ParamGeomInt > *point1*, shared_ptr< ParamGeomInt > *point2*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

point1	of type ParamPointInt.
point2	of type ParamPointInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index (0) of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.393.2.2 Go::PtPtIntersector::PtPtIntersector (shared_ptr< ParamGeomInt > *point1*, shared_ptr< ParamGeomInt > *point2*, double *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

point1	of type ParamPointInt.
point2	of type ParamPointInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index (0) of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.393.2.3 virtual Go::PtPtIntersector::~PtPtIntersector ( ) [virtual]

Destructor.

29.393.3 Member Function Documentation

29.393.3.1 virtual int Go::PtPtIntersector::checkCoincidence ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.393.3.2 virtual int Go::PtPtIntersector::doSubdivide ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.393.3.3 virtual int Go::PtPtIntersector::linearCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.393.3.4 virtual shared_ptr<Intersector> Go::PtPtIntersector::lowerOrderIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [virtual]

Implements Go::Intersector2Obj.

29.393.3.5 virtual void Go::PtPtIntersector::microCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.393.3.6 virtual int Go::PtPtIntersector::numParams ( ) const [inline], [virtual]

Return the number of parameter directions for the object.

Returns

the number of parameter directions

Implements Go::Intersector.

Definition at line 102 of file PtPtIntersector.h.

29.393.3.7 virtual int Go::PtPtIntersector::repairIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 121 of file PtPtIntersector.h.

29.393.3.8 virtual int Go::PtPtIntersector::updateIntersections ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

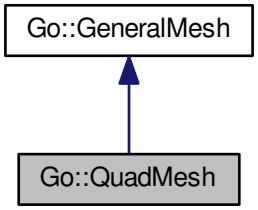
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/PtPtIntersector.h

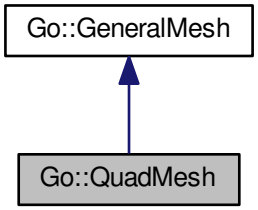
29.394 Go::QuadMesh Class Reference

`#include <QuadMesh.h>`

Inheritance diagram for Go::QuadMesh:



Collaboration diagram for Go::QuadMesh:



Public Member Functions

- QuadMesh (int num_vert=0, int num_quads=0, bool use_normals=true, bool use_texcoords=false)
- bool useNormals ()

  Check if normals will be computed.
- bool useTexCoords ()

  Check if texture coordinates will be computed.
- int numQuads ()

  The total number of quads.
- virtual int numTriangles ()

  The total number of triangles. Not used in this context.
- virtual int numVertices ()

  Number of nodes in mesh.
- void resize (int num_vert, int num_quads)

  Change mesh size.

- virtual double * vertexArray ()
  Fetch all nodes.
- double * normalArray ()
  Normal information.
- double * texcoordArray ()
  Texture coordinate information.
- unsigned int * quadIndexArray ()
  Indices to quads.
- virtual unsigned int * triangleIndexArray ()
  Indices to triangle. Not used in this context.
- virtual double * paramArray ()
  Fetch parameter values corresponding to the nodes.
- virtual int atBoundary (int idx)
  Check if a given node lies at the boundary.

Additional Inherited Members

29.394.1 Detailed Description

Based on gvGenericTriMesh, designed to store data for GL visualizing.

Definition at line 52 of file QuadMesh.h.

29.394.2 Constructor & Destructor Documentation

29.394.2.1 Go::QuadMesh::QuadMesh (int *num_vert* = 0, int *num_quads* = 0, bool *use_normals* = true, bool *use_texcoords* = false) [inline]

Constructor. Give mesh size. Set whether or not normals and texture coordinates should be computed

Definition at line 57 of file QuadMesh.h.

29.394.3 Member Function Documentation

29.394.3.1 virtual int Go::QuadMesh::atBoundary (int *idx*) [inline], [virtual]

Check if a given node lies at the boundary.

Implements Go::GeneralMesh.

Definition at line 106 of file QuadMesh.h.

29.394.3.2 double* Go::QuadMesh::normalArray ( ) [inline]

Normal information.

Definition at line 98 of file QuadMesh.h.

29.394.3.3 int Go::QuadMesh::numQuads ( ) [inline]

The total number of quads.

Definition at line 75 of file QuadMesh.h.

29.394.3.4 virtual int Go::QuadMesh::numTriangles ( ) [inline], [virtual]

The total number of triangles. Not used in this context.

Reimplemented from Go::GeneralMesh.

Definition at line 79 of file QuadMesh.h.

29.394.3.5 virtual int Go::QuadMesh::numVertices ( ) [inline], [virtual]

Number of nodes in mesh.

Implements Go::GeneralMesh.

Definition at line 82 of file QuadMesh.h.

29.394.3.6 virtual double* Go::QuadMesh::paramArray ( ) [inline], [virtual]

Fetch parameter values corresponding to the nodes.

Implements Go::GeneralMesh.

Definition at line 105 of file QuadMesh.h.

29.394.3.7 unsigned int* Go::QuadMesh::quadIndexArray ( ) [inline]

Indices to quads.

Definition at line 102 of file QuadMesh.h.

29.394.3.8 void Go::QuadMesh::resize (int *num_vert,* int *num_quads*) [inline]

Change mesh size.

Definition at line 86 of file QuadMesh.h.

29.394.3.9 double* Go::QuadMesh::texcoordArray ( ) [inline]

Texture coordinate information.

Definition at line 100 of file QuadMesh.h.

29.394.3.10 virtual unsigned int* Go::QuadMesh::triangleIndexArray ( ) [inline], [virtual]

Indices to triangle. Not used in this context.

Implements Go::GeneralMesh.

Definition at line 104 of file QuadMesh.h.

29.394.3.11 bool Go::QuadMesh::useNormals ( ) [inline]

Check if normals will be computed.

Definition at line 67 of file QuadMesh.h.

29.394.3.12 bool Go::QuadMesh::useTexCoords ( ) [inline]

Check if texture coordinates will be computed.

Definition at line 71 of file QuadMesh.h.

29.394.3.13 virtual double* Go::QuadMesh::vertexArray ( ) [inline], [virtual]

Fetch all nodes.

Implements Go::GeneralMesh.

Definition at line 96 of file QuadMesh.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/QuadMesh.h

29.395 Go::QualityResults Class Reference

`#include <QualityResults.h>`

Public Member Functions

- ~QualityResults ()

Friends

- class ModelQuality
- class FaceSetQuality
- class ModelRepair
- class FaceSetRepair

29.395.1 Detailed Description

Definition at line 56 of file QualityResults.h.

29.395.2 Constructor & Destructor Documentation

29.395.2.1 Go::QualityResults::~QualityResults ( )

29.395.3 Friends And Related Function Documentation

29.395.3.1 friend class FaceSetQuality [friend]

Definition at line 59 of file QualityResults.h.

29.395.3.2 friend class FaceSetRepair [friend]

Definition at line 61 of file QualityResults.h.

29.395.3.3 friend class ModelQuality [friend]

Definition at line 58 of file QualityResults.h.

29.395.3.4 friend class ModelRepair [friend]

Definition at line 60 of file QualityResults.h.

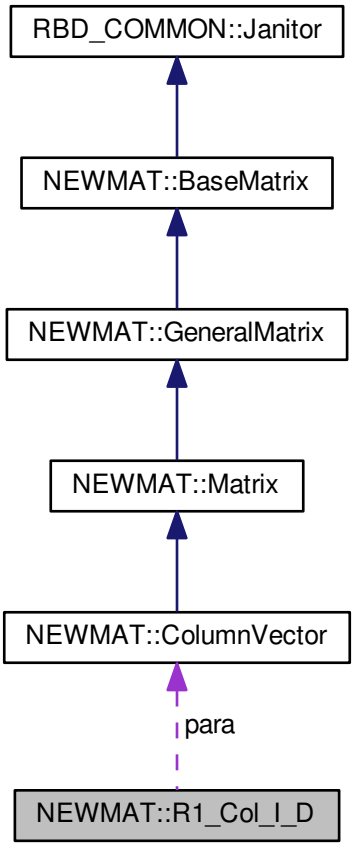
The documentation for this class was generated from the following file:

- qualitymodule/include/GoTools/qualitymodule/QualityResults.h

29.396 NEWMAT::R1_Col_I_D Class Reference

`#include <newmatnl.h>`

Collaboration diagram for NEWMAT::R1_Col_I_D:



Public Member Functions

- virtual bool IsValid ()
- virtual Real operator() (int i)=0
- virtual void Set (const ColumnVector &X)
- bool IsValid (const ColumnVector &X)
- Real operator() (int i, const ColumnVector &X)
- virtual ReturnMatrix Derivatives ()=0
- virtual ~R1_Col_I_D ()

Protected Attributes

- ColumnVector para

29.396.1 Detailed Description

Definition at line 181 of file newmatnl.h.

29.396.2 Constructor & Destructor Documentation

29.396.2.1 virtual NEWMAT::R1_Col_I_D::~R1_Col_I_D ( ) [inline], [virtual]

Definition at line 207 of file newmatnl.h.

29.396.3 Member Function Documentation

29.396.3.1 virtual ReturnMatrix NEWMAT::R1_Col_I_D::Derivatives ( ) [pure virtual]

29.396.3.2 virtual bool NEWMAT::R1_Col_I_D::IsValid ( ) [inline], [virtual]

Definition at line 194 of file newmatnl.h.

29.396.3.3 bool NEWMAT::R1_Col_I_D::IsValid (const ColumnVector & *X*) [inline]

Definition at line 199 of file newmatnl.h.

29.396.3.4 virtual Real NEWMAT::R1_Col_I_D::operator() (int *i*) [pure virtual]

29.396.3.5 Real NEWMAT::R1_Col_I_D::operator() (int *i*, const ColumnVector & *X*) [inline]

Definition at line 202 of file newmatnl.h.

29.396.3.6 virtual void NEWMAT::R1_Col_I_D::Set (const ColumnVector & *X*) [inline], [virtual]

Definition at line 197 of file newmatnl.h.

29.396.4 Member Data Documentation

29.396.4.1 ColumnVector NEWMAT::R1_Col_I_D::para [protected]

Definition at line 191 of file newmatnl.h.

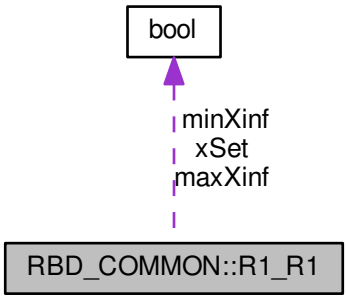
The documentation for this class was generated from the following file:

- newmat/include/newmatnl.h

29.397 RBD_COMMON::R1_R1 Class Reference

`#include <solution.h>`

Collaboration diagram for RBD_COMMON::R1_R1:



Public Member Functions

- R1_R1 ()
- virtual Real operator() ()=0
- virtual void Set (Real X)
- Real operator() (Real X)
- virtual bool IsValid (Real X)
- operator Real ()
- virtual ~R1_R1 ()

Public Attributes

- Real minX
- Real maxX
- bool minXinf
- bool maxXinf

Protected Attributes

- Real x
- bool xSet

29.397.1 Detailed Description

Definition at line 19 of file solution.h.

29.397.2 Constructor & Destructor Documentation

29.397.2.1 RBD_COMMON::R1_R1::R1_R1 ( ) [inline]

Definition at line 34 of file solution.h.

29.397.2.2 virtual RBD_COMMON::R1_R1::~R1_R1 ( ) [inline], [virtual]

Definition at line 42 of file solution.h.

29.397.3 Member Function Documentation

29.397.3.1 bool R1_R1::IsValid (Real *X*) [virtual]

Definition at line 191 of file solution.cpp.

29.397.3.2 R1_R1::operator Real ( )

Definition at line 27 of file solution.cpp.

29.397.3.3 virtual Real RBD_COMMON::R1_R1::operator() ( ) [pure virtual]

29.397.3.4 Real RBD_COMMON::R1_R1::operator() (Real *X*) [inline]

Definition at line 38 of file solution.h.

29.397.3.5 void R1_R1::Set (Real *X*) [virtual]

Definition at line 20 of file solution.cpp.

29.397.4 Member Data Documentation

29.397.4.1 Real RBD_COMMON::R1_R1::maxX

Definition at line 32 of file solution.h.

29.397.4.2 bool RBD_COMMON::R1_R1::maxXinf

Definition at line 33 of file solution.h.

29.397.4.3 Real RBD_COMMON::R1_R1::minX

Definition at line 32 of file solution.h.

29.397.4.4 bool RBD_COMMON::R1_R1::minXinf

Definition at line 33 of file solution.h.

29.397.4.5 Real RBD_COMMON::R1_R1::x [protected]

Definition at line 28 of file solution.h.

29.397.4.6 bool RBD_COMMON::R1_R1::xSet [protected]

Definition at line 29 of file solution.h.

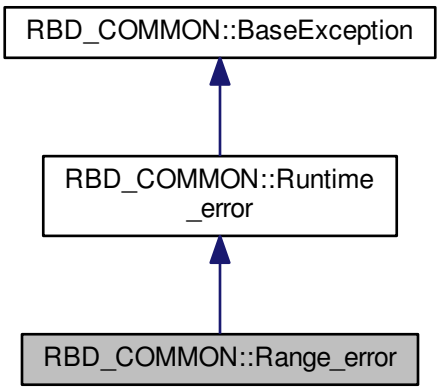
The documentation for this class was generated from the following files:

- newmat/include/solution.h
- newmat/src/solution.cpp

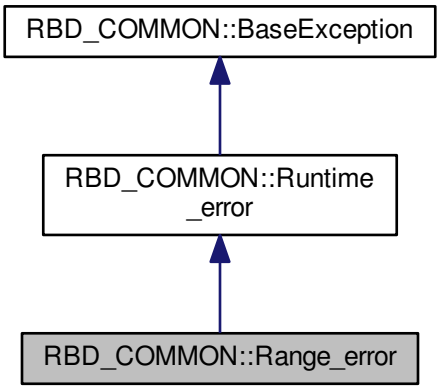
29.398 RBD_COMMON::Range_error Class Reference

`#include <myexcept.h>`

Inheritance diagram for RBD_COMMON::Range_error:



Collaboration diagram for RBD_COMMON::Range_error:



- static unsigned long Select
- Range_error (const char *a_what=0)

Additional Inherited Members

29.398.1 Detailed Description

Definition at line 413 of file myexcept.h.

29.398.2 Constructor & Destructor Documentation

29.398.2.1 Range_error::Range_error (const char * *a_what* = 0)

Definition at line 454 of file myexcept.cpp.

29.398.3 Member Data Documentation

29.398.3.1 unsigned long Range_error::Select [static]

Definition at line 416 of file myexcept.h.

The documentation for this class was generated from the following files:

- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

29.399 rank_info Struct Reference

`#include <sislP.h>`

Public Attributes

- int * prio
- int * groups
- int antgr
- int antrem

29.399.1 Detailed Description

Definition at line 346 of file sislP.h.

29.399.2 Member Data Documentation

29.399.2.1 int rank_info::antgr

Definition at line 350 of file sislP.h.

29.399.2.2 int rank_info::antrem

Definition at line 351 of file sislP.h.

29.399.2.3 int* rank_info::groups

Definition at line 349 of file sislP.h.

29.399.2.4 int* rank_info::prio

Definition at line 348 of file sislP.h.

The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.400 Go::Rational Class Reference

`#include <Rational.h>`

Public Member Functions

- Rational ()

  Construct a rational number whose value is 0.
- Rational (int p)

  Construct a rational number whose value is 'p' (integer)
- Rational (int p, int q)

  Construct a rational number whose value is 'p'/'q' (fraction)
- Rational & operator+= (const Rational &other)

  Add a different rational number to this rational number.
- Rational & operator-= (const Rational &other)

  Subtract a different rational number from this rational number.
- Rational & operator*= (const Rational &other)

  Multiply this rational number with a different rational number.
- Rational & operator/= (const Rational &other)

  Divide this rational number by a different rational number.
- Rational operator- () const

  Return the additive inverse of this rational number.
- bool operator== (const Rational r)

  Test this rational number for equality with another rational number.
- bool operator!= (const Rational r)

  Test this rational number for difference with another rational number.
- void write (std::ostream &os) const

  Write this rational number to a stream.
- void simplify ()

  Simplify the internal fractional expression of this rational number.

29.400.1 Detailed Description

Class representing rational numbers

Definition at line 53 of file Rational.h.

29.400.2 Constructor & Destructor Documentation

29.400.2.1 Go::Rational::Rational ( ) [inline]

Construct a rational number whose value is 0.

Definition at line 58 of file Rational.h.

29.400.2.2 Go::Rational::Rational (int *p*) [inline]

Construct a rational number whose value is 'p' (integer)

Definition at line 61 of file Rational.h.

29.400.2.3 Go::Rational::Rational (int *p*, int *q*) [inline]

Construct a rational number whose value is 'p'/'q' (fraction)

Definition at line 64 of file Rational.h.

29.400.3 Member Function Documentation

29.400.3.1 bool Go::Rational::operator!= (const Rational *r*) [inline]

Test this rational number for difference with another rational number.

Definition at line 114 of file Rational.h.

29.400.3.2 Rational& Go::Rational::operator*= (const Rational & *other*) [inline]

Multiply this rational number with a different rational number.

Definition at line 84 of file Rational.h.

29.400.3.3 Rational& Go::Rational::operator+= (const Rational & *other*) [inline]

Add a different rational number to this rational number.

Definition at line 67 of file Rational.h.

29.400.3.4 Rational Go::Rational::operator- ( ) const [inline]

Return the additive inverse of this rational number.

Definition at line 102 of file Rational.h.

29.400.3.5 Rational& Go::Rational::operator-= (const Rational & *other*) [inline]

Subtract a different rational number from this rational number.

Definition at line 76 of file Rational.h.

29.400.3.6 Rational& Go::Rational::operator/= (const Rational & *other*) [inline]

Divide this rational number by a different rational number.

Definition at line 93 of file Rational.h.

29.400.3.7 bool Go::Rational::operator== (const Rational *r*) [inline]

Test this rational number for equality with another rational number.

Definition at line 108 of file Rational.h.

29.400.3.8 void Go::Rational::simplify ( ) [inline]

Simplify the internal fractional expression of this rational number.

Definition at line 126 of file Rational.h.

29.400.3.9 void Go::Rational::write (std::ostream & *os*) const [inline]

Write this rational number to a stream.

Definition at line 120 of file Rational.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/Rational.h

29.401 Go::raw_pointer_comp< T > Struct Template Reference

`#include <IntersectionPoolUtils.h>`

Public Member Functions

- bool operator() (shared_ptr< T > A, shared_ptr< T > B)

29.401.1 Detailed Description

template<class T>
struct Go::raw_pointer_comp< T >

Definition at line 116 of file IntersectionPoolUtils.h.

29.401.2 Member Function Documentation

29.401.2.1 template<class T > bool Go::raw_pointer_comp< T >::operator() (shared_ptr< T > *A*, shared_ptr< T > *B*) [inline]

Definition at line 119 of file IntersectionPoolUtils.h.

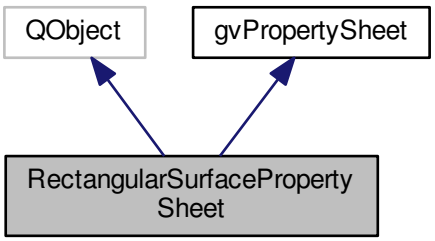
The documentation for this struct was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionPoolUtils.h

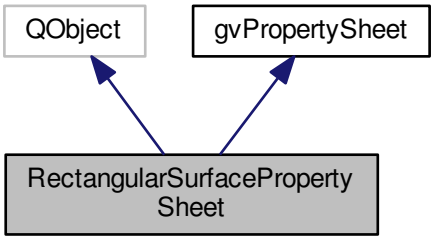
29.402 RectangularSurfacePropertySheet Class Reference

`#include <RectangularSurfacePropertySheet.h>`

Inheritance diagram for RectangularSurfacePropertySheet:



Collaboration diagram for RectangularSurfacePropertySheet:



Public Slots

- void apply ()

Public Member Functions

- RectangularSurfacePropertySheet (Go::RectangularSurfaceTesselator *tess, gvRectangularSurface↩ Paintable *pable, shared_ptr< Go::ParamSurface > &surf)
- virtual ~RectangularSurfacePropertySheet ()
- virtual void createSheet (QWidget *parent, gvObserver *obs)

29.402.1 Detailed Description

Documentation ... etc

Definition at line 61 of file RectangularSurfacePropertySheet.h.

29.402.2 Constructor & Destructor Documentation

29.402.2.1 RectangularSurfacePropertySheet::RectangularSurfacePropertySheet (Go::RectangularSurfaceTesselator * *tess*, gvRectangularSurfacePaintable * *pable*, shared_ptr< Go::ParamSurface > & *surf*) [inline]

Definition at line 67 of file RectangularSurfacePropertySheet.h.

29.402.2.2 virtual RectangularSurfacePropertySheet::~RectangularSurfacePropertySheet ( ) [virtual]

29.402.3 Member Function Documentation

29.402.3.1 void RectangularSurfacePropertySheet::apply ( ) [slot]

29.402.3.2 virtual void RectangularSurfacePropertySheet::createSheet (QWidget * *parent*, gvObserver * *obs*) [virtual]

Implements gvPropertySheet.

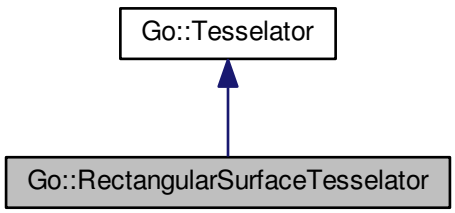
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/RectangularSurfacePropertySheet.h

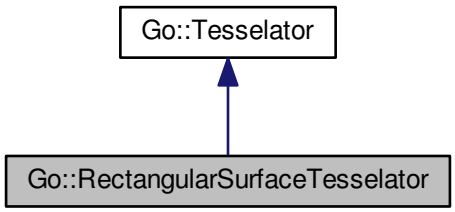
29.403 Go::RectangularSurfaceTesselator Class Reference

`#include <RectangularSurfaceTesselator.h>`

Inheritance diagram for Go::RectangularSurfaceTesselator:



Collaboration diagram for Go::RectangularSurfaceTesselator:



Public Member Functions

- RectangularSurfaceTesselator (const ParamSurface &surf, int ures=20, int vres=20, bool iso=false, int uiso=15, int viso=15, int isores=300)
- virtual ~RectangularSurfaceTesselator ()

  Destructor.
- virtual void tesselate ()

  Perform tesselation.
- shared_ptr< RegularMesh > getMesh ()

  Fetch the computed mesh.
- std::vector< LineStrip > & getIsolineStrips ()

  Fetch tesselation of iso parametric curves.
- void changeRes (int m, int n)

  Change mesh size.
- void getRes (int &m, int &n)

  Fetch mesh size.
- void changeIsolines (bool isolines)

  Retesselate iso parametric curves.
- void getIsolines (bool &isolines)

  Fetch mesh of iso parametric curves.
- void changeIsolineNumRes (int m, int n, int res)

  Change the number of iso parametric curves to compute.
- void getIsolineNumRes (int &m, int &n, int &res)

  Fetch the number of iso parametric curves to compute.

29.403.1 Detailed Description

RectangularSurfaceTesselator: create a mesh for a boundary trimmed parametric surface. Visualization purposes.

Definition at line 56 of file RectangularSurfaceTesselator.h.

29.403.2 Constructor & Destructor Documentation

29.403.2.1 Go::RectangularSurfaceTesselator::RectangularSurfaceTesselator (const ParamSurface & *surf,* int *ures* = 20, int *vres* = 20, bool *iso* = false, int *uiso* = 15, int *viso* = 15, int *isores* = 300) [inline]

Constructor. Surface and mesh size are given. The tesselator can be set to compute also iso parametric curves with a specified mesh size.

Definition at line 61 of file RectangularSurfaceTesselator.h.

29.403.2.2 virtual Go::RectangularSurfaceTesselator::~RectangularSurfaceTesselator ( ) [virtual]

Destructor.

29.403.3 Member Function Documentation

29.403.3.1 void Go::RectangularSurfaceTesselator::changeIsolineNumRes (int *m,* int *n,* int *res*) [inline]

Change the number of iso parametric curves to compute.

Definition at line 133 of file RectangularSurfaceTesselator.h.

29.403.3.2 void Go::RectangularSurfaceTesselator::changeIsolines (bool *isolines*) [inline]

Retesselate iso parametric curves.

Definition at line 118 of file RectangularSurfaceTesselator.h.

29.403.3.3 void Go::RectangularSurfaceTesselator::changeRes (int *m,* int *n*) [inline]

Change mesh size.

Definition at line 100 of file RectangularSurfaceTesselator.h.

29.403.3.4 void Go::RectangularSurfaceTesselator::getIsolineNumRes (int & *m,* int & *n,* int & *res*) [inline]

Fetch the number of iso parametric curves to compute.

Definition at line 141 of file RectangularSurfaceTesselator.h.

29.403.3.5 void Go::RectangularSurfaceTesselator::getIsolines (bool & *isolines*) [inline]

Fetch mesh of iso parametric curves.

Definition at line 127 of file RectangularSurfaceTesselator.h.

29.403.3.6 std::vector<LineStrip>& Go::RectangularSurfaceTesselator::getIsolineStrips ( ) [inline]

Fetch tesselation of iso parametric curves.

Definition at line 86 of file RectangularSurfaceTesselator.h.

29.403.3.7 shared_ptr<RegularMesh> Go::RectangularSurfaceTesselator::getMesh ( ) [inline]

Fetch the computed mesh.

Definition at line 80 of file RectangularSurfaceTesselator.h.

29.403.3.8 void Go::RectangularSurfaceTesselator::getRes (int & *m*, int & *n*) [inline]

Fetch mesh size.

Definition at line 111 of file RectangularSurfaceTesselator.h.

29.403.3.9 virtual void Go::RectangularSurfaceTesselator::tesselate ( ) [virtual]

Perform tesselation.

Implements Go::Tesselator.

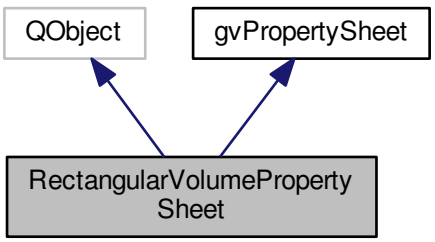
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/RectangularSurfaceTesselator.h

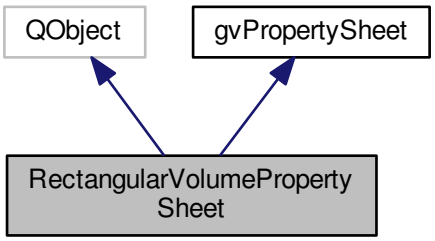
29.404 RectangularVolumePropertySheet Class Reference

`#include <RectangularVolumePropertySheet.h>`

Inheritance diagram for RectangularVolumePropertySheet:



Collaboration diagram for RectangularVolumePropertySheet:



Public Slots

- void apply ()

Public Member Functions

- RectangularVolumePropertySheet (Go::RectangularVolumeTesselator ∗tess, gvRectangularVolumePaintable ∗pable, shared_ptr< Go::ParamVolume > &vol)
- virtual ∼RectangularVolumePropertySheet ()
- virtual void createSheet (QWidget ∗parent, gvObserver ∗obs)

29.404.1 Detailed Description

Documentation ... etc

Definition at line 64 of file RectangularVolumePropertySheet.h.

29.404.2 Constructor & Destructor Documentation

29.404.2.1 RectangularVolumePropertySheet::RectangularVolumePropertySheet (Go::RectangularVolumeTesselator ∗ *tess,* gvRectangularVolumePaintable ∗ *pable,* shared_ptr< Go::ParamVolume > & *vol*) [inline]

Definition at line 70 of file RectangularVolumePropertySheet.h.

29.404.2.2 virtual RectangularVolumePropertySheet::∼RectangularVolumePropertySheet ( ) [virtual]

29.404.3 Member Function Documentation

29.404.3.1 void RectangularVolumePropertySheet::apply ( ) [slot]

29.404.3.2 virtual void RectangularVolumePropertySheet::createSheet (QWidget ∗ *parent,* gvObserver ∗ *obs*) [virtual]

Implements gvPropertySheet.

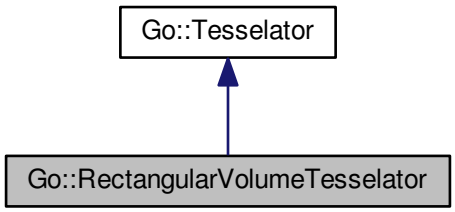
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/vol_and_lr/RectangularVolumePropertySheet.h

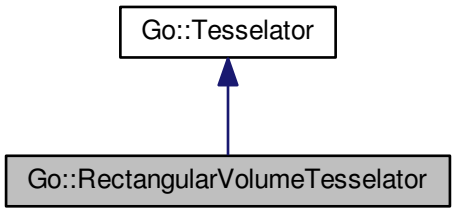
29.405 Go::RectangularVolumeTesselator Class Reference

`#include <RectangularVolumeTesselator.h>`

Inheritance diagram for Go::RectangularVolumeTesselator:



Collaboration diagram for Go::RectangularVolumeTesselator:



Public Member Functions

- RectangularVolumeTesselator (const ParamVolume &vol, int res=50)
- virtual ~RectangularVolumeTesselator ()

  Destructor.
- virtual void tesselate ()

  Perform tesselation.
- shared_ptr< RegularVolMesh > getMesh ()

  Fetch the computed mesh.
- void changeRes (int m)

  Change mesh size.
- void getRes (int &m)

  Fetch mesh size.

29.405.1 Detailed Description

RectangularSurfaceTesselator: create a mesh for a boundary trimmed parametric surface. Visualization purposes.

Definition at line 59 of file RectangularVolumeTesselator.h.

29.405.2 Constructor & Destructor Documentation

29.405.2.1 Go::RectangularVolumeTesselator::RectangularVolumeTesselator (const ParamVolume & *vol,* int *res* = 50) [inline]

Constructor. Volume and mesh size are given. The tesselator can be set to compute also iso parametric curves with a specified mesh size.

Definition at line 64 of file RectangularVolumeTesselator.h.

29.405.2.2 virtual Go::RectangularVolumeTesselator::~RectangularVolumeTesselator ( ) [virtual]

Destructor.

29.405.3 Member Function Documentation

29.405.3.1 void Go::RectangularVolumeTesselator::changeRes (int *m*) [inline]

Change mesh size.

Definition at line 102 of file RectangularVolumeTesselator.h.

29.405.3.2 shared_ptr<RegularVolMesh> Go::RectangularVolumeTesselator::getMesh ( ) [inline]

Fetch the computed mesh.

Definition at line 88 of file RectangularVolumeTesselator.h.

29.405.3.3 void Go::RectangularVolumeTesselator::getRes (int & *m*) [inline]

Fetch mesh size.

Definition at line 109 of file RectangularVolumeTesselator.h.

29.405.3.4 virtual void Go::RectangularVolumeTesselator::tesselate ( ) [virtual]

Perform tesselation.

Implements Go::Tesselator.

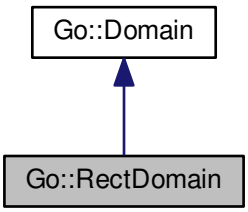
The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/RectangularVolumeTesselator.h

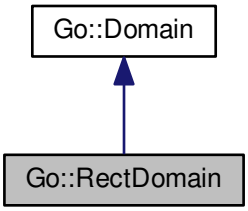
29.406 Go::RectDomain Class Reference

`#include <RectDomain.h>`

Inheritance diagram for Go::RectDomain:



Collaboration diagram for Go::RectDomain:



Public Member Functions

- RectDomain ()

  Constructs an uninitialized domain.
- RectDomain (const Array< double, 2 > &corner1, const Array< double, 2 > &corner2)
- virtual ~RectDomain ()

  Virtual destructor, enables safe inheritance.
- virtual bool isInDomain (const Array< double, 2 > &point, double tolerance) const
- virtual int isInDomain2 (const Array< double, 2 > &point, double tolerance) const
- virtual bool isOnBoundary (const Array< double, 2 > &point, double tolerance) const
- bool isOnCorner (const Array< double, 2 > &point, double tolerance) const
- int whichBoundary (const Array< double, 2 > &point1, const Array< double, 2 > &point2, double tolerance) const
- virtual void closestInDomain (const Array< double, 2 > &point, Array< double, 2 > &clo_pt, double tolerance) const

- virtual void closestOnBoundary (const Array< double, 2 > &point, Array< double, 2 > &clo_bd_pt, double tolerance) const
- void addUnionWith (const RectDomain &rd)
- void intersectWith (const RectDomain &rd)
- double umin () const
- double umax () const
- double vmin () const
- double vmax () const
- double diagLength ()

  Length of diagonal.
- Array< double, 2 > lowerLeft () const
- Array< double, 2 > upperRight () const

29.406.1 Detailed Description

Represents a rectangular parameter domain

Definition at line 54 of file RectDomain.h.

29.406.2 Constructor & Destructor Documentation

29.406.2.1 Go::RectDomain::RectDomain ( ) [inline]

Constructs an uninitialized domain.

Definition at line 58 of file RectDomain.h.

29.406.2.2 Go::RectDomain::RectDomain (const Array< double, 2 > & *corner1*, const Array< double, 2 > & *corner2*)

Constructs and defines a rectangular domain by two of its opposing corners.

Parameters

corner1	the first corner
corner2	the opposing corner to 'corner1'

29.406.2.3 virtual Go::RectDomain::~RectDomain ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.406.3 Member Function Documentation

29.406.3.1 void Go::RectDomain::addUnionWith (const RectDomain & *rd*)

Expand the RectDomain just enough to cover the RectDomain given as argument.

Parameters

rd	the RectDomain that we want to be covered by 'this' RectDomain.

29.406.3.2 virtual void Go::RectDomain::closestInDomain (const Array< double, 2 > & *point,* Array< double, 2 > & *clo_pt,* double *tolerance*) const [virtual]

Find the (u, v) point in the Domain that is closest (using Euclidean distance in R^2) to a given (u, v) point. If the given point is in the domain, then the answer is obviously the same point.

Implements Go::Domain.

29.406.3.3 virtual void Go::RectDomain::closestOnBoundary (const Array< double, 2 > & *point,* Array< double, 2 > & *clo_bd_pt,* double *tolerance*) const [virtual]

Find the (u, v) point on the boundary of the Domain that is closest (using Euclidean distance in R^2) to a given (u, v) point. If the point is already considered *on* the boundary, then the answer is obviously the same point.

Implements Go::Domain.

29.406.3.4 double Go::RectDomain::diagLength ( ) [inline]

Length of diagonal.

Definition at line 138 of file RectDomain.h.

29.406.3.5 void Go::RectDomain::intersectWith (const RectDomain & *rd*)

Set 'this' RectDomain to be the intersection of its current extent and that of the argument RectDomain.

Parameters

rd	the RectDomain that we want to intersect with 'this' one.

29.406.3.6 virtual bool Go::RectDomain::isInDomain (const Array< double, 2 > & *point,* double *tolerance*) const [virtual]

check whether a given parameter pair is located inside the domain

Parameters

point	the (u,v)-pair that we want to test.
tolerance	the tolerance used (ruling what to do when 'point' is located very near the edge of the domain).

Returns

'true' if 'point' is inside the domain, or within 'tolerance' from being inside the domain, 'false' otherwise'.

Implements Go::Domain.

29.406.3.7 virtual int Go::RectDomain::isInDomain2 (const Array< double, 2 > & *point*, double *tolerance*) const [virtual]

Query whether a given parameter pair is inside the domain or not.

Parameters

point	array containing the parameter pair
tolerance	the tolerance to be used. In order to be considered 'inside', the point must be located inside one of the defining CurveLoop s, as well as being at a distance more than 'tolerance' from any point on that CurveLoop.

Returns

'1' if the point is found to be inside the domain, '2' if it is found to be on the boundary '0' otherwise.

Implements Go::Domain.

29.406.3.8 virtual bool Go::RectDomain::isOnBoundary (const Array< double, 2 > & *point*, double *tolerance*) const [virtual]

check whether a given parameter pair is located on the domain boundary

Parameters

point	the (u,v)-pair that we want to test
tolerance	the tolerance used (how 'far' from the boundary our (u,v) pair can be and still be considered 'on' the boundary.

Returns

'true' if the point is considered to be on the boundary (within 'tolerance', 'false' otherwise.

Implements Go::Domain.

29.406.3.9 bool Go::RectDomain::isOnCorner (const Array< double, 2 > & *point*, double *tolerance*) const

Check if a given parameter pair lies on a corner in the domain within the given tolerance

29.406.3.10 Array<double, 2> Go::RectDomain::lowerLeft ( ) const [inline]

Get the 'lower left' corner of this RectDomain.

Returns

a 2D array containing the 'lower left' corner of this RectDomain

Definition at line 145 of file RectDomain.h.

29.406.3.11 double Go::RectDomain::umax ( ) const [inline]

Get the RectDomain's largest value for the first parameter

Returns

the RectDomain's largest value for the first parameter

Definition at line 127 of file RectDomain.h.

29.406.3.12 double Go::RectDomain::umin ( ) const [inline]

Get the RectDomain's smallest value for the first parameter

Returns

the RectDomain's smallest value for the first parameter

Definition at line 123 of file RectDomain.h.

29.406.3.13 Array<double, 2> Go::RectDomain::upperRight ( ) const [inline]

Get the 'upper right' corner of this RectDomain

Returns

a 2D array containing the 'upper right' corner of this RectDomain

Definition at line 149 of file RectDomain.h.

29.406.3.14 double Go::RectDomain::vmax ( ) const [inline]

Get the RectDomain's largest value for the second parameter

Returns

the RectDomain's largest value for the second parameter

Definition at line 135 of file RectDomain.h.

29.406.3.15 double Go::RectDomain::vmin ( ) const [inline]

Get the RectDomain's smallest value for the second parameter

Returns

the RectDomain's smallest value for the second parameter

Definition at line 131 of file RectDomain.h.

29.406.3.16 int Go::RectDomain::whichBoundary (const Array< double, 2 > & *point1,* const Array< double, 2 > & *point2,* double *tolerance*) const

Given two parameter pairs, check if they specify a domain boundary return value: -1=no boundary, 0=umin, 1=umax, 2=vmin, 3=vmax

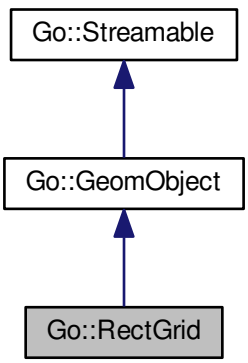
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/RectDomain.h

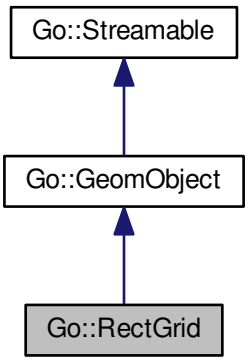
29.407 Go::RectGrid Class Reference

`#include <RectGrid.h>`

Inheritance diagram for Go::RectGrid:



Collaboration diagram for Go::RectGrid:



Public Member Functions

- RectGrid ()
- RectGrid (int numu, int numv, int dim, double ∗pts)
- virtual ∼RectGrid ()

  virtual destructor assures safe inheritacne
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual GeomObject ∗ clone () const

  Clone the GeomObject and return a pointer to the clone.
- void read (std::istream &is)
- void write (std::ostream &os) const
- void setGrid (int numu, int numv, int dim, const double ∗pts)
- int numCoefs_u () const
- int numCoefs_v () const
- double ∗ rawData ()
- const double ∗ rawData () const
- void swapDirections ()

  Swap grid directions.

Static Public Member Functions

- static ClassType classType ()

29.407.1 Detailed Description

This class represent the simplest of all quadrangulations: a rectangular grid.

Definition at line 50 of file RectGrid.h.

29.407.2 Constructor & Destructor Documentation

29.407.2.1 Go::RectGrid::RectGrid ( ) [inline]

Constructor that defines an empty grid, which can only be assigned or read() into.

Definition at line 56 of file RectGrid.h.

29.407.2.2 Go::RectGrid::RectGrid (int *numu*, int *numv*, int *dim*, double * *pts*) [inline]

Constructor explicitly specifying a RectGrid

Parameters

numu	number of points along the first grid direction
numv	number of points along the second grid direction
dim	dimension of the points (usually 2 or 3)
pts	pointer to the array where the points are stored. The points should be stored so that the first grid has lowest stride (ie., coefficients are stored (u1v1, u2v1,... unv1, u1v2, u2v2, ...unv2,.... unvm)

Definition at line 69 of file RectGrid.h.

29.407.2.3 virtual Go::RectGrid::~RectGrid ( ) [virtual]

virtual destructor assures safe inheritacne

29.407.3 Member Function Documentation

29.407.3.1 virtual BoundingBox Go::RectGrid::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.407.3.2 static ClassType Go::RectGrid::classType ( ) [inline], [static]

Definition at line 87 of file RectGrid.h.

29.407.3.3 virtual GeomObject* Go::RectGrid::clone ( ) const [inline], [virtual]

Clone the GeomObject and return a pointer to the clone.

Implements Go::GeomObject.

Definition at line 93 of file RectGrid.h.

29.407.3.4 virtual int Go::RectGrid::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.407.3.5 virtual ClassType Go::RectGrid::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.407.3.6 int Go::RectGrid::numCoefs_u ( ) const [inline]

Get number of points along the first grid direction

Returns

the number of points along the first grid direction

Definition at line 123 of file RectGrid.h.

29.407.3.7 int Go::RectGrid::numCoefs_v ( ) const [inline]

Get number of points along the second grid direction

Returns

the number of points along the second grid direction

Definition at line 130 of file RectGrid.h.

29.407.3.8 double* Go::RectGrid::rawData ( ) [inline]

Get a pointer to the start of the array where grid point coordinates are stored.

Returns

a pointer to the storage array for grid points.

Definition at line 138 of file RectGrid.h.

29.407.3.9 const double* Go::RectGrid::rawData ( ) const [inline]

Get a const pointer to the start of the array where grid point coordinates are stored.

Returns

a const pointer to the storage array for grid points.

Definition at line 146 of file RectGrid.h.

29.407.3.10 void Go::RectGrid::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.407.3.11 void Go::RectGrid::setGrid (int *numu,* int *numv,* int *dim,* const double * *pts*) [inline]

Set grid according to the user-supplied data

Parameters

numu	number of points along the first grid direction
numv	number of points along the second grid direction
dim	dimension of the points (usually 2 or 3)
pts	pointer to the array where the points are stored. The points should be stored so that the first grid has lowest stride (ie., coefficients are stored (u1v1, u2v1,... unv1, u1v2, u2v2, ...unv2,.... unvm)

Definition at line 112 of file RectGrid.h.

29.407.3.12 void Go::RectGrid::swapDirections ( )

Swap grid directions.

29.407.3.13 void Go::RectGrid::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

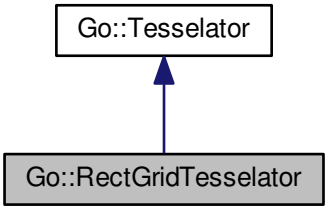
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/RectGrid.h

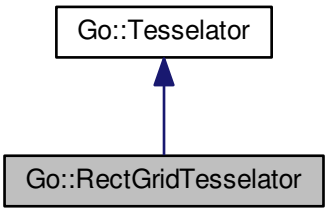
29.408 Go::RectGridTesselator Class Reference

`#include <RectGridTesselator.h>`

Inheritance diagram for Go::RectGridTesselator:



Collaboration diagram for Go::RectGridTesselator:



Public Member Functions

- RectGridTesselator (const RectGrid &rg)
  Constructor.
- virtual ~RectGridTesselator ()
  Destructor.
- virtual void tesselate ()
  Perform tesselation.
- shared_ptr< QuadMesh > getMesh ()
  Fetch result.

29.408.1 Detailed Description

Transfer the information in a RectGrid to a QuadMesh

Definition at line 55 of file RectGridTesselator.h.

29.408.2 Constructor & Destructor Documentation

29.408.2.1 Go::RectGridTesselator::RectGridTesselator (const RectGrid & *rg*)

Constructor.

29.408.2.2 virtual Go::RectGridTesselator::~RectGridTesselator ( ) [virtual]

Destructor.

29.408.3 Member Function Documentation

29.408.3.1 shared_ptr<QuadMesh> Go::RectGridTesselator::getMesh ( ) [inline]

Fetch result.

Definition at line 67 of file RectGridTesselator.h.

29.408.3.2 virtual void Go::RectGridTesselator::tesselate ( ) [virtual]

Perform tesselation.

Implements Go::Tesselator.

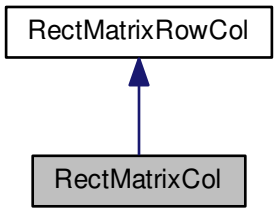
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/RectGridTesselator.h

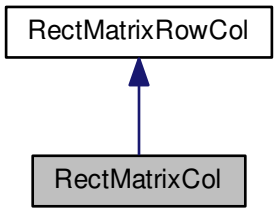
29.409 RectMatrixCol Class Reference

`#include <newmatrm.h>`

Inheritance diagram for RectMatrixCol:



Collaboration diagram for RectMatrixCol:



Public Member Functions

- RectMatrixCol (const Matrix &, int, int, int)
- RectMatrixCol (const Matrix &, int)
- void Reset (const Matrix &, int, int, int)
- void Reset (const Matrix &, int)
- void Down ()
- void Right ()
- void Up ()
- void Left ()

Friends

- void ComplexScale (RectMatrixCol &, RectMatrixCol &, Real, Real)
- void Rotate (RectMatrixCol &, RectMatrixCol &, Real, Real)

Additional Inherited Members

29.409.1 Detailed Description

Definition at line 63 of file newmatrm.h.

29.409.2 Constructor & Destructor Documentation

29.409.2.1 RectMatrixCol::RectMatrixCol (const Matrix & *M,* int *skip,* int *col,* int *length*) [inline]

Definition at line 99 of file newmatrm.h.

29.409.2.2 RectMatrixCol::RectMatrixCol (const Matrix & *M,* int *col*) [inline]

Definition at line 102 of file newmatrm.h.

29.409.3 Member Function Documentation

29.409.3.1 void RectMatrixCol::Down ( ) [inline]

Definition at line 70 of file newmatrm.h.

29.409.3.2 void RectMatrixCol::Left ( ) [inline]

Definition at line 73 of file newmatrm.h.

29.409.3.3 void RectMatrixCol::Reset (const Matrix & *M,* int *skip,* int *col,* int *length*)

Definition at line 37 of file newmatrm.cpp.

29.409.3.4 void RectMatrixCol::Reset (const Matrix & *M,* int *col*)

Definition at line 44 of file newmatrm.cpp.

29.409.3.5 void RectMatrixCol::Right ( ) [inline]

Definition at line 71 of file newmatrm.h.

29.409.3.6 void RectMatrixCol::Up ( ) [inline]

Definition at line 72 of file newmatrm.h.

29.409.4 Friends And Related Function Documentation

29.409.4.1 void ComplexScale (RectMatrixCol & *U,* RectMatrixCol & *V,* Real *x,* Real *y*) [friend]

Definition at line 131 of file newmatrm.cpp.

29.409.4.2 void Rotate (RectMatrixCol & *U,* RectMatrixCol & *V,* Real *tau,* Real *s*) [friend]

Definition at line 155 of file newmatrm.cpp.

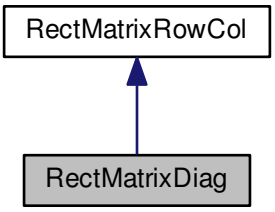
The documentation for this class was generated from the following files:

- newmat/include/newmatrm.h
- newmat/src/newmatrm.cpp

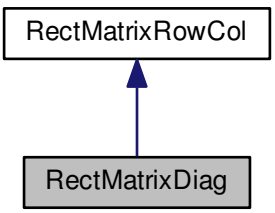
29.410 RectMatrixDiag Class Reference

`#include <newmatrm.h>`

Inheritance diagram for RectMatrixDiag:



Collaboration diagram for RectMatrixDiag:



Public Member Functions

- RectMatrixDiag (const DiagonalMatrix &D)
- Real & operator[ ] (int i)
- void DownDiag ()
- void UpDiag ()

Additional Inherited Members

29.410.1 Detailed Description

Definition at line 79 of file newmatrm.h.

29.410.2 Constructor & Destructor Documentation

29.410.2.1 RectMatrixDiag::RectMatrixDiag (const DiagonalMatrix & *D*) [inline]

Definition at line 82 of file newmatrm.h.

29.410.3 Member Function Documentation

29.410.3.1 void RectMatrixDiag::DownDiag ( ) [inline]

Definition at line 85 of file newmatrm.h.

29.410.3.2 Real& RectMatrixDiag::operator[ ] (int *i*) [inline]

Definition at line 84 of file newmatrm.h.

29.410.3.3 void RectMatrixDiag::UpDiag ( ) [inline]

Definition at line 86 of file newmatrm.h.

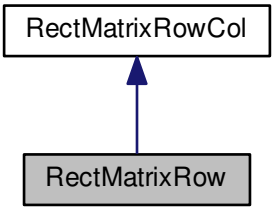
The documentation for this class was generated from the following file:

- newmat/include/newmatrm.h

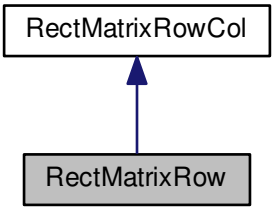
29.411 RectMatrixRow Class Reference

`#include <newmatrm.h>`

Inheritance diagram for RectMatrixRow:



Collaboration diagram for RectMatrixRow:



Public Member Functions

- RectMatrixRow (const Matrix &, int, int, int)
- RectMatrixRow (const Matrix &, int)
- void Reset (const Matrix &, int, int, int)
- void Reset (const Matrix &, int)
- Real & operator[ ] (int i)
- void Down ()
- void Right ()
- void Up ()
- void Left ()

Additional Inherited Members

29.411.1 Detailed Description

Definition at line 48 of file newmatrm.h.

29.411.2 Constructor & Destructor Documentation

29.411.2.1 RectMatrixRow::RectMatrixRow (const Matrix & *M,* int *row,* int *skip,* int *length*) [inline]

Definition at line 92 of file newmatrm.h.

29.411.2.2 RectMatrixRow::RectMatrixRow (const Matrix & *M,* int *row*) [inline]

Definition at line 95 of file newmatrm.h.

29.411.3 Member Function Documentation

29.411.3.1 void RectMatrixRow::Down ( ) [inline]

Definition at line 56 of file newmatrm.h.

29.411.3.2 void RectMatrixRow::Left ( ) [inline]

Definition at line 59 of file newmatrm.h.

29.411.3.3 Real& RectMatrixRow::operator[ ] (int *i*) [inline]

Definition at line 55 of file newmatrm.h.

29.411.3.4 void RectMatrixRow::Reset (const Matrix & *M,* int *row,* int *skip,* int *length*)

Definition at line 24 of file newmatrm.cpp.

29.411.3.5 void RectMatrixRow::Reset (const Matrix & *M,* int *row*)

Definition at line 31 of file newmatrm.cpp.

29.411.3.6 void RectMatrixRow::Right ( ) [inline]

Definition at line 57 of file newmatrm.h.

29.411.3.7 void RectMatrixRow::Up ( ) [inline]

Definition at line 58 of file newmatrm.h.

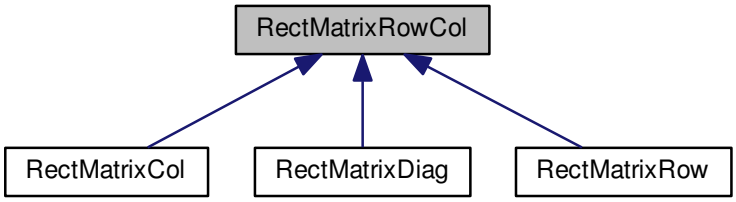
The documentation for this class was generated from the following files:

- newmat/include/newmatrm.h
- newmat/src/newmatrm.cpp

29.412 RectMatrixRowCol Class Reference

`#include <newmatrm.h>`

Inheritance diagram for RectMatrixRowCol:



Public Member Functions

- Real operator∗ (const RectMatrixRowCol &) const
- void AddScaled (const RectMatrixRowCol &, Real)
- void Divide (const RectMatrixRowCol &, Real)
- void Divide (Real)
- void Negate ()
- void Zero ()
- Real & operator[ ] (int i)
- Real SumSquare () const
- Real & First ()
- void DownDiag ()
- void UpDiag ()

Protected Member Functions

- RectMatrixRowCol (Real ∗st, int nx, int sp, int sh)
- void Reset (Real ∗st, int nx, int sp, int sh)

Protected Attributes

- Real ∗ store
- int n
- int spacing
- int shift

Friends

- void ComplexScale (RectMatrixCol &, RectMatrixCol &, Real, Real)
- void Rotate (RectMatrixCol &, RectMatrixCol &, Real, Real)

29.412.1 Detailed Description

Definition at line 16 of file newmatrm.h.

29.412.2 Constructor & Destructor Documentation

29.412.2.1 RectMatrixRowCol::RectMatrixRowCol (Real * *st,* int *nx,* int *sp,* int *sh*) [inline],[protected]

Definition at line 27 of file newmatrm.h.

29.412.3 Member Function Documentation

29.412.3.1 void RectMatrixRowCol::AddScaled (const RectMatrixRowCol & *rmrc,* Real *r*)

Definition at line 78 of file newmatrm.cpp.

29.412.3.2 void RectMatrixRowCol::Divide (const RectMatrixRowCol & *rmrc,* Real *r*)

Definition at line 93 of file newmatrm.cpp.

29.412.3.3 void RectMatrixRowCol::Divide (Real *r*)

Definition at line 107 of file newmatrm.cpp.

29.412.3.4 void RectMatrixRowCol::DownDiag ( ) [inline]

Definition at line 41 of file newmatrm.h.

29.412.3.5 Real& RectMatrixRowCol::First ( ) [inline]

Definition at line 40 of file newmatrm.h.

29.412.3.6 void RectMatrixRowCol::Negate ( )

Definition at line 115 of file newmatrm.cpp.

29.412.3.7 Real RectMatrixRowCol::operator* (const RectMatrixRowCol & *rmrc*) const

Definition at line 61 of file newmatrm.cpp.

29.412.3.8 Real& RectMatrixRowCol::operator[ ] (int *i*) [inline]

Definition at line 38 of file newmatrm.h.

29.412.3.9 void RectMatrixRowCol::Reset (Real * *st,* int *nx,* int *sp,* int *sh*) [inline],[protected]

Definition at line 29 of file newmatrm.h.

29.412.3.10 Real RectMatrixRowCol::SumSquare ( ) const

Definition at line 51 of file newmatrm.cpp.

29.412.3.11 void RectMatrixRowCol::UpDiag ( ) [inline]

Definition at line 42 of file newmatrm.h.

29.412.3.12 void RectMatrixRowCol::Zero ( )

Definition at line 123 of file newmatrm.cpp.

29.412.4 Friends And Related Function Documentation

29.412.4.1 void ComplexScale (RectMatrixCol & *U,* RectMatrixCol & *V,* Real *x,* Real *y*) [friend]

Definition at line 131 of file newmatrm.cpp.

29.412.4.2 void Rotate (RectMatrixCol & *U,* RectMatrixCol & *V,* Real *tau,* Real *s*) [friend]

Definition at line 155 of file newmatrm.cpp.

29.412.5 Member Data Documentation

29.412.5.1 int RectMatrixRowCol::n [protected]

Definition at line 24 of file newmatrm.h.

29.412.5.2 int RectMatrixRowCol::shift [protected]

Definition at line 26 of file newmatrm.h.

29.412.5.3 int RectMatrixRowCol::spacing [protected]

Definition at line 25 of file newmatrm.h.

29.412.5.4 Real* RectMatrixRowCol::store [protected]

Definition at line 23 of file newmatrm.h.

The documentation for this class was generated from the following files:

- newmat/include/newmatrm.h
- newmat/src/newmatrm.cpp

29.413 Go::LRSplineSurface::Refinement2D Struct Reference

`#include <LRSplineSurface.h>`

Public Member Functions

- void setVal (double val, double st, double e, Direction2D dir, int mult)

Public Attributes

- double kval
- double start
- double end
- Direction2D d
- int multiplicity

29.413.1 Detailed Description

Definition at line 71 of file LRSplineSurface.h.

29.413.2 Member Function Documentation

29.413.2.1 void Go::LRSplineSurface::Refinement2D::setVal (double *val,* double *st,* double *e,* Direction2D *dir,* int *mult*) [inline]

Definition at line 78 of file LRSplineSurface.h.

29.413.3 Member Data Documentation

29.413.3.1 Direction2D Go::LRSplineSurface::Refinement2D::d

Definition at line 75 of file LRSplineSurface.h.

29.413.3.2 double Go::LRSplineSurface::Refinement2D::end

Definition at line 74 of file LRSplineSurface.h.

29.413.3.3 double Go::LRSplineSurface::Refinement2D::kval

Definition at line 72 of file LRSplineSurface.h.

29.413.3.4 int Go::LRSplineSurface::Refinement2D::multiplicity

Definition at line 76 of file LRSplineSurface.h.

29.413.3.5 double Go::LRSplineSurface::Refinement2D::start

Definition at line 73 of file LRSplineSurface.h.

The documentation for this struct was generated from the following file:

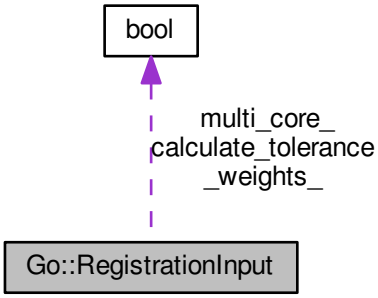
- lrsplines2D/include/GoTools/lrsplines2D/LRSplineSurface.h

29.414 Go::RegistrationInput Struct Reference

Struct for input to registration, either raw, fine or combined.

`#include <RegistrationUtils.h>`

Collaboration diagram for Go::RegistrationInput:



Public Member Functions

- RegistrationInput ()
- void setToleranceWeights (double w_rotation, double w_translation, double w_rescaling)

  Set the tolerance weights used in Newtons method.

Public Attributes

- double area_tolerance_sq_
- int max_newton_iterations_

  Maximum number of iterations in newton approach method.
- double newton_tolerance_

  Upper limit for when weighed sum of squares of changes in Newton's method requires us to break out of the loop.
- bool calculate_tolerance_weights_
- double tolerance_weight_rotation_

  The weight of the square of the change in the rotation vector, used in the Newtons method.
- double tolerance_weight_translation_

  The weight of the square of the change in the translation vector, used in the Newtons method.
- double tolerance_weight_rescale_

  The weight of the square of the change in the rescaling, used in the Newtons method.
- int max_solve_iterations_

  The maximum number of iterations used when solving the linear system in each iteration in Newtons method.
- double solve_tolerance_

  The tolerance used when solving the linear system in each iteration in Newtons method.
- bool multi_core_

  If true, and if OPENMP is included, run the fine registration in multicore.

29.414.1 Detailed Description

Struct for input to registration, either raw, fine or combined.

Definition at line 60 of file RegistrationUtils.h.

29.414.2 Constructor & Destructor Documentation

29.414.2.1 Go::RegistrationInput::RegistrationInput ( ) [inline]

Definition at line 63 of file RegistrationUtils.h.

29.414.3 Member Function Documentation

29.414.3.1 void Go::RegistrationInput::setToleranceWeights (double *w_rotation*, double *w_translation*, double *w_rescaling*) [inline]

Set the tolerance weights used in Newtons method.

Definition at line 113 of file RegistrationUtils.h.

29.414.4 Member Data Documentation

29.414.4.1 double Go::RegistrationInput::area_tolerance_sq_

The lower limit of the square of the sine value of the smallest angle in a triangle, to accept the triangle as good enough for a raw registration

Definition at line 80 of file RegistrationUtils.h.

29.414.4.2 bool Go::RegistrationInput::calculate_tolerance_weights_

If true, the result of the first iteration of Newtons method will set the weights for the calculation of the sqaures of changes used to check if we have reached a satisfactory result and should break out of Newtons method. The weights will be set relatively according to the changes, with 1.0 as the weight for the translation vector

Definition at line 92 of file RegistrationUtils.h.

29.414.4.3 int Go::RegistrationInput::max_newton_iterations_

Maximum number of iterations in newton approach method.

Definition at line 83 of file RegistrationUtils.h.

29.414.4.4 int Go::RegistrationInput::max_solve_iterations_

The maximum number of iterations used when solving the linear system in each iteration in Newtons method.

Definition at line 104 of file RegistrationUtils.h.

29.414.4.5 bool Go::RegistrationInput::multi_core_

If true, and if OPENMP is included, run the fine registration in multicore.

Definition at line 110 of file RegistrationUtils.h.

29.414.4.6 double Go::RegistrationInput::newton_tolerance_

Upper limit for when weighed sum of squares of changes in Newton's method requires us to break out of the loop.

Definition at line 86 of file RegistrationUtils.h.

29.414.4.7 double Go::RegistrationInput::solve_tolerance_

The tolerance used when solving the linear system in each iteration in Newtons method.

Definition at line 107 of file RegistrationUtils.h.

29.414.4.8 double Go::RegistrationInput::tolerance_weight_rescale_

The weight of the square of the change in the rescaling, used in the Newtons method.

Definition at line 101 of file RegistrationUtils.h.

29.414.4.9 double Go::RegistrationInput::tolerance_weight_rotation_

The weight of the square of the change in the rotation vector, used in the Newtons method.

Definition at line 95 of file RegistrationUtils.h.

29.414.4.10 double Go::RegistrationInput::tolerance_weight_translation_

The weight of the square of the change in the translation vector, used in the Newtons method.

Definition at line 98 of file RegistrationUtils.h.

The documentation for this struct was generated from the following file:

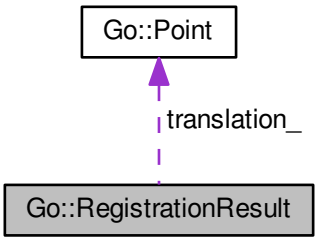
- gotools-core/include/GoTools/utils/RegistrationUtils.h

29.415 Go::RegistrationResult Struct Reference

Struct for result from registration process, either raw, fine or combined.

`#include <RegistrationUtils.h>`

Collaboration diagram for Go::RegistrationResult:



Public Member Functions

- bool ok ()

  Return wether the result of the registration was RegistrationOK.

Public Attributes

- RegistrationReturnType result_type_

  The result type of the registration process, either OK or an error code.
- std::vector< std::vector< double > > rotation_matrix_

  The rotation matrix of the registration.
- Point translation_

  The translation of the registration (to be performed after rescaling and rotation)
- double rescaling_

  The rescaling factor of the registration;.
- int last_newton_iteration_
- double last_change_
- int solve_result_

29.415.1 Detailed Description

Struct for result from registration process, either raw, fine or combined.

Definition at line 123 of file RegistrationUtils.h.

29.415.2 Member Function Documentation

29.415.2.1 bool Go::RegistrationResult::ok ( ) [inline]

Return wether the result of the registration was RegistrationOK.

Definition at line 154 of file RegistrationUtils.h.

29.415.3 Member Data Documentation

29.415.3.1 double Go::RegistrationResult::last_change_

The last weighed sum of squares of changes in Newton's method Only used for fine registration

Definition at line 147 of file RegistrationUtils.h.

29.415.3.2 int Go::RegistrationResult::last_newton_iteration_

The iteration number (starting at 0) of the last newton iteration, or the maximum number of iterations if the weighed sum of squares of changes never became smaller than the tolerance limit. Only used for fine registration

Definition at line 143 of file RegistrationUtils.h.

29.415.3.3 double Go::RegistrationResult::rescaling_

The rescaling factor of the registration;.

Definition at line 137 of file RegistrationUtils.h.

29.415.3.4 RegistrationReturnType Go::RegistrationResult::result_type_

The result type of the registration process, either OK or an error code.

Definition at line 128 of file RegistrationUtils.h.

29.415.3.5 std::vector<std::vector<double> > Go::RegistrationResult::rotation_matrix_

The rotation matrix of the registration.

Definition at line 131 of file RegistrationUtils.h.

29.415.3.6 int Go::RegistrationResult::solve_result_

The return value of the last attempt to solve the linear system in the Newtons method iterations Only used for fine registration

Definition at line 151 of file RegistrationUtils.h.

29.415.3.7 Point Go::RegistrationResult::translation_

The translation of the registration (to be performed after rescaling and rotation)

Definition at line 134 of file RegistrationUtils.h.

The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/utils/RegistrationUtils.h

29.416 Go::Registrator< T > Class Template Reference

`#include <Factory.h>`

Public Member Functions

- Registrator ()

29.416.1 Detailed Description

template<class T>
class Go::Registrator< T >

Work around for compilation problems.On some compilators (ie., VS6), the Register() function cannot be used directly. To work around this, we wrap it in the constructor of a dummy class, which we call registrator. With other words, in order to register the class 'DerivedClass' (supposedly inheriting from GeomObject), we type:

```
Registrator<DerivedClass> r
```

.

Definition at line 174 of file Factory.h.

29.416.2 Constructor & Destructor Documentation

29.416.2.1 template<class T > Go::Registrator< T >::Registrator ( ) [inline]

Definition at line 177 of file Factory.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Factory.h

29.417 Go::RegularizeFace Class Reference

Split one face into a number of 4-sided domains without inner trimming. This class is intended for use in block structuring. One face with possible inner and outer trimming is split according to certain rules to result in a face set with 4 sided faces although faces with less than 4 sides can occur. A side is defined as a piece of the face boundary between two corners or between vertices where there are more than one adjacent face. The trimmed surfaces being output from this class can later be approximated by spline surfaces. The splitting procedure is recursive.

`#include <RegularizeFace.h>`

Public Member Functions

- RegularizeFace (shared_ptr< ftSurface > face, double epsge, double angtol, double tol2, bool split_in_cand=false)

  Constructor.
- RegularizeFace (shared_ptr< ftSurface > face, double epsge, double angtol, double tol2, double bend, bool split_in_cand=false)

  Constructor.
- RegularizeFace (shared_ptr< ftSurface > face, shared_ptr< SurfaceModel > model, bool split_in_cand=false)

  Constructor.
- ~RegularizeFace ()

  Destructor.
- void setAxis (Point &centre, Point &axis)
- void unsetAxis ()
- void setCandSplit (std::vector< std::pair< std::pair< Point, int >, std::pair< Point, int > > > cand_split)
- void setNonTjointFaces (std::vector< shared_ptr< ftSurface > > &faces)

  Set information about faces not to be the cause of T-joint splitting.
- void setSplitMode (int split_mode)
- void classifyVertices ()
- std::vector< shared_ptr< ftSurface > > getRegularFaces ()

  Fetch result.
- std::vector< Point > getSeamJointInfo () const

  Fetch info about removed seams.
- void setDivideInT (bool divideInT)

  Decides whether T-joint splitting should be performed at face level.
- std::vector< std::pair< Point, Point > > fetchVxPntCorr ()

  Fetch info about point corrspondance.

29.417.1 Detailed Description

Split one face into a number of 4-sided domains without inner trimming. This class is intended for use in block structuring. One face with possible inner and outer trimming is split according to certain rules to result in a face set with 4 sided faces although faces with less than 4 sides can occur. A side is defined as a piece of the face boundary between two corners or between vertices where there are more than one adjacent face. The trimmed surfaces being output from this class can later be approximated by spline surfaces. The splitting procedure is recursive.

Definition at line 58 of file RegularizeFace.h.

29.417.2 Constructor & Destructor Documentation

29.417.2.1 Go::RegularizeFace::RegularizeFace (shared_ptr< ftSurface > *face,* double *epsge,* double *angtol,* double *tol2,* bool *split_in_cand* = false)

Constructor.

29.417.2.2 Go::RegularizeFace::RegularizeFace (shared_ptr< ftSurface > *face,* double *epsge,* double *angtol,* double *tol2,* double *bend,* bool *split_in_cand* = false)

Constructor.

29.417.2.3 Go::RegularizeFace::RegularizeFace (shared_ptr< ftSurface > *face,* shared_ptr< SurfaceModel > *model,* bool *split_in_cand* = false)

Constructor.

29.417.2.4 Go::RegularizeFace::~RegularizeFace ( )

Destructor.

29.417.3 Member Function Documentation

29.417.3.1 void Go::RegularizeFace::classifyVertices ( )

Classify vertices according to significance. Mark vertices that should not trigger splitting

29.417.3.2 std::vector<std::pair<Point, Point> > Go::RegularizeFace::fetchVxPntCorr ( ) [inline]

Fetch info about point corrspondance.

Definition at line 124 of file RegularizeFace.h.

29.417.3.3 std::vector<shared_ptr<ftSurface> > Go::RegularizeFace::getRegularFaces ( )

Fetch result.

29.417.3.4 std::vector<Point> Go::RegularizeFace::getSeamJointInfo ( ) const [inline]

Fetch info about removed seams.

Definition at line 112 of file RegularizeFace.h.

29.417.3.5 void Go::RegularizeFace::setAxis (Point & *centre,* Point & *axis*)

Set information about the centre of the current face to the regularization of sub faces

29.417.3.6 void Go::RegularizeFace::setCandSplit (std::vector< std::pair< std::pair< Point, int >, std::pair< Point, int > > > *cand_split*) [inline]

Set info about splitting performed in opposite faces in a body. Used from RegularizeFaceSet.

Definition at line 87 of file RegularizeFace.h.

29.417.3.7 void Go::RegularizeFace::setDivideInT (bool *divideInT*) [inline]

Decides whether T-joint splitting should be performed at face level.

Definition at line 118 of file RegularizeFace.h.

29.417.3.8 void Go::RegularizeFace::setNonTjointFaces (std::vector< shared_ptr< ftSurface > > & *faces*) [inline]

Set information about faces not to be the cause of T-joint splitting.

Definition at line 94 of file RegularizeFace.h.

29.417.3.9 void Go::RegularizeFace::setSplitMode (int *split_mode*) [inline]

Definition at line 99 of file RegularizeFace.h.

29.417.3.10 void Go::RegularizeFace::unsetAxis ( )

The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/RegularizeFace.h

29.418 Go::RegularizeFaceSet Class Reference

`#include <RegularizeFaceSet.h>`

Public Member Functions

- RegularizeFaceSet (std::vector< shared_ptr< ftSurface > > faces, double epsge, double angtol, bool split_in_cand=false)
  Constructor.
- RegularizeFaceSet (std::vector< shared_ptr< ftSurface > > faces, double gap, double neighbour, double kink, double bend, bool split_in_cand=false)
- RegularizeFaceSet (shared_ptr< SurfaceModel > model, bool split_in_cand=false)
  Constructor.
- ~RegularizeFaceSet ()
  Destructor.
- void setSplitMode (int split_mode)
- void setFaceCorrespondance (int idx1, int idx2)
  Set information.
- std::vector< shared_ptr< ftSurface > > getRegularFaces (bool reverse_sequence=false)
  Fetch result.
- shared_ptr< SurfaceModel > getRegularModel (bool reverse_sequence=false)
  Return the resulting face set as a surface model.
- std::vector< std::pair< Point, Point > > fetchVxPntCorr ()
  Fetch info about point corrspondance.
- std::vector< SurfaceModel * > getModifiedAdjacentModels ()

29.418.1 Detailed Description

Split a set of faces into a number of 4-sided domains without inner trimming. This class is intended for use in block structuring. A set of faces with possible inner and outer trimming is split according to certain rules to result in a face set with 4 sided faces although faces with less than 4 sides can occur. A side is defined as a piece of the face boundary between two corners or between vertices where there are more than one adjacent face. The trimmed surfaces being output from this class can later be approximated by spline surfaces.

Definition at line 61 of file RegularizeFaceSet.h.

29.418.2 Constructor & Destructor Documentation

29.418.2.1 Go::RegularizeFaceSet::RegularizeFaceSet (std::vector< shared_ptr< ftSurface > > *faces*, double *epsge*, double *angtol*, bool *split_in_cand* = false)

Constructor.

29.418.2.2 Go::RegularizeFaceSet::RegularizeFaceSet (std::vector< shared_ptr< ftSurface > > *faces*, double *gap*, double *neighbour*, double *kink*, double *bend*, bool *split_in_cand* = false)

29.418.2.3 Go::RegularizeFaceSet::RegularizeFaceSet (shared_ptr< SurfaceModel > *model*, bool *split_in_cand* = false)

Constructor.

29.418.2.4 Go::RegularizeFaceSet::~RegularizeFaceSet ( )

Destructor.

29.418.3 Member Function Documentation

29.418.3.1 std::vector<std::pair<Point, Point> > Go::RegularizeFaceSet::fetchVxPntCorr ( ) [inline]

Fetch info about point corrspondance.

Definition at line 93 of file RegularizeFaceSet.h.

29.418.3.2 std::vector<SurfaceModel*> Go::RegularizeFaceSet::getModifiedAdjacentModels ( ) [inline]

Fetch info about adjacent surface models that are modified due to changes in the current model

Definition at line 100 of file RegularizeFaceSet.h.

29.418.3.3 std::vector<shared_ptr<ftSurface> > Go::RegularizeFaceSet::getRegularFaces (bool *reverse_sequence* = false)

Fetch result.

29.418.3.4 shared_ptr<SurfaceModel> Go::RegularizeFaceSet::getRegularModel (bool *reverse_sequence* = false)

Return the resulting face set as a surface model.

29.418.3.5 void Go::RegularizeFaceSet::setFaceCorrespondance (int *idx1*, int *idx2*)

Set information.

29.418.3.6 void Go::RegularizeFaceSet::setSplitMode (int *split_mode*) [inline]

Definition at line 78 of file RegularizeFaceSet.h.

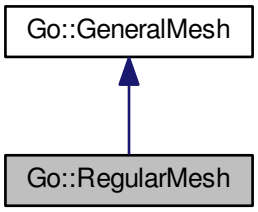
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/RegularizeFaceSet.h

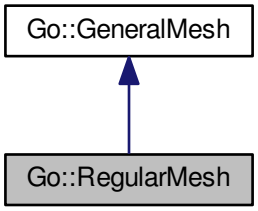
29.419 Go::RegularMesh Class Reference

`#include <RegularMesh.h>`

Inheritance diagram for Go::RegularMesh:



Collaboration diagram for Go::RegularMesh:



Public Member Functions

- RegularMesh (int m=20, int n=20, bool use_normals=true, bool use_texcoords=false)
- virtual ~RegularMesh ()

  Destructor.
- bool useNormals ()

  Check if normals will be computed.
- bool useTexCoords ()

  Check if texture coordinates will be computed.
- int numStrips ()

  Number of strips.
- int stripLength ()
- virtual int numTriangles ()

  The total number of triangles.
- virtual int numVertices ()

Number of vertices.

- void resize (int m, int n)

  Change mesh size.
- virtual double * vertexArray ()

  Fetch all nodes.
- virtual double * paramArray ()

  Fetch parameter values corresponding to the nodes.
- virtual int atBoundary (int idx)

  Check if a given node lies at the boundary.
- double * normalArray ()

  Normal information.
- double * texcoordArray ()

  Texture coordinate information.
- unsigned int * stripArray ()
- Triangle * triangleArray ()
- virtual unsigned int * triangleIndexArray ()

  Indices of nodes belonging to each triangle.
- virtual RegularMesh * asRegularMesh ()

  Casting. Return as regular mesh.
- void translate (const std::vector< double > &vert_translation)

  Translate all vertices by vert_translation, wrt the geometry.

Additional Inherited Members

29.419.1 Detailed Description

Simple triangulation class, designed to store data for GL visualizing with triangle strips. Vertices are stored in x1 y1 z1 x2 y2 z2... format. Triangles are stored as startindices into the stripe array. Based on earlier work.

Definition at line 68 of file RegularMesh.h.

29.419.2 Constructor & Destructor Documentation

29.419.2.1 Go::RegularMesh::RegularMesh (int *m* = 20, int *n* = 20, bool *use_normals* = true, bool *use_texcoords* = false)

Constructor. Give mesh size. Set whether or not normals and texture coordinates should be computed 010613: To me it seems that 'm' and 'n' is the dimension of the (rectangular) grid of vertices, i.e., that in total there will be (m-1)*(n-1)*2 triangles. Trying to fix things using this assumption... (jon)

29.419.2.2 virtual Go::RegularMesh::~RegularMesh ( ) [virtual]

Destructor.

29.419.3 Member Function Documentation

29.419.3.1 virtual RegularMesh* Go::RegularMesh::asRegularMesh ( ) [virtual]

Casting. Return as regular mesh.

Reimplemented from Go::GeneralMesh.

29.419.3.2 virtual int Go::RegularMesh::atBoundary (int *idx*) [virtual]

Check if a given node lies at the boundary.

Implements Go::GeneralMesh.

29.419.3.3 double* Go::RegularMesh::normalArray ( ) [inline]

Normal information.

Definition at line 119 of file RegularMesh.h.

29.419.3.4 int Go::RegularMesh::numStrips ( ) [inline]

Number of strips.

Definition at line 95 of file RegularMesh.h.

29.419.3.5 virtual int Go::RegularMesh::numTriangles ( ) [inline], [virtual]

The total number of triangles.

Reimplemented from Go::GeneralMesh.

Definition at line 104 of file RegularMesh.h.

29.419.3.6 virtual int Go::RegularMesh::numVertices ( ) [inline], [virtual]

Number of vertices.

Implements Go::GeneralMesh.

Definition at line 108 of file RegularMesh.h.

29.419.3.7 virtual double* Go::RegularMesh::paramArray ( ) [inline], [virtual]

Fetch parameter values corresponding to the nodes.

Implements Go::GeneralMesh.

Definition at line 116 of file RegularMesh.h.

29.419.3.8 void Go::RegularMesh::resize (int *m*, int *n*)

Change mesh size.

29.419.3.9 unsigned int* Go::RegularMesh::stripArray ( ) [inline]

Definition at line 122 of file RegularMesh.h.

29.419.3.10 int Go::RegularMesh::stripLength ( ) [inline]

The number of vertices in a strip (i.e the number of triangles in a strip+ 2).

Definition at line 100 of file RegularMesh.h.

29.419.3.11 double* Go::RegularMesh::texcoordArray ( ) [inline]

Texture coordinate information.

Definition at line 121 of file RegularMesh.h.

29.419.3.12 void Go::RegularMesh::translate (const std::vector< double > & *vert_translation*)

Translate all vertices by vert_translation, wrt the geometry.

29.419.3.13 Triangle* Go::RegularMesh::triangleArray ( ) [inline]

Definition at line 123 of file RegularMesh.h.

29.419.3.14 virtual unsigned int* Go::RegularMesh::triangleIndexArray ( ) [inline], [virtual]

Indices of nodes belonging to each triangle.

Implements Go::GeneralMesh.

Definition at line 124 of file RegularMesh.h.

29.419.3.15 bool Go::RegularMesh::useNormals ( ) [inline]

Check if normals will be computed.

Definition at line 87 of file RegularMesh.h.

29.419.3.16 bool Go::RegularMesh::useTexCoords ( ) [inline]

Check if texture coordinates will be computed.

Definition at line 91 of file RegularMesh.h.

29.419.3.17 virtual double* Go::RegularMesh::vertexArray ( ) [inline], [virtual]

Fetch all nodes.

Implements Go::GeneralMesh.

Definition at line 115 of file RegularMesh.h.

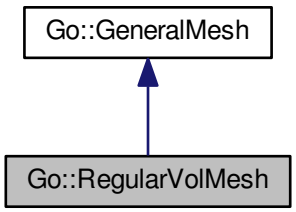
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/RegularMesh.h

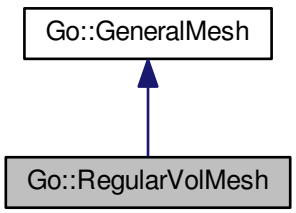
29.420 Go::RegularVolMesh Class Reference

`#include <RegularVolMesh.h>`

Inheritance diagram for Go::RegularVolMesh:



Collaboration diagram for Go::RegularVolMesh:



Public Member Functions

- RegularVolMesh (int m=20, bool use_normals=true, bool use_texcoords=false)
- virtual ~RegularVolMesh ()

  Destructor.
- bool useNormals ()

  Check if normals will be computed.
- bool useTexCoords ()

  Check if texture coordinates will be computed.
- int numStrips ()

  Number of strips.
- int stripLength ()
- virtual int numTriangles ()

  The total number of triangles.
- virtual int numVertices ()

  Number of vertices.
- void resize (int m)

  Change mesh size.
- virtual double * vertexArray ()

  Fetch all nodes.
- virtual double * paramArray ()

  Fetch parameter values corresponding to the nodes.
- virtual int atBoundary (int idx)

  Check if a given node lies at the boundary.
- double * normalArray ()

  Normal information.
- double * texcoordArray ()

  Texture coordinate information.
- unsigned int * stripArray ()
- Triangle * triangleArray ()
- virtual unsigned int * triangleIndexArray ()

  Indices of nodes belonging to each triangle.
- virtual RegularMesh * asRegularMesh ()

  Casting. Return as regular mesh.

Additional Inherited Members

29.420.1 Detailed Description

Simple triangulation class, designed to store data for GL visualizing with triangle strips. Vertices are stored in x1 y1 z1 x2 y2 z2... format. Triangles are stored as startindices into the stripe array. Based on earlier work.

Definition at line 56 of file RegularVolMesh.h.

29.420.2 Constructor & Destructor Documentation

29.420.2.1 Go::RegularVolMesh::RegularVolMesh (int *m* = 20, bool *use_normals* = true, bool *use_texcoords* = false)

Constructor. Give mesh size. Set whether or not normals and texture coordinates should be computed 010613: To me it seems that 'm' and 'n' is the dimension of the (rectangular) grid of vertices, i.e., that in total there will be (m-1)*(n-1)*2 triangles. Trying to fix things using this assumption... (jon)

29.420.2.2 virtual Go::RegularVolMesh::~RegularVolMesh ( ) [virtual]

Destructor.

29.420.3 Member Function Documentation

29.420.3.1 virtual RegularMesh* Go::RegularVolMesh::asRegularMesh ( ) [virtual]

Casting. Return as regular mesh.

Reimplemented from Go::GeneralMesh.

29.420.3.2 virtual int Go::RegularVolMesh::atBoundary (int *idx*) [virtual]

Check if a given node lies at the boundary.

Implements Go::GeneralMesh.

29.420.3.3 double* Go::RegularVolMesh::normalArray ( ) [inline]

Normal information.

Definition at line 107 of file RegularVolMesh.h.

29.420.3.4 int Go::RegularVolMesh::numStrips ( ) [inline]

Number of strips.

Definition at line 83 of file RegularVolMesh.h.

29.420.3.5 virtual int Go::RegularVolMesh::numTriangles ( ) [inline], [virtual]

The total number of triangles.

Reimplemented from Go::GeneralMesh.

Definition at line 92 of file RegularVolMesh.h.

29.420.3.6 virtual int Go::RegularVolMesh::numVertices ( ) [inline], [virtual]

Number of vertices.

Implements Go::GeneralMesh.

Definition at line 96 of file RegularVolMesh.h.

29.420.3.7 virtual double* Go::RegularVolMesh::paramArray ( ) [inline], [virtual]

Fetch parameter values corresponding to the nodes.

Implements Go::GeneralMesh.

Definition at line 104 of file RegularVolMesh.h.

29.420.3.8 void Go::RegularVolMesh::resize (int *m*)

Change mesh size.

29.420.3.9 unsigned int* Go::RegularVolMesh::stripArray ( ) [inline]

Definition at line 110 of file RegularVolMesh.h.

29.420.3.10 int Go::RegularVolMesh::stripLength ( ) [inline]

The number of vertices in a strip (i.e the number of triangles in a strip+ 2).

Definition at line 88 of file RegularVolMesh.h.

29.420.3.11 double* Go::RegularVolMesh::texcoordArray ( ) [inline]

Texture coordinate information.

Definition at line 109 of file RegularVolMesh.h.

29.420.3.12 Triangle* Go::RegularVolMesh::triangleArray ( ) [inline]

Definition at line 111 of file RegularVolMesh.h.

29.420.3.13 virtual unsigned int* Go::RegularVolMesh::triangleIndexArray ( ) [inline], [virtual]

Indices of nodes belonging to each triangle.

Implements Go::GeneralMesh.

Definition at line 112 of file RegularVolMesh.h.

29.420.3.14 bool Go::RegularVolMesh::useNormals ( ) [inline]

Check if normals will be computed.

Definition at line 75 of file RegularVolMesh.h.

29.420.3.15 bool Go::RegularVolMesh::useTexCoords ( ) [inline]

Check if texture coordinates will be computed.

Definition at line 79 of file RegularVolMesh.h.

29.420.3.16 virtual double* Go::RegularVolMesh::vertexArray ( ) [inline], [virtual]

Fetch all nodes.

Implements Go::GeneralMesh.

Definition at line 103 of file RegularVolMesh.h.

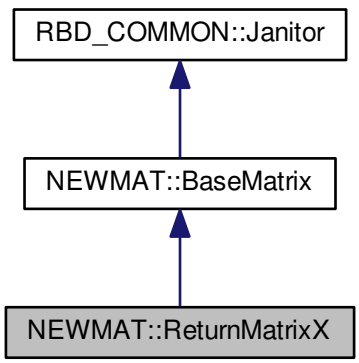
The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/RegularVolMesh.h

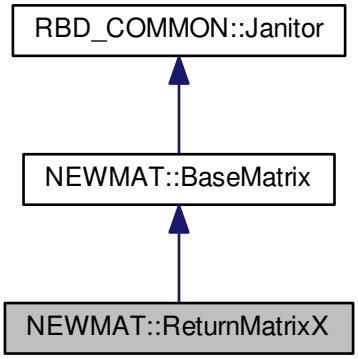
29.421 NEWMAT::ReturnMatrixX Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::ReturnMatrixX:



Collaboration diagram for NEWMAT::ReturnMatrixX:



Public Member Functions

- ~ReturnMatrixX ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- ReturnMatrixX (const ReturnMatrixX &tm)
- ReturnMatrixX (const GeneralMatrix *gmx)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix

Additional Inherited Members

29.421.1 Detailed Description

Definition at line 1466 of file newmat.h.

29.421.2 Constructor & Destructor Documentation

29.421.2.1 NEWMAT::ReturnMatrixX::~ReturnMatrixX ( ) [inline]

Definition at line 1471 of file newmat.h.

29.421.2.2 NEWMAT::ReturnMatrixX::ReturnMatrixX (const ReturnMatrixX & *tm*) [inline]

Definition at line 1477 of file newmat.h.

29.421.2.3 NEWMAT::ReturnMatrixX::ReturnMatrixX (const GeneralMatrix * *gmx*) [inline]

Definition at line 1479 of file newmat.h.

29.421.3 Member Function Documentation

29.421.3.1 MatrixBandWidth ReturnMatrixX::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 485 of file newmat4.cpp.

29.421.3.2 GeneralMatrix * ReturnMatrixX::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Implements NEWMAT::BaseMatrix.

Definition at line 376 of file newmat5.cpp.

29.421.4 Friends And Related Function Documentation

29.421.4.1 friend class BaseMatrix [friend]

Definition at line 1473 of file newmat.h.

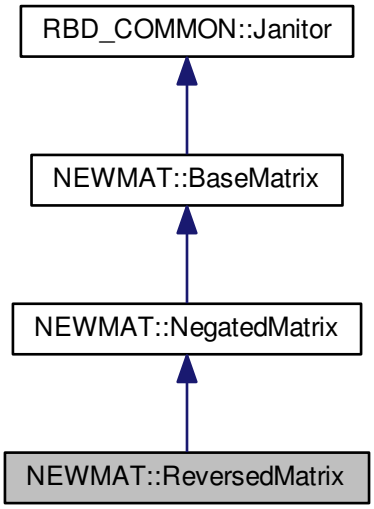
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

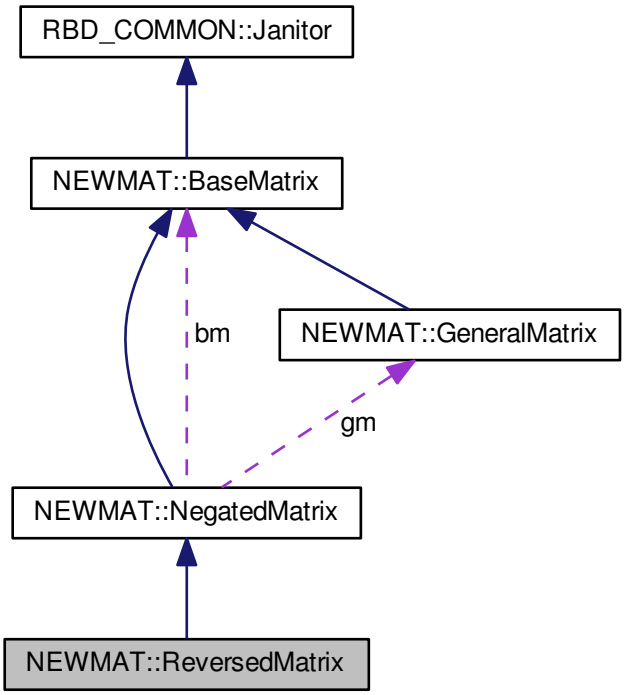
29.422 NEWMAT::ReversedMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::ReversedMatrix:



Collaboration diagram for NEWMAT::ReversedMatrix:



Public Member Functions

- ~ReversedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)

Friends

- class BaseMatrix

Additional Inherited Members

29.422.1 Detailed Description

Definition at line 1392 of file newmat.h.

29.422.2 Constructor & Destructor Documentation

29.422.2.1 NEWMAT::ReversedMatrix::~ReversedMatrix ( ) [inline]

Definition at line 1397 of file newmat.h.

29.422.3 Member Function Documentation

29.422.3.1 GeneralMatrix * ReversedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 251 of file newmat5.cpp.

29.422.4 Friends And Related Function Documentation

29.422.4.1 friend class BaseMatrix [friend]

Definition at line 1395 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat5.cpp

29.423 Go::RotatedBox Class Reference

```
#include <RotatedBox.h>
```

Public Member Functions

- template<typename RandomAccessIterator >
  RotatedBox (RandomAccessIterator start, int dim, int num_u, int num_v, const Point *axis)
- RotatedBox (const Point &low, const Point &high, const Point *axis)
- ~RotatedBox ()

  Do not inherit from this class – nonvirtual destructor.
- template<typename RandomAccessIterator >
  void setFromArray (RandomAccessIterator start, int dim, int num_u, int num_v)
- void setFromPoints (const Point &low, const Point &high)
- int dimension () const

  The dimension of the rotated box.
- const Point & low () const
- const Point & high () const
- const Point low_rot () const
- const Point high_rot () const
- const CompositeBox & box () const
- bool containsPoint (const Point &pt, double toli=0.0, double tole=0.0) const
- bool overlaps (const RotatedBox &box, double toli=0.0, double tole=0.0) const
- bool containsBox (const RotatedBox &box, double toli=0.0, double tole=0.0) const

29.423.1 Detailed Description

A rotated version of CompositeBox. It works in the same way, except that the boxes are aligned with an arbitrary (given) coordinate system.

Definition at line 57 of file RotatedBox.h.

29.423.2 Constructor & Destructor Documentation

29.423.2.1 template<typename RandomAccessIterator > Go::RotatedBox::RotatedBox (RandomAccessIterator *start,* int *dim,* int *num_u,* int *num_v,* const Point * *axis*) [inline]

Given an array of dim-dimensional points and a coordinate system given by (axis[0], axis[1], axis[0] x axis[1]), construct a rotated box containing all points. If in 2D, coordinate system is (axis[0], Rot(Pi/2)*axis[0])

Definition at line 65 of file RotatedBox.h.

29.423.2.2 Go::RotatedBox::RotatedBox (const Point & *low,* const Point & *high,* const Point * *axis*) [inline]

Creates a RotatedBox with the Point low specifying the lower bound in all dimensions and high specifying the upper bound. The inner and edge boxes are equal.

Definition at line 80 of file RotatedBox.h.

29.423.2.3 Go::RotatedBox::~RotatedBox ( ) [inline]

Do not inherit from this class – nonvirtual destructor.

Definition at line 90 of file RotatedBox.h.

29.423.3 Member Function Documentation

29.423.3.1 const CompositeBox& Go::RotatedBox::box ( ) const [inline]

The composite box. WARNING: The coordinates of this box must be interpreted in the coordinate system given by coordsystem().

Definition at line 211 of file RotatedBox.h.

29.423.3.2 bool Go::RotatedBox::containsBox (const RotatedBox & *box,* double *toli* = 0.0, double *tole* = 0.0) const [inline]

Returns true if this box contain the box passed as a parameter,up to tolerances. Tolerances may be specified separately for inner and edge boxes.

Definition at line 258 of file RotatedBox.h.

29.423.3.3 bool Go::RotatedBox::containsPoint (const Point & *pt,* double *toli* = 0.0, double *tole* = 0.0) const [inline]

Returns true if the point pt is inside the box, up to tolerances. Tolerances may be specified separately for inner and edge boxes.

Definition at line 219 of file RotatedBox.h.

29.423.3.4 int Go::RotatedBox::dimension ( ) const [inline]

The dimension of the rotated box.

Definition at line 156 of file RotatedBox.h.

29.423.3.5 const Point& Go::RotatedBox::high ( ) const [inline]

The upper bound of the bounding box, in coordinate system of rotated box.

Definition at line 170 of file RotatedBox.h.

29.423.3.6 const Point Go::RotatedBox::high_rot ( ) const [inline]

The upper bound of the bounding box, in standard coordinate system.

Definition at line 194 of file RotatedBox.h.

29.423.3.7 const Point& Go::RotatedBox::low ( ) const [inline]

The lower bound of the bounding box, in coordinate system of rotated box.

Definition at line 163 of file RotatedBox.h.

29.423.3.8 const Point Go::RotatedBox::low_rot ( ) const [inline]

The lower bound of the bounding box, in standard coordinate system.

Definition at line 177 of file RotatedBox.h.

29.423.3.9 bool Go::RotatedBox::overlaps (const RotatedBox & *box,* double *toli* = 0.0, double *tole* = 0.0) const [inline]

Returns true if the two boxes overlap, up to tolerances. Tolerances may be specified separately for inner and edge boxes.

Definition at line 238 of file RotatedBox.h.

29.423.3.10 template<typename RandomAccessIterator > void Go::RotatedBox::setFromArray (RandomAccessIterator *start,* int *dim,* int *num_u,* int *num_v*) [inline]

Given an array of dim-dimensional points stored as doubles or floats, makes the smallest composite box containing all points in the array. The array must be like a control point grid, with num_u points in the fastest running direction, and num_v points in the other direction. For curves, use num_v = 1.

Definition at line 101 of file RotatedBox.h.

29.423.3.11 void Go::RotatedBox::setFromPoints (const Point & *low,* const Point & *high*) [inline]

Makes the bounding box have lower bounds as specified in low and upper bounds as specified in high.

Definition at line 136 of file RotatedBox.h.

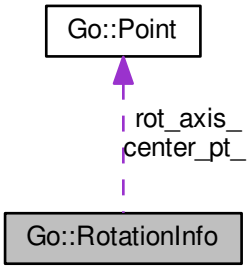
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/RotatedBox.h

29.424 Go::RotationInfo Struct Reference

`#include <cmUtils.h>`

Collaboration diagram for Go::RotationInfo:



Public Attributes

- Go::Point center_pt_
- Go::Point rot_axis_
- double rot_angle_

  Measured in radians.

29.424.1 Detailed Description

Definition at line 53 of file cmUtils.h.

29.424.2 Member Data Documentation

29.424.2.1 Go::Point Go::RotationInfo::center_pt_

Definition at line 55 of file cmUtils.h.

29.424.2.2 double Go::RotationInfo::rot_angle_

Measured in radians.

Definition at line 57 of file cmUtils.h.

29.424.2.3 Go::Point Go::RotationInfo::rot_axis_

Definition at line 56 of file cmUtils.h.

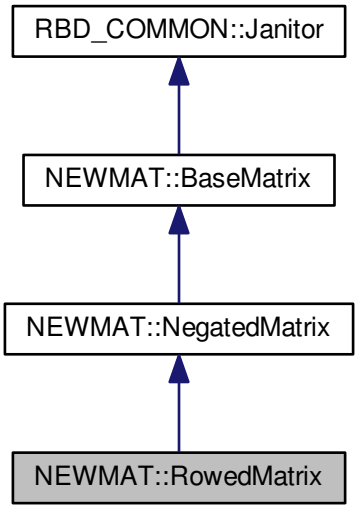
The documentation for this struct was generated from the following file:

- compositemodel/include/GoTools/compositemodel/cmUtils.h

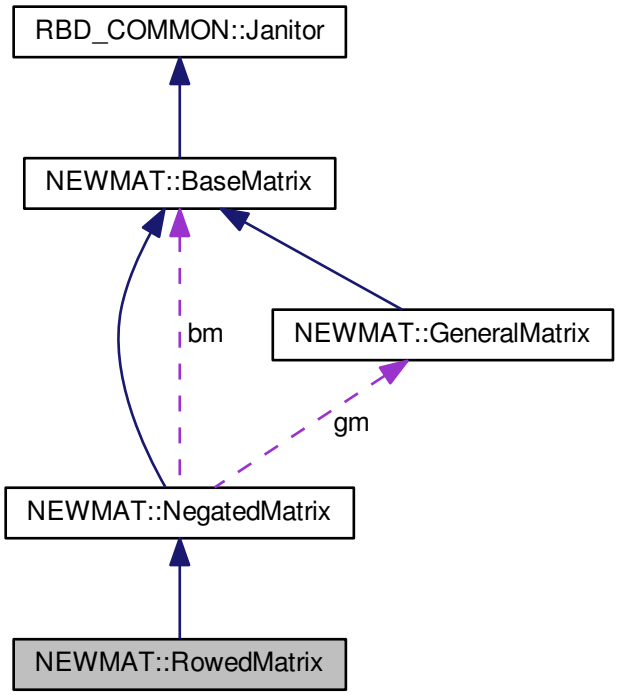
29.425 NEWMAT::RowedMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::RowedMatrix:



Collaboration diagram for NEWMAT::RowedMatrix:



Public Member Functions

- ~RowedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix

Additional Inherited Members

29.425.1 Detailed Description

Definition at line 1420 of file newmat.h.

29.425.2 Constructor & Destructor Documentation

29.425.2.1 NEWMAT::RowedMatrix::~RowedMatrix ( ) [inline]

Definition at line 1425 of file newmat.h.

29.425.3 Member Function Documentation

29.425.3.1 MatrixBandWidth RowedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 481 of file newmat4.cpp.

29.425.3.2 GeneralMatrix * RowedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 290 of file newmat5.cpp.

29.425.4 Friends And Related Function Documentation

29.425.4.1 friend class BaseMatrix [friend]

Definition at line 1423 of file newmat.h.

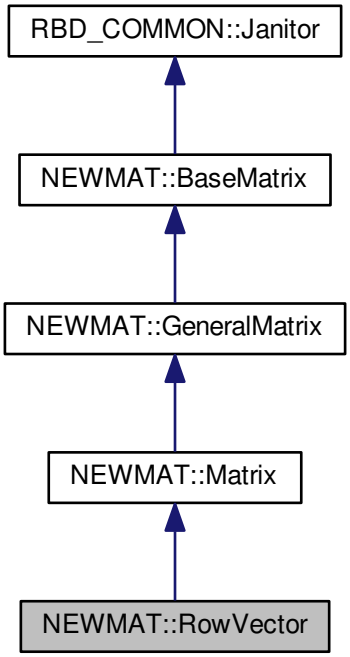
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

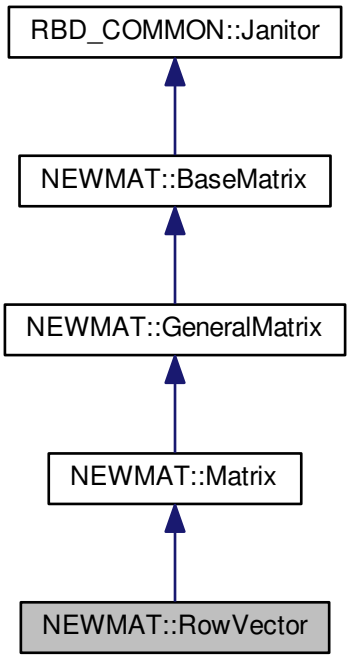
29.426 NEWMAT::RowVector Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::RowVector:



Collaboration diagram for NEWMAT::RowVector:



Public Member Functions

- RowVector ()
- ~RowVector ()
- RowVector (ArrayLengthSpecifier n)
- RowVector (const BaseMatrix &)
- RowVector (const RowVector &gm)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- void operator= (const RowVector &m)
- Real & operator() (int)
- Real & element (int)
- Real operator() (int) const
- Real element (int) const
- MatrixType Type () const
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &)
- void NextCol (MatrixRowCol &)
- void NextCol (MatrixColX &)
- void RestoreCol (MatrixRowCol &)
- void RestoreCol (MatrixColX &c)
- GeneralMatrix * Transpose (TransposedMatrix *, MatrixType)
- void ReSize (int)
- void ReSize (int, int)
- void ReSize (const GeneralMatrix &A)
- Real * nric () const
- void CleanUp ()

Additional Inherited Members

29.426.1 Detailed Description

Definition at line 792 of file newmat.h.

29.426.2 Constructor & Destructor Documentation

29.426.2.1 NEWMAT::RowVector::RowVector ( ) [inline]

Definition at line 796 of file newmat.h.

29.426.2.2 NEWMAT::RowVector::~RowVector ( ) [inline]

Definition at line 797 of file newmat.h.

29.426.2.3 NEWMAT::RowVector::RowVector (ArrayLengthSpecifier *n*) [inline]

Definition at line 798 of file newmat.h.

29.426.2.4 NEWMAT::RowVector::RowVector (const BaseMatrix &)

29.426.2.5 NEWMAT::RowVector::RowVector (const RowVector & *gm*) [inline]

Definition at line 800 of file newmat.h.

29.426.3 Member Function Documentation

29.426.3.1 void RowVector::CleanUp ( ) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 832 of file newmat4.cpp.

29.426.3.2 Real& NEWMAT::RowVector::element (int)

29.426.3.3 Real NEWMAT::RowVector::element (int) const

29.426.3.4 void NEWMAT::RowVector::GetCol (MatrixRowCol &) [virtual]

Reimplemented from NEWMAT::Matrix.

29.426.3.5 void NEWMAT::RowVector::GetCol (MatrixColX &) [virtual]

Reimplemented from NEWMAT::Matrix.

29.426.3.6 void NEWMAT::RowVector::NextCol (MatrixRowCol &) [virtual]

Reimplemented from NEWMAT::Matrix.

29.426.3.7 void NEWMAT::RowVector::NextCol (MatrixColX &) [virtual]

Reimplemented from NEWMAT::Matrix.

29.426.3.8 Real* NEWMAT::RowVector::nric ( ) const [inline]

Definition at line 823 of file newmat.h.

29.426.3.9 Real& NEWMAT::RowVector::operator() (int)

29.426.3.10 Real NEWMAT::RowVector::operator() (int) const

29.426.3.11 void NEWMAT::RowVector::operator= (const BaseMatrix &)

29.426.3.12 void NEWMAT::RowVector::operator= (Real *f*) [inline]

Definition at line 802 of file newmat.h.

29.426.3.13 void NEWMAT::RowVector::operator= (const RowVector & *m*) [inline]

Definition at line 803 of file newmat.h.

29.426.3.14 void NEWMAT::RowVector::ReSize (int)

29.426.3.15 void NEWMAT::RowVector::ReSize (int , int) [virtual]

Reimplemented from NEWMAT::Matrix.

29.426.3.16 void RowVector::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::Matrix.

Definition at line 276 of file newmat4.cpp.

29.426.3.17 void NEWMAT::RowVector::RestoreCol (MatrixRowCol &) [inline], [virtual]

Reimplemented from NEWMAT::Matrix.

Definition at line 817 of file newmat.h.

29.426.3.18 void NEWMAT::RowVector::RestoreCol (MatrixColX & *c*) [virtual]

Reimplemented from NEWMAT::Matrix.

29.426.3.19 GeneralMatrix * RowVector::Transpose (TransposedMatrix *, MatrixType *mt*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 68 of file newmat5.cpp.

29.426.3.20 MatrixType RowVector::Type ( ) const [virtual]

Reimplemented from NEWMAT::Matrix.

Definition at line 390 of file newmat4.cpp.

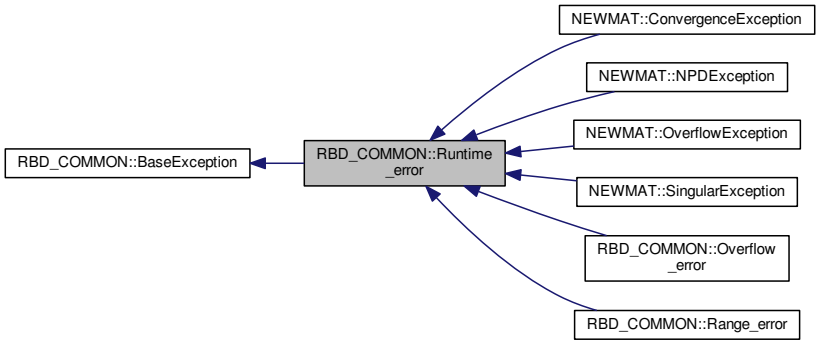
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

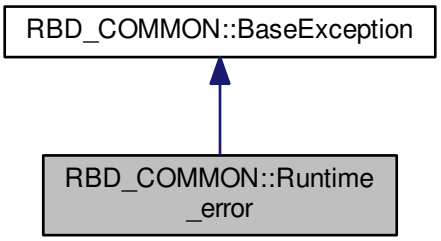
29.427 RBD_COMMON::Runtime_error Class Reference

`#include <myexcept.h>`

Inheritance diagram for RBD_COMMON::Runtime_error:



Collaboration diagram for RBD_COMMON::Runtime_error:



- static unsigned long Select
- Runtime_error (const char *a_what=0)

Additional Inherited Members

29.427.1 Detailed Description

Definition at line 364 of file myexcept.h.

29.427.2 Constructor & Destructor Documentation

29.427.2.1 Runtime_error::Runtime_error (const char * *a_what* = 0)

Definition at line 404 of file myexcept.cpp.

29.427.3 Member Data Documentation

29.427.3.1 unsigned long Runtime_error::Select [static]

Definition at line 367 of file myexcept.h.

The documentation for this class was generated from the following files:

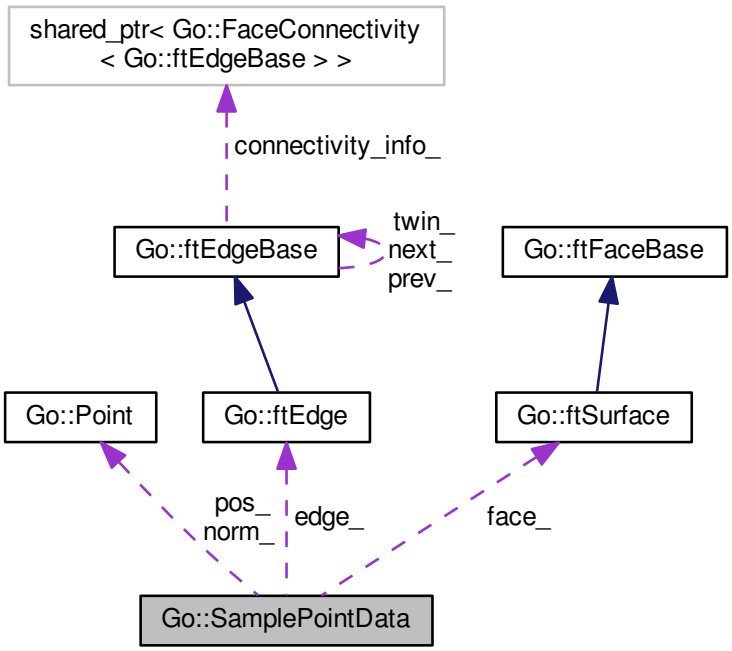
- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

29.428 Go::SamplePointData Struct Reference

Sample data related to one face. The struct contains one point in a point set with information about position, associated surface normal and curvature. Points lying on the face boundary know about its assoicated edge. If the surface normal and curvature information regarding boundary points is not unique, the assosiated data is set to be equal to MAX_DOUBLE.

`#include <FaceUtilities.h>`

Collaboration diagram for Go::SamplePointData:



Public Member Functions

- SamplePointData (Point pos, Point norm, double curvature, ftSurface *face, double face_par_u, double face_par_v, ftEdge *edge, double edge_par)

  Constructor for points at the face boundary.
- SamplePointData (Point pos, Point norm, double curvature, ftSurface *face, double face_par_u, double face_par_v)

  Constructor for points in the inner of the face.

Public Attributes

- Point pos_
- Point norm_
- double mean_curvature_
- ftSurface * face_
- double face_par_ [2]
- ftEdge * edge_
- double edge_par_

29.428.1 Detailed Description

Sample data related to one face. The struct contains one point in a point set with information about position, associated surface normal and curvature. Points lying on the face boundary know about its assoicated edge. If the surface normal and curvature information regarding boundary points is not unique, the assosiated data is set to be equal to MAX_DOUBLE.

Definition at line 55 of file FaceUtilities.h.

29.428.2 Constructor & Destructor Documentation

29.428.2.1 Go::SamplePointData::SamplePointData (Point *pos,* Point *norm,* double *curvature,* ftSurface * *face,* double *face_par_u,* double *face_par_v,* ftEdge * *edge,* double *edge_par*) [inline]

Constructor for points at the face boundary.

Definition at line 66 of file FaceUtilities.h.

29.428.2.2 Go::SamplePointData::SamplePointData (Point *pos,* Point *norm,* double *curvature,* ftSurface * *face,* double *face_par_u,* double *face_par_v*) [inline]

Constructor for points in the inner of the face.

Definition at line 81 of file FaceUtilities.h.

29.428.3 Member Data Documentation

29.428.3.1 ftEdge* Go::SamplePointData::edge_

Definition at line 62 of file FaceUtilities.h.

29.428.3.2 double Go::SamplePointData::edge_par_

Definition at line 63 of file FaceUtilities.h.

29.428.3.3 ftSurface* Go::SamplePointData::face_

Definition at line 60 of file FaceUtilities.h.

29.428.3.4 double Go::SamplePointData::face_par_[2]

Definition at line 61 of file FaceUtilities.h.

29.428.3.5 double Go::SamplePointData::mean_curvature_

Definition at line 59 of file FaceUtilities.h.

29.428.3.6 Point Go::SamplePointData::norm_

Definition at line 58 of file FaceUtilities.h.

29.428.3.7 Point Go::SamplePointData::pos_

Definition at line 57 of file FaceUtilities.h.

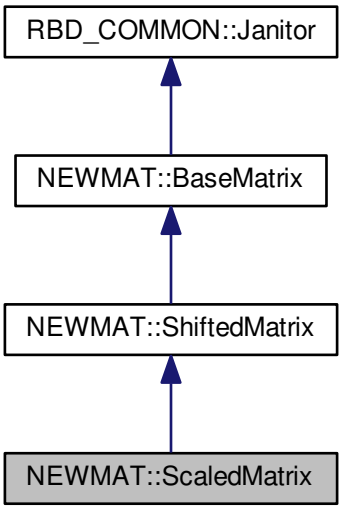
The documentation for this struct was generated from the following file:

- compositemodel/include/GoTools/compositemodel/FaceUtilities.h

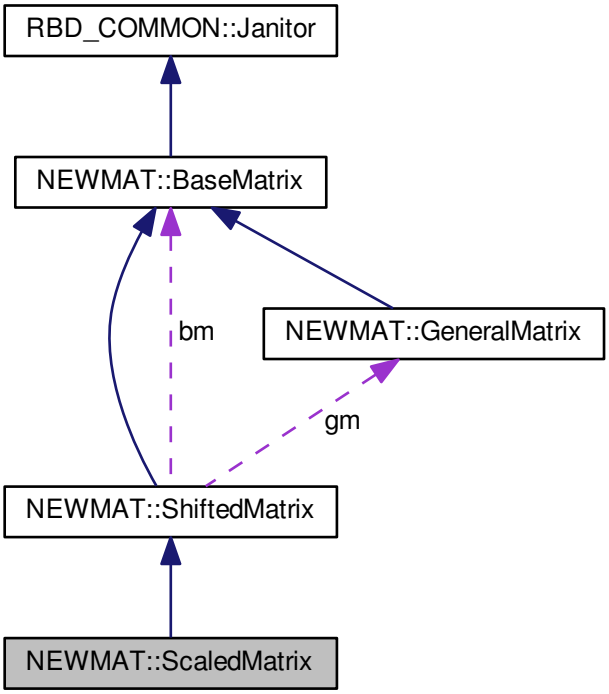
29.429 NEWMAT::ScaledMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::ScaledMatrix:



Collaboration diagram for NEWMAT::ScaledMatrix:



Public Member Functions

- ~ScaledMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix
- class GeneralMatrix
- class GenericMatrix
- ScaledMatrix operator* (Real f, const BaseMatrix &BM)

Additional Inherited Members

29.429.1 Detailed Description

Definition at line 1349 of file newmat.h.

29.429.2 Constructor & Destructor Documentation

29.429.2.1 NEWMAT::ScaledMatrix::~ScaledMatrix ( ) [inline]

Definition at line 1356 of file newmat.h.

29.429.3 Member Function Documentation

29.429.3.1 MatrixBandWidth ScaledMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 465 of file newmat4.cpp.

29.429.3.2 GeneralMatrix * ScaledMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::ShiftedMatrix.

Definition at line 170 of file newmat5.cpp.

29.429.4 Friends And Related Function Documentation

29.429.4.1 friend class BaseMatrix [friend]

Definition at line 1352 of file newmat.h.

29.429.4.2 friend class GeneralMatrix [friend]

Definition at line 1353 of file newmat.h.

29.429.4.3 friend class GenericMatrix [friend]

Definition at line 1354 of file newmat.h.

29.429.4.4 ScaledMatrix operator* (Real *f,* const BaseMatrix & *BM*) [friend]

Definition at line 1778 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

29.430 Go::ScratchVect< T, N > Class Template Reference

`#include <ScratchVect.h>`

Public Types

- typedef T * iterator
- typedef const T * const_iterator

Public Member Functions

- ScratchVect ()

  Create a new, empty ScratchVect.
- ScratchVect (size_t size)

  Create a new ScratchVect with 'size' (uninitialized) elements.
- ScratchVect (size_t size, T elem)
- ScratchVect (const std::vector< T > &vec)
- template<typename RAIter >
  ScratchVect (RAIter beg, RAIter end)
- template<int M>
  ScratchVect (const ScratchVect< T, M > &orig)
- ScratchVect & operator= (const ScratchVect &orig)

  Assignment operator.
- void resize (size_t new_size)

  resize the ScratchVect
- template<typename RAIter >
  void assign (RAIter beg, RAIter end)
- iterator begin ()

  Get iterator to beginning of range.
- const_iterator begin () const

  Get constant iterator to beginning of range.
- iterator end ()

  Get iterator to one-past-end of range.
- const_iterator end () const

  Get constant iterator to one-past-end of range.
- size_t size () const

  Get the number of elements in the ScratchVect.
- const T & operator[ ] (int i) const

  Element access operators (const and not-const)
- T & operator[ ] (int i)
- void push_back (const T &e)

  Add an element to the back of the range.
- void clear ()

  Clear ScratchVect.

29.430.1 Detailed Description

template<typename T, size_t N>
class Go::ScratchVect< T, N >

A template Vector class that behaves much like the std::vector template, but stores its elements on the stack rather than on the heap as long as the total size stays less than 'N' (template argument).

Definition at line 56 of file ScratchVect.h.

29.430.2 Member Typedef Documentation

29.430.2.1 template<typename T, size_t N> typedef const T* Go::ScratchVect< T, N >::const_iterator

Definition at line 66 of file ScratchVect.h.

29.430.2.2 template<typename T, size_t N> typedef T* Go::ScratchVect< T, N >::iterator

Definition at line 65 of file ScratchVect.h.

29.430.3 Constructor & Destructor Documentation

29.430.3.1 template<typename T, size_t N> Go::ScratchVect< T, N >::ScratchVect ( ) [inline]

Create a new, empty ScratchVect.

Definition at line 69 of file ScratchVect.h.

29.430.3.2 template<typename T, size_t N> Go::ScratchVect< T, N >::ScratchVect (size_t *size*) [inline]

Create a new ScratchVect with 'size' (uninitialized) elements.

Definition at line 75 of file ScratchVect.h.

29.430.3.3 template<typename T, size_t N> Go::ScratchVect< T, N >::ScratchVect (size_t *size*, T *elem*) [inline]

Create a new ScratchVect with 'size' elements initialized to the value 'elem'.

Definition at line 88 of file ScratchVect.h.

29.430.3.4 template<typename T, size_t N> Go::ScratchVect< T, N >::ScratchVect (const std::vector< T > & *vec*) [inline]

Set the contents of this ScratchVect to be equal to that of the STL vector 'vec'.

Definition at line 104 of file ScratchVect.h.

29.430.3.5 template<typename T, size_t N> template<typename RAIter > Go::ScratchVect< T, N >::ScratchVect (RAIter *beg,* RAIter *end*) [inline]

Set the contents of this ScratchVect to be equal to the contents of the range specified by 'beg' and 'end'.

Definition at line 111 of file ScratchVect.h.

29.430.3.6 template<typename T, size_t N> template<int M> Go::ScratchVect< T, N >::ScratchVect (const ScratchVect< T, M > & *orig*) [inline]

Set the contents of this ScratchVector to be equal to that of the ScratchVector 'orig'. (A templatized copy constructor, if you like).

Definition at line 119 of file ScratchVect.h.

29.430.4 Member Function Documentation

29.430.4.1 template<typename T, size_t N> template<typename RAIter > void Go::ScratchVect< T, N >::assign (RAIter *beg,* RAIter *end*) [inline]

Set the contents of this ScratchVect to be equal to the contents of the range specified by 'beg' and 'end'.

Definition at line 161 of file ScratchVect.h.

29.430.4.2 template<typename T, size_t N> iterator Go::ScratchVect< T, N >::begin ( ) [inline]

Get iterator to beginning of range.

Definition at line 176 of file ScratchVect.h.

29.430.4.3 template<typename T, size_t N> const_iterator Go::ScratchVect< T, N >::begin ( ) const [inline]

Get constant iterator to beginning of range.

Definition at line 179 of file ScratchVect.h.

29.430.4.4 template<typename T, size_t N> void Go::ScratchVect< T, N >::clear ( ) [inline]

Clear ScratchVect.

Definition at line 217 of file ScratchVect.h.

29.430.4.5 template<typename T, size_t N> iterator Go::ScratchVect< T, N >::end ( ) [inline]

Get iterator to one-past-end of range.

Definition at line 182 of file ScratchVect.h.

29.430.4.6 template<typename T, size_t N> const_iterator Go::ScratchVect< T, N >::end ( ) const [inline]

Get constant iterator to one-past-end of range.

Definition at line 185 of file ScratchVect.h.

29.430.4.7 template<typename T, size_t N> ScratchVect& Go::ScratchVect< T, N >::operator= (const ScratchVect< T, N > & *orig*) [inline]

Assignment operator.

Definition at line 124 of file ScratchVect.h.

29.430.4.8 template<typename T, size_t N> const T& Go::ScratchVect< T, N >::operator[ ] (int *i*) const [inline]

Element access operators (const and not-const)

Definition at line 191 of file ScratchVect.h.

29.430.4.9 template<typename T, size_t N> T& Go::ScratchVect< T, N >::operator[ ] (int *i*) [inline]

Definition at line 192 of file ScratchVect.h.

29.430.4.10 template<typename T, size_t N> void Go::ScratchVect< T, N >::push_back (const T & *e*) [inline]

Add an element to the back of the range.

Definition at line 195 of file ScratchVect.h.

29.430.4.11 template<typename T, size_t N> void Go::ScratchVect< T, N >::resize (size_t *new_size*) [inline]

resize the ScratchVect

Definition at line 130 of file ScratchVect.h.

29.430.4.12 template<typename T, size_t N> size_t Go::ScratchVect< T, N >::size ( ) const [inline]

Get the number of elements in the ScratchVect.

Definition at line 188 of file ScratchVect.h.

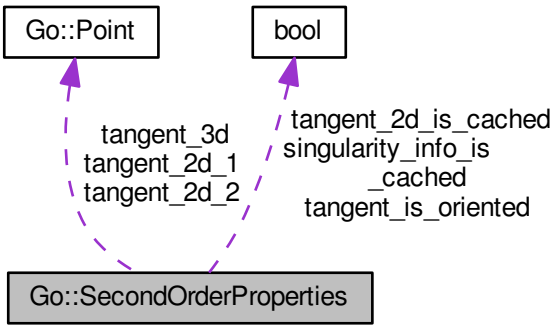
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/ScratchVect.h

29.431 Go::SecondOrderProperties Struct Reference

`#include <SecondOrderProperties.h>`

Collaboration diagram for Go::SecondOrderProperties:



Public Member Functions

- SecondOrderProperties ()
- void clear ()

Public Attributes

- bool singularity_info_is_cached
- Point tangent_3d [2]
- SingularityType singularity_type
- bool tangent_is_oriented
- bool tangent_2d_is_cached
- Point tangent_2d_1 [2]
- Point tangent_2d_2 [2]

29.431.1 Detailed Description

Definition at line 59 of file SecondOrderProperties.h.

29.431.2 Constructor & Destructor Documentation

29.431.2.1 Go::SecondOrderProperties::SecondOrderProperties ( ) [inline]

Definition at line 61 of file SecondOrderProperties.h.

29.431.3 Member Function Documentation

29.431.3.1 void Go::SecondOrderProperties::clear ( ) [inline]

Definition at line 64 of file SecondOrderProperties.h.

29.431.4 Member Data Documentation

29.431.4.1 bool Go::SecondOrderProperties::singularity_info_is_cached

Definition at line 74 of file SecondOrderProperties.h.

29.431.4.2 SingularityType Go::SecondOrderProperties::singularity_type

Definition at line 76 of file SecondOrderProperties.h.

29.431.4.3 Point Go::SecondOrderProperties::tangent_2d_1[2]

Definition at line 82 of file SecondOrderProperties.h.

29.431.4.4 Point Go::SecondOrderProperties::tangent_2d_2[2]

Definition at line 83 of file SecondOrderProperties.h.

29.431.4.5 bool Go::SecondOrderProperties::tangent_2d_is_cached

Definition at line 81 of file SecondOrderProperties.h.

29.431.4.6 Point Go::SecondOrderProperties::tangent_3d[2]

Definition at line 75 of file SecondOrderProperties.h.

29.431.4.7 bool Go::SecondOrderProperties::tangent_is_oriented

Definition at line 78 of file SecondOrderProperties.h.

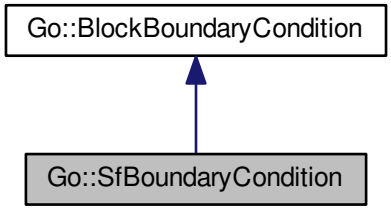
The documentation for this struct was generated from the following file:

- intersections/include/GoTools/intersections/SecondOrderProperties.h

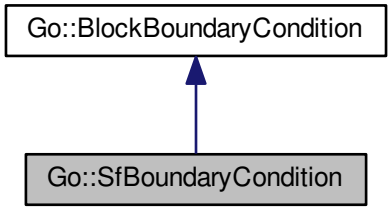
29.432 Go::SfBoundaryCondition Class Reference

`#include <SfBoundaryCondition.h>`

Inheritance diagram for Go::SfBoundaryCondition:



Collaboration diagram for Go::SfBoundaryCondition:



Public Member Functions

- SfBoundaryCondition (int edge_nmb, BdConditionType type, BdCondFunctor *fbd, std::pair< double, double > end_par, SfSolution *solution)
- SfBoundaryCondition (int edge_nmb, BdConditionType type, const Point &const_val, std::pair< double, double > end_par, SfSolution *solution)
- virtual ~SfBoundaryCondition ()
- virtual void getCoefficientsEnumeration (std::vector< int > &local_enumeration)
- virtual void getCoefficientsEnumeration (std::vector< int > &local_enumeration_bd, std::vector< int > &local_enumeration_bd2)
- virtual void getBdCoefficients (std::vector< std::pair< int, Point > > &coefs)
- virtual void getBdCoefficients (std::vector< std::pair< int, Point > > &coefs_bd, std::vector< std::pair< int, Point > > &coefs_bd2)
- virtual void update ()
- void getBasisFunctions (int index_of_Gauss_point, bool &u_dir, std::vector< double > &basisValues, std::vector< double > &basisDerivs) const
- shared_ptr< SplineCurve > getSplineApproximation () const
- virtual void updateBoundaryValue (BdCondFunctor *fbd)
- int edgeNumber () const
- virtual tpTolerances getTolerances () const

Additional Inherited Members

29.432.1 Detailed Description

Definition at line 68 of file SfBoundaryCondition.h.

29.432.2 Constructor & Destructor Documentation

29.432.2.1 Go::SfBoundaryCondition::SfBoundaryCondition (int *edge_nmb,* BdConditionType *type,* BdCondFunctor * *fbd,* std::pair< double, double > *end_par,* SfSolution * *solution*)

29.432.2.2 Go::SfBoundaryCondition::SfBoundaryCondition (int *edge_nmb,* BdConditionType *type,* const Point & *const_val,* std::pair< double, double > *end_par,* SfSolution * *solution*)

29.432.2.3 virtual Go::SfBoundaryCondition::~SfBoundaryCondition ( ) [virtual]

29.432.3 Member Function Documentation

29.432.3.1 int Go::SfBoundaryCondition::edgeNumber ( ) const

29.432.3.2 void Go::SfBoundaryCondition::getBasisFunctions (int *index_of_Gauss_point,* bool & *u_dir,* std::vector< double > & *basisValues,* std::vector< double > & *basisDerivs*) const

29.432.3.3 virtual void Go::SfBoundaryCondition::getBdCoefficients (std::vector< std::pair< int, Point > > & *coefs*) [virtual]

Parameters

coefs	the boundary coefficients. Each pair consists the coefficient and its index when considered a curve.

Implements Go::BlockBoundaryCondition.

29.432.3.4 virtual void Go::SfBoundaryCondition::getBdCoefficients (std::vector< std::pair< int, Point > > & *coefs_bd,* std::vector< std::pair< int, Point > > & *coefs_bd2*) [virtual]

Parameters

coefs_bd	the boundary coefficients. Each pair consists the coefficient and its index when considered a curve.
coefs_bd2	the row of coefficients next to the boundary. Each pair consists the coefficient and its index when considered a curve.

Implements Go::BlockBoundaryCondition.

29.432.3.5 virtual void Go::SfBoundaryCondition::getCoefficientsEnumeration (std::vector< int > & *local_enumeration*) [virtual]

Implements Go::BlockBoundaryCondition.

29.432.3.6 virtual void Go::SfBoundaryCondition::getCoefficientsEnumeration (std::vector< int > & *local_enumeration_bd*, std::vector< int > & *local_enumeration_bd2*) [virtual]

Implements Go::BlockBoundaryCondition.

29.432.3.7 shared_ptr<SplineCurve> Go::SfBoundaryCondition::getSplineApproximation ( ) const

29.432.3.8 virtual tpTolerances Go::SfBoundaryCondition::getTolerances ( ) const [virtual]

Implements Go::BlockBoundaryCondition.

29.432.3.9 virtual void Go::SfBoundaryCondition::update ( ) [virtual]

Implements Go::BlockBoundaryCondition.

29.432.3.10 virtual void Go::SfBoundaryCondition::updateBoundaryValue (BdCondFunctor * *fbd*) [virtual]

Implements Go::BlockBoundaryCondition.

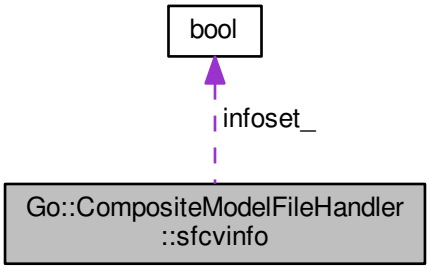
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/SfBoundaryCondition.h

29.433 Go::CompositeModelFileHandler::sfcvinfo Struct Reference

`#include <CompositeModelFileHandler.h>`

Collaboration diagram for Go::CompositeModelFileHandler::sfcvinfo:



Public Member Functions

- sfcvinfo (int ccm, int constdir, double constpar, int bd, int orientation)
- sfcvinfo ()

Public Attributes

- bool infoset_
- int ccm_
- int constdir_
- int bd_
- int orientation_
- double constpar_

29.433.1 Detailed Description

Definition at line 102 of file CompositeModelFileHandler.h.

29.433.2 Constructor & Destructor Documentation

29.433.2.1 Go::CompositeModelFileHandler::sfcvinfo::sfcvinfo (int *ccm,* int *constdir,* double *constpar,* int *bd,* int *orientation*) [inline]

Definition at line 104 of file CompositeModelFileHandler.h.

29.433.2.2 Go::CompositeModelFileHandler::sfcvinfo::sfcvinfo ( ) [inline]

Definition at line 113 of file CompositeModelFileHandler.h.

29.433.3 Member Data Documentation

29.433.3.1 int Go::CompositeModelFileHandler::sfcvinfo::bd_

Definition at line 119 of file CompositeModelFileHandler.h.

29.433.3.2 int Go::CompositeModelFileHandler::sfcvinfo::ccm_

Definition at line 119 of file CompositeModelFileHandler.h.

29.433.3.3 int Go::CompositeModelFileHandler::sfcvinfo::constdir_

Definition at line 119 of file CompositeModelFileHandler.h.

29.433.3.4 double Go::CompositeModelFileHandler::sfcvinfo::constpar_

Definition at line 120 of file CompositeModelFileHandler.h.

29.433.3.5 bool Go::CompositeModelFileHandler::sfcvinfo::infoset_

Definition at line 118 of file CompositeModelFileHandler.h.

29.433.3.6 int Go::CompositeModelFileHandler::sfcvinfo::orientation_

Definition at line 119 of file CompositeModelFileHandler.h.

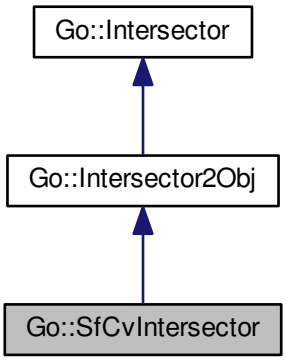
The documentation for this struct was generated from the following file:

- compositemodel/include/GoTools/compositemodel/CompositeModelFileHandler.h

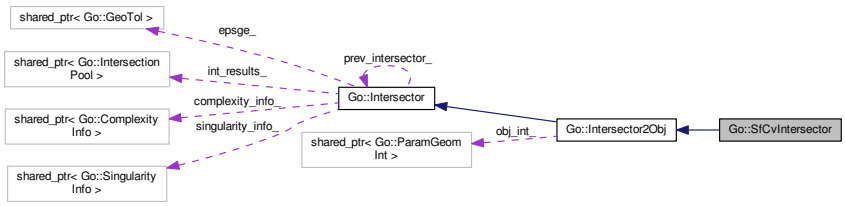
29.434 Go::SfCvIntersector Class Reference

`#include <SfCvIntersector.h>`

Inheritance diagram for Go::SfCvIntersector:



Collaboration diagram for Go::SfCvIntersector:



Public Member Functions

- SfCvIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, double epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- SfCvIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~SfCvIntersector ()

  Destructor.
- virtual int numParams () const
- void postIterateBd ()

Protected Member Functions

- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual int performRotatedBoxTest (double eps1, double eps2)
- virtual bool foundIntersectionNearBoundary ()
- virtual int simpleCase ()
- virtual int simpleCase2 (Point &axis1, Point &axis2)
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- virtual int linearCase ()
- virtual int doSubdivide ()
- virtual void postIterate (int nmb_orig, int dir=-1, bool keep_endpt=true)

Additional Inherited Members

29.434.1 Detailed Description

This class performs intersection between a parametric surface and a parametric curve.

Definition at line 53 of file SfCvIntersector.h.

29.434.2 Constructor & Destructor Documentation

29.434.2.1 Go::SfCvIntersector::SfCvIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, double *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. One of the objects should refer to a surface, the other a curve (this is not checked compile-time, so we rely on the user to obey this rule). The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

obj1	either of type ParamSurfaceInt or ParamCurveInt.
obj2	either of type ParamCurveInt or ParamSurfaceInt (not the same type as *obj1*).
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.434.2.2 Go::SfCvIntersector::SfCvIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. One of the objects should refer to a surface, the other a curve (this is not checked compile-time, so we rely on the user to obey this rule). The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

obj1	either of type ParamSurfaceInt or ParamCurveInt.
obj2	either of type ParamCurveInt or ParamSurfaceInt (not the same type as *obj1*).
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.434.2.3 virtual Go::SfCvIntersector::~SfCvIntersector ( ) [virtual]

Destructor.

29.434.3 Member Function Documentation

29.434.3.1 virtual int Go::SfCvIntersector::checkCoincidence ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.434.3.2 virtual int Go::SfCvIntersector::doSubdivide ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.434.3.3 virtual bool Go::SfCvIntersector::foundIntersectionNearBoundary ( ) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.434.3.4 virtual int Go::SfCvIntersector::linearCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.434.3.5 virtual shared_ptr<Intersector> Go::SfCvIntersector::lowerOrderIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [virtual]

Implements Go::Intersector2Obj.

29.434.3.6 virtual void Go::SfCvIntersector::microCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.434.3.7 virtual int Go::SfCvIntersector::numParams ( ) const [inline], [virtual]

Return the number of parameter directions for the object.

Returns

the number of parameter directions

Implements Go::Intersector.

Definition at line 110 of file SfCvIntersector.h.

29.434.3.8 virtual int Go::SfCvIntersector::performRotatedBoxTest (double *eps1*, double *eps2*) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.434.3.9 virtual void Go::SfCvIntersector::postIterate (int *nmb_orig*, int *dir* = −1, bool *keep_endpt* = true) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.434.3.10 void Go::SfCvIntersector::postIterateBd ( )

29.434.3.11 virtual int Go::SfCvIntersector::repairIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 139 of file SfCvIntersector.h.

29.434.3.12 virtual int Go::SfCvIntersector::simpleCase ( ) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.434.3.13 virtual int Go::SfCvIntersector::simpleCase2 (Point & *axis1*, Point & *axis2*) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.434.3.14 virtual int Go::SfCvIntersector::updateIntersections ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

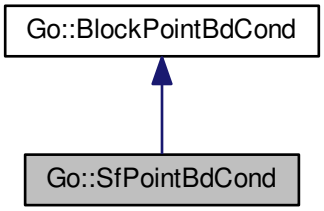
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/SfCvIntersector.h

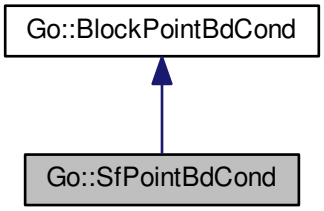
29.435 Go::SfPointBdCond Class Reference

`#include <SfPointBdCond.h>`

Inheritance diagram for Go::SfPointBdCond:



Collaboration diagram for Go::SfPointBdCond:



Public Member Functions

- SfPointBdCond (int edge_nmb, double param, Point &condition_value)
- virtual ~SfPointBdCond ()
- virtual void getCoefficientsEnumeration (std::vector< int > &local_enumeration) const
- virtual Point getConditionValue () const
- double getParam () const
- virtual void getInterpolationFactors (std::vector< std::pair< int, double > > &factors) const
- int edgeNumber () const

29.435.1 Detailed Description

Definition at line 56 of file SfPointBdCond.h.

29.435.2 Constructor & Destructor Documentation

29.435.2.1 Go::SfPointBdCond::SfPointBdCond (int *edge_nmb,* double *param,* Point & *condition_value*)

29.435.2.2 virtual Go::SfPointBdCond::~SfPointBdCond ( ) [virtual]

29.435.3 Member Function Documentation

29.435.3.1 int Go::SfPointBdCond::edgeNumber ( ) const

29.435.3.2 virtual void Go::SfPointBdCond::getCoefficientsEnumeration (std::vector< int > & *local_enumeration*) const [virtual]

Implements Go::BlockPointBdCond.

29.435.3.3 virtual Point Go::SfPointBdCond::getConditionValue ( ) const [virtual]

Implements Go::BlockPointBdCond.

29.435.3.4 virtual void Go::SfPointBdCond::getInterpolationFactors (std::vector< std::pair< int, double > > & *factors*) const [virtual]

Implements Go::BlockPointBdCond.

29.435.3.5 double Go::SfPointBdCond::getParam ( ) const

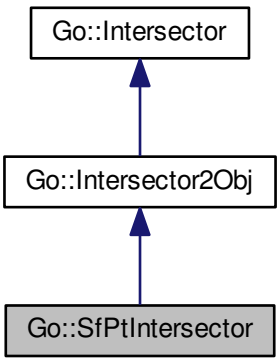
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/SfPointBdCond.h

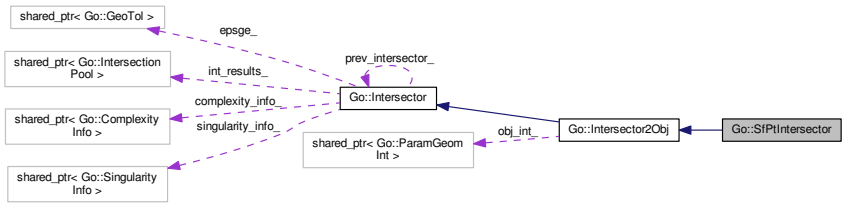
29.436 Go::SfPtIntersector Class Reference

`#include <SfPtIntersector.h>`

Inheritance diagram for Go::SfPtIntersector:



Collaboration diagram for Go::SfPtIntersector:



Public Member Functions

- SfPtIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, shared_ptr< GeoTol > epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual ~SfPtIntersector ()

  Destructor.
- virtual int numParams () const

Protected Member Functions

- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- virtual int linearCase ()
- virtual int doSubdivide ()
- virtual int performRotatedBoxTest (double eps1, double eps2)

Additional Inherited Members

29.436.1 Detailed Description

This class performs intersection between a parametric surface and a point

Definition at line 53 of file SfPtIntersector.h.

29.436.2 Constructor & Destructor Documentation

29.436.2.1 Go::SfPtIntersector::SfPtIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0)

Constructor. One of the objects should refer to a surface, the other a point (this is not checked compile-time, so we rely on the user to obey this rule). The last two variables are relevant only if the parent has one more parameter than the Intersector to be constructed.

Parameters

obj1	either of type ParamSurfaceInt or ParamPointInt.
obj2	either of type ParamPointInt or ParamSurfaceInt (not the same type as *obj1*).
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).
eliminated_parameter	the index of the parameter that was removed from the parent *prev*.
eliminated_value	the value of the parameter that was removed from the parent *prev*.

29.436.2.2 virtual Go::SfPtIntersector::~SfPtIntersector ( ) [virtual]

Destructor.

29.436.3 Member Function Documentation

29.436.3.1 virtual int Go::SfPtIntersector::checkCoincidence ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.436.3.2 virtual int Go::SfPtIntersector::doSubdivide ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.436.3.3 virtual int Go::SfPtIntersector::linearCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.436.3.4 virtual shared_ptr<Intersector> Go::SfPtIntersector::lowerOrderIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [virtual]

Implements Go::Intersector2Obj.

29.436.3.5 virtual void Go::SfPtIntersector::microCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.436.3.6 virtual int Go::SfPtIntersector::numParams ( ) const [inline], [virtual]

Return the number of parameter directions for the object.

Returns

the number of parameter directions

Implements Go::Intersector.

Definition at line 87 of file SfPtIntersector.h.

29.436.3.7 virtual int Go::SfPtIntersector::performRotatedBoxTest (double *eps1*, double *eps2*) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.436.3.8 virtual int Go::SfPtIntersector::repairIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 106 of file SfPtIntersector.h.

29.436.3.9 virtual int Go::SfPtIntersector::updateIntersections ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

The documentation for this class was generated from the following file:

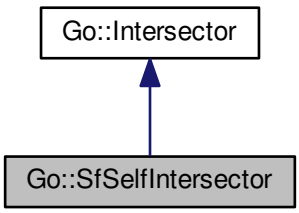
- intersections/include/GoTools/intersections/SfPtIntersector.h

29.437 Go::SfSelfIntersector Class Reference

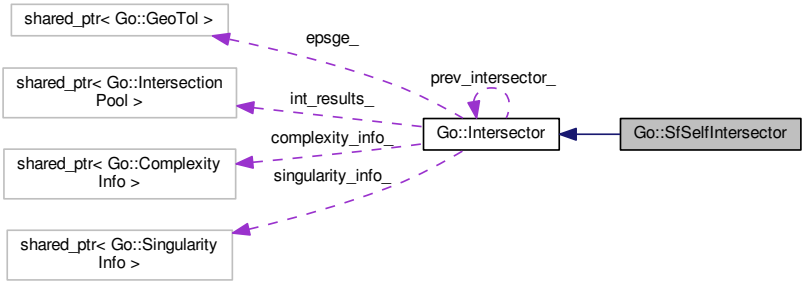
This class finds self-intersections for a parametric surface.

`#include <SfSelfIntersector.h>`

Inheritance diagram for Go::SfSelfIntersector:



Collaboration diagram for Go::SfSelfIntersector:



Public Member Functions

- SfSelfIntersector (shared_ptr< ParamSurfaceInt > surf, double epsge, Intersector *prev=NULL)
- SfSelfIntersector (shared_ptr< ParamSurfaceInt > surf, shared_ptr< GeoTol > epsge, Intersector *prev=NULL)
- virtual ~SfSelfIntersector ()

  Destructor.
- virtual void compute (bool compute_at_boundary=true)
- virtual int numParams () const
- void setMaxRec (int max_rec)
- int getNmbComplexDomain ()
- virtual bool isSelfIntersection ()

  Verifies that this computation is a self intersection problem.

Protected Member Functions

- bool computeG1 ()
- std::vector< shared_ptr< ParamSurfaceInt > > getNonSelfintersecting ()
- virtual void print_objs ()
- virtual int getBoundaryIntersections ()
- virtual int performInterception ()
- virtual int simpleCase ()
- virtual bool isLinear ()
- virtual bool complexityReduced ()
- virtual void handleComplexity ()
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- virtual int linearCase ()
- virtual int doSubdivide ()
- virtual void printDebugInfo ()
- virtual void addComplexDomain (RectDomain dom)

Additional Inherited Members

29.437.1 Detailed Description

This class finds self-intersections for a parametric surface.

Definition at line 96 of file SfSelfIntersector.h.

29.437.2 Constructor & Destructor Documentation

29.437.2.1 Go::SfSelfIntersector::SfSelfIntersector (shared_ptr< ParamSurfaceInt > *surf*, double *epsge*, Intersector * *prev* = NULL)

Constructor.

Parameters

surf	the parametric surface.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).

29.437.2.2 Go::SfSelfIntersector::SfSelfIntersector (shared_ptr< ParamSurfaceInt > *surf*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = NULL)

Constructor.

Parameters

surf	the parametric surface.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).

29.437.2.3 virtual Go::SfSelfIntersector::~SfSelfIntersector ( ) [virtual]

Destructor.

29.437.3 Member Function Documentation

29.437.3.1 virtual void Go::SfSelfIntersector::addComplexDomain (RectDomain *dom*) [inline], [protected], [virtual]

Reimplemented from Go::Intersector.

Definition at line 190 of file SfSelfIntersector.h.

29.437.3.2 virtual int Go::SfSelfIntersector::checkCoincidence ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 172 of file SfSelfIntersector.h.

29.437.3.3 virtual bool Go::SfSelfIntersector::complexityReduced ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 167 of file SfSelfIntersector.h.

29.437.3.4 virtual void Go::SfSelfIntersector::compute (bool *compute_at_boundary* = true) [virtual]

Compute topology of self-intersection.

Parameters

compute_at_boundary	indicate if we want to compute at the boundary

Reimplemented from Go::Intersector.

29.437.3.5 bool Go::SfSelfIntersector::computeG1 ( ) [protected]

29.437.3.6 virtual int Go::SfSelfIntersector::doSubdivide ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 185 of file SfSelfIntersector.h.

29.437.3.7 virtual int Go::SfSelfIntersector::getBoundaryIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 155 of file SfSelfIntersector.h.

29.437.3.8 int Go::SfSelfIntersector::getNmbComplexDomain ( ) [inline]

Count the number of complex domains in the object.

Returns

The number of complex domains in the object.

Definition at line 134 of file SfSelfIntersector.h.

29.437.3.9 std::vector<shared_ptr<ParamSurfaceInt> > Go::SfSelfIntersector::getNonSelfintersecting ( ) [inline], [protected]

Definition at line 150 of file SfSelfIntersector.h.

29.437.3.10 virtual void Go::SfSelfIntersector::handleComplexity ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 170 of file SfSelfIntersector.h.

29.437.3.11 virtual bool Go::SfSelfIntersector::isLinear ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 164 of file SfSelfIntersector.h.

29.437.3.12 virtual bool Go::SfSelfIntersector::isSelfIntersection ( ) [inline], [virtual]

Verifies that this computation is a self intersection problem.

Reimplemented from Go::Intersector.

Definition at line 138 of file SfSelfIntersector.h.

29.437.3.13 virtual int Go::SfSelfIntersector::linearCase ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 182 of file SfSelfIntersector.h.

29.437.3.14 virtual void Go::SfSelfIntersector::microCase ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 175 of file SfSelfIntersector.h.

29.437.3.15 virtual int Go::SfSelfIntersector::numParams ( ) const [inline], [virtual]

Get the number of parameter directions for the object.

Returns

the number of parameter directions (i.e. 2)

Implements Go::Intersector.

Definition at line 124 of file SfSelfIntersector.h.

29.437.3.16 virtual int Go::SfSelfIntersector::performInterception ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 158 of file SfSelfIntersector.h.

29.437.3.17 virtual void Go::SfSelfIntersector::print_objs ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 153 of file SfSelfIntersector.h.

29.437.3.18 virtual void Go::SfSelfIntersector::printDebugInfo ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 188 of file SfSelfIntersector.h.

29.437.3.19 virtual int Go::SfSelfIntersector::repairIntersections ( ) [protected], [virtual]

Implements Go::Intersector.

29.437.3.20 void Go::SfSelfIntersector::setMaxRec (int *max_rec*) [inline]

Set the maximum number of recursion levels.

Parameters

max_rec	the number of levels

Definition at line 129 of file SfSelfIntersector.h.

29.437.3.21 virtual int Go::SfSelfIntersector::simpleCase ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 161 of file SfSelfIntersector.h.

29.437.3.22 virtual int Go::SfSelfIntersector::updateIntersections ( ) [inline], [protected], [virtual]

Implements Go::Intersector.

Definition at line 177 of file SfSelfIntersector.h.

The documentation for this class was generated from the following file:

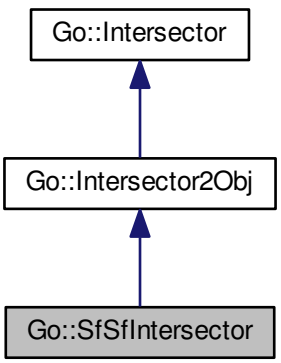
- intersections/include/GoTools/intersections/SfSelfIntersector.h

29.438 Go::SfSfIntersector Class Reference

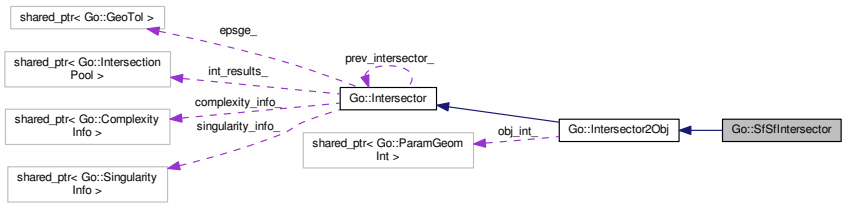
This class performs intersection between two parametric surfaces.

`#include <SfSfIntersector.h>`

Inheritance diagram for Go::SfSfIntersector:



Collaboration diagram for Go::SfSfIntersector:



Public Member Functions

- SfSfIntersector ()

  Default constructor.
- SfSfIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, shared_ptr< GeoTol > epsge, Intersector *prev=0)
- SfSfIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, double epsge, Intersector *prev=0)
- virtual ~SfSfIntersector ()

  Destructor.
- virtual int numParams () const
- void postIterate3 (int nmb_orig, int dir)

Protected Member Functions

- virtual shared_ptr< Intersector > lowerOrderIntersector (shared_ptr< ParamGeomInt > obj1, shared_ptr< ParamGeomInt > obj2, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)
- virtual int performRotatedBoxTest (double eps1, double eps2)
- virtual bool foundIntersectionNearBoundary ()
- virtual int performInterceptionByImplicitization ()
- virtual int interceptionBySeparationSurface ()
- virtual int simpleCase2 (Point &axis1, Point &axis2)
- virtual int simpleCaseByImplicitization ()
- virtual bool complexityReduced ()
- virtual void handleComplexity ()
- virtual int checkCoincidence ()
- virtual void microCase ()
- virtual bool degTriangleSimple ()
- virtual int updateIntersections ()
- virtual int repairIntersections ()
- void repairSingularityBox ()
- void repairFalseBranchPoints ()
- void removeIsolatedPoints ()
- void repairMissingLinks ()
- bool connectIfPossible (shared_ptr< IntersectionPoint > pt1, shared_ptr< IntersectionPoint > pt2)
- void fixCrossingLinks ()

  Fix crossing intersection links.
- bool checkCloseEndpoint (shared_ptr< IntersectionPoint > pnt, shared_ptr< IntersectionLink > link)
- void iterateOnIntersectionPoints ()
- void getSingularityBox (shared_ptr< IntersectionPoint > sing, double frompar[], double topar[])

- shared_ptr< SfSfIntersector > getSubIntersector (double frompar[ ], double topar[ ])
- virtual int linearCase ()
- virtual int doSubdivide ()
- void getApproxImplicit (std::vector< std::vector< shared_ptr< Param2FunctionInt > > > &approx_implicit, std::vector< double > &approx_implicit_err, std::vector< double > &approx_implicit_gradsize, std::vector< double > &approx_implicit_gradvar)

Friends

- class SfSelfIntersector
- class IntersectionPool

Additional Inherited Members

29.438.1 Detailed Description

This class performs intersection between two parametric surfaces.

Definition at line 57 of file SfSfIntersector.h.

29.438.2 Constructor & Destructor Documentation

29.438.2.1 Go::SfSfIntersector::SfSfIntersector ( ) [inline]

Default constructor.

Definition at line 63 of file SfSfIntersector.h.

29.438.2.2 Go::SfSfIntersector::SfSfIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, shared_ptr< GeoTol > *epsge*, Intersector * *prev* = 0)

Constructor. Both objects should refer to surfaces (this is not checked compile-time, so we rely on the user to obey this rule).

Parameters

obj1	of type ParamSurfaceInt.
obj2	of type ParamSurfaceInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).

29.438.2.3 Go::SfSfIntersector::SfSfIntersector (shared_ptr< ParamGeomInt > *obj1*, shared_ptr< ParamGeomInt > *obj2*, double *epsge*, Intersector * *prev* = 0)

Constructor. Both objects should refer to surfaces (this is not checked compile-time, so we rely on the user to obey this rule).

Parameters

obj1	of type ParamSurfaceInt.
obj2	of type ParamSurfaceInt.
epsge	the associated tolerance.
prev	the "parent" Intersector (0 if there is no parent).

29.438.2.4 virtual Go::SfSfIntersector::~SfSfIntersector ( ) [virtual]

Destructor.

29.438.3 Member Function Documentation

29.438.3.1 bool Go::SfSfIntersector::checkCloseEndpoint (shared_ptr< IntersectionPoint > *pnt*, shared_ptr< IntersectionLink > *link*) [protected]

29.438.3.2 virtual int Go::SfSfIntersector::checkCoincidence ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.438.3.3 virtual bool Go::SfSfIntersector::complexityReduced ( ) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.438.3.4 bool Go::SfSfIntersector::connectIfPossible (shared_ptr< IntersectionPoint > *pt1*, shared_ptr< IntersectionPoint > *pt2*) [protected]

29.438.3.5 virtual bool Go::SfSfIntersector::degTriangleSimple ( ) [protected], [virtual]

Reimplemented from Go::Intersector.

29.438.3.6 virtual int Go::SfSfIntersector::doSubdivide ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.438.3.7 void Go::SfSfIntersector::fixCrossingLinks ( ) [protected]

Fix crossing intersection links.

29.438.3.8 virtual bool Go::SfSfIntersector::foundIntersectionNearBoundary ( ) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.438.3.9 void Go::SfSfIntersector::getApproxImplicit (std::vector< std::vector< shared_ptr< Param2FunctionInt > > > & *approx_implicit,* std::vector< double > & *approx_implicit_err,* std::vector< double > & *approx_implicit_gradsize,* std::vector< double > & *approx_implicit_gradvar*) [protected]

29.438.3.10 void Go::SfSfIntersector::getSingularityBox (shared_ptr< IntersectionPoint > *sing,* double *frompar[ ],* double *topar[ ]*) [protected]

29.438.3.11 shared_ptr<SfSfIntersector> Go::SfSfIntersector::getSubIntersector (double *frompar[ ],* double *topar[ ]*) [protected]

29.438.3.12 virtual void Go::SfSfIntersector::handleComplexity ( ) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.438.3.13 virtual int Go::SfSfIntersector::interceptionBySeparationSurface ( ) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.438.3.14 void Go::SfSfIntersector::iterateOnIntersectionPoints ( ) [protected]

29.438.3.15 virtual int Go::SfSfIntersector::linearCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.438.3.16 virtual shared_ptr<Intersector> Go::SfSfIntersector::lowerOrderIntersector (shared_ptr< ParamGeomInt > *obj1,* shared_ptr< ParamGeomInt > *obj2,* Intersector * *prev* = 0, int *eliminated_parameter* = -1, double *eliminated_value* = 0) [protected], [virtual]

Implements Go::Intersector2Obj.

29.438.3.17 virtual void Go::SfSfIntersector::microCase ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.438.3.18 virtual int Go::SfSfIntersector::numParams ( ) const [inline], [virtual]

Return the number of parameter directions for the object.

Returns

the number of parameter directions

Implements Go::Intersector.

Definition at line 95 of file SfSfIntersector.h.

29.438.3.19 virtual int Go::SfSfIntersector::performInterceptionByImplicitization ( ) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.438.3.20 virtual int Go::SfSfIntersector::performRotatedBoxTest (double *eps1*, double *eps2*) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.438.3.21 void Go::SfSfIntersector::postIterate3 (int *nmb_orig*, int *dir*) [inline]

Definition at line 98 of file SfSfIntersector.h.

29.438.3.22 void Go::SfSfIntersector::removeIsolatedPoints ( ) [protected]

29.438.3.23 void Go::SfSfIntersector::repairFalseBranchPoints ( ) [protected]

29.438.3.24 virtual int Go::SfSfIntersector::repairIntersections ( ) [protected], [virtual]

Implements Go::Intersector.

29.438.3.25 void Go::SfSfIntersector::repairMissingLinks ( ) [protected]

29.438.3.26 void Go::SfSfIntersector::repairSingularityBox ( ) [protected]

29.438.3.27 virtual int Go::SfSfIntersector::simpleCase2 (Point & *axis1*, Point & *axis2*) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.438.3.28 virtual int Go::SfSfIntersector::simpleCaseByImplicitization ( ) [protected], [virtual]

Reimplemented from Go::Intersector2Obj.

29.438.3.29 virtual int Go::SfSfIntersector::updateIntersections ( ) [protected], [virtual]

Implements Go::Intersector2Obj.

29.438.4 Friends And Related Function Documentation

29.438.4.1 friend class IntersectionPool [friend]

Definition at line 103 of file SfSfIntersector.h.

29.438.4.2 friend class SfSelfIntersector [friend]

Definition at line 60 of file SfSfIntersector.h.

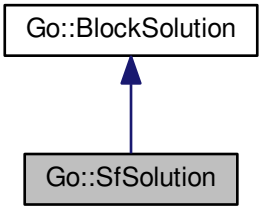
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/SfSfIntersector.h

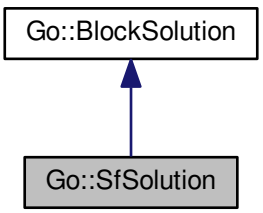
29.439 Go::SfSolution Class Reference

`#include <SfSolution.h>`

Inheritance diagram for Go::SfSolution:



Collaboration diagram for Go::SfSolution:



Public Member Functions

- SfSolution (IsogeometricSfBlock *parent, shared_ptr< SplineSurface > sol_surf)
- virtual ~SfSolution ()
- virtual SfSolution * asSfSolution ()
- void addBoundaryCondition (int edge_nmb, BdConditionType type, BdCondFunctor *fbd, std::pair< double, double > end_par)
- void addBoundaryCondition (int edge_nmb, BdConditionType type, const Point &const_val, std::pair< double, double > end_par)
- void addDirichletPointBdCond (double param[ ], Point &condition_value)
- int getNmbOfBoundaryConditions () const
- shared_ptr< SfBoundaryCondition > getBoundaryCondition (int index) const
- void getEdgeBoundaryConditions (int edge_number, std::vector< shared_ptr< SfBoundaryCondition > > &bd_cond) const
- void getEdgeBoundaryConditions (std::vector< shared_ptr< SfBoundaryCondition > > &bd_cond) const
- virtual int getNmbOfPointBdConditions () const
- shared_ptr< SfPointBdCond > getPointBdCondition (int index) const
- void getEdgePointBdConditions (int edge_number, std::vector< shared_ptr< SfPointBdCond > > &bd_cond) const
- void getPointBdCond (std::vector< shared_ptr< SfPointBdCond > > &bd_cond) const
- virtual bool matchingSplineSpace (BlockSolution *other) const
- virtual void getMatchingCoefficients (BlockSolution *other, std::vector< std::pair< int, int > > &enumeration, int match_pos=0) const
- virtual void getBoundaryCoefficients (int boundary, std::vector< int > &enumeration) const
- virtual void getBoundaryCoefficients (int boundary, std::vector< int > &enumeration_bd, std::vector< int > &enumeration_bd2) const
- virtual void makeMatchingSplineSpace (BlockSolution *other)
- virtual void increaseDegree (int new_degree, int pardir)
- virtual void insertKnots (const std::vector< int > &knot_intervals, int pardir)
- virtual void insertKnots (const std::vector< double > &knots, int pardir)
- virtual void erasePreEvaluatedBasisFunctions ()
- virtual void performPreEvaluation (std::vector< std::vector< double > > &Gauss_par)
- void getBasisFunctions (int index_of_Gauss_point1, int index_of_Gauss_point2, std::vector< double > &basisValues, std::vector< double > &basisDerivs_u, std::vector< double > &basisDerivs_v) const
- void getBasisFunctions (double param1, double param2, std::vector< double > &basisValues, std::vector< double > &basisDerivs_u, std::vector< double > &basisDerivs_v) const
- void getBasisFunctionValues (int basis_func_id_u, int basis_func_id_v, std::vector< int > &index_of_Gauss_points1, std::vector< int > &index_of_Gauss_points2, std::vector< double > &basisValues, std::vector< double > &basisDerivs_u, std::vector< double > &basisDerivs_v) const
- void getBasisFunctionValues (int basis_func_id_u, int basis_func_id_v, int knot_ind_u, int knot_ind_v, std::vector< int > &index_of_Gauss_points1, std::vector< int > &index_of_Gauss_points2, std::vector< double > &basisValues, std::vector< double > &basisDerivs_u, std::vector< double > &basisDerivs_v) const
- virtual double getJacobian (std::vector< int > &index_of_Gauss_point) const
- virtual void valuesInGaussPoint (const std::vector< int > &index_of_Gauss_point, std::vector< Point > &derivs) const
- virtual void setSolutionCoefficients (const std::vector< double > &coefs)
- shared_ptr< SplineSurface > getSolutionSurface () const
- shared_ptr< SplineSurface > getGeometrySurface () const
- void setMinimumDegree (int degree)
- void refineToGeometry (int pardir)
- virtual int nmbCoefs () const
- virtual int nmbCoefs (int pardir) const
- virtual int degree (int pardir) const
- virtual std::vector< double > knots (int pardir) const
- virtual std::vector< double > distinctKnots (int pardir) const
- virtual BsplineBasis basis (int pardir) const

- virtual int dimension () const
- virtual void updateConditions ()
- double getGaussParameter (int index_of_Gauss_point, int pardir) const
- virtual tpTolerances getTolerances () const

29.439.1 Detailed Description

Definition at line 79 of file SfSolution.h.

29.439.2 Constructor & Destructor Documentation

29.439.2.1 Go::SfSolution::SfSolution (IsogeometricSfBlock * *parent,* shared_ptr< SplineSurface > *sol_surf*)

29.439.2.2 virtual Go::SfSolution::~SfSolution ( ) [virtual]

29.439.3 Member Function Documentation

29.439.3.1 void Go::SfSolution::addBoundaryCondition (int *edge_nmb,* BdConditionType *type,* BdCondFunctor * *fbd,* std::pair< double, double > *end_par*)

29.439.3.2 void Go::SfSolution::addBoundaryCondition (int *edge_nmb,* BdConditionType *type,* const Point & *const_val,* std::pair< double, double > *end_par*)

29.439.3.3 void Go::SfSolution::addDirichletPointBdCond (double *param[ ],* Point & *condition_value*)

29.439.3.4 virtual SfSolution* Go::SfSolution::asSfSolution ( ) [virtual]

Reimplemented from Go::BlockSolution.

29.439.3.5 virtual BsplineBasis Go::SfSolution::basis (int *pardir*) const [virtual]

Implements Go::BlockSolution.

29.439.3.6 virtual int Go::SfSolution::degree (int *pardir*) const [virtual]

Implements Go::BlockSolution.

29.439.3.7 virtual int Go::SfSolution::dimension ( ) const [virtual]

Implements Go::BlockSolution.

29.439.3.8 virtual std::vector<double> Go::SfSolution::distinctKnots (int *pardir*) const [virtual]

Implements Go::BlockSolution.

29.439.3.9 virtual void Go::SfSolution::erasePreEvaluatedBasisFunctions ( ) [virtual]

Implements Go::BlockSolution.

29.439.3.10 void Go::SfSolution::getBasisFunctions (int *index_of_Gauss_point1*, int *index_of_Gauss_point2*, std::vector< double > & *basisValues*, std::vector< double > & *basisDerivs_u*, std::vector< double > & *basisDerivs_v*) const

29.439.3.11 void Go::SfSolution::getBasisFunctions (double *param1*, double *param2*, std::vector< double > & *basisValues*, std::vector< double > & *basisDerivs_u*, std::vector< double > & *basisDerivs_v*) const

29.439.3.12 void Go::SfSolution::getBasisFunctionValues (int *basis_func_id_u*, int *basis_func_id_v*, std::vector< int > & *index_of_Gauss_points1*, std::vector< int > & *index_of_Gauss_points2*, std::vector< double > & *basisValues*, std::vector< double > & *basisDerivs_u*, std::vector< double > & *basisDerivs_v*) const

29.439.3.13 void Go::SfSolution::getBasisFunctionValues (int *basis_func_id_u*, int *basis_func_id_v*, int *knot_ind_u*, int *knot_ind_v*, std::vector< int > & *index_of_Gauss_points1*, std::vector< int > & *index_of_Gauss_points2*, std::vector< double > & *basisValues*, std::vector< double > & *basisDerivs_u*, std::vector< double > & *basisDerivs_v*) const

29.439.3.14 virtual void Go::SfSolution::getBoundaryCoefficients (int *boundary*, std::vector< int > & *enumeration*) const [virtual]

Implements Go::BlockSolution.

29.439.3.15 virtual void Go::SfSolution::getBoundaryCoefficients (int *boundary*, std::vector< int > & *enumeration_bd*, std::vector< int > & *enumeration_bd2*) const [virtual]

Implements Go::BlockSolution.

29.439.3.16 shared_ptr<SfBoundaryCondition> Go::SfSolution::getBoundaryCondition (int *index*) const

29.439.3.17 void Go::SfSolution::getEdgeBoundaryConditions (int *edge_number*, std::vector< shared_ptr< SfBoundaryCondition > > & *bd_cond*) const

29.439.3.18 void Go::SfSolution::getEdgeBoundaryConditions (std::vector< shared_ptr< SfBoundaryCondition > > & *bd_cond*) const

29.439.3.19 void Go::SfSolution::getEdgePointBdConditions (int *edge_number*, std::vector< shared_ptr< SfPointBdCond > > & *bd_cond*) const

29.439.3.20 double Go::SfSolution::getGaussParameter (int *index_of_Gauss_point*, int *pardir*) const

29.439.3.21 shared_ptr<SplineSurface> Go::SfSolution::getGeometrySurface ( ) const

29.439.3.22 virtual double Go::SfSolution::getJacobian (std::vector< int > & *index_of_Gauss_point*) const [virtual]

Implements Go::BlockSolution.

29.439.3.23 virtual void Go::SfSolution::getMatchingCoefficients (BlockSolution * *other,* std::vector< std::pair< int, int > > & *enumeration,* int *match_pos* = 0) const [virtual]

Implements Go::BlockSolution.

29.439.3.24 int Go::SfSolution::getNmbOfBoundaryConditions ( ) const

29.439.3.25 virtual int Go::SfSolution::getNmbOfPointBdConditions ( ) const [virtual]

Implements Go::BlockSolution.

29.439.3.26 void Go::SfSolution::getPointBdCond (std::vector< shared_ptr< SfPointBdCond > > & *bd_cond*) const

29.439.3.27 shared_ptr<SfPointBdCond> Go::SfSolution::getPointBdCondition (int *index*) const

29.439.3.28 shared_ptr<SplineSurface> Go::SfSolution::getSolutionSurface ( ) const

29.439.3.29 virtual tpTolerances Go::SfSolution::getTolerances ( ) const [virtual]

Implements Go::BlockSolution.

29.439.3.30 virtual void Go::SfSolution::increaseDegree (int *new_degree,* int *pardir*) [virtual]

Implements Go::BlockSolution.

29.439.3.31 virtual void Go::SfSolution::insertKnots (const std::vector< int > & *knot_intervals,* int *pardir*) [virtual]

Implements Go::BlockSolution.

29.439.3.32 virtual void Go::SfSolution::insertKnots (const std::vector< double > & *knots,* int *pardir*) [virtual]

Implements Go::BlockSolution.

29.439.3.33 virtual std::vector<double> Go::SfSolution::knots (int *pardir*) const [virtual]

Implements Go::BlockSolution.

29.439.3.34 virtual void Go::SfSolution::makeMatchingSplineSpace (BlockSolution * *other*) [virtual]

Implements Go::BlockSolution.

29.439.3.35 virtual bool Go::SfSolution::matchingSplineSpace (BlockSolution * *other*) const [virtual]

Implements Go::BlockSolution.

29.439.3.36 virtual int Go::SfSolution::nmbCoefs ( ) const [virtual]

Implements Go::BlockSolution.

29.439.3.37 virtual int Go::SfSolution::nmbCoefs (int *pardir*) const [virtual]

Implements Go::BlockSolution.

29.439.3.38 virtual void Go::SfSolution::performPreEvaluation (std::vector< std::vector< double > > & *Gauss_par*) [virtual]

Implements Go::BlockSolution.

29.439.3.39 void Go::SfSolution::refineToGeometry (int *pardir*)

29.439.3.40 void Go::SfSolution::setMinimumDegree (int *degree*)

29.439.3.41 virtual void Go::SfSolution::setSolutionCoefficients (const std::vector< double > & *coefs*) [virtual]

Implements Go::BlockSolution.

29.439.3.42 virtual void Go::SfSolution::updateConditions ( ) [virtual]

Implements Go::BlockSolution.

29.439.3.43 virtual void Go::SfSolution::valuesInGaussPoint (const std::vector< int > & *index_of_Gauss_point*, std::vector< Point > & *derivs*) const [virtual]

Implements Go::BlockSolution.

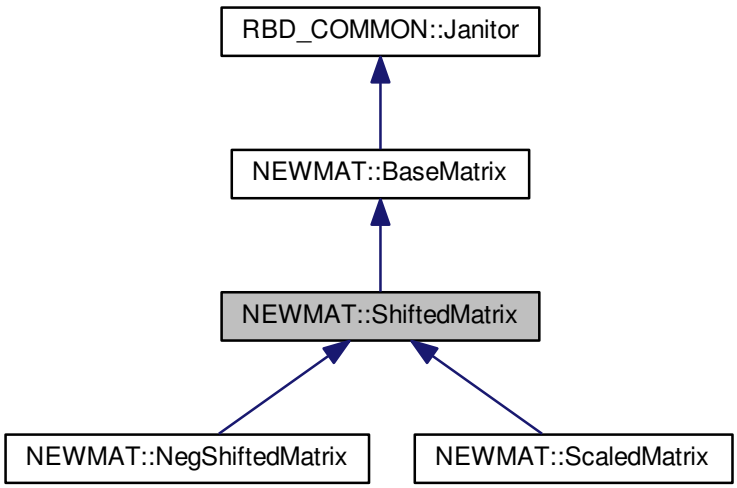
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/SfSolution.h

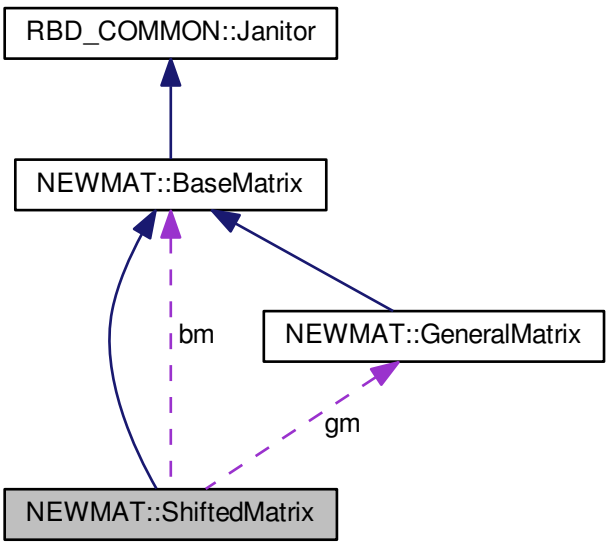
29.440 NEWMAT::ShiftedMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::ShiftedMatrix:



Collaboration diagram for NEWMAT::ShiftedMatrix:



Public Member Functions

- ~ShiftedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)

Protected Member Functions

- ShiftedMatrix (const BaseMatrix *bmx, Real fx)
- int search (const BaseMatrix *) const

Protected Attributes

- union {
  const BaseMatrix * bm
  GeneralMatrix * gm
  };
- Real f

Friends

- class BaseMatrix
- class GeneralMatrix
- class GenericMatrix
- ShiftedMatrix operator+ (Real f, const BaseMatrix &BM)

29.440.1 Detailed Description

Definition at line 1311 of file newmat.h.

29.440.2 Constructor & Destructor Documentation

29.440.2.1 NEWMAT::ShiftedMatrix::ShiftedMatrix (const BaseMatrix * *bmx*, Real *fx*) [inline],[protected]

Definition at line 1316 of file newmat.h.

29.440.2.2 NEWMAT::ShiftedMatrix::~ShiftedMatrix ( ) [inline]

Definition at line 1322 of file newmat.h.

29.440.3 Member Function Documentation

29.440.3.1 GeneralMatrix * ShiftedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Implements NEWMAT::BaseMatrix.

Reimplemented in NEWMAT::ScaledMatrix, and NEWMAT::NegShiftedMatrix.

Definition at line 94 of file newmat5.cpp.

29.440.3.2 int ShiftedMatrix::search (const BaseMatrix * *s*) const [protected], [virtual]

Implements NEWMAT::BaseMatrix.

Definition at line 376 of file newmat4.cpp.

29.440.4 Friends And Related Function Documentation

29.440.4.1 friend class BaseMatrix [friend]

Definition at line 1318 of file newmat.h.

29.440.4.2 friend class GeneralMatrix [friend]

Definition at line 1319 of file newmat.h.

29.440.4.3 friend class GenericMatrix [friend]

Definition at line 1320 of file newmat.h.

29.440.4.4 ShiftedMatrix operator+ (Real *f,* const BaseMatrix & *BM*) [friend]

Definition at line 1776 of file newmat.h.

29.440.5 Member Data Documentation

29.440.5.1 union { ... } [protected]

29.440.5.2 const BaseMatrix* NEWMAT::ShiftedMatrix::bm

Definition at line 1314 of file newmat.h.

29.440.5.3 Real NEWMAT::ShiftedMatrix::f [protected]

Definition at line 1315 of file newmat.h.

29.440.5.4 GeneralMatrix* NEWMAT::ShiftedMatrix::gm

Definition at line 1314 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

29.441 Go::sideConstraint Struct Reference

`#include <ConstraintDefinitions.h>`

Public Attributes

- int dim_

  Dimension of coefficient (max 3).
- std::vector< std::pair< int, double > > factor_
- double constant_term_ [3]

  The constant term in the current equation.

29.441.1 Detailed Description

Struct defining linear side constraints between control points in a surface. The elements of factor_ correspond to a linear combination of control points on the left side of the equation, whilst constant_term_ denotes the right side of the equation.

Definition at line 54 of file ConstraintDefinitions.h.

29.441.2 Member Data Documentation

29.441.2.1 double Go::sideConstraint::constant_term_[3]

The constant term in the current equation.

Definition at line 63 of file ConstraintDefinitions.h.

29.441.2.2 int Go::sideConstraint::dim_

Dimension of coefficient (max 3).

Definition at line 57 of file ConstraintDefinitions.h.

29.441.2.3 std::vector<std::pair<int, double> > Go::sideConstraint::factor_

For each coefficient involved in the constraint, the index of the coefficient is given and the factor corresponding to the coefficient in the equation.

Definition at line 61 of file ConstraintDefinitions.h.

The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/creators/ConstraintDefinitions.h

29.442 Go::sideConstraintSet Struct Reference

`#include <ConstraintDefinitions.h>`

Public Member Functions

- sideConstraintSet ()
  Default constructor.
- sideConstraintSet (int dim)

Public Attributes

- int dim_
  Dimension of coefficient (max 3).
- std::vector< std::pair< std::pair< int, int >, double > > factor_
- double constant_term_ [3]

29.442.1 Detailed Description

Struct defining linear side constraints between control points in a set of surfaces. The elements of factor_ correspond to a linear combination of control points on the left side of the equation, whilst constant_term_ denotes the right side of the equation.

Definition at line 72 of file ConstraintDefinitions.h.

29.442.2 Constructor & Destructor Documentation

29.442.2.1 Go::sideConstraintSet::sideConstraintSet ( ) [inline]

Default constructor.

Definition at line 84 of file ConstraintDefinitions.h.

29.442.2.2 Go::sideConstraintSet::sideConstraintSet (int *dim*) [inline]

Constructor.

Parameters

dim	dimension of geometric space.

Definition at line 92 of file ConstraintDefinitions.h.

29.442.3 Member Data Documentation

29.442.3.1 double Go::sideConstraintSet::constant_term_[3]

The constant term in the current equation, on the right side of the equation. For dim $<$ 3 not all elements are used.

Definition at line 82 of file ConstraintDefinitions.h.

29.442.3.2 int Go::sideConstraintSet::dim_

Dimension of coefficient (max 3).

Definition at line 75 of file ConstraintDefinitions.h.

29.442.3.3 std::vector<std::pair<std::pair<int,int>, double> > Go::sideConstraintSet::factor_

For each coefficient involved in the constraint, the index of the surface, the index of the coefficient and the factor corresponding to the coefficient in the equation is given.

Definition at line 79 of file ConstraintDefinitions.h.

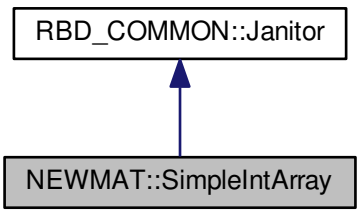
The documentation for this struct was generated from the following file:

- gotools-core/include/GoTools/creators/ConstraintDefinitions.h

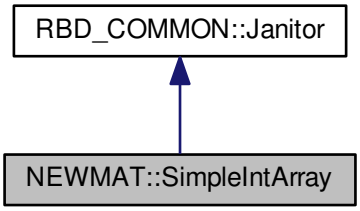
29.443 NEWMAT::SimpleIntArray Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::SimpleIntArray:



Collaboration diagram for NEWMAT::SimpleIntArray:



Public Member Functions

- SimpleIntArray (int xn)
- ~SimpleIntArray ()
- int & operator[ ] (int i)
- int operator[ ] (int i) const
- void operator= (int ai)
- void operator= (const SimpleIntArray &b)
- SimpleIntArray (const SimpleIntArray &b)
- int Size () const
- int * Data ()
- const int * Data () const
- void ReSize (int i, bool keep=false)
- void CleanUp ()

Protected Attributes

- int * a
- int n

29.443.1 Detailed Description

Definition at line 1566 of file newmat.h.

29.443.2 Constructor & Destructor Documentation

29.443.2.1 SimpleIntArray::SimpleIntArray (int *xn*)

Definition at line 856 of file newmat4.cpp.

29.443.2.2 SimpleIntArray::~SimpleIntArray ( )

Definition at line 865 of file newmat4.cpp.

29.443.2.3 SimpleIntArray::SimpleIntArray (const SimpleIntArray & *b*)

Definition at line 907 of file newmat4.cpp.

29.443.3 Member Function Documentation

29.443.3.1 void NEWMAT::SimpleIntArray::CleanUp ( ) [inline], [virtual]

Reimplemented from RBD_COMMON::Janitor.

Definition at line 1589 of file newmat.h.

29.443.3.2 int* NEWMAT::SimpleIntArray::Data ( ) [inline]

Definition at line 1584 of file newmat.h.

29.443.3.3 const int* NEWMAT::SimpleIntArray::Data ( ) const [inline]

Definition at line 1585 of file newmat.h.

29.443.3.4 void SimpleIntArray::operator= (int *ai*)

Definition at line 891 of file newmat4.cpp.

29.443.3.5 void SimpleIntArray::operator= (const SimpleIntArray & *b*)

Definition at line 897 of file newmat4.cpp.

29.443.3.6 int & SimpleIntArray::operator[ ] (int *i*)

Definition at line 872 of file newmat4.cpp.

29.443.3.7 int NEWMAT::SimpleIntArray::operator[ ] (int *i*) const

29.443.3.8 void SimpleIntArray::ReSize (int *i*, bool *keep* = false)

Definition at line 921 of file newmat4.cpp.

29.443.3.9 int NEWMAT::SimpleIntArray::Size ( ) const [inline]

Definition at line 1582 of file newmat.h.

29.443.4 Member Data Documentation

29.443.4.1 int* NEWMAT::SimpleIntArray::a [protected]

Definition at line 1569 of file newmat.h.

29.443.4.2 int NEWMAT::SimpleIntArray::n [protected]

Definition at line 1570 of file newmat.h.

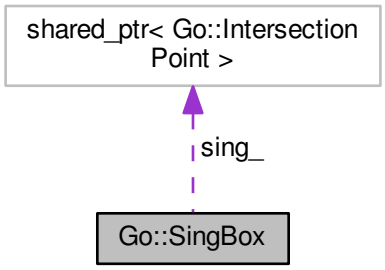
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp

29.444 Go::SingBox Struct Reference

`#include <SfSelfIntersector.h>`

Collaboration diagram for Go::SingBox:



Public Member Functions

- SingBox (std::vector< std::pair< double, int > > box, shared_ptr< IntersectionPoint > sing)

Public Attributes

- std::vector< std::pair< double, int > > box_limit_
- shared_ptr< IntersectionPoint > sing_

29.444.1 Detailed Description

Definition at line 54 of file SfSelfIntersector.h.

29.444.2 Constructor & Destructor Documentation

29.444.2.1 Go::SingBox::SingBox (std::vector< std::pair< double, int > > *box*, shared_ptr< IntersectionPoint > *sing*) [inline]

Definition at line 59 of file SfSelfIntersector.h.

29.444.3 Member Data Documentation

29.444.3.1 std::vector<std::pair<double, int> > Go::SingBox::box_limit_

Definition at line 56 of file SfSelfIntersector.h.

29.444.3.2 shared_ptr<IntersectionPoint> Go::SingBox::sing_

Definition at line 57 of file SfSelfIntersector.h.

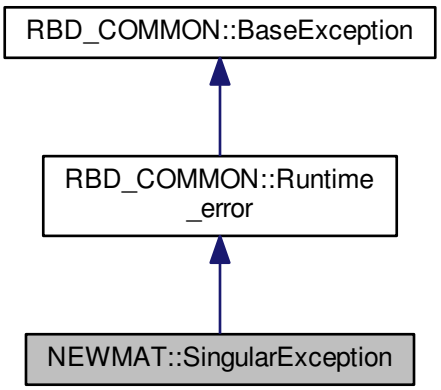
The documentation for this struct was generated from the following file:

- intersections/include/GoTools/intersections/SfSelfIntersector.h

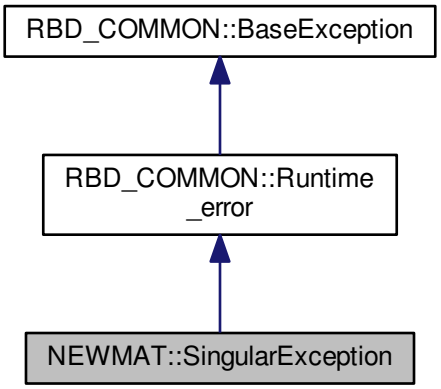
29.445 NEWMAT::SingularException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::SingularException:



Collaboration diagram for NEWMAT::SingularException:



Public Member Functions

- SingularException (const GeneralMatrix &A)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.445.1 Detailed Description

Definition at line 1610 of file newmat.h.

29.445.2 Constructor & Destructor Documentation

29.445.2.1 SingularException::SingularException (const GeneralMatrix & *A*)

Definition at line 54 of file newmatex.cpp.

29.445.3 Member Data Documentation

29.445.3.1 unsigned long SingularException::Select [static]

Definition at line 1613 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

29.446 Go::SingularityInfo Class Reference

`#include <SingularityInfo.h>`

Public Member Functions

- SingularityInfo ()
  Default constructor.
- SingularityInfo (shared_ptr< SingularityInfo > previous, bool use_previous=false)
- SingularityInfo (shared_ptr< SingularityInfo > previous, int missing_dir)
- bool hasPoint ()
- int getNmbPoints (int nmb_par)
- double getParam (int dir)
- void addIterationCount ()
  Increment the iteration count.
- void addSimpleCount (bool simple1, bool simple2)
- void setSingularPoint (double *par, int nmb_par)
- void addSingularPoint (double *par, int nmb_par)
- Point getPoint (int idx, int nmb_par)
- bool iterationDone ()
- bool iterationSucceed ()
- int nmbSimple1 ()
- int nmbSimple2 ()
- void setHighPriSing (double *par, int nmb_par)
- void setHighPriSingType (SingularityClassification type)
- SingularityClassification hasHighPriSing ()
- double getHighPriSing (int idx)
- std::vector< double > getHighPriSing ()
- void cleanUp (std::vector< double > start, std::vector< double > end, double tol)

29.446.1 Detailed Description

This class contains information about singularities in an intersection problem

Definition at line 55 of file SingularityInfo.h.

29.446.2 Constructor & Destructor Documentation

29.446.2.1 Go::SingularityInfo::SingularityInfo ( )

Default constructor.

29.446.2.2 Go::SingularityInfo::SingularityInfo (shared_ptr< SingularityInfo > *previous*, bool *use_previous* = false)

Inheritance constructor

Parameters

previous	shared pointer to a SingularityInfo object
use_previous	flag indicating if *previous* comes from a previous intersection problem

29.446.2.3 Go::SingularityInfo::SingularityInfo (shared_ptr< **SingularityInfo** > *previous*, int *missing_dir*)

Inheritance constructor

Parameters

previous	shared pointer to a SingularityInfo object
missing_dir	if the dimension of the intersection problem has been reduced from previous, the index tells us which parameter direction that was removed. Indexing starts at 0.

29.446.3 Member Function Documentation

29.446.3.1 void Go::SingularityInfo::addIterationCount ( ) [inline]

Increment the iteration count.

Definition at line 94 of file SingularityInfo.h.

29.446.3.2 void Go::SingularityInfo::addSimpleCount (**bool** *simple1*, **bool** *simple2*) [inline]

Increment the number of times the intersection objects are characterized as simple.

Parameters

simple1	if `true`, increment for the first intersection object
simple2	if `true`, increment for the second intersection object

Definition at line 106 of file SingularityInfo.h.

29.446.3.3 void Go::SingularityInfo::addSingularPoint (**double** * *par*, int *nmb_par*)

Add a singular point

Parameters

par	parameter array of the singular point
nmb_par	number of parameters in *par*

29.446.3.4 void Go::SingularityInfo::cleanUp (std::vector< double > *start,* std::vector< double > *end,* double *tol*)

29.446.3.5 double Go::SingularityInfo::getHighPriSing (int *idx*) [inline]

Get the high priority singularity

Parameters

idx	index specifying a parameter of the singular point

Returns

the parameter of the singular point in the *idx* direction

Definition at line 171 of file SingularityInfo.h.

29.446.3.6 std::vector<double> Go::SingularityInfo::getHighPriSing ( ) [inline]

Get the high priority singularity

Returns

the vector of parameters of the singular point

Definition at line 176 of file SingularityInfo.h.

29.446.3.7 int Go::SingularityInfo::getNmbPoints (int *nmb_par*) [inline]

Get number of singular points

Parameters

nmb_par	the number of parameters

Returns

the number of sinular points

Definition at line 85 of file SingularityInfo.h.

29.446.3.8 double Go::SingularityInfo::getParam (int *dir*)

Get a parameter for th last found singularity or closest point

Parameters

dir	the index of the parameter direction

Returns

the parameter value in the *dir* direction

29.446.3.9 Point Go::SingularityInfo::getPoint (int *idx,* int *nmb_par*)

Get a singular point

Parameters

idx	index to the singular point in question
nmb_par	number of parameters

Returns

the singular Point

29.446.3.10 SingularityClassification Go::SingularityInfo::hasHighPriSing ( ) [inline]

Get info on high priority singularities

Returns

the singularity classification

Definition at line 164 of file SingularityInfo.h.

29.446.3.11 bool Go::SingularityInfo::hasPoint ( ) [inline]

Check if singular point has been found

Returns

`true` if a singular point has been found, `false` otherwise

Definition at line 79 of file SingularityInfo.h.

29.446.3.12 bool Go::SingularityInfo::iterationDone ( ) [inline]

Check if the iteration is done

Returns

`true` if the iteration is done, `false` otherwise

Definition at line 132 of file SingularityInfo.h.

29.446.3.13 bool Go::SingularityInfo::iterationSucceed ( ) [inline]

Check if the iteration succeeded

Returns

`true` if the iteration succeeded, `false` otherwise

Definition at line 137 of file SingularityInfo.h.

29.446.3.14 int Go::SingularityInfo::nmbSimple1 ( ) [inline]

Get the number of times the first intersection object has been characterized as simple.

Returns

the number of times

Definition at line 143 of file SingularityInfo.h.

29.446.3.15 int Go::SingularityInfo::nmbSimple2 ( ) [inline]

Get the number of times the second intersection object has been characterized as simple.

Returns

the number of times

Definition at line 149 of file SingularityInfo.h.

29.446.3.16 void Go::SingularityInfo::setHighPriSing (double * *par,* int *nmb_par*)

Set a high priority singular point

Parameters

par	parameter array of the singular point
nmb_par	number of parameters in *par*

29.446.3.17 void Go::SingularityInfo::setHighPriSingType (SingularityClassification *type*) [inline]

Set the high priority singular point type

Parameters

type	the type of the singular point

Definition at line 159 of file SingularityInfo.h.

29.446.3.18 void Go::SingularityInfo::setSingularPoint (double * *par,* int *nmb_par*)

Set a singular point

Parameters

par	parameter array of the singular point
nmb_par	number of parameters in *par*

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/SingularityInfo.h

29.447 Go::SingUnion Struct Reference

`#include <SfSelfIntersector.h>`

Public Member Functions

- SingUnion (double box[ ], std::vector< int > idx)
- bool isInside (double *mima)

Public Attributes

- double limit_ [4]
- std::vector< int > singbox_idx_

29.447.1 Detailed Description

Definition at line 67 of file SfSelfIntersector.h.

29.447.2 Constructor & Destructor Documentation

29.447.2.1 Go::SingUnion::SingUnion (double *box[ ],* std::vector< int > *idx*) [inline]

Definition at line 72 of file SfSelfIntersector.h.

29.447.3 Member Function Documentation

29.447.3.1 bool Go::SingUnion::isInside (double * *mima*) [inline]

Definition at line 79 of file SfSelfIntersector.h.

29.447.4 Member Data Documentation

29.447.4.1 double Go::SingUnion::limit_[4]

Definition at line 69 of file SfSelfIntersector.h.

29.447.4.2 std::vector<int> Go::SingUnion::singbox_idx_

Definition at line 70 of file SfSelfIntersector.h.

The documentation for this struct was generated from the following file:

- intersections/include/GoTools/intersections/SfSelfIntersector.h

29.448 SISLbox Struct Reference

```
#include <sisl.h>
```

Public Attributes

- double * emax
- double * emin
- int imin
- int imax
- double * e2max [3]
- double * e2min [3]
- double etol [3]

29.448.1 Detailed Description

Definition at line 107 of file sisl.h.

29.448.2 Member Data Documentation

29.448.2.1 double* SISLbox::e2max[3]

Definition at line 114 of file sisl.h.

29.448.2.2 double* SISLbox::e2min[3]

Definition at line 115 of file sisl.h.

29.448.2.3 double* SISLbox::emax

Definition at line 109 of file sisl.h.

29.448.2.4 double* SISLbox::emin

Definition at line 110 of file sisl.h.

29.448.2.5 double SISLbox::etol[3]

Definition at line 116 of file sisl.h.

29.448.2.6 int SISLbox::imax

Definition at line 112 of file sisl.h.

29.448.2.7 int SISLbox::imin

Definition at line 111 of file sisl.h.

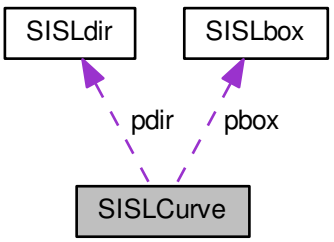
The documentation for this struct was generated from the following file:

- sisl/include/sisl.h

29.449 SISLCurve Struct Reference

```
#include <sisl.h>
```

Collaboration diagram for SISLCurve:



Public Attributes

- int ik
- int in
- double * et
- double * ecoef
- double * rcoef
- int ikind
- int idim
- int icopy
- SISLdir * pdir
- SISLbox * pbox
- int cuopen

29.449.1 Detailed Description

Definition at line 122 of file sisl.h.

29.449.2 Member Data Documentation

29.449.2.1 int SISLCurve::cuopen

Definition at line 148 of file sisl.h.

29.449.2.2 double* SISLCurve::ecoef

Definition at line 127 of file sisl.h.

29.449.2.3 double* SISLCurve::et

Definition at line 126 of file sisl.h.

29.449.2.4 int SISLCurve::icopy

Definition at line 137 of file sisl.h.

29.449.2.5 int SISLCurve::idim

Definition at line 135 of file sisl.h.

29.449.2.6 int SISLCurve::ik

Definition at line 124 of file sisl.h.

29.449.2.7 int SISLCurve::ikind

Definition at line 130 of file sisl.h.

29.449.2.8 int SISLCurve::in

Definition at line 125 of file sisl.h.

29.449.2.9 SISLbox* SISLCurve::pbox

Definition at line 146 of file sisl.h.

29.449.2.10 SISLdir* SISLCurve::pdir

Definition at line 144 of file sisl.h.

29.449.2.11 double* SISLCurve::rcoef

Definition at line 128 of file sisl.h.

The documentation for this struct was generated from the following file:

- sisl/include/sisl.h

29.450 SISLdir Struct Reference

```
#include <sisl.h>
```

Public Attributes

- int igtpi
- double * ecoef
- double aang
- double * esmooth

29.450.1 Detailed Description

Definition at line 78 of file sisl.h.

29.450.2 Member Data Documentation

29.450.2.1 double SISLdir::aang

Definition at line 90 of file sisl.h.

29.450.2.2 double* SISLdir::ecoef

Definition at line 89 of file sisl.h.

29.450.2.3 double* SISLdir::esmooth

Definition at line 92 of file sisl.h.

29.450.2.4 int SISLdir::igtpi

Definition at line 80 of file sisl.h.

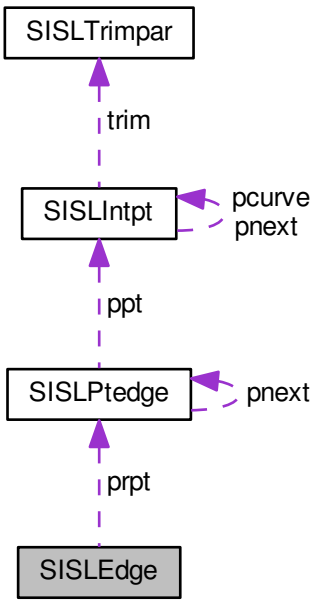
The documentation for this struct was generated from the following file:

- sisl/include/sisl.h

29.451 SISLEdge Struct Reference

```
#include <sislP.h>
```

Collaboration diagram for SISLEdge:



Public Attributes

- int iedge
- int ipoint
- SISLPtedge ** prpt

29.451.1 Detailed Description

Definition at line 323 of file sislP.h.

29.451.2 Member Data Documentation

29.451.2.1 int SISLEdge::iedge

Definition at line 325 of file sislP.h.

29.451.2.2 int SISLEdge::ipoint

Definition at line 326 of file sislP.h.

29.451.2.3 SISLPtedge** SISLEdge::prpt

Definition at line 328 of file sislP.h.

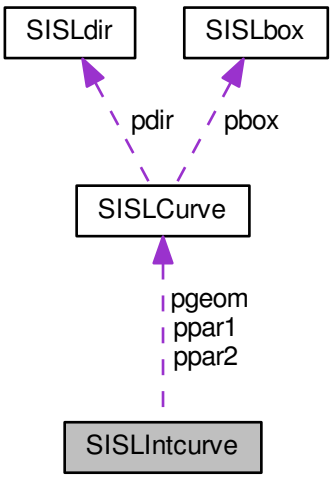
The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.452 SISLIntcurve Struct Reference

```
#include <sisl.h>
```

Collaboration diagram for SISLIntcurve:



Public Attributes

- int ipoint
- int ipar1
- int ipar2
- double * epar1
- double * epar2
- SISLCurve * pgeom
- SISLCurve * ppar1
- SISLCurve * ppar2
- int itype
- int pretop [4]

29.452.1 Detailed Description

Definition at line 205 of file sisl.h.

29.452.2 Member Data Documentation

29.452.2.1 double* SISLIntcurve::epar1

Definition at line 212 of file sisl.h.

29.452.2.2 double* SISLIntcurve::epar2

Definition at line 215 of file sisl.h.

29.452.2.3 int SISLIntcurve::ipar1

Definition at line 208 of file sisl.h.

29.452.2.4 int SISLIntcurve::ipar2

Definition at line 210 of file sisl.h.

29.452.2.5 int SISLIntcurve::ipoint

Definition at line 207 of file sisl.h.

29.452.2.6 int SISLIntcurve::itype

Definition at line 231 of file sisl.h.

29.452.2.7 SISLCurve* SISLIntcurve::pgeom

Definition at line 220 of file sisl.h.

29.452.2.8 SISLCurve* SISLIntcurve::ppar1

Definition at line 223 of file sisl.h.

29.452.2.9 SISLCurve* SISLIntcurve::ppar2

Definition at line 227 of file sisl.h.

29.452.2.10 int SISLIntcurve::pretop[4]

Definition at line 247 of file sisl.h.

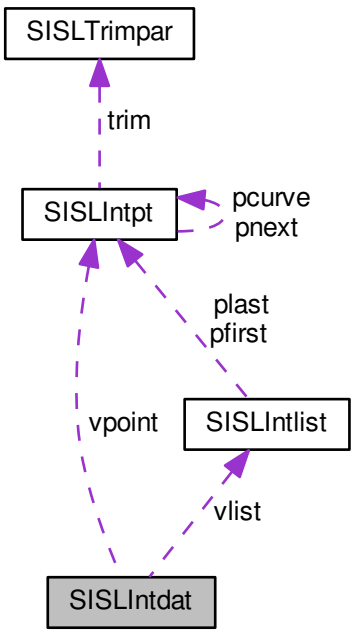
The documentation for this struct was generated from the following file:

- sisl/include/sisl.h

29.453 SISLIntdat Struct Reference

`#include <sislP.h>`

Collaboration diagram for SISLIntdat:



Public Attributes

- SISLIntpt ** vpoint
- int ipoint
- int ipmax
- SISLIntlist ** vlist
- int ilist
- int ilmax

29.453.1 Detailed Description

Definition at line 336 of file sislP.h.

29.453.2 Member Data Documentation

29.453.2.1 int SISLIntdat::ilist

Definition at line 342 of file sislP.h.

29.453.2.2 int SISLIntdat::ilmax

Definition at line 343 of file sislP.h.

29.453.2.3 int SISLIntdat::ipmax

Definition at line 340 of file sislP.h.

29.453.2.4 int SISLIntdat::ipoint

Definition at line 339 of file sislP.h.

29.453.2.5 SISLIntlist** SISLIntdat::vlist

Definition at line 341 of file sislP.h.

29.453.2.6 SISLIntpt** SISLIntdat::vpoint

Definition at line 338 of file sislP.h.

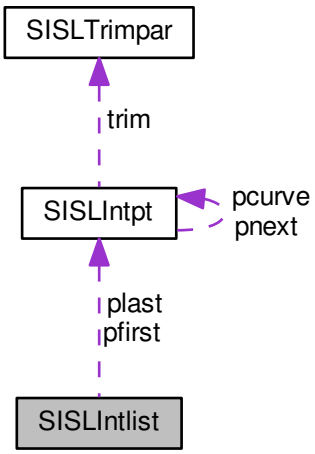
The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.454 SISLIntlist Struct Reference

`#include <sislP.h>`

Collaboration diagram for SISLIntlist:



Public Attributes

- SISLIntpt * pfirst
- SISLIntpt * plast
- int ind_first
- int ind_last
- int itype
- int inumb
- int pretop [4]

29.454.1 Detailed Description

Definition at line 289 of file sislP.h.

29.454.2 Member Data Documentation

29.454.2.1 int SISLIntlist::ind_first

Definition at line 293 of file sislP.h.

29.454.2.2 int SISLIntlist::ind_last

Definition at line 294 of file sislP.h.

29.454.2.3 int SISLIntlist::inumb

Definition at line 304 of file sislP.h.

29.454.2.4 int SISLIntlist::itype

Definition at line 295 of file sislP.h.

29.454.2.5 SISLIntpt* SISLIntlist::pfirst

Definition at line 291 of file sislP.h.

29.454.2.6 SISLIntpt* SISLIntlist::plast

Definition at line 292 of file sislP.h.

29.454.2.7 int SISLIntlist::pretop[4]

Definition at line 305 of file sislP.h.

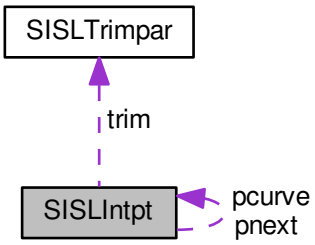
The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.455 SISLIntpt Struct Reference

`#include <sislP.h>`

Collaboration diagram for SISLIntpt:



Public Attributes

- int ipar
- double * epar
- double adist
- struct SISLIntpt * pcurve
- int iinter
- struct SISLIntpt ** pnext
- int * curve_dir
- int no_of_curves
- int no_of_curves_alloc
- int * left_obj_1
- int * left_obj_2
- int * right_obj_1
- int * right_obj_2
- int size_1
- int size_2
- double * geo_data_1
- double * geo_data_2
- double geo_track_3d [10]
- double geo_track_2d_1 [7]
- double geo_track_2d_2 [7]
- int edge_1
- int edge_2
- int marker
- int evaluated
- struct SISLTrimpar * trim [2]
- int iside_1
- int iside_2

29.455.1 Detailed Description

Definition at line 203 of file sisIP.h.

29.455.2 Member Data Documentation

29.455.2.1 double SISLIntpt::adist

Definition at line 209 of file sisIP.h.

29.455.2.2 int* SISLIntpt::curve_dir

Definition at line 221 of file sisIP.h.

29.455.2.3 int SISLIntpt::edge_1

Definition at line 241 of file sisIP.h.

29.455.2.4 int SISLIntpt::edge_2

Definition at line 242 of file sisIP.h.

29.455.2.5 double* SISLIntpt::epar

Definition at line 207 of file sisIP.h.

29.455.2.6 int SISLIntpt::evaluated

Definition at line 244 of file sisIP.h.

29.455.2.7 double* SISLIntpt::geo_data_1

Definition at line 235 of file sisIP.h.

29.455.2.8 double* SISLIntpt::geo_data_2

Definition at line 236 of file sisIP.h.

29.455.2.9 double SISLIntpt::geo_track_2d_1[7]

Definition at line 239 of file sisIP.h.

29.455.2.10 double SISLIntpt::geo_track_2d_2[7]

Definition at line 240 of file sisIP.h.

29.455.2.11 double SISLIntpt::geo_track_3d[10]

Definition at line 238 of file sisIP.h.

29.455.2.12 int SISLIntpt::iinter

Definition at line 213 of file sisIP.h.

29.455.2.13 int SISLIntpt::ipar

Definition at line 205 of file sisIP.h.

29.455.2.14 int SISLIntpt::iside_1

Definition at line 246 of file sislP.h.

29.455.2.15 int SISLIntpt::iside_2

Definition at line 247 of file sislP.h.

29.455.2.16 int* SISLIntpt::left_obj_1

Definition at line 225 of file sislP.h.

29.455.2.17 int* SISLIntpt::left_obj_2

Definition at line 227 of file sislP.h.

29.455.2.18 int SISLIntpt::marker

Definition at line 243 of file sislP.h.

29.455.2.19 int SISLIntpt::no_of_curves

Definition at line 223 of file sislP.h.

29.455.2.20 int SISLIntpt::no_of_curves_alloc

Definition at line 224 of file sislP.h.

29.455.2.21 struct SISLIntpt* SISLIntpt::pcurve

Definition at line 211 of file sislP.h.

29.455.2.22 struct SISLIntpt** SISLIntpt::pnext

Definition at line 219 of file sislP.h.

29.455.2.23 int* SISLIntpt::right_obj_1

Definition at line 229 of file sislP.h.

29.455.2.24 int* SISLIntpt::right_obj_2

Definition at line 231 of file sislP.h.

29.455.2.25 int SISLIntpt::size_1

Definition at line 233 of file sislP.h.

29.455.2.26 int SISLIntpt::size_2

Definition at line 234 of file sislP.h.

29.455.2.27 struct SISLTrimpar* SISLIntpt::trim[2]

Definition at line 245 of file sislP.h.

The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.456 SISLIntsurf Struct Reference

`#include <sislP.h>`

Public Attributes

- int ipoint
- int ipar
- double * epar
- int * const_par

29.456.1 Detailed Description

Definition at line 178 of file sislP.h.

29.456.2 Member Data Documentation

29.456.2.1 int* SISLIntsurf::const_par

Definition at line 184 of file sislP.h.

29.456.2.2 double* SISLIntsurf::epar

Definition at line 182 of file sislP.h.

29.456.2.3 int SISLIntsurf::ipar

Definition at line 181 of file sislP.h.

29.456.2.4 int SISLIntsurf::ipoint

Definition at line 180 of file sislP.h.

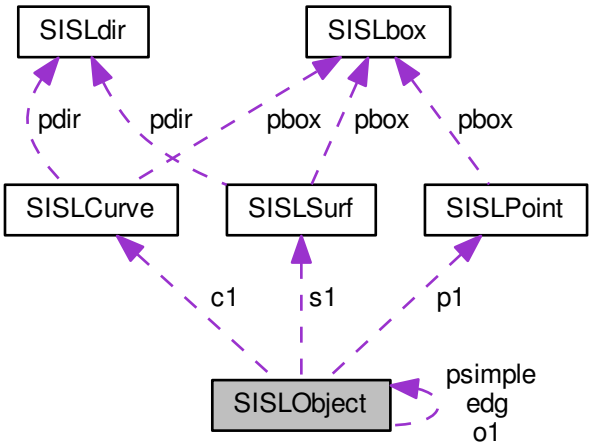
The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.457 SISLObject Struct Reference

`#include <sislP.h>`

Collaboration diagram for SISLObject:



Public Attributes

- int iobj
- SISLPoint * p1
- SISLCurve * c1
- SISLSurf * s1
- struct SISLObject * o1
- struct SISLObject * edg [4]
- struct SISLObject * psimple

29.457.1 Detailed Description

Definition at line 158 of file sislP.h.

29.457.2 Member Data Documentation

29.457.2.1 SISLCurve* SISLObject::c1

Definition at line 166 of file sislP.h.

29.457.2.2 struct SISLObject* SISLObject::edg[4]

Definition at line 172 of file sislP.h.

29.457.2.3 int SISLObject::iobj

Definition at line 160 of file sislP.h.

29.457.2.4 struct SISLObject* SISLObject::o1

Definition at line 170 of file sislP.h.

29.457.2.5 SISLPoint* SISLObject::p1

Definition at line 165 of file sislP.h.

29.457.2.6 struct SISLObject* SISLObject::psimple

Definition at line 174 of file sislP.h.

29.457.2.7 SISLSurf* SISLObject::s1

Definition at line 168 of file sislP.h.

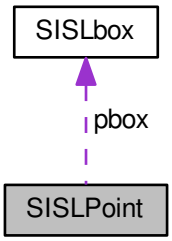
The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.458 SISLPoint Struct Reference

`#include <sislP.h>`

Collaboration diagram for SISLPoint:



Public Attributes

- double ec [3]
- int idim
- double * ecoef
- int icopy
- SISLbox * pbox

29.458.1 Detailed Description

Definition at line 134 of file sislP.h.

29.458.2 Member Data Documentation

29.458.2.1 double SISLPoint::ec[3]

Definition at line 136 of file sislP.h.

29.458.2.2 double* SISLPoint::ecoef

Definition at line 138 of file sislP.h.

29.458.2.3 int SISLPoint::icopy

Definition at line 140 of file sislP.h.

29.458.2.4 int SISLPoint::idim

Definition at line 137 of file sislP.h.

29.458.2.5 SISLbox* SISLPoint::pbox

Definition at line 148 of file sislP.h.

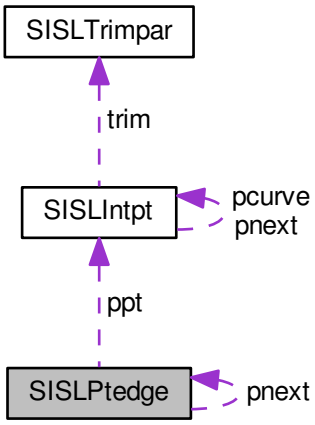
The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.459 SISLPtedge Struct Reference

`#include <sislP.h>`

Collaboration diagram for SISLPtedge:



Public Attributes

- SISLIntpt * ppt
- struct SISLPtedge * pnext

29.459.1 Detailed Description

Definition at line 312 of file sislP.h.

29.459.2 Member Data Documentation

29.459.2.1 struct SISLPtedge* SISLPtedge::pnext

Definition at line 315 of file sislP.h.

29.459.2.2 SISLIntpt* SISLPtedge::ppt

Definition at line 314 of file sislP.h.

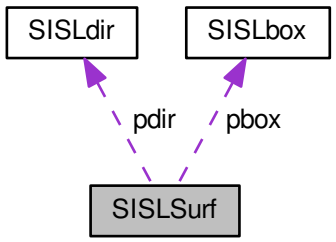
The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.460 SISLSurf Struct Reference

`#include <sisl.h>`

Collaboration diagram for SISLSurf:



Public Attributes

- int ik1
- int ik2
- int in1
- int in2
- double * et1
- double * et2
- double * ecoef
- double * rcoef
- int ikind
- int idim
- int icopy
- SISLdir * pdir
- SISLbox * pbox
- int use_count
- int cuopen_1
- int cuopen_2

29.460.1 Detailed Description

Definition at line 154 of file sisl.h.

29.460.2 Member Data Documentation

29.460.2.1 int SISLSurf::cuopen_1

Definition at line 195 of file sisl.h.

29.460.2.2 int SISLSurf::cuopen_2

Definition at line 196 of file sisl.h.

29.460.2.3 double* SISLSurf::ecoef

Definition at line 168 of file sisl.h.

29.460.2.4 double* SISLSurf::et1

Definition at line 164 of file sisl.h.

29.460.2.5 double* SISLSurf::et2

Definition at line 166 of file sisl.h.

29.460.2.6 int SISLSurf::icopy

Definition at line 182 of file sisl.h.

29.460.2.7 int SISLSurf::idim

Definition at line 180 of file sisl.h.

29.460.2.8 int SISLSurf::ik1

Definition at line 156 of file sisl.h.

29.460.2.9 int SISLSurf::ik2

Definition at line 158 of file sisl.h.

29.460.2.10 int SISLSurf::ikind

Definition at line 171 of file sisl.h.

29.460.2.11 int SISLSurf::in1

Definition at line 160 of file sisl.h.

29.460.2.12 int SISLSurf::in2

Definition at line 162 of file sisl.h.

29.460.2.13 SISLbox* SISLSurf::pbox

Definition at line 191 of file sisl.h.

29.460.2.14 SISLdir* SISLSurf::pdir

Definition at line 189 of file sisl.h.

29.460.2.15 double* SISLSurf::rcoef

Definition at line 169 of file sisl.h.

29.460.2.16 int SISLSurf::use_count

Definition at line 193 of file sisl.h.

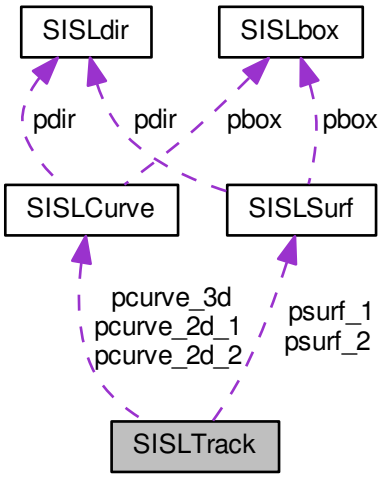
The documentation for this struct was generated from the following file:

- sisl/include/sisl.h

29.461 SISLTrack Struct Reference

`#include <sislP.h>`

Collaboration diagram for SISLTrack:



Public Attributes

- SISLSurf * psurf_1
- SISLSurf * psurf_2
- SISLCurve * pcurve_3d
- SISLCurve * pcurve_2d_1
- SISLCurve * pcurve_2d_2
- int ideg
- double eimpli [16]
- int turned
- int exact
- int pretop [4]
- int sing_start
- int sing_end

29.461.1 Detailed Description

Definition at line 253 of file sislP.h.

29.461.2 Member Data Documentation

29.461.2.1 double SISLTrack::eimpli[16]

Definition at line 274 of file sislP.h.

29.461.2.2 int SISLTrack::exact

Definition at line 280 of file sislP.h.

29.461.2.3 int SISLTrack::ideg

Definition at line 262 of file sislP.h.

29.461.2.4 SISLCurve* SISLTrack::pcurve_2d_1

Definition at line 258 of file sislP.h.

29.461.2.5 SISLCurve* SISLTrack::pcurve_2d_2

Definition at line 260 of file sislP.h.

29.461.2.6 SISLCurve* SISLTrack::pcurve_3d

Definition at line 257 of file sislP.h.

29.461.2.7 int SISLTrack::pretop[4]

Definition at line 281 of file sislP.h.

29.461.2.8 SISLSurf* SISLTrack::psurf_1

Definition at line 255 of file sislP.h.

29.461.2.9 SISLSurf* SISLTrack::psurf_2

Definition at line 256 of file sislP.h.

29.461.2.10 int SISLTrack::sing_end

Definition at line 283 of file sislP.h.

29.461.2.11 int SISLTrack::sing_start

Definition at line 282 of file sislP.h.

29.461.2.12 int SISLTrack::turned

Definition at line 275 of file sislP.h.

The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.462 SISLTrimpar Struct Reference

`#include <sislP.h>`

Public Attributes

- int ptindex
- int parindex

29.462.1 Detailed Description

Definition at line 189 of file sislP.h.

29.462.2 Member Data Documentation

29.462.2.1 int SISLTrimpar::parindex

Definition at line 193 of file sislP.h.

29.462.2.2 int SISLTrimpar::ptindex

Definition at line 191 of file sislP.h.

The documentation for this struct was generated from the following file:

- sisl/include/sislP.h

29.463 Go::SmoothCurve Class Reference

`#include <SmoothCurve.h>`

Public Member Functions

- SmoothCurve (int dim=3)
- ~SmoothCurve ()

  Destructor.
- int attach (const shared_ptr< SplineCurve > &incurve, int coef_known[ ], int numSideConstraints=0)

  Spefify the spline space we want to use,.
- void setOptim (const double weight1, const double weight2, const double weight3)
- void setLeastSquares (const std::vector< double > &pnts, const std::vector< double > &param_pnts, const std::vector< double > &pnt_weights, double weight)
- void setPeriodicity (int cont, double weight)
- void setSideConstraints (std::vector< sideConstraint > &constraints)
- void equationSolve (shared_ptr< SplineCurve > &curve)

29.463.1 Detailed Description

This class is used to generate a spline curve from a given spline space that approximates a set of weighed data points. In addition, user can set other conditions on things like curve smoothness or periodicity. To use this object, you must first instanciate it, then run the 'attach()' function, the 'setOptim()' function, the 'setLeastSquares()' function and finally the 'equationSolve()' function. Optionally, the functions 'setPeriodicity()' and 'setSideConstraints()' can be run before 'equationSolve()', if the corresponding conditions should be speficied.

Definition at line 87 of file SmoothCurve.h.

29.463.2 Constructor & Destructor Documentation

29.463.2.1 Go::SmoothCurve::SmoothCurve (int *dim* = 3)

Constructor. Initialises the object with a given spatial dimension (default is 3).

Parameters

dim	dimension of the geometry space.

29.463.2.2 Go::SmoothCurve::~SmoothCurve ( )

Destructor.

29.463.3 Member Function Documentation

29.463.3.1 int Go::SmoothCurve::attach (const shared_ptr< SplineCurve > & *incurve*, int *coef_known[ ]*, int *numSideConstraints* = 0)

Spefify the spline space we want to use,.

Initializes data given by an intermediate curve.

Parameters

incurve	curve defining the initial spline curve.
coef_known	array defining the free coefficients. Size equal to the number of coefficients in incurve. Value 0 = not known, value 1 = known.
numSideConstraints	the number of linear side constrains for the approximation.

Returns

status value: 0 = OK, negative not OK.

29.463.3.2 void Go::SmoothCurve::equationSolve (shared_ptr< SplineCurve > & *curve*)

Solve equation system, and produce output curve.

Parameters

curve	the curve resulting from the smoothing process.

29.463.3.3 void Go::SmoothCurve::setLeastSquares (const std::vector< double > & *pnts,* const std::vector< double > & *param_pnts,* const std::vector< double > & *pnt_weights,* double *weight*)

Compute matrices for least squares approximation.

Parameters

pnts	the input points (for 3D: (x0, y0, z0, x1, y1, z1, ...)) defining the approximation part of the smoothing problem.
param_pnts	the parameters for the input pnts.
pnt_weights	weight attached to each point to be approximated. Should lie in the unit interval. Typically they are all 1.0.
weight	multiplier of all weights in the pnt_weights vector

29.463.3.4 void Go::SmoothCurve::setOptim (const double *weight1,* const double *weight2,* const double *weight3*)

Compute the smoothing part of the equation system. The sum of the weights should lie in the unit interval.

Parameters

weight1	weight for smoothing with respect to the 1st derivative.
weight2	weight for smoothing with respect to the 2nd derivative.
weight3	weight for smoothing with respect to the 3rd derivative.

29.463.3.5 void Go::SmoothCurve::setPeriodicity (int *cont,* double *weight*)

Set periodicity constraints in one par. dir.

Parameters

cont	the wanted continuity across the seam.
weight	weight given to approximative continuity conditions. Should lie inside the unit interval.

29.463.3.6 void Go::SmoothCurve::setSideConstraints (std::vector< sideConstraint > & *constraints*)

Set linear side constraints (linear equation involving the free coefficients) to the minimization problem. The problem is solved using the method of Lagrange multipliers.

Parameters

constraints	the linear side constraints.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/SmoothCurve.h

29.464 Go::SmoothCurveSet Class Reference

`#include <SmoothCurveSet.h>`

Public Member Functions

- SmoothCurveSet ()
  Default constructor to the class.
- ~SmoothCurveSet ()
  Destructor.
- int attach (std::vector< shared_ptr< SplineCurve > > &incvs, std::vector< int > &seem, std::vector< std::vector< int > > &coef_known, int numSideConstraints=0)
- int setOptimize (double weight1, double weight2, double weight3)
  Compute the smoothing part of the equation system.
- int setLeastSquares (const std::vector< std::vector< double > > &pnts, const std::vector< std::vector< double > > &param_pnts, const std::vector< std::vector< double > > &pnt_weights, double weight)
- void setApproxOrig (double weight)
  Add term for approximation of the original curves.
- void setInterpolationConditions (const std::vector< std::vector< double > > &pnts, const std::vector< std::vector< double > > &param_pnts, const std::vector< std::vector< int > > &der, bool appr_constraints, double appr_wgt, int *jstat)
- int setCvSetConstraints (const std::vector< shared_ptr< cvSetConstraint > > &cv_set_constraints, bool appr_constraints, double appr_wgt)
- int setApproxSideConstraints (std::vector< shared_ptr< sideConstraintSet > > &constraints, double weight)
- int equationSolve (std::vector< shared_ptr< SplineCurve > > &curves)
  Solve equation system, and produce output curves.
- int setOrthCond (const std::vector< std::vector< double > > &pnts, const std::vector< std::vector< double > > &param_pnts, double weight)
- void setSideConstraints (std::vector< shared_ptr< sideConstraintSet > > &constraints, bool replace_constraints)

29.464.1 Detailed Description

Smoothing, point interpolation and point approximation applied to a set of curves while maintaining a set of continuity conditions between the curves, exact or approximative.

Definition at line 84 of file SmoothCurveSet.h.

29.464.2 Constructor & Destructor Documentation

29.464.2.1 Go::SmoothCurveSet::SmoothCurveSet ( )

Default constructor to the class.

29.464.2.2 Go::SmoothCurveSet::~SmoothCurveSet ( )

Destructor.

29.464.3 Member Function Documentation

29.464.3.1 int Go::SmoothCurveSet::attach (std::vector< shared_ptr< SplineCurve > > & *incvs,* std::vector< int > & *seem,* std::vector< std::vector< int > > & *coef_known,* int *numSideConstraints* = 0)

Initializes data given by an intermediate set of curves. For each curve there exists a vector coef_known (of size equal to the number of coefficients in the curve) Input is array of iterators to first element.

29.464.3.2 int Go::SmoothCurveSet::equationSolve (std::vector< shared_ptr< SplineCurve > > & *curves*)

Solve equation system, and produce output curves.

29.464.3.3 void Go::SmoothCurveSet::setApproxOrig (double *weight*)

Add term for approximation of the original curves.

29.464.3.4 int Go::SmoothCurveSet::setApproxSideConstraints (std::vector< shared_ptr< sideConstraintSet > > & *constraints,* double *weight*)

We may have side constraints which are not suitable for exact equality as spline solution space may not be large enough. We therefore allow using least squares to minimize the error. This applies in particular to constraint involving higher order derivatives. Assuming input is preprocessed (all coefs in constraints are free).

29.464.3.5 int Go::SmoothCurveSet::setCvSetConstraints (const std::vector< shared_ptr< cvSetConstraint > > & *cv_set_constraints,* bool *appr_constraints,* double *appr_wgt*)

Set linear side constraints between the coefs in (possibly different) input cvs.

29.464.3.6 void Go::SmoothCurveSet::setInterpolationConditions (const std::vector< std::vector< double > > & *pnts*, const std::vector< std::vector< double > > & *param_pnts*, const std::vector< std::vector< int > > & *der*, bool *appr_constraints*, double *appr_wgt*, int * *jstat*)

We add the interpolation conditions as linear side constraints. Assuming the degrees of freedom are sufficient (i.e. that the input curve provided by the user has enough knots).

29.464.3.7 int Go::SmoothCurveSet::setLeastSquares (const std::vector< std::vector< double > > & *pnts*, const std::vector< std::vector< double > > & *param_pnts*, const std::vector< std::vector< double > > & *pnt_weights*, double *weight*)

Compute matrices for least squares approximation. Each curve is assigned a number of data points with corresponding parameter values and weights

29.464.3.8 int Go::SmoothCurveSet::setOptimize (double *weight1*, double *weight2*, double *weight3*)

Compute the smoothing part of the equation system.

29.464.3.9 int Go::SmoothCurveSet::setOrthCond (const std::vector< std::vector< double > > & *pnts*, const std::vector< std::vector< double > > & *param_pnts*, double *weight*)

The contribution to the equation system from the approximation of normal directions.

29.464.3.10 void Go::SmoothCurveSet::setSideConstraints (std::vector< shared_ptr< sideConstraintSet > > & *constraints*, bool *replace_constraints*)

Add side constraints to the functional (Lagrange multiplier). Assuming input is preprocessed (all coefs in constraints are free). If replace_constraints==true the old constraints are removed prior to adding new constraints.

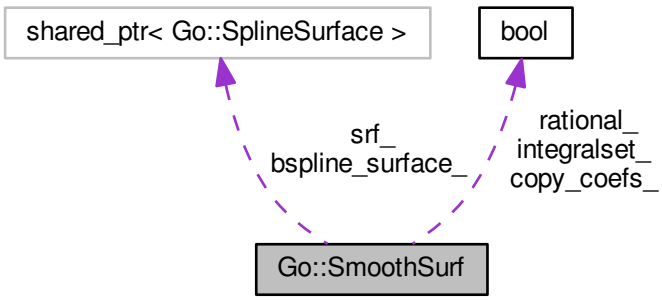
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/SmoothCurveSet.h

29.465 Go::SmoothSurf Class Reference

`#include <SmoothSurf.h>`

Collaboration diagram for Go::SmoothSurf:



Public Member Functions

- SmoothSurf ()

  Default constructor. Initializes class variable.
- SmoothSurf (bool copy_coefs)
- virtual ~SmoothSurf ()

  Destructor.
- void attach (shared_ptr< SplineSurface > &insf, int seem[], int coef_known[], int num_side_constraints=0, int has_normal_cond=0)
- virtual void setOptimize (const double weight1, const double weight2, const double weight3)
- void setLeastSquares (const std::vector< double > &pnts, const std::vector< double > &param_pnts, const std::vector< double > &pnt_weights, const double weight)
- int setNormalCond (const std::vector< double > &pnts, const std::vector< double > &param_pnts, const std::vector< double > &pnt_weights, const double weight)
- void approxOrig (double weight)
- virtual void setPeriodicity (int pardir, int cont, double weight1, double weight2)
- void setSideConstraints (std::vector< sideConstraint > &constraints)
- int equationSolve (shared_ptr< SplineSurface > &surf)
- void setRelaxParam (double omega)

  Set the relaxation parameter for the RILU preconditioner.

Protected Member Functions

- virtual void releaseScratch ()

  Free all memory allocated for class members.
- virtual void prepareIntegral ()

  Prepare storage for integrals of inner products of basis functions.
- virtual void getBasis (const double *sb1, const double *sb2, int kleft1, int kleft2, int ider, double *sbasis)
- void preparePeriodicity (int seem[])
- void setOptimizeNonrational (const double weight1, const double weight2, const double weight3)
- void setOptimizeRational (const double weight1, const double weight2, const double weight3)
- void approxOrigNonrational (double weight)
- void approxOrigRational (double weight)
- void setC1AtSeem (int pardir, double weight)
- void setC2AtSeem (int pardir, double weight)
- void setRationalCnAtSeem (int pardir, int cn, double weight1, double weight2)
- virtual int adjustAtSeem ()

Protected Attributes

- int norm_dim_
- int idim_
- int kdim_
- int idim1_
- int ider_
- bool integralset_
- int ider_scratch_
- bool rational_
- shared_ptr< SplineSurface > bspline_surface_
- int cont_seem_ [2]
- int kncond_
- int knconstraint_

- const int kpointer_
- int * coefknown_
- std::vector< int > pivot_
- shared_ptr< SplineSurface > srf_
- int kk1_
- int kk2_
- int kn1_
- int kn2_
- std::vector< double >::const_iterator st1_
- std::vector< double >::const_iterator st2_
- const bool copy_coefs_
- std::vector< double > coef_array_

  Parameters used to define the specific input spline surface.
- std::vector< double >::iterator scoef_
- std::vector< double > gmat_

  Storage of the equation system.
- std::vector< double > gright_

29.465.1 Detailed Description

This class modifies a tensor product B-spline surface with respect to conditions on smoothness, editing constraints and boundary conditions.

Definition at line 74 of file SmoothSurf.h.

29.465.2 Constructor & Destructor Documentation

29.465.2.1 Go::SmoothSurf::SmoothSurf ( )

Default constructor. Initializes class variable.

29.465.2.2 Go::SmoothSurf::SmoothSurf (bool *copy_coefs*)

Constructor. Initializes class variable.

Parameters

copy_coefs	true if coefficients on attached surface are not to be modified.

29.465.2.3 virtual Go::SmoothSurf::~SmoothSurf ( ) [virtual]

Destructor.

29.465.3 Member Function Documentation

29.465.3.1 virtual int Go::SmoothSurf::adjustAtSeem ( ) [protected], [virtual]

Ensure that the expected C1 or C2 continuity at the seem is satisfied. Only applicable if seem_[0] $>$ 1 $||$ seem_[1] $>$ 1.

29.465.3.2 void Go::SmoothSurf::approxOrig (double *weight*)

Compute the contribution to the equation system from the approximation of an original surface, i.e. the contribution of the original coefficients.

Parameters

weight	the relative contribution of the original coefs. Should lie in the unit interval.

29.465.3.3 void Go::SmoothSurf::approxOrigNonrational (double *weight*) [protected]

Compute the contribution to the equation system from the approximation of an original surface, i.e. the contribution of the original coefficients for the non-rational case

Parameters

weight	the relative contribution of the original coefs. Should lie in the unit interval.

29.465.3.4 void Go::SmoothSurf::approxOrigRational (double *weight*) [protected]

Compute the contribution to the equation system from the approximation of an original surface, i.e. the contribution of the original coefficients for the rational case

Parameters

weight	the relative contribution of the original coefs. Should lie in the unit interval.

29.465.3.5 void Go::SmoothSurf::attach (shared_ptr$<$ SplineSurface $>$ & *insf*, int *seem[ ]*, int *coef_known[ ]*, int *num_side_constraints* = 0, int *has_normal_cond* = 0)

Initializes data given by an intermediate surface.

Parameters

insf	the initial surface.
seem	continuity across opposite edges. 0 not specified, 1 = C0, 2 = C1, 3 = C2.
coef_known	whether the coefs are free to be altered. 0: not known, 1: known >= kpointer_ = 3: the coefficients indexed by ki & coef_known[ki] - kpointer_ should be equal.
num_side_constraints	the number of linear side constraints in the system.
has_normal_cond	whether the system must fulfill normal conditions.

29.465.3.6 int Go::SmoothSurf::equationSolve (shared_ptr< SplineSurface > & *surf*)

Solve equation system, and produce output surface. If failing to solve the routine may throw an exception.

Parameters

surf	the output surface.

Returns

0 = OK, negative = failed solving system.

29.465.3.7 virtual void Go::SmoothSurf::getBasis (const double * *sb1*, const double * *sb2*, int *kleft1*, int *kleft2*, int *ider*, double * *sbasis*) [protected], [virtual]

Given the value of non-zero B-spline functions, compute the value of the corresponding surface basis function (i.e. the products of the u- and v-basis functions).

Parameters

sb1	the basis values in the first parameter direction (u).
sb2	the basis values in the second parameter direction (v).
kleft1	index of the first knot interval in u-dir.
kleft2	index of the first knot interval in v-dir.
ider	the number of derivatives to compute.
sbasis	the computed basis values in sf. size = order_u()*order_v()*(ider + 1)*(ider + 1). The space must be allocated on the outside.

29.465.3.8 virtual void Go::SmoothSurf::prepareIntegral ( ) [protected], [virtual]

Prepare storage for integrals of inner products of basis functions.

29.465.3.9 void Go::SmoothSurf::preparePeriodicity (int *seem[ ]*) [protected]

Set pointers between identical coefficients at a periodic seem. If possible, update fixed coefficients at the seem.

Parameters

seem	continuity across the seem. Array size = 2.

29.465.3.10 virtual void Go::SmoothSurf::releaseScratch ( ) [protected], [virtual]

Free all memory allocated for class members.

29.465.3.11 void Go::SmoothSurf::setC1AtSeem (int *pardir,* double *weight*) [protected]

Set constraints on C1-continuity across a seem and add these to the equation system.

29.465.3.12 void Go::SmoothSurf::setC2AtSeem (int *pardir,* double *weight*) [protected]

Set constraints on C2-continuity across a seem and add these to the equation system.

29.465.3.13 void Go::SmoothSurf::setLeastSquares (const std::vector< double > & *pnts,* const std::vector< double > & *param_pnts,* const std::vector< double > & *pnt_weights,* const double *weight*)

Compute matrices for least squares approximation.

Parameters

pnts	points on surface to be approximated. Stored as (for 3D): (x0, y0, z0, x1, y1, z1, ...)
param_pnts	the corresponding 2-dimensional parametric points. Stored as: (u0, v0, u1, v1, ...)
pnt_weights	each of the pnts is assigned a weight lying in the unit interval. 1.0 if all pnts are equally important.
weight	the contribution of the approximation of the pnts in the system. weight should lie in the unit interval.

29.465.3.14 int Go::SmoothSurf::setNormalCond (const std::vector< double > & *pnts,* const std::vector< double > & *param_pnts,* const std::vector< double > & *pnt_weights,* const double *weight*)

Compute matrices for approximation of normal directions.

Parameters

pnts	normals in sf to be approximated. Stored as (for 3D): (x0, y0, z0, x1, y1, z1, ...)
param_pnts	the corresponding 2-dimensional parametric points. Stored as: (u0, v0, u1, v1, ...)
pnt_weights	each of the pnts is assigned a weight lying in the unit interval. 1.0 if all pnts are equally important.
weight	the contribution of the approximation of the normals in the system. weight should lie in the unit interval.

Returns

status value: 0 = OK, 1 = warning (system not prepared for normal conditions).

29.465.3.15 virtual void Go::SmoothSurf::setOptimize (const double *weight1,* const double *weight2,* const double *weight3*) [virtual]

Compute the smoothing part of the equation system.

Parameters

weight1	contribution weight with respect to the 1st derivative.
weight2	contribution weight with respect to the 2nd derivative.
weight3	contribution weight with respect to the 3rd derivative.

29.465.3.16 void Go::SmoothSurf::setOptimizeNonrational (const double *weight1,* const double *weight2,* const double *weight3*) [protected]

Compute the smoothing part of the equation system, non-rational case.

Parameters

weight1	contribution weight with respect to the 1st derivative.
weight2	contribution weight with respect to the 2nd derivative.
weight3	contribution weight with respect to the 3rd derivative.

29.465.3.17 void Go::SmoothSurf::setOptimizeRational (const double *weight1,* const double *weight2,* const double *weight3*) [protected]

Compute the smoothing part of the equation system, rational case.

Parameters

weight1	contribution weight with respect to the 1st derivative.
weight2	contribution weight with respect to the 2nd derivative.
weight3	contribution weight with respect to the 3rd derivative.

29.465.3.18 virtual void Go::SmoothSurf::setPeriodicity (int *pardir,* int *cont,* double *weight1,* double *weight2*) [virtual]

Set periodicity constraints in one par. dir.

Parameters

pardir	the direction of the periodicity, 1 == udir && 2 == vdir.
cont	the continuity across the seem, 0 = C0, 1 = C1, 2 = C2.
weight1	C1 continuity contribution used in approximation.
weight2	C2 continuity contribution used in approximation.

29.465.3.19 void Go::SmoothSurf::setRationalCnAtSeem (int *pardir,* int *cn,* double *weight1,* double *weight2*) [protected]

Set constraints on C1- and C2-continuity across a seem and add these to the equation system when surface is rational.

29.465.3.20 void Go::SmoothSurf::setRelaxParam (double *omega*)

Set the relaxation parameter for the RILU preconditioner.

29.465.3.21 void Go::SmoothSurf::setSideConstraints (std::vector< sideConstraint > & *constraints*)

Add linear side constraints to the system equation.

Parameters

constraints	the linear side constraints between surface coefficients.

29.465.4 Member Data Documentation

29.465.4.1 shared_ptr<SplineSurface> Go::SmoothSurf::bspline_surface_ [protected]

Definition at line 181 of file SmoothSurf.h.

29.465.4.2 std::vector<double> Go::SmoothSurf::coef_array_ [protected]

Parameters used to define the specific input spline surface.

Definition at line 213 of file SmoothSurf.h.

29.465.4.3 int* Go::SmoothSurf::coefknown_ [protected]

Definition at line 193 of file SmoothSurf.h.

29.465.4.4 int Go::SmoothSurf::cont_seem_[2] [protected]

Definition at line 186 of file SmoothSurf.h.

29.465.4.5 const bool Go::SmoothSurf::copy_coefs_ [protected]

Definition at line 210 of file SmoothSurf.h.

29.465.4.6 std::vector<double> Go::SmoothSurf::gmat_ [protected]

Storage of the equation system.

Definition at line 217 of file SmoothSurf.h.

29.465.4.7 std::vector<double> Go::SmoothSurf::gright_ [protected]

Definition at line 218 of file SmoothSurf.h.

29.465.4.8 int Go::SmoothSurf::ider_ [protected]

Definition at line 175 of file SmoothSurf.h.

29.465.4.9 int Go::SmoothSurf::ider_scratch_ [protected]

Definition at line 177 of file SmoothSurf.h.

29.465.4.10 int Go::SmoothSurf::idim1_ [protected]

Definition at line 174 of file SmoothSurf.h.

29.465.4.11 int Go::SmoothSurf::idim_ [protected]

Definition at line 172 of file SmoothSurf.h.

29.465.4.12 bool Go::SmoothSurf::integralset_ [protected]

Definition at line 176 of file SmoothSurf.h.

29.465.4.13 int Go::SmoothSurf::kdim_ [protected]

Definition at line 173 of file SmoothSurf.h.

29.465.4.14 int Go::SmoothSurf::kk1_ [protected]

Definition at line 203 of file SmoothSurf.h.

29.465.4.15 int Go::SmoothSurf::kk2_ [protected]

Definition at line 203 of file SmoothSurf.h.

29.465.4.16 int Go::SmoothSurf::kn1_ [protected]

Definition at line 204 of file SmoothSurf.h.

29.465.4.17 int Go::SmoothSurf::kn2_ [protected]

Definition at line 204 of file SmoothSurf.h.

29.465.4.18 int Go::SmoothSurf::kncond_ [protected]

Definition at line 188 of file SmoothSurf.h.

29.465.4.19 int Go::SmoothSurf::knconstraint_ [protected]

Definition at line 189 of file SmoothSurf.h.

29.465.4.20 const int Go::SmoothSurf::kpointer_ [protected]

Definition at line 190 of file SmoothSurf.h.

29.465.4.21 int Go::SmoothSurf::norm_dim_ [protected]

Definition at line 171 of file SmoothSurf.h.

29.465.4.22 std::vector<int> Go::SmoothSurf::pivot_ [protected]

Definition at line 198 of file SmoothSurf.h.

29.465.4.23 bool Go::SmoothSurf::rational_ [protected]

Definition at line 180 of file SmoothSurf.h.

29.465.4.24 std::vector<double>::iterator Go::SmoothSurf::scoef_ [protected]

Definition at line 214 of file SmoothSurf.h.

29.465.4.25 shared_ptr<SplineSurface> Go::SmoothSurf::srf_ [protected]

Definition at line 202 of file SmoothSurf.h.

29.465.4.26 std::vector<double>::const_iterator Go::SmoothSurf::st1_ [protected]

Definition at line 205 of file SmoothSurf.h.

29.465.4.27 std::vector<double>::const_iterator Go::SmoothSurf::st2_ [protected]

Definition at line 207 of file SmoothSurf.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/SmoothSurf.h

29.466 Go::SmoothSurfSet Class Reference

`#include <SmoothSurfSet.h>`

Public Member Functions

- SmoothSurfSet ()

  Default constructor. Initializes class variable.
- SmoothSurfSet (bool copy_coefs)
- virtual ~SmoothSurfSet ()

  Destructor.
- void attach (std::vector< shared_ptr< SplineSurface > > &insf, std::vector< std::vector< int > > &coef_known, int num_side_constraints=0, int has_normal_cond=0)
- virtual void setOptimize (double weight1, double weight2, double weight3)
- void setLeastSquares (std::vector< std::vector< double > > &pnts, std::vector< std::vector< double > > &param_pnts, std::vector< std::vector< double > > &pnt_weights, double weight)
- int setNormalCond (std::vector< std::vector< double > > &pnts, std::vector< std::vector< double > > &param_pnts, std::vector< std::vector< double > > &pnt_weights, double weight)
- void approxOrig (double weight)
- void setSideConstraints (std::vector< sideConstraintSet > &constraints)
- void setApproxSideConstraints (std::vector< sideConstraintSet > &constraints, double weight)

  Use least squares to minimize the error given by the constraints.
- int equationSolve (std::vector< shared_ptr< SplineSurface > > &surfaces)

Protected Member Functions

- virtual void getBasis (double *sb1, double *sb2, int kk1, int kk2, int kleft1, int kleft2, int ider, double *sbasis)

Protected Attributes

- int kdim_
- int idim_
- int idim1_
- int ider_
- int kncond_
- int knconstraint_
- std::vector< std::vector< int >::iterator > coef_known_
- std::vector< std::vector< int > > pivot_
- std::vector< shared_ptr< SplineSurface > > srfs_
- const int copy_coefs_
- std::vector< std::vector< double > > coef_array_
- std::vector< double > gmat_
- std::vector< double > gright_

29.466.1 Detailed Description

This class modifies a set of tensor product B-spline surfaces with respect to conditions on smoothness, editing constraints and boundary conditions.

Definition at line 70 of file SmoothSurfSet.h.

29.466.2 Constructor & Destructor Documentation

29.466.2.1 Go::SmoothSurfSet::SmoothSurfSet ( )

Default constructor. Initializes class variable.

29.466.2.2 Go::SmoothSurfSet::SmoothSurfSet (bool *copy_coefs*)

Constructor. Initializes class variable.

Parameters

copy_coefs	whether to copy coefs in input surface or work directly on them.

29.466.2.3 virtual Go::SmoothSurfSet::~SmoothSurfSet ( ) [virtual]

Destructor.

29.466.3 Member Function Documentation

29.466.3.1 void Go::SmoothSurfSet::approxOrig (double *weight*)

Compute the contribution to the equation system from the approximation of an original surface, i.e. the contribution of the original coefficients.

Parameters

weight	the relative contribution of the original coefs. Should lie in the unit interval.

29.466.3.2 void Go::SmoothSurfSet::attach (std::vector< shared_ptr< SplineSurface > > & *insf*, std::vector< std::vector< int > > & *coef_known*, int *num_side_constraints* = 0, int *has_normal_cond* = 0)

Initializes data given by an intermediate surface.

Parameters

insf	input set of surfaces to be smoothed.
coef_known	whether the coefs are free to be altered. 0: not known, 1: known >= kpointer_ = 3: the coefficients indexed by ki & coef_known[ki] - kpointer_ should be equal. Size of coef_known equal to that of insf, size of coef_known[ki] equals the number of control points in insf[ki].
num_side_constraints	number of side constraints to the minimization problem
has_normal_cond	indicates if normal conditions will be given

29.466.3.3 int Go::SmoothSurfSet::equationSolve (std::vector< shared_ptr< SplineSurface > > & *surfaces*)

Solve equation system, and produce output surfaces. If failing to solve the routine may throw an exception.

Parameters

surfaces	the output surface.

Returns

0 = OK, negative = failed solving system.

29.466.3.4 virtual void Go::SmoothSurfSet::getBasis (double * *sb1*, double * *sb2*, int *kk1*, int *kk2*, int *kleft1*, int *kleft2*, int *ider*, double * *sbasis*) [protected], [virtual]

Given the value of non-zero B-spline functions, compute the value of the corresponding surface basis function (i.e. the products of the u and v basis functions).

Parameters

sb1	the basis values in the first parameter direction (u).
sb2	the basis values in the second parameter direction (v).
kk1	order in the first (u) direction.
kk2	order in the second (v) direction.
kleft1	index of the first knot interval in u-dir.
kleft2	index of the first knot interval in v-dir.
ider	the number of derivatives to compute.
sbasis	the computed basis values in sf. size = order_u()*order_v()*(ider + 1)*(ider + 1). The space must be allocated on the outside.

29.466.3.5 void Go::SmoothSurfSet::setApproxSideConstraints (std::vector< sideConstraintSet > & *constraints*, double *weight*)

Use least squares to minimize the error given by the constraints.

29.466.3.6 void Go::SmoothSurfSet::setLeastSquares (std::vector< std::vector< double > > & *pnts*, std::vector< std::vector< double > > & *param_pnts*, std::vector< std::vector< double > > & *pnt_weights*, double *weight*)

Compute matrices for least squares approximation. First index of all vectors corresponds to the indexing of the attached surfaces.

Parameters

pnts	points on surfaces to be approximated. Stored as (for 3D): (x0, y0, z0, x1, y1, z1, ...)
param_pnts	the corresponding 2-dimensional parametric points. Stored as: (u0, v0, u1, v1, ...)
pnt_weights	each of the pnts is assigned a weight lying in the unit interval. 1.0 if all pnts are equally important.
weight	the contribution of the approximation of the pnts in the system. weight should lie in the unit interval.

29.466.3.7 int Go::SmoothSurfSet::setNormalCond (std::vector< std::vector< double > > & *pnts*, std::vector< std::vector< double > > & *param_pnts*, std::vector< std::vector< double > > & *pnt_weights*, double *weight*)

Compute matrices for approximation of normal directions.

Parameters

pnts	normals in sf to be approximated. Stored as (for 3D): (x0, y0, z0, x1, y1, z1, ...)
param_pnts	the corresponding 2-dimensional parametric points. Stored as: (u0, v0, u1, v1, ...)
pnt_weights	each of the pnts is assigned a weight lying in the unit interval. 1.0 if all pnts are equally important.
weight	the contribution of the approximation of the normals in the system. weight should lie in the unit interval.

Returns

status value: 0 = OK, 1 = warning (system not prepared for normal conditions).

29.466.3.8 virtual void Go::SmoothSurfSet::setOptimize (double *weight1*, double *weight2*, double *weight3*) [virtual]

Compute the smoothing part of the equation system. All weights should be positive, and their sum not exceed 1.0.

Parameters

weight1	smoothing weight w.r.t. the 1st derivative.
weight2	smoothing weight w.r.t. the 2nd derivative.
weight3	smoothing weight w.r.t. the 3rd derivative.

29.466.3.9 void Go::SmoothSurfSet::setSideConstraints (std::vector< sideConstraintSet > & *constraints*)

Add linear side constraints to the system equation.

Parameters

constraints	the linear side constraints between surface coefficients.

29.466.4 Member Data Documentation

29.466.4.1 std::vector<std::vector<double> > Go::SmoothSurfSet::coef_array_ [protected]

Definition at line 190 of file SmoothSurfSet.h.

29.466.4.2 std::vector<std::vector<int>::iterator> Go::SmoothSurfSet::coef_known_ [protected]

Definition at line 176 of file SmoothSurfSet.h.

29.466.4.3 const int Go::SmoothSurfSet::copy_coefs_ [protected]

Definition at line 186 of file SmoothSurfSet.h.

29.466.4.4 std::vector<double> Go::SmoothSurfSet::gmat_ [protected]

Definition at line 195 of file SmoothSurfSet.h.

29.466.4.5 std::vector<double> Go::SmoothSurfSet::gright_ [protected]

Definition at line 196 of file SmoothSurfSet.h.

29.466.4.6 int Go::SmoothSurfSet::ider_ [protected]

Definition at line 171 of file SmoothSurfSet.h.

29.466.4.7 int Go::SmoothSurfSet::idim1_ [protected]

Definition at line 170 of file SmoothSurfSet.h.

29.466.4.8 int Go::SmoothSurfSet::idim_ [protected]

Definition at line 169 of file SmoothSurfSet.h.

29.466.4.9 int Go::SmoothSurfSet::kdim_ [protected]

Definition at line 168 of file SmoothSurfSet.h.

29.466.4.10 int Go::SmoothSurfSet::kncond_ [protected]

Definition at line 173 of file SmoothSurfSet.h.

29.466.4.11 int Go::SmoothSurfSet::knconstraint_ [protected]

Definition at line 174 of file SmoothSurfSet.h.

29.466.4.12 std::vector<std::vector<int> > Go::SmoothSurfSet::pivot_ [protected]

Definition at line 180 of file SmoothSurfSet.h.

29.466.4.13 std::vector<shared_ptr<SplineSurface> > Go::SmoothSurfSet::srfs_ [protected]

Definition at line 184 of file SmoothSurfSet.h.

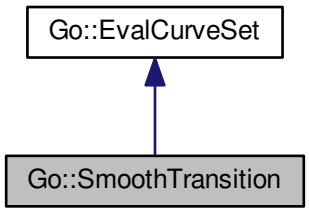
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/SmoothSurfSet.h

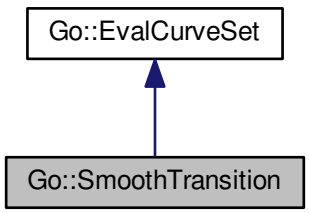
29.467 Go::SmoothTransition Class Reference

`#include <SmoothTransition.h>`

Inheritance diagram for Go::SmoothTransition:



Collaboration diagram for Go::SmoothTransition:



Public Member Functions

- SmoothTransition (shared_ptr< const SplineCurve > &inters_crv, shared_ptr< const SplineCurve > &p_↩ crv1, shared_ptr< const SplineCurve > &p_crv2, shared_ptr< const ParamSurface > surf1, shared_ptr< const ParamSurface > surf2, double offset_dist1, double offset_dist2, double epsgeo)
- virtual ~SmoothTransition ()

  Empty destructor.
- virtual std::vector< Point > eval (double t)
- virtual void eval (double t, int n, std::vector< std::vector< Point > > &der)
- virtual double start ()
- virtual double end ()
- virtual int dim ()
- virtual bool approximationOK (double par, const std::vector< Point > &approxpos, double tol1, double tol2)
- virtual int nmbCvs ()

29.467.1 Detailed Description

This abstract class provides an interface to a curve that can be evaluated. Given input of curve lying on two surfaces, we create a smooth transition surface by offsetting both surfaces, approximating intersecting curve, continue with projection of intersection curve on the two surfaces. Resulting projected curves and cross tangent curves may then be lofted. We're thus computing four points in eval().

Definition at line 61 of file SmoothTransition.h.

29.467.2 Constructor & Destructor Documentation

29.467.2.1 Go::SmoothTransition::SmoothTransition (shared_ptr< const SplineCurve > & *inters_crv*, shared_ptr< const SplineCurve > & *p_crv1*, shared_ptr< const SplineCurve > & *p_crv2*, shared_ptr< const ParamSurface > *surf1*, shared_ptr< const ParamSurface > *surf2*, double *offset_dist1*, double *offset_dist2*, double *epsgeo*)

Constructor.

Parameters

inters_crv	intersection curve between two surfaces
p_crv1	associated parameter curve in first surface
p_crv2	associated parameter curve in second surface
surf1	first surface
surf2	second surface
offset_dist1	offset distance related to first surface
offset_dist2	offset distance related to second surface
epsgeo	approximation tolerance and tolerance used in intersection computations

29.467.2.2 virtual Go::SmoothTransition::~SmoothTransition ( ) [virtual]

Empty destructor.

29.467.3 Member Function Documentation

29.467.3.1 virtual bool Go::SmoothTransition::approximationOK (double *par*, const std::vector< Point > & *approxpos*, double *tol1*, double *tol2*) [virtual]

Whether the approximation is within tolerances in input parameter.

Parameters

par	parameter in which to evaluate.
approxpos	whether the input points are within tolerance from the evaluated points (as given by eval()).
tol1	tolerance used to decide approximation accuracy.
tol2	tolerance used to decide approximation accuracy.

Returns

whether the approximation is within tolerances in input parameter.

Implements Go::EvalCurveSet.

29.467.3.2 virtual int Go::SmoothTransition::dim ( ) [virtual]

The geometric dimension of the spline curves.

Returns

geometric dimension of the space.

Implements Go::EvalCurveSet.

29.467.3.3 virtual double Go::SmoothTransition::end ( ) [virtual]

End parameter of domain.

Returns

end parameter of the spline space.

Implements Go::EvalCurveSet.

29.467.3.4 virtual std::vector<Point> Go::SmoothTransition::eval (double *t*) [virtual]

Evaluate the curves.

Parameters

t	parameter in which to evaluate.

Returns

the evaluated points for the curve set.

Implements Go::EvalCurveSet.

29.467.3.5 virtual void Go::SmoothTransition::eval (double *t*, int *n*, std::vector< std::vector< Point > > & *der*) [virtual]

Evaluate the curve derivatives.

Parameters

t	parameter in which to evaluate.
n	number of derivatives to compute.
der	the evaluated points up to the n'th derivative for the curve set.

Implements Go::EvalCurveSet.

29.467.3.6 virtual int Go::SmoothTransition::nmbCvs ( ) [inline], [virtual]

The number of curves in the curve set.

Returns

the number of curves in the curve set.

Implements Go::EvalCurveSet.

Definition at line 96 of file SmoothTransition.h.

29.467.3.7 virtual double Go::SmoothTransition::start ( ) [virtual]

Start parameter of domain.

Returns

start parameter of the spline space.

Implements Go::EvalCurveSet.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/SmoothTransition.h

29.468 Go::SmoothVolume Class Reference

This class modifies a NURBS volume with respect to smoothness, editing constraints and boundary conditions. Specified coefficients are adjusted to minimize a functional combining the different modification conditions.

`#include <SmoothVolume.h>`

Public Member Functions

- SmoothVolume ()

  Default constructor. Initializes class variable.
- SmoothVolume (bool copy_coefs)
- virtual ~SmoothVolume ()
- void attach (shared_ptr< SplineVolume > &in_vol, std::vector< CoefStatus > status)
- void reset ()

  Reset all smoothing parameters, but keep the input volume.
- void setOptimize (const double weight1, const double weight2, const double weight3)
- void setLeastSquares (std::vector< double > &pnts, std::vector< double > &param_pnts, std::vector< double > &pnt_weights, const double weight)
- void setPeriodicity (int pardir, int cont, double weight1, double weight2)
- int equationSolve (shared_ptr< SplineVolume > &vol)

29.468.1 Detailed Description

This class modifies a NURBS volume with respect to smoothness, editing constraints and boundary conditions. Specified coefficients are adjusted to minimize a functional combining the different modification conditions.

Definition at line 68 of file SmoothVolume.h.

29.468.2 Constructor & Destructor Documentation

29.468.2.1 Go::SmoothVolume::SmoothVolume ( )

Default constructor. Initializes class variable.

29.468.2.2 Go::SmoothVolume::SmoothVolume (bool *copy_coefs*)

Constructor. Initializes class variable.

Parameters

copy_coefs	true if coefficients on attached volume are not to be modified.

29.468.2.3 virtual Go::SmoothVolume::~SmoothVolume ( ) [virtual]

29.468.3 Member Function Documentation

29.468.3.1 void Go::SmoothVolume::attach (shared_ptr< SplineVolume > & *in_vol,* std::vector< CoefStatus > *status*)

Initializes data given by an intermediate volume.

Parameters

in_vol	the initial volume.
status	array with the freedom for each coefficient of the volume CoefFree: Not known, CoefKnown: Known, CoefAvoid: Not of interrest

29.468.3.2 int Go::SmoothVolume::equationSolve (shared_ptr< SplineVolume > & *vol*)

Set up and solve equation system, and produce output volume. If failing to solve the routine may throw an exception.

Parameters

vol	the output surface.

Returns

0 = OK, negative = failed solving system.

29.468.3.3 void Go::SmoothVolume::reset ( )

Reset all smoothing parameters, but keep the input volume.

29.468.3.4 void Go::SmoothVolume::setLeastSquares (std::vector< double > & *pnts,* std::vector< double > & *param_pnts,* std::vector< double > & *pnt_weights,* const double *weight*)

Add data for the least squares approximation.

Parameters

pnts	points in volume to be approximated. Stored as (for 3D): (x0, y0, z0, x1, y1, z1, ...)
param_pnts	the corresponding 3-dimensional parametric points. Stored as: (u0, v0, w0, u1, v1, w1, ...)
pnt_weights	each of the pnts is assigned a weight lying in the unit interval. 1.0 if all pnts are equally important.
weight	the contribution of the approximation of the pnts in the system. weight should lie in the unit interval.

29.468.3.5 void Go::SmoothVolume::setOptimize (const double *weight1,* const double *weight2,* const double *weight3*)

Add weights for the smoothing part of the equation system.

Parameters

weight1	contribution weight with respect to the 1st derivative.
weight2	contribution weight with respect to the 2nd derivative.
weight3	contribution weight with respect to the 3rd derivative.

29.468.3.6 void Go::SmoothVolume::setPeriodicity (int *pardir,* int *cont,* double *weight1,* double *weight2*)

Add periodicity constraints in one par. dir.

Parameters

pardir	the direction of the periodicity, 0, 1 or 2
cont	the continuity across the seem, 0 = C0, 1 = C1, 2 = C2.
weight1	C1 continuity contribution used in approximation.
weight2	C2 continuity contribution used in approximation.

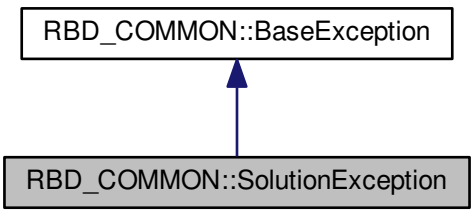
The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/SmoothVolume.h

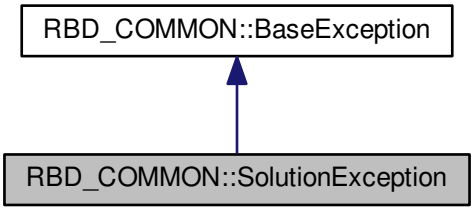
29.469 RBD_COMMON::SolutionException Class Reference

`#include <solution.h>`

Inheritance diagram for RBD_COMMON::SolutionException:



Collaboration diagram for RBD_COMMON::SolutionException:



Public Member Functions

- SolutionException (const char *a_what=0)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.469.1 Detailed Description

Definition at line 45 of file solution.h.

29.469.2 Constructor & Destructor Documentation

29.469.2.1 SolutionException::SolutionException (const char * *a_what* = 0)

Definition at line 36 of file solution.cpp.

29.469.3 Member Data Documentation

29.469.3.1 unsigned long SolutionException::Select [static]

Definition at line 48 of file solution.h.

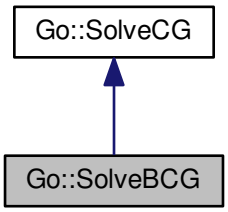
The documentation for this class was generated from the following files:

- newmat/include/solution.h
- newmat/src/solution.cpp

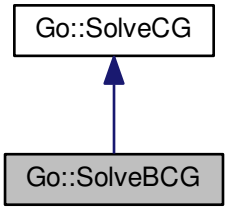
29.470 Go::SolveBCG Class Reference

`#include <SolveBCG.h>`

Inheritance diagram for Go::SolveBCG:



Collaboration diagram for Go::SolveBCG:



Public Member Functions

- SolveBCG (int conv_type, bool symm)
- virtual ~SolveBCG ()

  Destructor.
- virtual void precond (double relaxfac)

  Prepare for preconditioning.
- virtual int solve (double *ex, double *eb, int nn)

  Solve the equation system.

Additional Inherited Members

29.470.1 Detailed Description

Using the biconjugate gradient method to solve sparse and positive definite matrix systems.

Definition at line 52 of file SolveBCG.h.

29.470.2 Constructor & Destructor Documentation

29.470.2.1 Go::SolveBCG::SolveBCG (int *conv_type,* bool *symm*)

Constructor.

Parameters

conv_type	in the range 1 to 4. Convergence estimate. The selection of preconditioner is based on this number

29.470.2.2 virtual Go::SolveBCG::~SolveBCG ( ) [virtual]

Destructor.

29.470.3 Member Function Documentation

29.470.3.1 virtual void Go::SolveBCG::precond (double *relaxfac*) [virtual]

Prepare for preconditioning.

29.470.3.2 virtual int Go::SolveBCG::solve (double * *ex,* double * *eb,* int *nn*) [virtual]

Solve the equation system.

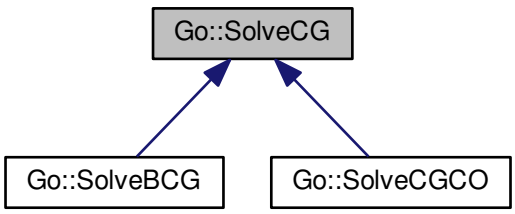
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/SolveBCG.h

29.471 Go::SolveCG Class Reference

`#include <SolveCG.h>`

Inheritance diagram for Go::SolveCG:



Public Member Functions

- SolveCG ()

  Default constructor.
- virtual ~SolveCG ()

  Destructor.
- void attachMatrix (double *gmat, int nn)
- virtual void precondRILU (double relaxfac)
- int solve (double *ex, double *eb, int nn)
- void setTolerance (double tolerance=1.0e-6)
- void setMaxIterations (int max_iterations)

Protected Member Functions

- template<typename RandomIterator1 , typename RandomIterator2 >
  void matrixProduct (RandomIterator1 sx, RandomIterator2 sy)
- int getIndex (int ki, int kj)

  Given an index in the full equation system, get the index in A_.
- void forwBack (double *r, double *s)
- void transposedMatrixProduct (double *sx, double *sy)
- int solveRILU (double *ex, double *eb, int nn)
- int solveStd (double *ex, double *eb, int nn)
- void printPrecond ()

  Print to file ("fM.m") the preconditioning matrix.

Protected Attributes

- std::vector< double > A_
- int nn_
- int np_
- std::vector< int > irow_
- std::vector< int > jcol_
- double tolerance_
- int max_iterations_
- std::vector< double > M_
- double omega_
- std::vector< int > diagonal_
- int diagset_

29.471.1 Detailed Description

Solve the equation system Ax=b where A is a symmetric positive definite matrix using the Conjugate Gradient Method.

Definition at line 63 of file SolveCG.h.

29.471.2 Constructor & Destructor Documentation

29.471.2.1 Go::SolveCG::SolveCG ( )

Default constructor.

29.471.2.2 virtual Go::SolveCG::~SolveCG ( ) [virtual]

Destructor.

29.471.3 Member Function Documentation

29.471.3.1 void Go::SolveCG::attachMatrix (double * *gmat,* int *nn*)

Attach the left side of the equation system to the current object and represent the matrix as a sparse matrix. No test is applied on whether the matrix really is symmetric and positive definite.

Parameters

gmat	the system matrix for the linear equations. Size is nn*nn, stored columnwise.
nn	the number of unknowns in the system.

29.471.3.2 void Go::SolveCG::forwBack (double * *r,* double * *s*) [protected]

Apply preconditioning matrix, i.e. solve the equation system M_*s = r, where M_ stores an LU-factorized matrix.

Parameters

r	the input (right side) vector.
s	the output (unknown) vector.

29.471.3.3 int Go::SolveCG::getIndex (int *ki,* int *kj*) [protected]

Given an index in the full equation system, get the index in A_.

29.471.3.4 template<typename RandomIterator1 , typename RandomIterator2 > void Go::SolveCG::matrixProduct (RandomIterator1 *sx,* RandomIterator2 *sy*) [inline], [protected]

Compute the matrix product sy = A_ * sx.

Parameters

sx	the vector to be multiplied by the matrix.
sy	the resulting vector.

Definition at line 130 of file SolveCG.h.

29.471.3.5 virtual void Go::SolveCG::precondRILU (double *relaxfac*) [virtual]

Prepare for preconditioning.

Parameters

relaxfac	relaxation parameter. Range: [0,0, 1.0].

Reimplemented in Go::SolveCGCO.

29.471.3.6 void Go::SolveCG::printPrecond ( ) [protected]

Print to file ("fM.m") the preconditioning matrix.

29.471.3.7 void Go::SolveCG::setMaxIterations (int *max_iterations*) [inline]

Set the maximal number of iterations to be used by the solver.

Parameters

max_iterations	the maximal number of iterations.

Definition at line 101 of file SolveCG.h.

29.471.3.8 void Go::SolveCG::setTolerance (double *tolerance* = 1.0e-6) [inline]

Set numerical tolerance used by the solver.

Parameters

tolerance	numerical tolerance.

Definition at line 96 of file SolveCG.h.

29.471.3.9 int Go::SolveCG::solve (double * *ex*, double * *eb*, int *nn*)

Solve the equation system by conjugate gradient method.

Parameters

ex	the solution vector. The input should be the initial guess. Size is equal to nn.
eb	the right side of the equation. Size is equal to nn.
nn	the number of unknowns int the system.

Returns

0: success, 1: iterationcount exceeded, $<$ 0: error.

29.471.3.10 int Go::SolveCG::solveRILU (double * ex, double * eb, int nn) [protected]

Solve the equation system by conjugate gradient method using a given RILU (Relaxed Incomplete LU) preconditioner

Parameters

ex	the solution vector. The input should be the initial guess. Size is equal to nn.
eb	the right side of the equation. Size is equal to nn.
nn	the number of unknowns int the system.

Returns

0: success, 1: iterationcount exceeded, $<$ 0: error.

29.471.3.11 int Go::SolveCG::solveStd (double * ex, double * eb, int nn) [protected]

Parameters

ex	the solution vector. The input should be the initial guess. Size is equal to nn.
eb	the right side of the equation. Size is equal to nn.
nn	the number of unknowns int the system.

Returns

0: success, 1: iterationcount exceeded, $<$ 0: error.

29.471.3.12 void Go::SolveCG::transposedMatrixProduct (double * sx, double * sy) [protected]

29.471.4 Member Data Documentation

29.471.4.1 std::vector<double> Go::SolveCG::A_ [protected]

Definition at line 107 of file SolveCG.h.

29.471.4.2 std::vector<int> Go::SolveCG::diagonal_ [protected]

Definition at line 123 of file SolveCG.h.

29.471.4.3 int Go::SolveCG::diagset_ [protected]

Definition at line 124 of file SolveCG.h.

29.471.4.4 std::vector<int> Go::SolveCG::irow_ [protected]

Definition at line 111 of file SolveCG.h.

29.471.4.5 std::vector<int> Go::SolveCG::jcol_ [protected]

Definition at line 113 of file SolveCG.h.

29.471.4.6 std::vector<double> Go::SolveCG::M_ [protected]

Definition at line 120 of file SolveCG.h.

29.471.4.7 int Go::SolveCG::max_iterations_ [protected]

Definition at line 116 of file SolveCG.h.

29.471.4.8 int Go::SolveCG::nn_ [protected]

Definition at line 109 of file SolveCG.h.

29.471.4.9 int Go::SolveCG::np_ [protected]

Definition at line 110 of file SolveCG.h.

29.471.4.10 double Go::SolveCG::omega_ [protected]

Definition at line 121 of file SolveCG.h.

29.471.4.11 double Go::SolveCG::tolerance_ [protected]

Definition at line 115 of file SolveCG.h.

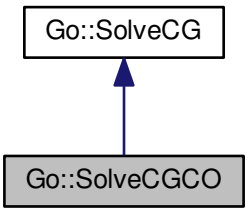
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/SolveCG.h

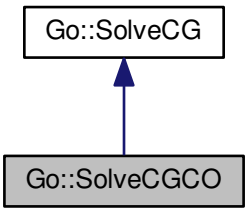
29.472 Go::SolveCGCO Class Reference

`#include <SolveCGCO.h>`

Inheritance diagram for Go::SolveCGCO:



Collaboration diagram for Go::SolveCGCO:



Public Member Functions

- SolveCGCO (int m, int n)
- virtual void precondRILU (double relaxfac)
- virtual ~SolveCGCO ()

Additional Inherited Members

29.472.1 Detailed Description

Definition at line 69 of file SolveCGCO.h.

29.472.2 Constructor & Destructor Documentation

29.472.2.1 Go::SolveCGCO::SolveCGCO (int *m,* int *n*)

29.472.2.2 virtual Go::SolveCGCO::∼SolveCGCO ( ) [virtual]

29.472.3 Member Function Documentation

29.472.3.1 virtual void Go::SolveCGCO::precondRILU (double *relaxfac*) [virtual]

Prepare for preconditioning.

Parameters

relaxfac	relaxation parameter. Range: [0,0, 1.0].

Reimplemented from Go::SolveCG.

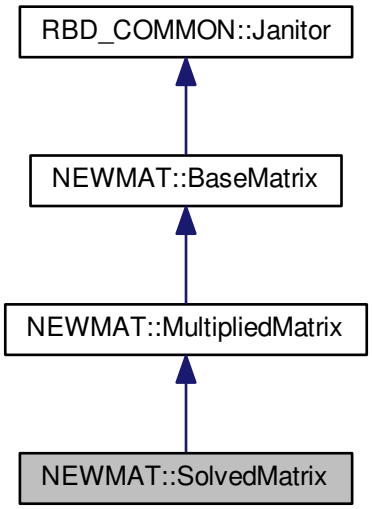
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/SolveCGCO.h

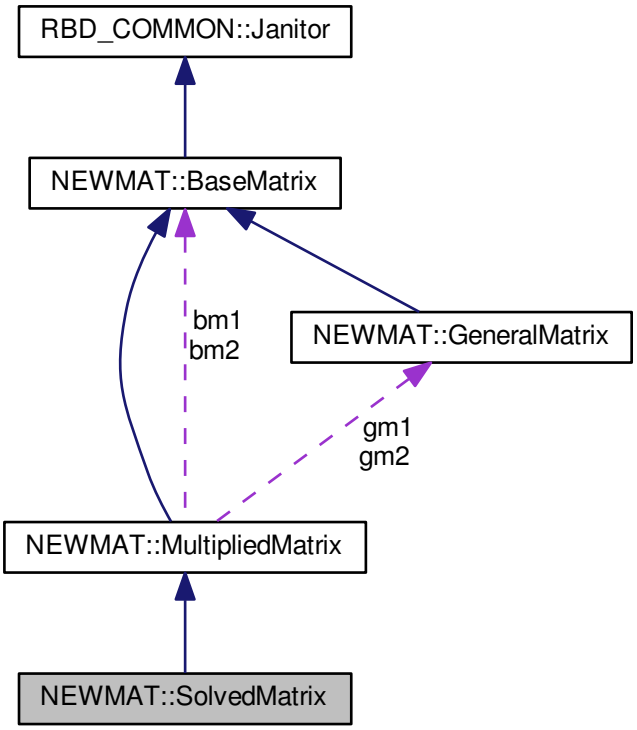
29.473 NEWMAT::SolvedMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::SolvedMatrix:



Collaboration diagram for NEWMAT::SolvedMatrix:



Public Member Functions

- ~SolvedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix
- class InvertedMatrix

Additional Inherited Members

29.473.1 Detailed Description

Definition at line 1285 of file newmat.h.

29.473.2 Constructor & Destructor Documentation

29.473.2.1 NEWMAT::SolvedMatrix::~SolvedMatrix ( ) [inline]

Definition at line 1292 of file newmat.h.

29.473.3 Member Function Documentation

29.473.3.1 MatrixBandWidth SolvedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::MultipliedMatrix.

Definition at line 458 of file newmat4.cpp.

29.473.3.2 GeneralMatrix * SolvedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::MultipliedMatrix.

Definition at line 115 of file newmat7.cpp.

29.473.4 Friends And Related Function Documentation

29.473.4.1 friend class BaseMatrix [friend]

Definition at line 1289 of file newmat.h.

29.473.4.2 friend class InvertedMatrix [friend]

Definition at line 1290 of file newmat.h.

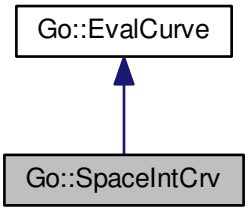
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp

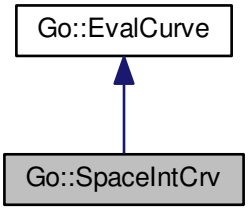
29.474 Go::SpaceIntCrv Class Reference

`#include <SpaceIntCrv.h>`

Inheritance diagram for Go::SpaceIntCrv:



Collaboration diagram for Go::SpaceIntCrv:



Public Member Functions

- SpaceIntCrv (shared_ptr< ParamCurve > init_crv, int pardir, std::vector< shared_ptr< CurveOnSurface > > &sfcv1, std::vector< double > start1, std::vector< double > end1, std::vector< shared_ptr< CurveOnSurface > > &sfcv2, std::vector< double > start2, std::vector< double > end2, std::vector< bool > opposite, bool same_orient)
- virtual ~SpaceIntCrv ()

  Destructor.
- virtual Point eval (double t) const
- virtual void eval (double t, int n, Point der[]) const
- virtual double start () const
- virtual double end () const
- virtual int dim () const

  The geometric dimension of the spline curves.
- virtual bool approximationOK (double par, Point approxpos, double tol1, double tol2) const

29.474.1 Detailed Description

This class represents an intersection curve approximated by two curve on surface instances

Definition at line 52 of file SpaceIntCrv.h.

29.474.2 Constructor & Destructor Documentation

29.474.2.1 Go::SpaceIntCrv::SpaceIntCrv (shared_ptr< ParamCurve > *init_crv,* int *pardir,* std::vector< shared_ptr< CurveOnSurface > > & *sfcv1,* std::vector< double > *start1,* std::vector< double > *end1,* std::vector< shared_ptr< CurveOnSurface > > & *sfcv2,* std::vector< double > *start2,* std::vector< double > *end2,* std::vector< bool > *opposite,* bool *same_orient*)

Constructor

Parameters

init_crv	approximation to true intersection curve
pardir	assumes monotonicity of intersection curve in this parameter direction
sfcv1	set of curves joining into the intersection curve representation related to first surface
start1	startparameter of the curves sfcv1. May restrict the extent of each curve.
end1	endparameter of the curves sfcv1. May restrict the extent of each curve.
sfcv2	set of curves joining into intersection curve representation related to second surface
start2	startparameter of the curves sfcv2. May restrict the extent of each curve.
end2	endparameter of the curves sfcv2. May restrict the extent of each curve.
opposite	pairwise comparisment of orientation from the curves in sfcv1 and sfcv2
same_orient	whether the curves in sfcv1 have the same orientation as the underlying surface

29.474.2.2 virtual Go::SpaceIntCrv::~SpaceIntCrv ( ) [virtual]

Destructor.

29.474.3 Member Function Documentation

29.474.3.1 virtual bool Go::SpaceIntCrv::approximationOK (double *par,* Point *approxpos,* double *tol1,* double *tol2*) const [virtual]

Whether the approximation is within tolerances in input parameter.

Parameters

par	parameter in which to evaluate.
approxpos	whether the input point are within tolerance from the evaluated points (as given by eval()).
tol1	tolerance used to decide approximation accuracy.
tol2	tolerance used to decide approximation accuracy.

Returns

whether the approximation is within tolerances in input parameter.

Implements Go::EvalCurve.

29.474.3.2 virtual int Go::SpaceIntCrv::dim ( ) const [virtual]

The geometric dimension of the spline curves.

Implements Go::EvalCurve.

29.474.3.3 virtual double Go::SpaceIntCrv::end ( ) const [virtual]

End parameter of domain.

Returns

end parameter of the spline space.

Implements Go::EvalCurve.

29.474.3.4 virtual Point Go::SpaceIntCrv::eval (double *t*) const [virtual]

Evaluate the curves.

Parameters

t	parameter in which to evaluate.

Returns

the evaluated point for the curve.

Implements Go::EvalCurve.

29.474.3.5 virtual void Go::SpaceIntCrv::eval (double *t*, int *n*, Point *der[ ]*) const [virtual]

Evaluate the curve derivatives.

Parameters

t	parameter in which to evaluate.
n	number of derivatives to compute.
der	the evaluated points up to the n'th derivative for the curve.

Implements Go::EvalCurve.

29.474.3.6 virtual double Go::SpaceIntCrv::start ( ) const [virtual]

Start parameter of domain.

Returns

start parameter of the spline space.

Implements Go::EvalCurve.

The documentation for this class was generated from the following file:

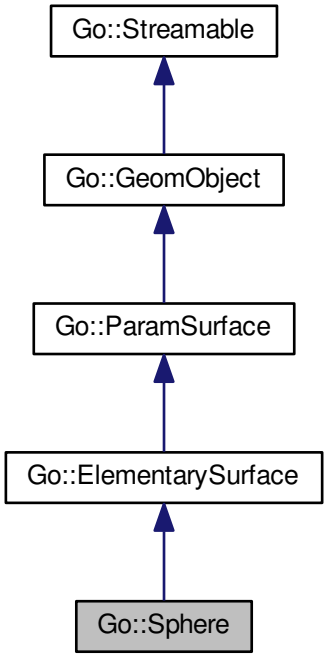
- gotools-core/include/GoTools/creators/SpaceIntCrv.h

29.475 Go::Sphere Class Reference

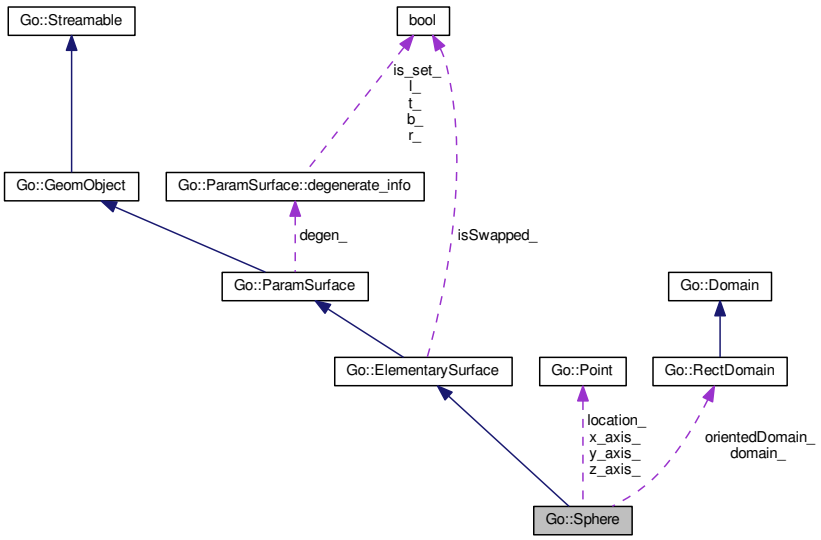
Class that represents a sphere. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

`#include <Sphere.h>`

Inheritance diagram for Go::Sphere:



Collaboration diagram for Go::Sphere:



Public Member Functions

- Sphere ()
- Sphere (double radius, Point location, Point z_axis, Point x_axis, bool isSwapped=false)
- virtual ~Sphere ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual Sphere * clone () const
- const RectDomain & parameterDomain () const
- std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- DirectionCone normalCone () const
- DirectionCone tangentCone (bool pardir_is_u) const
- void point (Point &pt, double upar, double vpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_↩ from_right=true, double resolution=1.0e-12) const
- void normal (Point &n, double upar, double vpar) const
- std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const

- void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- virtual shared_ptr< ElementaryCurve > getElementaryParamCurve (ElementaryCurve *space_crv, double tol, const Point *start_par_pt=NULL, const Point *end_par_pt=NULL) const
- bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- bool isBounded () const
- bool isClosed (bool &closed_dir_u, bool &closed_dir_v) const

  Check if the sphere is closed.
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for paralell and anti paralell partial derivatives in surface corners.
- double getRadius () const

  Sphere radius.
- Point getLocation () const

  Sphere centre.
- void getCoordinateAxes (Point &x_axis, Point &y_axis, Point &z_axis) const

  Local coordinate axes.
- virtual void setParameterBounds (double from_upar, double from_vpar, double to_upar, double to_vpar)

  Limit the surface by limiting the parameter domain.
- Sphere * subSurface (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const

  Pick part of sphere limited by parameter domain information.
- virtual SplineSurface * geometrySurface () const

  A SplineSurface representation of the sphere.
- virtual SplineSurface * createSplineSurface () const

  Create a SplineSurface representation of the sphere.
- shared_ptr< Circle > getLatitudinalCircle (double vpar) const
- shared_ptr< Circle > getLongitudinalCircle (double upar) const
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)

Static Public Member Functions

- static ClassType classType ()

Protected Member Functions

- void setCoordinateAxes ()

Protected Attributes

- double radius_
- Point location_
- Point z_axis_
- Point x_axis_
- Point y_axis_
- RectDomain domain_
- RectDomain orientedDomain_

29.475.1 Detailed Description

Class that represents a sphere. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

A Sphere has a natural parametrization in terms of the angles *u* and *v:* **p**(*u*, *v*) = **C** + *R* cos *v*((cos *u*) **x** + sin(*u*) **y**) + *R* (sin*v*) **z**, where **C** is a position vector, *R* is the radius, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $0 \leq u \leq 2\pi$, $-\frac{\pi}{2} < v < \frac{\pi}{2}$. The dimension is 3.

Definition at line 67 of file Sphere.h.

29.475.2 Constructor & Destructor Documentation

29.475.2.1 Go::Sphere::Sphere ( ) [inline]

Default constructor. Constructs an uninitialized Sphere which can only be assigned to or read into.

Definition at line 72 of file Sphere.h.

29.475.2.2 Go::Sphere::Sphere (double *radius,* Point *location,* Point *z_axis,* Point *x_axis,* bool *isSwapped* = false)

Constructor. Input is the radius, the location, the direction of the z-axis and the (possibly approximate) x-axis. The local coordinate axes are normalized even if `z_axis` and/or `x_axis` are not unit vectors.

29.475.2.3 virtual Go::Sphere::~Sphere ( ) [virtual]

Virtual destructor - ensures safe inheritance.

29.475.3 Member Function Documentation

29.475.3.1 std::vector<CurveLoop> Go::Sphere::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.475.3.2 virtual BoundingBox Go::Sphere::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.475.3.3 static ClassType Go::Sphere::classType ( ) [inline], [static]

Definition at line 99 of file Sphere.h.

29.475.3.4 virtual Sphere* Go::Sphere::clone ( ) const [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementarySurface.

29.475.3.5 void Go::Sphere::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.475.3.6 void Go::Sphere::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is
Generated by Doxygen	used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.475.3.7 std::vector<shared_ptr<ParamCurve> > Go::Sphere::constParamCurves (double *parameter*, bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.475.3.8 virtual SplineSurface* Go::Sphere::createSplineSurface ( ) const [virtual]

Create a SplineSurface representation of the sphere.

Implements Go::ElementarySurface.

29.475.3.9 virtual int Go::Sphere::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.475.3.10 virtual SplineSurface* Go::Sphere::geometrySurface ( ) const [virtual]

A SplineSurface representation of the sphere.

Implements Go::ElementarySurface.

29.475.3.11 void Go::Sphere::getBoundaryInfo (Point & *pt1*, Point & *pt2*, double *epsilon*, SplineCurve *& *cv*, SplineCurve *& *crosscv*, double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.475.3.12 void Go::Sphere::getCoordinateAxes (Point & *x_axis*, Point & *y_axis*, Point & *z_axis*) const [inline]

Local coordinate axes.

Definition at line 194 of file Sphere.h.

29.475.3.13 virtual void Go::Sphere::getDegenerateCorners (std::vector< Point > & *deg_corners*, double *tol*) const [virtual]

Check for paralell and anti paralell partial derivatives in surface corners.

Implements Go::ParamSurface.

29.475.3.14 virtual shared_ptr<ElementaryCurve> Go::Sphere::getElementaryParamCurve (ElementaryCurve * *space_crv*, double *tol*, const Point * *start_par_pt* = NULL, const Point * *end_par_pt* = NULL) const [virtual]

Fetch the parameter curve in the domain of the elementary surface corresponding to a given elementary curve in geometry space if this curve has a simpler elementary representation. Otherwise, nothing is returned

Reimplemented from Go::ElementarySurface.

29.475.3.15 shared_ptr<Circle> Go::Sphere::getLatitudinalCircle (double *vpar*) const

Get the circle along the latitude for a given v parameter.

Parameters

vpar	v parameter

Returns

A circle for the corresponding v parameter. If the v parameter is bounded, only a segment of a full circle is returned.

29.475.3.16 Point Go::Sphere::getLocation ( ) const [inline]

Sphere centre.

Definition at line 190 of file Sphere.h.

29.475.3.17 shared_ptr<Circle> Go::Sphere::getLongitudinalCircle (double *upar*) const

Get the circle along a longitude for a given u parameter.

Parameters

upar	u parameter

Returns

A circle for the corresponding u parameter. If the u parameter is bounded, only a segment of a full circle is returned.

29.475.3.18 double Go::Sphere::getRadius ( ) const [inline]

Sphere radius.

Definition at line 186 of file Sphere.h.

29.475.3.19 virtual ClassType Go::Sphere::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.475.3.20 virtual bool Go::Sphere::isAxisRotational (Point & *centre,* Point & *axis,* Point & *vec,* double & *angle*) [virtual]

Check if the surface is axis rotational. Only true if a connection to an axis rotational elementary surface exist The axis and rotational angle is only specified if the surface is actually rotational

Reimplemented from Go::ParamSurface.

29.475.3.21 bool Go::Sphere::isBounded ( ) const [virtual]

Query if parametrization is bounded. All four parameter bounds must be finite for this to be true.

Returns

true if bounded, *false* otherwise

Reimplemented from Go::ElementarySurface.

29.475.3.22 bool Go::Sphere::isClosed (bool & *closed_dir_u,* bool & *closed_dir_v*) const [virtual]

Check if the sphere is closed.

Reimplemented from Go::ElementarySurface.

29.475.3.23 bool Go::Sphere::isDegenerate (bool & *b,* bool & *r,* bool & *t,* bool & *l,* double *tolerance*) const [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

29.475.3.24 double Go::Sphere::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.475.3.25 void Go::Sphere::normal (Point & *n,* double *upar,* double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.475.3.26 DirectionCone Go::Sphere::normalCone ( ) const [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.475.3.27 const RectDomain& Go::Sphere::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.475.3.28 void Go::Sphere::point (Point & *pt,* double *upar,* double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.475.3.29 void Go::Sphere::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) * (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.475.3.30 virtual void Go::Sphere::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.475.3.31 void Go::Sphere::setCoordinateAxes ( ) [protected]

29.475.3.32 virtual void Go::Sphere::setParameterBounds (double *from_upar*, double *from_vpar*, double *to_upar*, double *to_vpar*) [virtual]

Limit the surface by limiting the parameter domain.

Implements Go::ElementarySurface.

29.475.3.33 Sphere* Go::Sphere::subSurface (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

Pick part of sphere limited by parameter domain information.

29.475.3.34 std::vector<shared_ptr<ParamSurface> > Go::Sphere::subSurfaces (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.475.3.35 DirectionCone Go::Sphere::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.475.3.36 virtual void Go::Sphere::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.475.4 Member Data Documentation

29.475.4.1 RectDomain Go::Sphere::domain_ [protected]

Definition at line 242 of file Sphere.h.

29.475.4.2 Point Go::Sphere::location_ [protected]

Definition at line 237 of file Sphere.h.

29.475.4.3 RectDomain Go::Sphere::orientedDomain_ [mutable], [protected]

Definition at line 243 of file Sphere.h.

29.475.4.4 double Go::Sphere::radius_ [protected]

Definition at line 236 of file Sphere.h.

29.475.4.5 Point Go::Sphere::x_axis_ [protected]

Definition at line 239 of file Sphere.h.

29.475.4.6 Point Go::Sphere::y_axis_ [protected]

Definition at line 240 of file Sphere.h.

29.475.4.7 Point Go::Sphere::z_axis_ [protected]

Definition at line 238 of file Sphere.h.

The documentation for this class was generated from the following file:

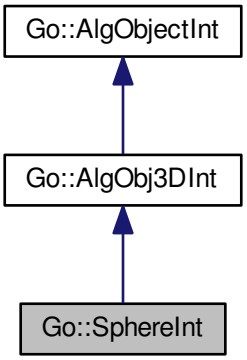
- gotools-core/include/GoTools/geometry/Sphere.h

29.476 Go::SphereInt Class Reference

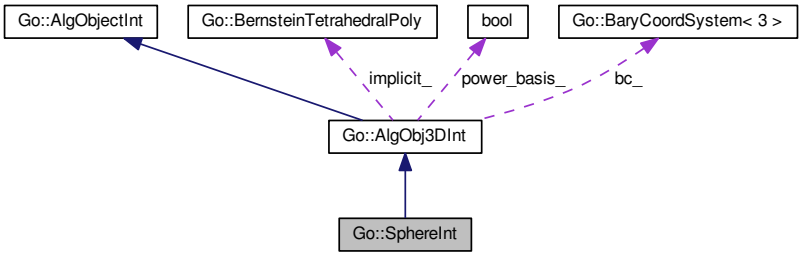
Class representing spherical algebraic intersection objects.

`#include <SphereInt.h>`

Inheritance diagram for Go::SphereInt:



Collaboration diagram for Go::SphereInt:



Public Member Functions

- SphereInt ()
- SphereInt (Point center, double radius)
- virtual ~SphereInt ()

  Destructor.
- void read (std::istream &is)
- Point center () const
- double radius () const
- SplineSurface * surface () const

Additional Inherited Members

29.476.1 Detailed Description

Class representing spherical algebraic intersection objects.

Definition at line 56 of file SphereInt.h.

29.476.2 Constructor & Destructor Documentation

29.476.2.1 Go::SphereInt::SphereInt ( )

Constructor. Used when reading from file.

29.476.2.2 Go::SphereInt::SphereInt (Point *center,* double *radius*)

Constructor.

Parameters

center	the center point of the sphere.
radius	the radius of the sphere.

29.476.2.3 virtual Go::SphereInt::~SphereInt ( ) [virtual]

Destructor.

29.476.3 Member Function Documentation

29.476.3.1 Point Go::SphereInt::center ( ) const

Get center point of the sphere.

Returns

The center point of the sphere.

29.476.3.2 double Go::SphereInt::radius ( ) const

Get the radius of the sphere.

Returns

The radius of the sphere.

29.476.3.3 void Go::SphereInt::read (std::istream & *is*)

Read a sphere description from file.

Parameters

is	the stream containing the sphere description.

29.476.3.4 SplineSurface* Go::SphereInt::surface ( ) const

Get a SplineSuface representing the sphere. This can be used to visualize the object.

Returns

The spline surface of the sphere.

The documentation for this class was generated from the following file:

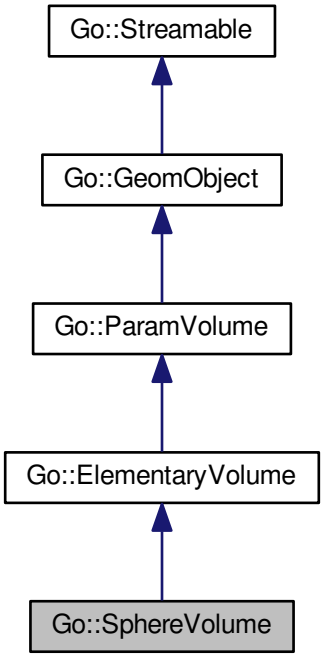
- intersections/include/GoTools/intersections/SphereInt.h

29.477 Go::SphereVolume Class Reference

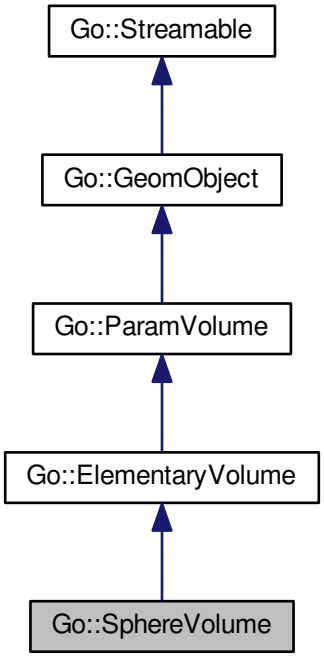
Class that represents a solid sphere. It is a subclass of ElementaryVolume, and thus has a parametrization.

`#include <SphereVolume.h>`

Inheritance diagram for Go::SphereVolume:



Collaboration diagram for Go::SphereVolume:



Public Member Functions

- SphereVolume ()
- SphereVolume (double radius, Point location, Point z_axis, Point x_axis)
- virtual ~SphereVolume ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual SphereVolume * clone () const
- DirectionCone tangentCone (int pardir) const
- const Array< double, 6 > parameterSpan () const
- void point (Point &pt, double upar, double vpar, double wpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, double wpar, int derivs, bool u_from_right=true, bool v_from_right=true, bool w_from_right=true, double resolution=1.0e-12) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, double &clo_w, Point &clo_pt, double &clo_dist, double epsilon, double *seed=0) const
- void reverseParameterDirection (int pardir)

- void swapParameterDirection (int pardir1, int pardir2)
- virtual std::vector< shared_ptr< ParamSurface > > getAllBoundarySurfaces () const

  Fetch all boundary surfaces corresponding to the volume.
- virtual void translate (const Point &vec)

  Translate.
- SplineVolume * geometryVolume () const

  Make a NURBS representation of the object.

Static Public Member Functions

- static ClassType classType ()

29.477.1 Detailed Description

Class that represents a solid sphere. It is a subclass of ElementaryVolume, and thus has a parametrization.

A SphereVolume has a natural parametrization by spherical coordinates in terms the distance *u* from the centre, the elevation angle *v* and the azimuth angle *w:* **p**(*u*, *v*, *w*) = **C** + *u* cos *w*((cos *v*) **x** + sin(*v*) **y**) + *u* (sin*w*) **z**, where **C** is a position vector, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $0 \leq u \leq R$, $0 \leq v \leq 2\pi$, $-\frac{\pi}{2} < w < \frac{\pi}{2}$, where *R* is the radius. The dimension is 3.

Definition at line 67 of file SphereVolume.h.

29.477.2 Constructor & Destructor Documentation

29.477.2.1 Go::SphereVolume::SphereVolume ( ) [inline]

Default constructor. Constructs an uninitialized SphereVolume which can only be assigned to or read into.

Definition at line 72 of file SphereVolume.h.

29.477.2.2 Go::SphereVolume::SphereVolume (double *radius*, Point *location*, Point *z_axis*, Point *x_axis*)

Constructor. Input is the radius, the location, the direction of the z-axis and the (possibly approximate) x-axis.

29.477.2.3 virtual Go::SphereVolume::~SphereVolume ( ) [virtual]

Virtual destructor - ensures safe inheritance.

29.477.3 Member Function Documentation

29.477.3.1 virtual BoundingBox Go::SphereVolume::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.477.3.2 static ClassType Go::SphereVolume::classType ( ) [inline], [static]

Definition at line 96 of file SphereVolume.h.

29.477.3.3 virtual SphereVolume* Go::SphereVolume::clone ( ) const [inline], [virtual]

make a clone of this volume and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementaryVolume.

Definition at line 103 of file SphereVolume.h.

29.477.3.4 void Go::SphereVolume::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, double & *clo_w*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the volume.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_w	w parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
seed	pointer to parameter values where iteration starts.

Implements Go::ParamVolume.

29.477.3.5 virtual int Go::SphereVolume::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.477.3.6 SplineVolume* Go::SphereVolume::geometryVolume ( ) const [virtual]

Make a NURBS representation of the object.

Implements Go::ElementaryVolume.

29.477.3.7 virtual std::vector<shared_ptr<ParamSurface> > Go::SphereVolume::getAllBoundarySurfaces ( ) const [virtual]

Fetch all boundary surfaces corresponding to the volume.

Implements Go::ParamVolume.

29.477.3.8 virtual ClassType Go::SphereVolume::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.477.3.9 double Go::SphereVolume::nextSegmentVal (int *dir*, double *par*, bool *forward*, double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0, 1 or 2)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamVolume.

29.477.3.10 const Array<double,6> Go::SphereVolume::parameterSpan ( ) const [virtual]

Return the parameter domain of the volume. This is an array containing the start and end parameter values. The spline's parameter i has its start value at the array position (2i) and its end parameter value at the array position (2i+1)

Returns

An array describing the parametric domain of the volume

Implements Go::ParamVolume.

29.477.3.11 void Go::SphereVolume::point (Point & *pt*, double *upar*, double *vpar*, double *wpar*) const [virtual]

Evaluates the volume's position for a given parameter triple.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter
wpar	the third parameter

Implements Go::ParamVolume.

29.477.3.12 void Go::SphereVolume::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, double *wpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, bool *w_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the volume's position and a certain number of derivatives for a given parameter triple.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function. Upon completion of the function, its first entry is the volume's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the volume tangents along the first, second and third parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dudw, dv2, dvdw, dw2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
wpar	the third parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
w_from_right	specify whether derivatives along the third parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamVolume.

29.477.3.13 virtual void Go::SphereVolume::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.477.3.14 void Go::SphereVolume::reverseParameterDirection (int *pardir*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

pardir	which parameter direction to reverse

Implements Go::ParamVolume.

29.477.3.15 void Go::SphereVolume::swapParameterDirection (int *pardir1*, int *pardir2*) [virtual]

Swaps two parameter directions

Parameters

pardir1	One of the parameter directions (0, 1 or 2) to be swapped
pardir2	The other parameter direction (0, 1 or 2) to be swapped

Implements Go::ParamVolume.

29.477.3.16 DirectionCone Go::SphereVolume::tangentCone (int *pardir*) const [virtual]

Creates a DirectionCone covering all tangents to this volume along a given parameter direction.

Parameters

pardir	if 1, the DirectionCone will be defined on basis of the volume's tangents along the first parameter direction. If 2, the second parameter direction will be used. If 3, the third parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this volume along the specified parameter direction.

Implements Go::ParamVolume.

29.477.3.17 virtual void Go::SphereVolume::translate (const Point & *vec*) [virtual]

Translate.

Implements Go::ParamVolume.

29.477.3.18 virtual void Go::SphereVolume::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

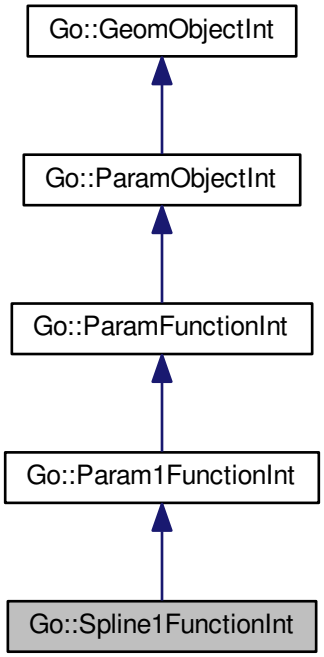
The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/SphereVolume.h

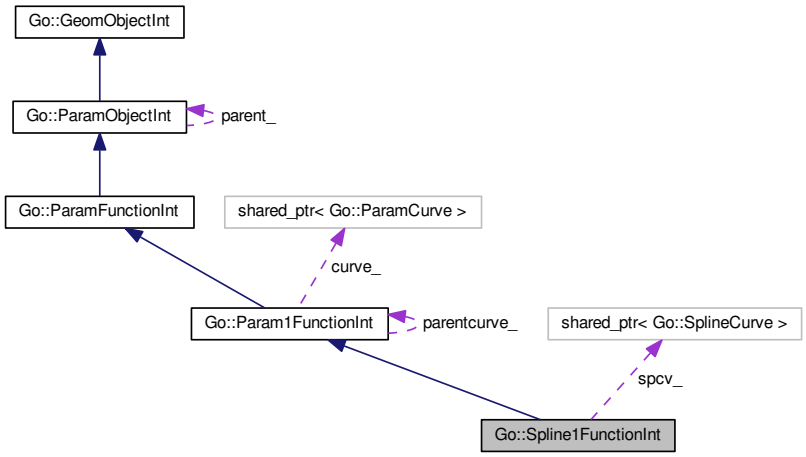
29.478 Go::Spline1FunctionInt Class Reference

```
#include <Spline1FunctionInt.h>
```

Inheritance diagram for Go::Spline1FunctionInt:



Collaboration diagram for Go::Spline1FunctionInt:



Public Member Functions

- Spline1FunctionInt (shared_ptr< ParamCurve > curve)
- Spline1FunctionInt (shared_ptr< ParamCurve > curve, ParamFunctionInt *parent)
- virtual ~Spline1FunctionInt ()

  Destructor.
- virtual shared_ptr< Param1FunctionInt > makeIntFunction (shared_ptr< ParamCurve > curve)
- virtual bool hasInnerKnots (int pardir) const
- virtual bool hasCriticalValsOrKnots (int pardir) const
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const
- virtual int getMeshSize (int dir)
- virtual double paramFromMesh (int dir, int idx)
- virtual std::vector< double >::iterator getMesh ()
- virtual bool monotone (Point &dir, double tol=1.0e-15) const
- virtual int knotIntervalFuzzy (double &t, double tol) const
- virtual double nextSegmentVal (double par, bool forward) const

Protected Attributes

- shared_ptr< SplineCurve > spcv_

29.478.1 Detailed Description

Class that represents the "intersection object" of a spline curve of dimension 1.

Definition at line 56 of file Spline1FunctionInt.h.

29.478.2 Constructor & Destructor Documentation

29.478.2.1 Go::Spline1FunctionInt::Spline1FunctionInt (shared_ptr< ParamCurve > *curve*) [explicit]

Constructor. Input curve must be of type SplineCurve. This is not checked run-time, so we rely on the user to obey this rule.

Parameters

curve	the parametric 1-dimensional curve defining the object.

29.478.2.2 Go::Spline1FunctionInt::Spline1FunctionInt (shared_ptr< ParamCurve > *curve,* ParamFunctionInt * *parent*) [explicit]

Constructor. Input curve must be of type SplineCurve. This is not checked run-time, so we rely on the user to obey this rule.

Parameters

curve	the parametric 1-dimensional curve defining the object. Can be either a curve or a surface.
parent	the parent object to this object.

29.478.2.3 virtual Go::Spline1FunctionInt::~Spline1FunctionInt ( ) [inline], [virtual]

Destructor.

Definition at line 75 of file Spline1FunctionInt.h.

29.478.3 Member Function Documentation

29.478.3.1 virtual std::vector<double> Go::Spline1FunctionInt::getCriticalValsAndKnots (int *pardir*) const [virtual]

Return the critical parameter values and inner knots for object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::Param1FunctionInt.

29.478.3.2 virtual std::vector<double> Go::Spline1FunctionInt::getInnerKnotVals (int *pardir,* bool *sort* = false) const [virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Reimplemented from Go::Param1FunctionInt.

29.478.3.3 virtual std::vector<double>::iterator Go::Spline1FunctionInt::getMesh ( ) [virtual]

Return the geometric sample mesh for the spline function.

Returns

The geometric sample mesh for the spline function.

Reimplemented from Go::Param1FunctionInt.

29.478.3.4 virtual int Go::Spline1FunctionInt::getMeshSize (int *dir*) [virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::Param1FunctionInt.

29.478.3.5 virtual bool Go::Spline1FunctionInt::hasCriticalValsOrKnots (int *pardir*) const [virtual]

Return true if the object has any critical parameter values or inner knots.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::Param1FunctionInt.

29.478.3.6 virtual bool Go::Spline1FunctionInt::hasInnerKnots (int *pardir*) const [virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::Param1FunctionInt.

29.478.3.7 virtual int Go::Spline1FunctionInt::knotIntervalFuzzy (double & *t*, double *tol*) const [virtual]

Return the knot interval for which t lies inside, moving the value t if it lies close to a knot.

Parameters

t	the parameter value
tol	the parametric tolerance deciding if the input parameter t should be moved.

Reimplemented from Go::Param1FunctionInt.

29.478.3.8 virtual shared_ptr<Param1FunctionInt> Go::Spline1FunctionInt::makeIntFunction (shared_ptr< ParamCurve > *curve*) [virtual]

Return an intersection object for the input curve. Input curve must be of type SplineCurve. This is not checked run-time, so we rely on the user to obey this rule. This object is used as the parent for the intersection object.

Parameters

curve	the parametric curve defining the intersection object.

Reimplemented from Go::Param1FunctionInt.

29.478.3.9 virtual bool Go::Spline1FunctionInt::monotone (Point & *dir,* double *tol* = 1.0e-15) const [virtual]

Return true if the curve is monotone.

Parameters

dir	the direction in which the object is monotone. Is not of interest here as the curve has only 1 parameter direction.

Returns

Whether or not the curve is monotone.

Reimplemented from Go::Param1FunctionInt.

29.478.3.10 virtual double Go::Spline1FunctionInt::nextSegmentVal (double *par,* bool *forward*) const [virtual]

Return the value of the knot next to the input parameter par.

Parameters

par	the parameter value
forward	if true we return the closest knot to the right, otherwise the closest knot to the left.

Returns

The knot closest to the input parameter.

Reimplemented from Go::Param1FunctionInt.

29.478.3.11 virtual double Go::Spline1FunctionInt::paramFromMesh (int *dir*, int *idx*) [virtual]

Return the corresponding mesh parameter.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Reimplemented from Go::Param1FunctionInt.

29.478.4 Member Data Documentation

29.478.4.1 shared_ptr<SplineCurve> Go::Spline1FunctionInt::spcv_ [protected]

Definition at line 157 of file Spline1FunctionInt.h.

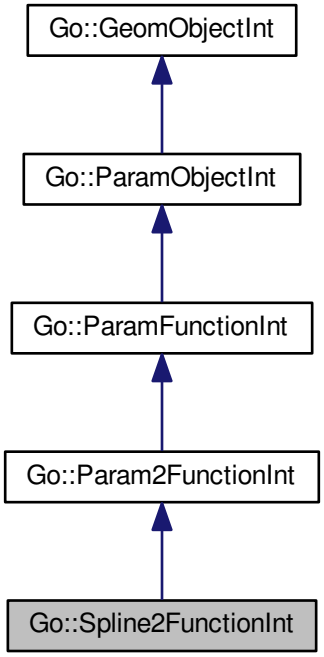
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Spline1FunctionInt.h

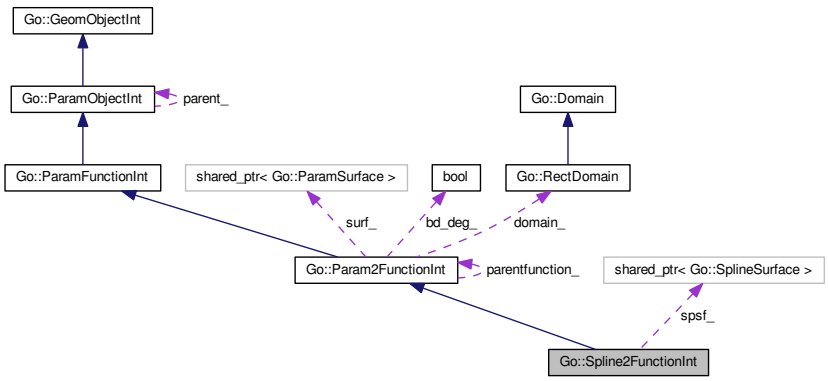
29.479 Go::Spline2FunctionInt Class Reference

```
#include <Spline2FunctionInt.h>
```

Inheritance diagram for Go::Spline2FunctionInt:



Collaboration diagram for Go::Spline2FunctionInt:



Public Member Functions

- Spline2FunctionInt (shared_ptr< SplineSurface > surf)
- Spline2FunctionInt (shared_ptr< SplineSurface > surf, Param2FunctionInt *parent)
- virtual ~Spline2FunctionInt ()

  Destructor.

- virtual shared_ptr< Param2FunctionInt > makeIntFunction (shared_ptr< ParamSurface > surf)
- virtual bool hasInnerKnots (int pardir) const
- virtual bool hasCriticalValsOrKnots (int pardir) const
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const
- virtual double startParam (int pardir) const
- virtual double endParam (int pardir) const
- virtual bool monotone (Point &dir, double tol=1.0e-15) const
- virtual int knotIntervalFuzzy (int pardir, double &t, double tol) const
- virtual double nextSegmentVal (int pardir, double par, bool forward) const
- virtual void getBoundaryObjects (std::vector< shared_ptr< BoundaryFunctionInt > > &bd_objs)
- shared_ptr< SplineSurface > surface3D ()
- shared_ptr< SplineSurface > createGradSurface () const

Protected Attributes

- shared_ptr< SplineSurface > spsf_

Additional Inherited Members

29.479.1 Detailed Description

This class represents the "intersection object" of a spline surface of dimension 1.

Definition at line 53 of file Spline2FunctionInt.h.

29.479.2 Constructor & Destructor Documentation

29.479.2.1 Go::Spline2FunctionInt::Spline2FunctionInt (shared_ptr< SplineSurface > *surf*) [explicit]

Constructor.

Parameters

surf	the parametric 1-dimensional surface defining the object.

29.479.2.2 Go::Spline2FunctionInt::Spline2FunctionInt (shared_ptr< SplineSurface > *surf*, Param2FunctionInt * *parent*) [explicit]

Constructor.

Parameters

surf	the parametric 1-dimensional surface defining the object.
parent	the parent object to this object.

29.479.2.3 virtual Go::Spline2FunctionInt::~Spline2FunctionInt ( ) [inline], [virtual]

Destructor.

Definition at line 68 of file Spline2FunctionInt.h.

29.479.3 Member Function Documentation

29.479.3.1 shared_ptr<SplineSurface> Go::Spline2FunctionInt::createGradSurface ( ) const

Return the gradient of the function S as a two-dimensional spline surface: (dS/du, dS/dv).

Returns

Pointer to the gradient spline surface

29.479.3.2 virtual double Go::Spline2FunctionInt::endParam (int *pardir*) const [virtual]

Return the end parameter in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Returns

The end parameter in the specified direction.

Reimplemented from Go::Param2FunctionInt.

29.479.3.3 virtual void Go::Spline2FunctionInt::getBoundaryObjects (std::vector< shared_ptr< BoundaryFunctionInt > > & *bd_objs*) [virtual]

Return the boundary objects of this object.

Parameters

bd_objs	the boundary objects of this object.

Reimplemented from Go::Param2FunctionInt.

29.479.3.4 virtual std::vector<double> Go::Spline2FunctionInt::getCriticalValsAndKnots (int *pardir*) const [virtual]

Return the critical parameter values and inner knots for object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::Param2FunctionInt.

29.479.3.5 virtual std::vector<double> Go::Spline2FunctionInt::getInnerKnotVals (int *pardir*, bool *sort* = false) const [virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Reimplemented from Go::Param2FunctionInt.

29.479.3.6 virtual bool Go::Spline2FunctionInt::hasCriticalValsOrKnots (int *pardir*) const [virtual]

Return true if the object has any critical parameter values or inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::Param2FunctionInt.

29.479.3.7 virtual bool Go::Spline2FunctionInt::hasInnerKnots (int *pardir*) const [virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::Param2FunctionInt.

29.479.3.8 virtual int Go::Spline2FunctionInt::knotIntervalFuzzy (int *pardir*, double & *t*, double *tol*) const [virtual]

Return the knot interval for which t lies inside, moving the value t if it lies close to a knot.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
t	the parameter value
tol	the parametric tolerance deciding if the input parameter t should be moved.

Reimplemented from Go::Param2FunctionInt.

29.479.3.9 virtual shared_ptr<Param2FunctionInt> Go::Spline2FunctionInt::makeIntFunction (shared_ptr< ParamSurface > *surf*) [virtual]

Return an intersection object for the input surface. This object is used as the parent for the intersection object.

Parameters

surf	the parametric surface defining the intersection object.

Reimplemented from Go::Param2FunctionInt.

29.479.3.10 virtual bool Go::Spline2FunctionInt::monotone (Point & *dir*, double *tol* = 1.0e-15) const [virtual]

Return true if the surface is monotone in any direction.

Parameters

dir	the direction in which the surface is monotone. Pertains only if surface is monotone.

Returns

Whether or not the surface is monotone.

Reimplemented from Go::Param2FunctionInt.

29.479.3.11 virtual double Go::Spline2FunctionInt::nextSegmentVal (int *pardir*, double *par*, bool *forward*) const [virtual]

Return the value of the knot next to the input parameter par.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
par	the parameter value
forward	if true we return the closest knot to the right, otherwise the closest knot to the left.

Returns

The knot closest to the input parameter.

Reimplemented from Go::Param2FunctionInt.

29.479.3.12 virtual double Go::Spline2FunctionInt::startParam (int *pardir*) const [virtual]

Return the start parameter value in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Returns

The start parameter in the specified direction.

Reimplemented from Go::Param2FunctionInt.

29.479.3.13 shared_ptr<SplineSurface> Go::Spline2FunctionInt::surface3D ( )

Return a 3-dimensional visualization spline surface.

Returns

The pointer to the 3-dimensional spline surface (u, v, surf_(u, v)).

29.479.4 Member Data Documentation

29.479.4.1 shared_ptr<SplineSurface> Go::Spline2FunctionInt::spsf_ [protected]

Definition at line 168 of file Spline2FunctionInt.h.

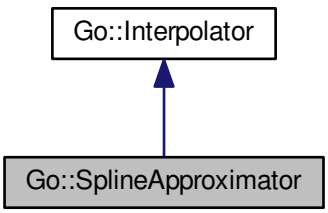
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/Spline2FunctionInt.h

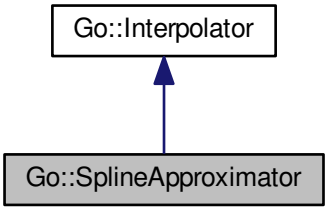
29.480 Go::SplineApproximator Class Reference

`#include <SplineApproximator.h>`

Inheritance diagram for Go::SplineApproximator:



Collaboration diagram for Go::SplineApproximator:



Public Member Functions

- SplineApproximator ()

  Constructor takes no arguments.
- virtual ∼SplineApproximator ()

  Virtual destructor ensures safe inheritance.
- virtual const BsplineBasis & basis ()
- virtual void interpolate (int num_points, int dimension, const double ∗param_start, const double ∗data_start, std::vector< double > &coefs)
- void setNumCoefs (int num)
- void setSplineSpace (const BsplineBasis &basis)

29.480.1 Detailed Description

An Interpolator that generates a spline curve approximating the given dataset in the least squares sense.

Definition at line 54 of file SplineApproximator.h.

29.480.2 Constructor & Destructor Documentation

29.480.2.1 Go::SplineApproximator::SplineApproximator ( ) [inline]

Constructor takes no arguments.

Definition at line 58 of file SplineApproximator.h.

29.480.2.2 virtual Go::SplineApproximator::∼SplineApproximator ( ) [virtual]

Virtual destructor ensures safe inheritance.

29.480.3 Member Function Documentation

29.480.3.1 virtual const BsplineBasis& Go::SplineApproximator::basis ( ) [virtual]

after the function interpolate() has been successfully run, this function can be called to get the BsplineBasis of the generated curve.

Returns

a constant reference to the BsplineBasis of the curve previously generated by interpolate().

Implements Go::Interpolator.

29.480.3.2 virtual void Go::SplineApproximator::interpolate (int *num_points,* int *dimension,* const double * *param_start,* const double * *data_start,* std::vector< double > & *coefs*) [virtual]

The interpolating function, as inherited by Interpolator. Prior to calling this function, the user must have specified:

- *either* the number of control points to use in the approximating curve by setNumCoefs().
- *or/and* directly specified the BsplineBasis to use by setSplineSpace(). A default BsplineBasis will be generated if the user has only set the number of control points prior to calling interpolate(). For parameter list, see Interpolator.

Implements Go::Interpolator.

29.480.3.3 void Go::SplineApproximator::setNumCoefs (int *num*) [inline]

Specify the number of basis functions / control points to use in the approximating curve.

Definition at line 86 of file SplineApproximator.h.

29.480.3.4 void Go::SplineApproximator::setSplineSpace (const BsplineBasis & *basis*) [inline]

Directly specify the spline space in which to search for the approximating function.

Definition at line 92 of file SplineApproximator.h.

The documentation for this class was generated from the following file:

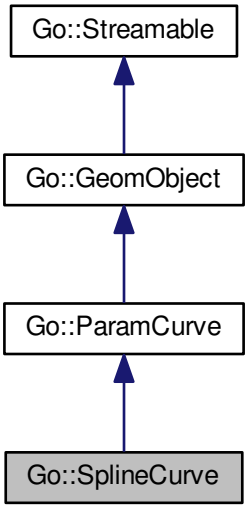
- gotools-core/include/GoTools/geometry/SplineApproximator.h

29.481 Go::SplineCurve Class Reference

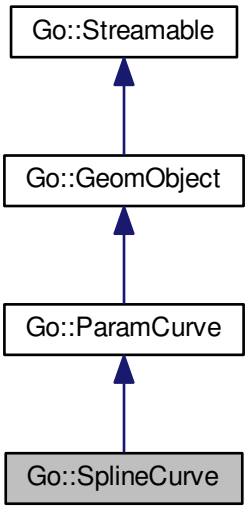
SplineCurve provides methodes for storing, reading and manipulating rational and non-rational B-spline curves.

`#include <SplineCurve.h>`

Inheritance diagram for Go::SplineCurve:



Collaboration diagram for Go::SplineCurve:



Public Member Functions

- SplineCurve ()
- template<typename RandomIterator1 , typename RandomIterator2 >
  SplineCurve (int number, int order, RandomIterator1 knotstart, RandomIterator2 coefsstart, int dim, bool rational=false)
- template<typename RandomIterator >
  SplineCurve (const BsplineBasis &basis, RandomIterator coefsstart, int dim, bool rational=false)
- SplineCurve (const Point &pnt1, const Point &pnt2)
- SplineCurve (const Point &pnt1, double startpar, const Point &pnt2, double endpar)
- virtual ~SplineCurve ()

  Virtual destructor, enables safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual SplineCurve * clone () const
- virtual void point (Point &pt, double tpar) const
- virtual void point (std::vector< Point > &pts, double tpar, int derivs, bool from_right=true) const
- virtual double startparam () const
- virtual double endparam () const
- virtual void reverseParameterDirection (bool switchparam=false)
- virtual SplineCurve * geometryCurve ()
- virtual DirectionCone directionCone () const
- virtual CompositeBox compositeBox () const
- virtual bool isDegenerate (double degenerate_epsilon)
- SplineCurve * derivCurve (int ider) const
- virtual SplineCurve * subCurve (double from_par, double to_par, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- std::vector< shared_ptr< SplineCurve > > split (std::vector< double > &param, double fuzzy=DEFAULT_PARAMETER_EPSILON) const

  Split curve in specified parameter values.
- virtual std::vector< shared_ptr< ParamCurve > > split (double param, double fuzzy=DEFAULT_PARAMETER_EPSILON) const

  Split curve in a specified parameter value.
- virtual void closestPoint (const Point &pt, double tmin, double tmax, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const
- virtual double length (double tol)
- virtual void appendCurve (ParamCurve *other_curve, int continuity, double &dist, bool repar=true)
- virtual void appendCurve (ParamCurve *cv, bool repar=true)
- void computeBasis (double param, std::vector< double > &basisValues, std::vector< double > &basisDerivs) const
- void gridEvaluator (std::vector< double > &points, const std::vector< double > &par) const
- const BsplineBasis & basis () const
- BsplineBasis & basis ()
- int numCoefs () const
- int numElem () const

  Query the number of elements in the SplineCurve.
- int order () const
- bool rational () const

- std::vector< double >::iterator knotsBegin ()
- std::vector< double >::iterator knotsEnd ()
- std::vector< double >::const_iterator knotsBegin () const
- std::vector< double >::const_iterator knotsEnd () const
- std::vector< double >::iterator coefs_begin ()
- std::vector< double >::iterator coefs_end ()
- std::vector< double >::const_iterator coefs_begin () const
- std::vector< double >::const_iterator coefs_end () const
- std::vector< double >::iterator rcoefs_begin ()
- std::vector< double >::iterator rcoefs_end ()
- std::vector< double >::const_iterator rcoefs_begin () const
- std::vector< double >::const_iterator rcoefs_end () const
- void getWeights (std::vector< double > &weights) const
- void interpolate (Interpolator &interpolator, int num_points, int dim, const double *param_start, const double *data_start)
- void insertKnot (double apar)
- void insertKnot (const std::vector< double > &new_knots)
- void makeBernsteinKnots ()
- virtual void setParameterInterval (double t1, double t2)
- void removeKnot (double tpar)
- void raiseOrder (int i=1)
- void makeKnotStartRegular ()
- void makeKnotEndRegular ()
- void swap (SplineCurve &other)
- void deform (const std::vector< double > &vec, int vdim=0)

  Adds the given deformation vector to the coefficients.
- void equalBdWeights (bool at_start)
- void representAsRational ()

  Ensure that the current curve is represented as a rational curve.
- void setBdWeight (double wgt, bool at_start)

  Set the weight in one endpoint of this curve (if rational)
- virtual double nextSegmentVal (double par, bool forward, double tol) const
- void replaceEndPoint (Point pnt, bool at_start)
- void translateCurve (const Point &dir)
- void translateSwapCurve (const Point &dir, double sgn, int pdir)
- bool isElementaryCurve ()

  Query if the curve was generated from an ElementaryCurve.
- shared_ptr< ElementaryCurve > getElementaryCurve ()
- void setElementaryCurve (shared_ptr< ElementaryCurve > elcurve)
- bool checkElementaryCurve ()
- void updateCoefsFromRcoefs ()
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)
- virtual bool isLinear (Point &dir, double tol)

  Check if the curve is linear.
- virtual bool isInPlane (const Point &loc, const Point &axis, double eps, Point &normal) const

  Check if the curve lies in a plane passing through a given axis.
- virtual bool isInPlane (const Point &norm, double eps, Point &pos) const

  Check if the curve lies in a plane with a given normal.

Static Public Member Functions

- static ClassType classType ()

Additional Inherited Members

29.481.1 Detailed Description

SplineCurve provides methodes for storing, reading and manipulating rational and non-rational B-spline curves.

Definition at line 57 of file SplineCurve.h.

29.481.2 Constructor & Destructor Documentation

29.481.2.1 Go::SplineCurve::SplineCurve ( ) [inline]

Creates an uninitialized SplineCurve, which can only be assigned to or read() into.

Definition at line 63 of file SplineCurve.h.

29.481.2.2 template<typename RandomIterator1 , typename RandomIterator2 > Go::SplineCurve::SplineCurve (int *number,* int *order,* RandomIterator1 *knotstart,* RandomIterator2 *coefsstart,* int *dim,* bool *rational* = false) [inline]

Create a SplineCurve by explicitly providing all spline-related information.

Parameters

number	number of control points
order	order of b-spline basis
knotstart	pointer to the array describing the knotvector
coefsstart	pointer to the array where the control points are consecutively stored.
dim	dimension of the space in which the curve lies (usually 2 or 3).
rational	Specify whether the curve is rational or not. If the curve is rational, coefficients must be in the following format: wP1 wP2 .... wPdim w. I.e., a (dim+1)-dimensional form. (This is the same form that is used within SISL).

Definition at line 83 of file SplineCurve.h.

29.481.2.3 template<typename RandomIterator > Go::SplineCurve::SplineCurve (const BsplineBasis & *basis,* RandomIterator *coefsstart,* int *dim,* bool *rational* = false) [inline]

Create a SplineCurve by explicitly providing all spline-related information.

Parameters

basis	the BsplineBasis to be used along the u-direction
basis_v	the BsplineBasis to be used along the v-direction
coefsstart	pointer to the array where the control points are consecutively stored. The storage order is such that control points along the u-parameter have the shortest stride (stored right after each other). If the surface is rational, pay attention to the comments below.
dim	dimension of the space in which the surface lies (usually 3).

Parameters

rational	Specify whether the surface is rational or not. If the surface is rational, coefficients must be in the following format: wP1 wP2 .... wPdim w. Ie. a (dim+1)-dimensional form. (This is the same form that is used within SISL).

Definition at line 123 of file SplineCurve.h.

29.481.2.4 Go::SplineCurve::SplineCurve (const Point & *pnt1,* const Point & *pnt2*)

Construct a straight curve between two points (order 2 - linear). The parameter span will be from 0 to T, where T is the euclidean distance between the two points.

Parameters

pnt1	first of the two points defining the straight curve
pnt2	second of the two points defining the straight curve

29.481.2.5 Go::SplineCurve::SplineCurve (const Point & *pnt1,* double *startpar,* const Point & *pnt2,* double *endpar*)

Make a straight curve between two points (order 2 - linear). The parameter span is also given by the user.

Parameters

pnt1	first of the two points defining the straight curve
startpar	start parameter of curve
pnt2	second of the two points defining the straight curve
endpar	end parameter of curve

29.481.2.6 virtual Go::SplineCurve::~SplineCurve ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.481.3 Member Function Documentation

29.481.3.1 virtual void Go::SplineCurve::appendCurve (ParamCurve * *other_curve,* int *continuity,* double & *dist,* bool *repar* = true) [virtual]

Inherited from ParamCurve. Appends a curve to end of this curve. The knotvector and control point vector of 'this' curve will be extended, and the degree will be raised if necessary. Note that there *will* be side-effects on the 'other↩ _curve' (its order might be raised, its knotvector will become k-regular and evt. reparametrized, its start point will be moved to coincide with the end point of 'this' curve, etc.)

Parameters

other_curve	the curve to append to this curve
continuity	which level of continuity we demand at the transition between the two curves (can be from -1 to order(), but the higher the value the more the curves will have to be locally modified.
dist	upon function return, this variable will hold the estimated maximum distorsion after 'smoothing' of joined curve to achieve the desired continuity.
repar	The parametrization of the 'other_curve' will *always* be shifted so that it starts where the parametrization of 'this' curve ends. However, if 'repar' is set to 'true', it will also be *scaled* as a function of position of control points close to the transition.

Implements Go::ParamCurve.

29.481.3.2 virtual void Go::SplineCurve::appendCurve (ParamCurve * *cv*, bool *repar* = true) [virtual]

Inherited from ParamCurve. Short hand function to call appendCurve with C^1 continuity.

Parameters

cv	the curve to append to this curve
repar	The parametrization of the 'other_curve' will *always* be shifted so that it starts where the parametrization of 'this' curve ends. However, if 'repar' is set to 'true', it will also be *scaled* as a function of position of control points close to the transition.

Implements Go::ParamCurve.

29.481.3.3 const BsplineBasis& Go::SplineCurve::basis ( ) const [inline]

Get a const reference to the BsplineBasis of the curve

Returns

const reference to the curve's BsplineBasis.

Definition at line 325 of file SplineCurve.h.

29.481.3.4 BsplineBasis& Go::SplineCurve::basis ( ) [inline]

Get a reference to the BsplineBasis of the curve

Returns

reference to the curve's BsplineBasis.

Definition at line 330 of file SplineCurve.h.

29.481.3.5 virtual BoundingBox Go::SplineCurve::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.481.3.6 bool Go::SplineCurve::checkElementaryCurve ( )

Check to see if `this` corresponds to the ElementaryCurve set by setElementaryCurve(). NOTE: Not yet implemented!

29.481.3.7 static ClassType Go::SplineCurve::classType ( ) [inline], [static]

Definition at line 183 of file SplineCurve.h.

29.481.3.8 virtual SplineCurve* Go::SplineCurve::clone ( ) const [inline], [virtual]

The clone-function is herited from GeomObject, but overridden here to get a covariant return type (for those compilers that allow this).

Implements Go::ParamCurve.

Definition at line 190 of file SplineCurve.h.

29.481.3.9 virtual void Go::SplineCurve::closestPoint (const Point & *pt*, double *tmin*, double *tmax*, double & *clo_t*, Point & *clo_pt*, double & *clo_dist*, double const * *seed* = 0) const [virtual]

Compute the closest point from an interval of this curve to a specified point.

Parameters

pt	point we want to find the closest point to
tmin	start parameter of search interval
tmax	end parameter of search interval
clo_t	upon function return, 'clo_t' will contain the parameter value of the closest point found.
clo_pt	upon function return, 'clo_pt' will contain the position of the closest point found.
clo_dist	upon function return, 'clo_dist' will containn the distance between 'pt' and the closest point found.
seed	pointer to initial guess value, provided by the user (can be 0, for which the algorithm will determine a (hopefully) reasonable choice).

Implements Go::ParamCurve.

29.481.3.10 std::vector<double>::iterator Go::SplineCurve::coefs_begin ( ) [inline]

Get an iterator to the start of the curve's internal, non-rational control point array

Returns

an iterator to the start of the curves non-rational control point array

Definition at line 376 of file SplineCurve.h.

29.481.3.11 std::vector<double>::const_iterator Go::SplineCurve::coefs_begin ( ) const [inline]

Get a const iterator to the start of the curve's non-rational, internal control point array

Returns

a const iterator to the start of the curve's non-rational control point array.

Definition at line 388 of file SplineCurve.h.

29.481.3.12 std::vector<double>::iterator Go::SplineCurve::coefs_end ( ) [inline]

Get a one-past-end iterator to the curve's non-rational, internal control point array

Returns

an iterator to one-past-end of the curve's non-rational, internal control point array

Definition at line 382 of file SplineCurve.h.

29.481.3.13 std::vector<double>::const_iterator Go::SplineCurve::coefs_end ( ) const [inline]

Get a one-past-end const iterator to the curve's non-rational, internal control point array

Returns

a const iterator to one-past-end of the curve's non-rational, internal control point array

Definition at line 394 of file SplineCurve.h.

29.481.3.14 virtual CompositeBox Go::SplineCurve::compositeBox ( ) const [virtual]

Creates a composite box enclosing the curve. The composite box consists of an inner and an edge box. The inner box is supposed to be made from the interior of the curve, while the edge box is made from the start and end points. The default implementation simply makes both boxes identical to the regular bounding box.

Returns

the CompositeBox enclosing the curve.

Reimplemented from Go::ParamCurve.

29.481.3.15 void Go::SplineCurve::computeBasis (double *param*, std::vector< double > & *basisValues*, std::vector< double > & *basisDerivs*) const

Evaluate positions and first derivatives of all basis values in a given parameter For non-rationals this is an interface to BsplineBasis::computeBasisValues, for rationals the routine evaluates the rational basis functions, i.e. the basis functions are divided by the denominator of the curve

Parameters

param	the parameter in which to compute
basisValues	the value of all basis functions, size equal to (degree_u+1)
basisDerivs	the derivative of all basis functions, same size as previous

29.481.3.16 void Go::SplineCurve::deform (const std::vector< double > & *vec*, int *vdim* = 0)

Adds the given deformation vector to the coefficients.

29.481.3.17 SplineCurve* Go::SplineCurve::derivCurve (int *ider*) const

Make a curve expressing the i'th derivative of 'this' curve, and return a pointer to it.

Parameters

ider	the number of the derivative of which we want to make a curve

Returns

a pointer to the newly generated curve. User assumes ownership and is responsible for deletion.

29.481.3.18 virtual int Go::SplineCurve::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.481.3.19 virtual DirectionCone Go::SplineCurve::directionCone ( ) const [virtual]

Creates a DirectionCone which covers all tangent directions of this curve.

Returns

the smallest DirectionCone containing all tangent directions of this curve.

Implements Go::ParamCurve.

29.481.3.20 virtual double Go::SplineCurve::endparam ( ) const [virtual]

Query the end parameter of the curve

Returns

the curve's end parameter

Implements Go::ParamCurve.

29.481.3.21 void Go::SplineCurve::equalBdWeights (bool *at_start*)

Update this curve to ensure equality of weights at one end of the curve. This is a reparametrization

29.481.3.22 virtual SplineCurve* Go::SplineCurve::geometryCurve ( ) [virtual]

If the definition of this ParamCurve contains a SplineCurve describing its spatial shape, then this function will return a pointer to this SplineCurve. Otherwise it will return a null pointer. The returned curve is NEWed, so the user is responsible for deleting it. This function may have side-effects.

Returns

a pointer to a SplineCurve representation of the ParamCurve, if it exists. Null pointer otherwise.

Implements Go::ParamCurve.

29.481.3.23 shared_ptr<ElementaryCurve> Go::SplineCurve::getElementaryCurve ( )

Get shared pointer to ElementaryCurve, if it exists. If not, return empty shared pointer.

NOTE: The ElementaryCurve returned by this function should ideally be the one corresponing to the current SplineCurve. However, there is no guarantee for this. One may check to see if this is the case by using checkElementaryCurve().

29.481.3.24 void Go::SplineCurve::getWeights (std::vector< double > & *weights*) const

Return all weights corresponding to this curve, a non-rational volume has all weights equal to one

29.481.3.25 void Go::SplineCurve::gridEvaluator (std::vector< double > & *points*, const std::vector< double > & *par*) const

Evaluation in a number of points Does not gain effectivity compared to evaluating the points one at the time, but provides a unified interface

29.481.3.26 void Go::SplineCurve::insertKnot (double *apar*)

Insert a new knot into the curve's knotvector

Parameters

apar	parameter value of the new knot

29.481.3.27 void Go::SplineCurve::insertKnot (const std::vector< double > & *new_knots*)

Insert several knots into the curve's knotvector

Parameters

new_knots	vector containing the parameter values of the new knots to be inserted into the knotvector.

29.481.3.28 virtual ClassType Go::SplineCurve::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.481.3.29 void Go::SplineCurve::interpolate (Interpolator & *interpolator*, int *num_points*, int *dim*, const double * *param_start*, const double * *data_start*)

Remake 'this' SplineCurve to interpolate (or approximate) a given sequence of data points.

Parameters

interpolator	reference to the Interpolator object specifying the interpolation method to use
num_points	number of points to interpolate
dim	dimension of the Euclidean space in which the points lie (usually 2 or 3)
param_start	pointer to the start of an array expressing the parameter values of the given data points.
data_start	pointer to the array where the coordinates of the data points are stored.

29.481.3.30 virtual bool Go::SplineCurve::isAxisRotational (Point & *centre*, Point & *axis*, Point & *vec*, double & *angle*) [virtual]

Check if the curve is axis rotational. Only true if a connection to an axis rotational elementary curve exist The axis and rotational angle is only specified if the curve is actually rotational

Reimplemented from Go::ParamCurve.

29.481.3.31 virtual bool Go::SplineCurve::isDegenerate (double *degenerate_epsilon*) [virtual]

Query whether the curve is degenerate (collapsed into a single point).

Parameters

degenerate_epsilon	the tolerance used in determine whether the curve is degenerate. A curve is considered degenerate if its total length is shorter than this value.

Returns

`true` if the curve is degenerate, `false` otherwise.

Implements Go::ParamCurve.

29.481.3.32 bool Go::SplineCurve::isElementaryCurve ( ) [inline]

Query if the curve was generated from an ElementaryCurve.

Definition at line 521 of file SplineCurve.h.

29.481.3.33 virtual bool Go::SplineCurve::isInPlane (const Point & *loc,* const Point & *axis,* double *eps,* Point & *normal*) const [virtual]

Check if the curve lies in a plane passing through a given axis.

Reimplemented from Go::ParamCurve.

29.481.3.34 virtual bool Go::SplineCurve::isInPlane (const Point & *norm,* double *eps,* Point & *pos*) const [virtual]

Check if the curve lies in a plane with a given normal.

Reimplemented from Go::ParamCurve.

29.481.3.35 virtual bool Go::SplineCurve::isLinear (Point & *dir,* double *tol*) [virtual]

Check if the curve is linear.

Reimplemented from Go::ParamCurve.

29.481.3.36 std::vector<double>::iterator Go::SplineCurve::knotsBegin ( ) [inline]

Get an iterator to the beginning of the knot vector

Returns

an iterator to the beginning of the knot vector

Definition at line 356 of file SplineCurve.h.

29.481.3.37 std::vector<double>::const_iterator Go::SplineCurve::knotsBegin ( ) const [inline]

Get a const iterator to the beginning of the knot vector

Returns

a const iterator to the beginning of the knot vector

Definition at line 364 of file SplineCurve.h.

29.481.3.38 std::vector<double>::iterator Go::SplineCurve::knotsEnd ( ) [inline]

Get a one-past-end iterator to the knot vector

Returns

an iterator to one-past-end of the knot vector

Definition at line 360 of file SplineCurve.h.

29.481.3.39 std::vector<double>::const_iterator Go::SplineCurve::knotsEnd ( ) const [inline]

Get a one-past-end const iterator to the knot vector

Returns

a const iterator to one-past-end of the knot vector

Definition at line 368 of file SplineCurve.h.

29.481.3.40 virtual double Go::SplineCurve::length (double *tol*) [virtual]

Inherited from ParamCurve Compute the total length of this curve

Implements Go::ParamCurve.

29.481.3.41 void Go::SplineCurve::makeBernsteinKnots ( )

Insert knots into the knotvector such that all knots get multiplicity equal to the order of the b-spline basis.

29.481.3.42 void Go::SplineCurve::makeKnotEndRegular ( )

Make the knotvector k-regular at end. Useful when k-regularity of a knotvector is to be assumed.

29.481.3.43 void Go::SplineCurve::makeKnotStartRegular ( )

Make the knotvector k-regular at start. Useful when k-regularity of a knotvector is to be assumed.

29.481.3.44 virtual double Go::SplineCurve::nextSegmentVal (double *par*, bool *forward*, double *tol*) const [virtual]

Inherited from ParamCurve. Returns the value of the next knot.

Parameters

par	the parameter from which we will look for the start of the next interval.
forward	specify whether we will look forwards or backwards.
tol	a tolerance specifying how close 'par' has to be to a knot to be considered 'on' the knot.

Reimplemented from Go::ParamCurve.

29.481.3.45 int Go::SplineCurve::numCoefs ( ) const [inline]

Query the number of control points of the curve

Returns

the number of control points of the curve.

Definition at line 335 of file SplineCurve.h.

29.481.3.46 int Go::SplineCurve::numElem ( ) const [inline]

Query the number of elements in the SplineCurve.

Definition at line 339 of file SplineCurve.h.

29.481.3.47 int Go::SplineCurve::order ( ) const [inline]

Query the order of the spline space in which the curve lies

Returns

the order of the curve's spline space

Definition at line 346 of file SplineCurve.h.

29.481.3.48 virtual void Go::SplineCurve::point (Point & *pt*, double *tpar*) const [virtual]

Evaluate the curve's position at a given parameter

Parameters

pt	the evaluated position will be written to this Point
tpar	the parameter for which we wish to evaluate the curve

Implements Go::ParamCurve.

29.481.3.49 virtual void Go::SplineCurve::point (std::vector< Point > & *pts*, double *tpar*, int *derivs*, bool *from_right* = true) const [virtual]

Evaluate the curve's position and a certain number of derivatives at a given parameter.

Parameters

pts	the evaluated position and derivatives (tangent, curvature vector, etc.) will be written to this vector. The first entry will be the position, the second entry will be the first derivative, etc. The size of this vector must be set to 'derivs'+ 1 prior to calling this function.
tpar	the parameter for which we want to evaluate the curve
derivs	the number of derivatives we want to have calculated
from_right	specify whether we should calculate derivatives 'from the right' or 'from the left' (default is from the right). This matters only when the curve presents discontinuities in its derivatives.

Implements Go::ParamCurve.

29.481.3.50 void Go::SplineCurve::raiseOrder (int *i* = 1)

Raise the order of the curve's b-spline basis without changing the shape of the curve

Parameters

i	specifies how many times the order will be raised.

29.481.3.51 bool Go::SplineCurve::rational ( ) const [inline]

Query whether or not the curve is rational.

Returns

'true' if the curve is rational, 'false' otherwise.

Definition at line 351 of file SplineCurve.h.

29.481.3.52 std::vector<double>::iterator Go::SplineCurve::rcoefs_begin ( ) [inline]

Get an iterator to the start of the curve's internal, rational control point array

Returns

an iterator to the start of the curves rational control point array

Definition at line 400 of file SplineCurve.h.

29.481.3.53 std::vector<double>::const_iterator Go::SplineCurve::rcoefs_begin ( ) const [inline]

Get a const iterator to the start of the curve's rational, internal control point array

Returns

a const iterator to the start of the curve's rational control point array.

Definition at line 412 of file SplineCurve.h.

29.481.3.54 std::vector<double>::iterator Go::SplineCurve::rcoefs_end ( ) [inline]

Get a one-past-end iterator to the curve's rational, internal control point array

Returns

an iterator to one-past-end of the curve's rational, internal control point array

Definition at line 406 of file SplineCurve.h.

29.481.3.55 std::vector<double>::const_iterator Go::SplineCurve::rcoefs_end ( ) const [inline]

Get a one-past-end const iterator to the curve's rational, internal control point array

Returns

a const iterator to one-past-end of the curve's rational, internal control point array

Definition at line 418 of file SplineCurve.h.

29.481.3.56 virtual void Go::SplineCurve::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.481.3.57 void Go::SplineCurve::removeKnot (double *tpar*)

Remove a knot from the knotvector

Parameters

tpar	the parameter value of the knot to be removed.

29.481.3.58 void Go::SplineCurve::replaceEndPoint (Point *pnt*, bool *at_start*)

Modify the curve by changing on endpoint

Parameters

pnt	new end point
at_start	whether or not the start coefficient should be changed

29.481.3.59 void Go::SplineCurve::representAsRational ( )

Ensure that the current curve is represented as a rational curve.

29.481.3.60 virtual void Go::SplineCurve::reverseParameterDirection (bool *switchparam* = false) [virtual]

Set the parameter direction of the curve. The curve's parameter interval will always remain constant, but by flipping the parameter direction, the curve will be traced the opposite way when moving a parameter over the parameter interval.

Parameters

switchparam	if true, and the curve is 2D, the x and y coordinates should be swapped. This is used when turning the orientation of bounded (trimmed) surfaces.

Implements Go::ParamCurve.

29.481.3.61 void Go::SplineCurve::setBdWeight (double *wgt*, bool *at_start*)

Set the weight in one endpoint of this curve (if rational)

29.481.3.62 void Go::SplineCurve::setElementaryCurve (shared_ptr< ElementaryCurve > *elcurve*)

Set shared pointer to the ElementaryCurve that is represented by `this`.

NOTE: The current SplineCurve (i.e. `this`), must be created from the argument ElementaryCurve by ElementaryCurve::createSplineCurve(), otherwise undefined behaviour may occur. One may check to see if this is the case by using checkElementaryCurve().

29.481.3.63 virtual void Go::SplineCurve::setParameterInterval (double *t1*, double *t2*) [virtual]

Rescale the knotvector so that the total parameter span now ranges from 't1' to 't2'.

Parameters

t1	new start value of the spline's parameter span
t2	new end value of the spline's parameter span

Implements Go::ParamCurve.

29.481.3.64 std::vector<shared_ptr<SplineCurve> > Go::SplineCurve::split (std::vector< double > & *param*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

Split curve in specified parameter values.

29.481.3.65 virtual std::vector<shared_ptr<ParamCurve> > Go::SplineCurve::split (double *param*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Split curve in a specified parameter value.

Reimplemented from Go::ParamCurve.

29.481.3.66 virtual double Go::SplineCurve::startparam ( ) const [virtual]

Query the start parameter of the curve

Returns

the curve's start parameter

Implements Go::ParamCurve.

29.481.3.67 virtual SplineCurve* Go::SplineCurve::subCurve (double *from_par*, double *to_par*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Returns a curve which is a part of this curve. The result is NEWed, so the user is responsible for deleting it. NB: It is not guaranteed that the ParamCurve that is returned is of the same type as the curve itself. Thus, the returned curve might be a SplineCurve.

Parameters

from_par	start value of parameter interval that will define the subcurve
to_par	end value of parameter interval that will define the subcurve
fuzzy	since subCurve works on those curves who are spline-based, this tolerance defines how close the start and end parameter must be to an existing knot in order to be considered *on* the knot.

Returns

a pointer to a new subcurve which represents the part of the curve between 'from_par' and 'to_par'. It will be spline-based and have a k-regular knotvector. The user is responsible for deleting this subcurve when it is no longer needed.

Implements Go::ParamCurve.

29.481.3.68 void Go::SplineCurve::swap (SplineCurve & *other*)

quick swap of 'this' SplineCurve with the 'other' one.

Parameters

other	the SplineCurve to swap with 'this' one.

29.481.3.69 void Go::SplineCurve::translateCurve (const Point & *dir*)

29.481.3.70 void Go::SplineCurve::translateSwapCurve (const Point & *dir,* double *sgn,* int *pdir*)

Modify in 1. (pdir == 1), 2. (pdir == 2) or both (pdir == 3) parameter directions

29.481.3.71 void Go::SplineCurve::updateCoefsFromRcoefs ( )

Given the rational coefficients of the curve (hx, hy, hz, h), set the coefficient array where the weight is divided out (x, y, z).

29.481.3.72 virtual void Go::SplineCurve::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

The documentation for this class was generated from the following file:

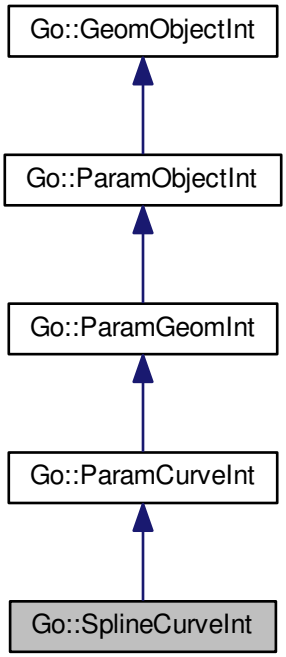
- gotools-core/include/GoTools/geometry/SplineCurve.h

29.482 Go::SplineCurveInt Class Reference

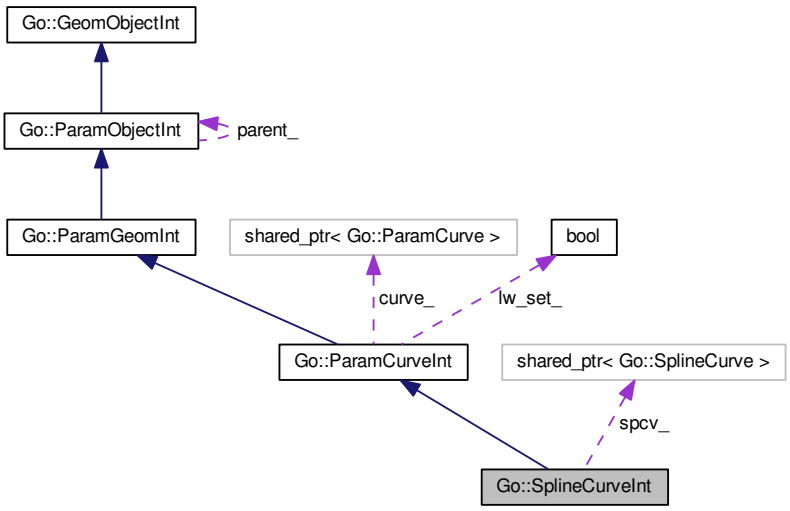
Class representing the "intersection object" of a spline curve.

`#include <SplineCurveInt.h>`

Inheritance diagram for Go::SplineCurveInt:



Collaboration diagram for Go::SplineCurveInt:



Public Member Functions

- SplineCurveInt (shared_ptr< ParamCurve > curve)
- SplineCurveInt (shared_ptr< ParamCurve > curve, ParamGeomInt *parent)
- virtual ~SplineCurveInt ()

  Destructor.
- virtual shared_ptr< ParamCurveInt > makeIntObject (shared_ptr< ParamCurve > curve)
- virtual bool hasInnerKnots (int pardir) const
- virtual bool hasCriticalValsOrKnots (int pardir) const
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const
- virtual int getMeshSize (int dir)
- virtual double paramFromMesh (int dir, int idx)
- virtual std::vector< double >::iterator getMesh ()

  Return the geometric sample mesh for the parametric function.
- virtual int checkPeriodicity (int pardir=0) const
- virtual int knotIntervalFuzzy (double &t, double tol) const
- virtual double nextSegmentVal (double par, bool forward, double tol) const
- virtual bool isSpline ()
- virtual const SplineCurve * getSpline ()
- virtual double getOptimizedConeAngle (Point &axis1, Point &axis2)
- virtual RotatedBox getRotatedBox (std::vector< Point > &axis) const

Protected Attributes

- shared_ptr< SplineCurve > spcv_

29.482.1 Detailed Description

Class representing the "intersection object" of a spline curve.

Definition at line 55 of file SplineCurveInt.h.

29.482.2 Constructor & Destructor Documentation

29.482.2.1 Go::SplineCurveInt::SplineCurveInt (shared_ptr< ParamCurve > *curve*) [explicit]

Constructor.

Parameters

curve	the parametric curve defining the intersection object.

29.482.2.2 Go::SplineCurveInt::SplineCurveInt (shared_ptr< ParamCurve > *curve*, ParamGeomInt * *parent*) [explicit]

Constructor.

Parameters

curve	the parametric curve defining the intersection object.
parent	the parent object to this object. Can be either a curve or a surface.

29.482.2.3 virtual Go::SplineCurveInt::~SplineCurveInt ( ) [inline], [virtual]

Destructor.

Definition at line 71 of file SplineCurveInt.h.

29.482.3 Member Function Documentation

29.482.3.1 virtual int Go::SplineCurveInt::checkPeriodicity (int *pardir* = 0) const [virtual]

Check if the object is periodic. Analyze periodicity of curve based on number of repeating knots and control points. The return value is -1 if the curve ends are disjoint, otherwise k if cv is C^k continuous. These are sufficient but not necessary conditions for periodicity, so it is possible that a higher degree of periodicity exists. Should not be called on this layer, should be overruled by inherited class.

Parameters

pardir	the parameter direction in question. Does not pertain to for a curve.

Returns

-1 if the curve ends are disjoint, or k if the curve is proven to be C^k continuous.

Reimplemented from Go::ParamCurveInt.

29.482.3.2 virtual std::vector<double> Go::SplineCurveInt::getCriticalValsAndKnots (int *pardir*) const [virtual]

Return the critical parameter values and inner knots for object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::ParamCurveInt.

29.482.3.3 virtual std::vector<double> Go::SplineCurveInt::getInnerKnotVals (int *pardir*, bool *sort* = false) const [virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Reimplemented from Go::ParamCurveInt.

29.482.3.4 virtual std::vector<double>::iterator Go::SplineCurveInt::getMesh ( ) [virtual]

Return the geometric sample mesh for the parametric function.

Reimplemented from Go::ParamCurveInt.

29.482.3.5 virtual int Go::SplineCurveInt::getMeshSize (int *dir*) [virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::ParamCurveInt.

29.482.3.6 virtual double Go::SplineCurveInt::getOptimizedConeAngle (Point & *axis1*, Point & *axis2*) [virtual]

We try to treat problems which will never result in a simple case by shrinking the domain slightly, resulting in smaller cones. This is useful for scenarios where the normals are parallell in a boundary point.

Parameters

axis1	first vector defining a projection plane
axis2	second vector defining a projection plane

Returns

The optimized cone angle

Reimplemented from Go::ParamCurveInt.

29.482.3.7 virtual RotatedBox Go::SplineCurveInt::getRotatedBox (std::vector< Point > & *axis*) const [virtual]

Create a box containing the geometric sample mesh in the input coordinate system.

Parameters

axis	the axis defining the coordinate system. The size of vector axis is 2, the last point is given as the cross product axis[0]axis[1].

Returns

The rotated box

Reimplemented from Go::ParamCurveInt.

29.482.3.8 virtual const SplineCurve* Go::SplineCurveInt::getSpline ( ) [inline], [virtual]

Reimplemented from Go::ParamCurveInt.

Definition at line 154 of file SplineCurveInt.h.

29.482.3.9 virtual bool Go::SplineCurveInt::hasCriticalValsOrKnots (int *pardir*) const [virtual]

Return true if the object has any critical parameter values or inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::ParamCurveInt.

29.482.3.10 virtual bool Go::SplineCurveInt::hasInnerKnots (int *pardir*) const [virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::ParamCurveInt.

29.482.3.11 virtual bool Go::SplineCurveInt::isSpline ( ) [virtual]

Verify whether the object is a spline.

Returns

True if the object is a spline.

Reimplemented from Go::ParamCurveInt.

29.482.3.12 virtual int Go::SplineCurveInt::knotIntervalFuzzy (double & *t*, double *tol*) const [virtual]

Find the knot interval for which t lies inside, moving the value t if it lies close to a knot.

Parameters

t	the parameter value
tol	the parametric tolerance deciding if the input parameter t should be moved.

Reimplemented from Go::ParamCurveInt.

29.482.3.13 virtual shared_ptr<ParamCurveInt> Go::SplineCurveInt::makeIntObject (shared_ptr< ParamCurve > *curve*) [virtual]

Return an intersection object for the input curve. This object is used as the parent for the intersection object.

Parameters

curve	the parametric curve defining the intersection object.

Reimplemented from Go::ParamCurveInt.

29.482.3.14 virtual double Go::SplineCurveInt::nextSegmentVal (double *par*, bool *forward*, double *tol*) const [virtual]

Return the value of the knot next to the input parameter par.

Parameters

par	the parameter value
forward	if true we return the closest knot to the right, otherwise the closest knot to the left.
tol	the tolerance to determine if *par* is already located on the start of the next segment.

Returns

The knot closest to the input parameter.

Reimplemented from Go::ParamCurveInt.

29.482.3.15 virtual double Go::SplineCurveInt::paramFromMesh (int *dir*, int *idx*) [virtual]

Return the corresponding mesh parameter.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Reimplemented from Go::ParamCurveInt.

29.482.4 Member Data Documentation

29.482.4.1 shared_ptr<SplineCurve> Go::SplineCurveInt::spcv_ [protected]

Definition at line 178 of file SplineCurveInt.h.

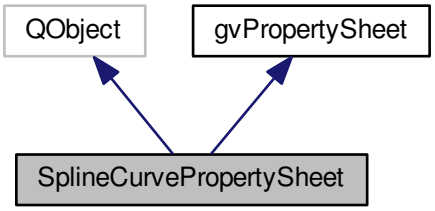
The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/SplineCurveInt.h

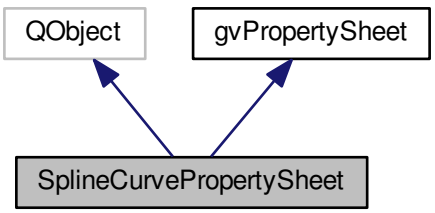
29.483 SplineCurvePropertySheet Class Reference

`#include <SplineCurvePropertySheet.h>`

Inheritance diagram for SplineCurvePropertySheet:



Collaboration diagram for SplineCurvePropertySheet:



Public Slots

- void apply ()

Public Member Functions

- SplineCurvePropertySheet (Go::CurveTesselator *tess, gvCurvePaintable *pable)
- virtual void createSheet (QWidget *parent, gvObserver *obs)

29.483.1 Detailed Description

Documentation ... etc

Definition at line 57 of file SplineCurvePropertySheet.h.

29.483.2 Constructor & Destructor Documentation

29.483.2.1 SplineCurvePropertySheet::SplineCurvePropertySheet (Go::CurveTesselator * *tess*, gvCurvePaintable * *pable*) [inline]

Definition at line 63 of file SplineCurvePropertySheet.h.

29.483.3 Member Function Documentation

29.483.3.1 void SplineCurvePropertySheet::apply ( ) [slot]

29.483.3.2 virtual void SplineCurvePropertySheet::createSheet (QWidget * *parent*, gvObserver * *obs*) [virtual]

Implements gvPropertySheet.

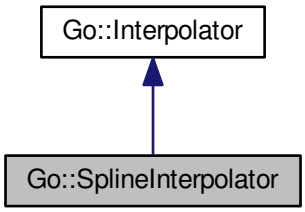
The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/SplineCurvePropertySheet.h

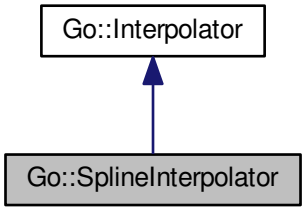
29.484 Go::SplineInterpolator Class Reference

`#include <SplineInterpolator.h>`

Inheritance diagram for Go::SplineInterpolator:



Collaboration diagram for Go::SplineInterpolator:



Public Types

- enum CondType {
  None, Hermite, Natural, Free,
  NaturalAtStart, NaturalAtEnd }

Public Member Functions

- SplineInterpolator ()

  Constructor takes no arguments.
- virtual ~SplineInterpolator ()

  Virtual destructor ensures safe inheritance.
- virtual const BsplineBasis & basis ()
- void interpolate (const std::vector< double > &params, const std::vector< double > &points, const std::↩
  ::vector< int > &tangent_index, const std::vector< double > &tangent_points, int order, std::vector< double
  > &coefs)

- void interpolate (const std::vector< double > &params, const std::vector< double > &points, const std::vector< int > &tangent_index, const std::vector< double > &tangent_points, std::vector< double > &coefs)
- virtual void interpolate (int num_points, int dimension, const double *param_start, const double *data_start, std::vector< double > &coefs)
- void setHermiteConditions (const Point &start_tangent, const Point &end_tangent)
- void setNaturalConditions ()
- void setNaturalStartCondition ()
- void setNaturalEndCondition ()
- void setFreeConditions ()
- void setEndTangents (shared_ptr< Point > &start_tangent, shared_ptr< Point > &end_tangent)
- CondType getCondType ()
- void makeBasis (const std::vector< double > &params, const std::vector< int > &tangent_index, int order)
- void setBasis (const BsplineBasis &basis)

29.484.1 Detailed Description

An Interpolator that generates a spline curve interpolating the given dataset.

Definition at line 56 of file SplineInterpolator.h.

29.484.2 Member Enumeration Documentation

29.484.2.1 enum Go::SplineInterpolator::CondType

CondType Enumerator specifying possible boundary conditions.

```
/// None           boundary conditions have not been specified yet. This will lead
///                to an error if the virtual interpolate() function is called. (The
///                other two interpolate() functions do not care about end conditions.
/// Hermite        The tangents are imposed at the start and end of the curve.
/// Natural        No imposed tangents, but curvature is imposed to be zero at the
///                start and end of the curve.
/// Free           No imposed conditions, neither at start nor end of curve.
/// NaturalAtStart Curvature imposed to be zero at start of curve.  End of curve
///                will either have no conditions at all, or have an imposed
///                tangent (depending on whether the  latter has been specified or not.
/// NaturalAtEnd   Curvature imposed to be zero at end of curve.  Start of curve
///                will either have no conditions, or have an imposed tangent
///                (depending on whether the latter has been specified or not).
///
```

Enumerator

None

Hermite

Natural

Free

NaturalAtStart

NaturalAtEnd

Definition at line 141 of file SplineInterpolator.h.

29.484.3 Constructor & Destructor Documentation

29.484.3.1 Go::SplineInterpolator::SplineInterpolator ( ) [inline]

Constructor takes no arguments.

Definition at line 60 of file SplineInterpolator.h.

29.484.3.2 virtual Go::SplineInterpolator::~SplineInterpolator ( ) [virtual]

Virtual destructor ensures safe inheritance.

29.484.4 Member Function Documentation

29.484.4.1 virtual const BsplineBasis& Go::SplineInterpolator::basis ( ) [virtual]

after the function interpolate() has been successfully run, this function can be called to get the BsplineBasis of the generated curve.

Returns

a constant reference to the BsplineBasis of the curve previously generated by interpolate().

Implements Go::Interpolator.

29.484.4.2 CondType Go::SplineInterpolator::getCondType ( ) [inline]

Query the type of endpoint conditions currenltly specified.

Returns

the currently specified CondType.

Definition at line 201 of file SplineInterpolator.h.

29.484.4.3 void Go::SplineInterpolator::interpolate (const std::vector< double > & *params*, const std::vector< double > & *points*, const std::vector< int > & *tangent_index*, const std::vector< double > & *tangent_points*, int *order*, std::vector< double > & *coefs*)

This interpolating function also takes user-specified tangent information into account, but does *not* rely on the previously specified end conditions. It constructs its own basis based on the given parametrization and order, so neither does it care about any basis previously set by the user. It carries out order-1 spline interpolation.

Parameters

params	vector containing the parameters for the data points. Its size is equal to the total number of datapoints.
points	vector containing the coordinates of the data points. Its size is equal to the total number of datapoints multiplied with the spatial dimension. (NB: This is how the algorithm deduces the spatial dimension to use: divide the size of 'points' with the size of 'params').
tangent_index	a vector containing the indexes of those data points that has tangents associated with them.
tangent_points	a vector containing the tangents associated with those data points that are referred to in

29.484.4.4 void Go::SplineInterpolator::interpolate (const std::vector< double > & *params,* const std::vector< double > & *points,* const std::vector< int > & *tangent_index,* const std::vector< double > & *tangent_points,* std::vector< double > & *coefs*)

Does the same as the interpolate() function above, but expects the basis to have been specified in advance (by makeBasis() or setBasis()). If the basis is not consistent with the given data set, an exception will be thrown. (The number of point must at least be equal to the basis' order, and the number of basis functions must be equal to the number of points plus the number of tangents). For a description of the parameter list, see interpolate().

29.484.4.5 virtual void Go::SplineInterpolator::interpolate (int *num_points,* int *dimension,* const double * *param_start,* const double * *data_start,* std::vector< double > & *coefs*) [virtual]

The interpolating function, as inherited by Interpolator. Does cubic spline interpolation of points (does not care about tangents). It constructs its own basis based on the given parametrization, so it does not care about any basis previously set by the user. Previously specified end conditions will be taken into account. For parameter list, see Interpolator.

Implements Go::Interpolator.

29.484.4.6 void Go::SplineInterpolator::makeBasis (const std::vector< double > & *params,* const std::vector< int > & *tangent_index,* int *order*)

Given a set of interpolation conditions (currently position and tangent information) and order, specify a fitting BsplineBasis (stored internally).

Parameters

params	vector containing the parametrization of the expected datapoints (one parameter per point).
tangent_index	vector containing indexes of those datapoints where tangent conditions will be imposed as well.
order	Order of the requested BsplineBasis.

29.484.4.7 void Go::SplineInterpolator::setBasis (const BsplineBasis & *basis*) [inline]

WARNING! basis must be suited to interpolation conditions! If there is no need to end up with a specific basis, makeBasis() is safer. Specify a user-defined BpslineBasis to be used for interpolation.

Parameters

basis	the specified basis. NB: it must be suited to the interpolation conditions that are going to be used! If there is no need to end up with a specific basis, makeBasis() is safer.

Definition at line 221 of file SplineInterpolator.h.

29.484.4.8 void Go::SplineInterpolator::setEndTangents (shared_ptr< Point > & *start_tangent,* shared_ptr< Point > & *end_tangent*) [inline]

Specify tangents for endpoints of curve. One or both of the shared pointers may be zero, which means that the corresponding endpoint condition will be set to 'Natural'; otherwise it will be set to 'Hermite'. **Note:** endpoint conditions are considered by the *virtual* interpolate() function. The other interpolate functions disregard this setting.

Definition at line 184 of file SplineInterpolator.h.

29.484.4.9 void Go::SplineInterpolator::setFreeConditions ( ) [inline]

Set the endpoint conditions to 'Free' (meaning no conditions at all). **Note:** endpoint conditions are considered by the *virtual* interpolate() function. The other interpolate functions disregard this setting.

Definition at line 177 of file SplineInterpolator.h.

29.484.4.10 void Go::SplineInterpolator::setHermiteConditions (const Point & *start_tangent,* const Point & *end_tangent*) [inline]

Set the endpoint conditions to 'Hermite'; impose tangents at start and end of curve. **Note:** endpoint conditions are considered by the *virtual* interpolate() function. The other interpolate functions disregard this setting.

Parameters

start_tangent	the imposed tangent at the start of the curve
end_tangent	the imposed tangent at the end of the curve.

Definition at line 148 of file SplineInterpolator.h.

29.484.4.11 void Go::SplineInterpolator::setNaturalConditions ( ) [inline]

Set the endpoint conditions to 'Natural'; zero curvature at start and end of curve. **Note:** endpoint conditions are considered by the *virtual* interpolate() function. The other interpolate functions disregard this setting.

Definition at line 158 of file SplineInterpolator.h.

29.484.4.12 void Go::SplineInterpolator::setNaturalEndCondition ( ) [inline]

Set the endpoint condition at end of curve to 'Natural'. (Condition at start of curve will be 'Hermite' if a tangent has been previously specified, or 'Free' otherwise). **Note:** endpoint conditions are considered by the *virtual* interpolate() function. The other interpolate functions disregard this setting.

Definition at line 172 of file SplineInterpolator.h.

29.484.4.13 void Go::SplineInterpolator::setNaturalStartCondition ( ) [inline]

Set the endpoint condition at start of curve to 'Natural'. (Condition at end of curve will be 'Hermite' if a tangent has been previously specified, or 'Free' otherwise). **Note:** endpoint conditions are considered by the *virtual* interpolate() function. The other interpolate functions disregard this setting.

Definition at line 165 of file SplineInterpolator.h.

The documentation for this class was generated from the following file:

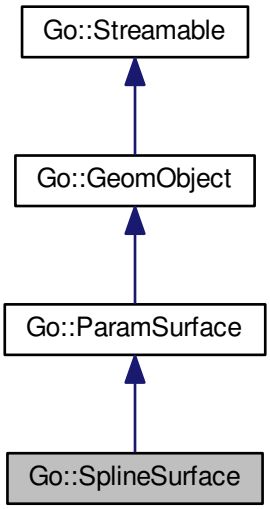
- gotools-core/include/GoTools/geometry/SplineInterpolator.h

29.485 Go::SplineSurface Class Reference

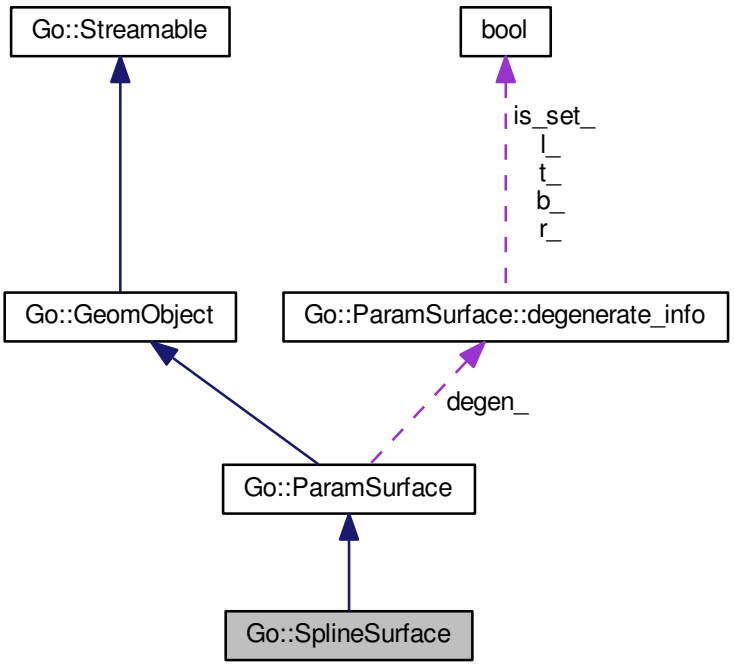
SplineSurface provides methodes for storing, reading and manipulating rational and non-rational B-spline surfaces.

```
#include <SplineSurface.h>
```

Inheritance diagram for Go::SplineSurface:



Collaboration diagram for Go::SplineSurface:



Public Types

- enum NormalConeMethod { SederbergMeyers = 0, SMCornersFirst = 1, sislBased = 2 }

  Enumerates the method for computing the normal cone.
- typedef std::vector< double > Dvector

  Convenience to be used in computations of basis grids.
- typedef std::vector< Dvector > Dmatrix

  Convenience to be used in computations of basis grids.

Public Member Functions

- SplineSurface ()
- template<typename RandomIterator1 , typename RandomIterator2 , typename RandomIterator3 > SplineSurface (int number1, int number2, int order1, int order2, RandomIterator1 knot1start, RandomIterator2 knot2start, RandomIterator3 coefsstart, int dim, bool rational=false)
- template<typename RandomIterator > SplineSurface (const BsplineBasis &basis_u, const BsplineBasis &basis_v, RandomIterator coefsstart, int dim, bool rational=false)
- virtual ~SplineSurface ()

  Virtual destructor, enables safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

Return the object's bounding box.

- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)

- void swap (SplineSurface &other)

  quick swap of two SplineSurface objects with each other

- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.

- virtual SplineSurface * clone () const
- virtual SplineSurface * asSplineSurface ()

  Return the spline surface represented by this surface, if any.

- virtual const RectDomain & parameterDomain () const
- virtual RectDomain containingDomain () const
- virtual bool inDomain (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies inside the domain of this surface.

- virtual int inDomain2 (double u, double v, double eps=1.0e-4) const
- virtual bool onBoundary (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies at the boundary of this surface.

- virtual Point closestInDomain (double u, double v) const
- virtual CurveLoop outerBoundaryLoop (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- virtual std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EP↩ SILON) const
- virtual void point (Point &pt, double upar, double vpar) const
- virtual void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_from_right=true, double resolution=1.0e-12) const
- virtual double startparam_u () const
- virtual double startparam_v () const
- double startparam (int idx) const

  Get the start parameter value for the parameter direction idx.

- virtual double endparam_u () const
- virtual double endparam_v () const
- double endparam (int idx) const

  Get the end parameter value for the parameter direction idx.

- virtual void normal (Point &n, double upar, double vpar) const
- DirectionCone normalCone (NormalConeMethod method) const
- virtual DirectionCone normalCone () const
- virtual DirectionCone tangentCone (bool pardir_is_u) const
- virtual CompositeBox compositeBox () const
- SplineSurface * normal () const

  Not yet implemented.

- SplineSurface * normalSurface () const
- SplineSurface * derivSurface (int ider1, int ider2) const
- SplineSurface * subSurface (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual SplineSurface * mirrorSurface (const Point &pos, const Point &norm) const

  Mirror a surface around a specified plane.

- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- virtual void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- double appendSurface (ParamSurface *sf, int join_dir, int continuity, double &dist, bool repar=true)
- void appendSurface (ParamSurface *sf, int join_dir, bool repar=true)

- virtual void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- void getBoundaryInfo (double par1, double par2, int bdindex, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- void getBoundaryIdx (Point &pt1, Point &pt2, double epsilon, int &bdindex, double &par1, double &par2, double knot_tol=1e-05) const
- void getBoundaryIdx (Point &pt1, double epsilon, int &bdindex, double knot_tol=1e-05) const

  Given one point on the surface boundary, find the index number of the.
- virtual void turnOrientation ()

  Turns the direction of the normal of the surface.
- virtual void swapParameterDirection ()

  Swaps the two parameter directions.
- virtual void reverseParameterDirection (bool direction_is_u)
- int boundaryIndex (Point &param_pt1, Point &param_pt2) const
- virtual double area (double tol) const
- const BsplineBasis & basis_u () const
- const BsplineBasis & basis_v () const
- BsplineBasis & basis_u ()
- BsplineBasis & basis_v ()
- const BsplineBasis & basis (int i) const
- int numCoefs_u () const
- int numCoefs_v () const
- int numElem () const

  Query the number of elements in the SplineSurface.
- int numElem (int pardir) const
- int order_u () const
- int order_v () const
- bool rational () const
- std::vector< double >::iterator coefs_begin ()
- std::vector< double >::iterator coefs_end ()
- std::vector< double >::const_iterator coefs_begin () const
- std::vector< double >::const_iterator coefs_end () const
- std::vector< double >::iterator rcoefs_begin ()
- std::vector< double >::iterator rcoefs_end ()
- std::vector< double >::const_iterator rcoefs_begin () const
- std::vector< double >::const_iterator rcoefs_end () const
- std::vector< double >::iterator ctrl_begin ()
- std::vector< double >::iterator ctrl_end ()
- std::vector< double >::const_iterator ctrl_begin () const
- std::vector< double >::const_iterator ctrl_end () const
- void replaceCoefficient (int ix, Point coef)

  Replace one specified coefficient (local enumeration)
- void getWeights (std::vector< double > &weights) const
- virtual bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for paralell and anti paralell partial derivatives in surface corners.
- virtual void getCornerPoints (std::vector< std::pair< Point, Point > > &corners) const
- virtual void setParameterDomain (double u1, double u2, double v1, double v2)
- void insertKnot_u (double apar)
- void insertKnot_u (const std::vector< double > &new_knots)
- void insertKnot_v (double apar)
- void insertKnot_v (const std::vector< double > &new_knots)
- void removeKnot_u (double tpar)
- void removeKnot_v (double tpar)

- void makeBernsteinKnotsU ()
- void makeBernsteinKnotsV ()
- void makeSurfaceKRegular ()

  Ensure k-regularity of this surface in both parameter directions.
- int numberOfPatches_u () const
- int numberOfPatches_v () const
- double knotSpan (int pardir, int iknot) const
- void raiseOrder (int raise_u, int raise_v)
- SplineCurve * constParamCurve (double parameter, bool pardir_is_u) const
- void constParamCurve (double parameter, bool pardir_is_u, SplineCurve *&cv, SplineCurve *&crosscv) const
- void getConstParamCurves (const std::vector< double > &params_u, const std::vector< double > &params_v, std::vector< shared_ptr< SplineCurve > > &curves_u, std::vector< shared_ptr< SplineCurve > > &curves_v)
- virtual std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- SplineCurve * edgeCurve (int ccw_edge_number) const
- void interpolate (Interpolator &interpolator1, Interpolator &interpolator2, int num_points1, int num_points2, int dim, const double *param1_start, const double *param2_start, const double *data_start)
- virtual void evalGrid (int num_u, int num_v, double umin, double umax, double vmin, double vmax, std::vector< double > &points, double nodata_val=-9999) const
- void gridEvaluator (int num_u, int num_v, std::vector< double > &points, std::vector< double > &normals, std::vector< double > &param_u, std::vector< double > &param_v, bool normalize=true) const
- void gridEvaluator (int num_u, int num_v, std::vector< double > &points, std::vector< double > &param_u, std::vector< double > &param_v) const
- void gridEvaluator (int num_u, int num_v, std::vector< double > &points, std::vector< double > &param_u, std::vector< double > &param_v, double start_u, double end_u, double start_v, double end_v) const
- void gridEvaluator (std::vector< double > &points, const std::vector< double > &param_u, const std::vector< double > &param_v) const
- void gridEvaluator (const std::vector< double > &params_u, const std::vector< double > &params_v, std::vector< double > &points, std::vector< double > &derivs_u, std::vector< double > &derivs_v, bool evaluate_from_right=true) const
- void computeBasis (double param[], std::vector< double > &basisValues, std::vector< double > &basisDerivs_u, std::vector< double > &basisDerivs_v, bool evaluate_from_right=true) const
- void computeBasis (const std::vector< double >::const_iterator &bas_vals_u, const std::vector< double >::const_iterator &bas_vals_v, int left_u, int left_v, std::vector< double > &basisValues, std::vector< double > &basisDerivs_u, std::vector< double > &basisDerivs_v) const
- void computeBasisGrid (const Dvector &param_u, const Dvector &param_v, Dmatrix &basisValues) const
- void computeBasis (double param_u, double param_v, BasisPtsSf &result) const
- void computeBasis (double param_u, double param_v, BasisDerivsSf &result, bool evaluate_from_right=true) const
- void computeBasis (double param_u, double param_v, BasisDerivsSf2 &result, bool evaluate_from_right=true) const
- void computeBasisGrid (const Dvector &param_u, const Dvector &param_v, std::vector< BasisPtsSf > &result) const
- void computeBasisGrid (const Dvector &param_u, const Dvector &param_v, Dmatrix &basisValues, Dmatrix &basisDerivs_u, Dmatrix &basisDerivs_v, bool evaluate_from_right=true) const
- void computeBasisGrid (const Dvector &param_u, const Dvector &param_v, std::vector< BasisDerivsSf > &result, bool evaluate_from_right=true) const
- void computeBasisGrid (const Dvector &param_u, const Dvector &param_v, std::vector< BasisDerivsSf2 > &result, bool evaluate_from_right=true) const
- virtual double nextSegmentVal (int dir, double par, bool forward, double tol) const
- bool replaceBoundaryCurve (int bd_nmb, shared_ptr< SplineCurve > bd_crv, bool unify=true)
- virtual bool isSpline () const

  Check if the surface is of type spline.
- void deform (const std::vector< double > &vec, int vdim=0)

Adds the given deformation vector to the coefficients.

- void add (const SplineSurface *other, double tol=1.0e-10)
- void representAsRational ()

  Ensure that the current surface is represented as a rational surface.
- double setAvBdWeight (double wgt, int pardir, bool at_start)
- virtual bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle)
- virtual bool isPlanar (Point &normal, double tol)
- virtual int ElementOnBoundary (int elem_ix, double eps)
- virtual int ElementBoundaryStatus (int elem_ix, double eps)
- std::vector< shared_ptr< SplineCurve > > getElementBdParCvs (int elem_ix, double elem_par[])
- bool isElementarySurface ()

  Query if the surface was generated from an ElementarySurface.
- shared_ptr< ElementarySurface > getElementarySurface ()
- void setElementarySurface (shared_ptr< ElementarySurface > elsurf)
- bool checkElementarySurface ()
- void pointsGrid (int m1, int m2, int derivs, const double *basisvals1, const double *basisvals2, const int *knotint1, const int *knotint2, double *result, double *normals=0) const

Static Public Member Functions

- static ClassType classType ()

Additional Inherited Members

29.485.1 Detailed Description

SplineSurface provides methodes for storing, reading and manipulating rational and non-rational B-spline surfaces.

Non-rational B-spline surfaces represented on the form

$$\sum_{i=1}^{n_1}\sum_{j=1}^{n_2} P_{i,j}B_{i,o_1}(u)B_{j,o_2}(v),$$

where the B-spline coefficients are stored in a vector called coefs. The coefs are stored as

$$P_{0,0}, P_{1,0}, \ldots, P_{n_1,n_2},$$

where $P_{i,j}$ is represented as dim doubles.

NURBS surfaces are represented on the form

$$\frac{\sum_{i=1}^{n_1}\sum_{j=1}^{n_2} w_{i,j}P_{i,j}B_{i,o_1}(u)B_{j,o_2}(v)}{\sum_{i=1}^{n_1}\sum_{j=1}^{n_2} w_{i,j}B_{i,o_1}(u)B_{j,o_2}(v)}$$

where $B_{i,o}$ is the *i*'th non-rational B-spline of order *o*. The Projected coefficients are stored in the coefs vector, i.e.

$$w_{0,0}\cdot P_{0,0}, w_{1,0}\cdot P_{1,0}, \ldots, w_{n_1,n_2}\cdot P_{n_1,n_2}.$$

In addition the cefficients for the surface in projective space are kept, i.e

$$P_{0,0}, w_{0,0}, P_{1,0}, w_{1,0}, \ldots, P_{n_1,n_2}, w_{n_1,n_2}.$$

With this representation surface is in the convex hull of the coefficients stored in coefs both for rational and non rational surfaces.

Definition at line 174 of file SplineSurface.h.

29.485.2 Member Typedef Documentation

29.485.2.1 typedef std::vector<Dvector> Go::SplineSurface::Dmatrix

Convenience to be used in computations of basis grids.

Definition at line 1103 of file SplineSurface.h.

29.485.2.2 typedef std::vector<double> Go::SplineSurface::Dvector

Convenience to be used in computations of basis grids.

Definition at line 1101 of file SplineSurface.h.

29.485.3 Member Enumeration Documentation

29.485.3.1 enum Go::SplineSurface::NormalConeMethod

Enumerates the method for computing the normal cone.

Enumerator

SederbergMeyers

SMCornersFirst

sislBased

Definition at line 400 of file SplineSurface.h.

29.485.4 Constructor & Destructor Documentation

29.485.4.1 Go::SplineSurface::SplineSurface ( ) [inline]

Creates an uninitialized SplineSurface, which can only be assigned to or read(...) into.

Definition at line 179 of file SplineSurface.h.

29.485.4.2 template<typename RandomIterator1 , typename RandomIterator2 , typename RandomIterator3 > Go::SplineSurface::SplineSurface (int *number1,* int *number2,* int *order1,* int *order2,* RandomIterator1 *knot1start,* RandomIterator2 *knot2start,* RandomIterator3 *coefsstart,* int *dim,* bool *rational* = false) [inline]

Create a SplineSurface by explicitly providing all spline-related information.

Parameters

number1	number of control points along the u-parameter
number2	number of control points along the v-parameter
order1	BsplineBasis order along the u-parameter
order2	BsplineBasis order along the v-parameter
knot1start	pointer to the array describing the knotvector for the u-parameter
knot2start	pointer to the array describing the knotvector for the v-parameter
coefsstart	pointer to the array where the control points are consecutively stored. The storage order is such

Definition at line 210 of file SplineSurface.h.

29.485.4.3 template<typename RandomIterator > Go::SplineSurface::SplineSurface (const BsplineBasis & *basis_u*, const BsplineBasis & *basis_v*, RandomIterator *coefsstart*, int *dim*, bool *rational* = false) [inline]

Create a SplineSurface by explicitly providing all spline-related information.

Parameters

basis_u	the BsplineBasis to be used along the u-direction
basis_v	the BsplineBasis to be used along the v-direction
coefsstart	pointer to the array where the control points are consecutively stored. The storage order is such that control points along the u-parameter have the shortest stride (stored right after each other). If the surface is rational, pay attention to the comments below.
dim	dimension of the space in which the surface lies (usually 3).
rational	Specify whether the surface is rational or not. If the surface is rational, coefficients must be in the following format: wP1 wP2 .... wPdim w. Ie. a (dim+1)-dimensional form. (This is the same form that is used within SISL).

Definition at line 254 of file SplineSurface.h.

29.485.4.4 virtual Go::SplineSurface::~SplineSurface ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.485.5 Member Function Documentation

29.485.5.1 void Go::SplineSurface::add (const SplineSurface * *other*, double *tol* = 1.0e-10)

Add coefficients from another surface. Weights are not summed for rational cases Nothing is done and exception is raised if

- Spline spaces are different in any paramter direction (order or knot vectors are not identical)
- The geometry spaces of the surfaces have different dimension
- One surface is rational while the other is not
- The weights are not equal within a given tolerance (only if surfaces are rational)

Parameters

other	The other spline surface with coefficients to be added into this surface
tol	tolerance used to test if weights are considered equal in rational case

29.485.5.2 virtual std::vector<CurveLoop> Go::SplineSurface::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.485.5.3 double Go::SplineSurface::appendSurface (ParamSurface * *sf,* int *join_dir,* int *continuity,* double & *dist,* bool *repar* = true)

Appends a surface to the end of 'this' surface along a specified parameter direction. The knotvector and control point grid of 'this' surface will be extended, and the degree will be raised if necessary. Note that there *will* be side-effects on the other surface; its order might be raised, its knotvector will become k-regular and reparametrized, one of its edges will be moved to coincide with an edge of 'this' surface, etc.

Parameters

sf	the surface to append to 'this' surface
join_dir	the parameter direction along which to extend 'this' surface by appending the 'sf' surface. If it is equal to 1, we will extend the surface along the u-parameter; if it equals 2, we will extend the surface along the v-parameter.
continuity	the desired level of continuity at the transition between the two surfaces (can be from -1 to order()). The higher the value, the more the surfaces will have to be locally modified around the seam.
dist	upon function return, this variable will hold the estimated maximum distorsion after the 'smoothing' of the seam in order to achieve the desired continuity.
repar	The parametrization of the concerned parameter in the other surface will *always* be shifted so that it starts where the parametrization of 'this' surface ends. However, if 'repar' is set to 'true', it will also be *scaled* as a function of position of control points close to the transition.
return	Set in the rational case. Maximum adjustment of input weight

29.485.5.4 void Go::SplineSurface::appendSurface (ParamSurface * *sf,* int *join_dir,* bool *repar* = true)

Short hand function to call appendSurface with C^1 continuity.

Parameters

sf	the surface to append to 'this' surface
join_dir	the parameter direction along which to extend 'this' surface by appending the 'sf' surface. If it is equal to 1, we will extend the surface along the u-parameter; if it equals 2, we will extend the surface along the v-parameter.

Parameters

repar	The parametrization of the concerned parameter in the other surface will *always* be shifted so that it starts where the parametrization of 'this' surface ends. However, if 'repar' is set to 'true', it will also be *scaled* as a function of position of control points close to the transition.

29.485.5.5 virtual double Go::SplineSurface::area (double *tol*) const [virtual]

Compute the total area of this surface up to some tolerance

Parameters

tol	the relative tolerance when approximating the area, i.e. stop iteration when error becomes smaller than tol/(surface area)

Returns

the area calculated

Implements Go::ParamSurface.

29.485.5.6 virtual SplineSurface* Go::SplineSurface::asSplineSurface ( ) [inline], [virtual]

Return the spline surface represented by this surface, if any.

Reimplemented from Go::ParamSurface.

Definition at line 312 of file SplineSurface.h.

29.485.5.7 const BsplineBasis& Go::SplineSurface::basis (int *i*) const [inline]

get one of the BsplineBasises of the surface

Parameters

i	specify whether to return the BsplineBasis for the first parameter (0), or for the second parameter (1).

Returns

const reference to the requested BsplineBasis.

Definition at line 659 of file SplineSurface.h.

29.485.5.8 const BsplineBasis& Go::SplineSurface::basis_u ( ) const [inline]

get a const reference to the BsplineBasis for the first parameter

Returns

const reference to the BsplineBasis for the first parameter

Definition at line 637 of file SplineSurface.h.

29.485.5.9 BsplineBasis& Go::SplineSurface::basis_u ( ) [inline]

get a reference to the BsplineBasis for the first parameter

Returns

reference to the BsplineBasis for the first parameter

Definition at line 647 of file SplineSurface.h.

29.485.5.10 const BsplineBasis& Go::SplineSurface::basis_v ( ) const [inline]

get a const reference to the BsplineBasis for the second parameter

Returns

const reference to the BsplineBasis for the second parameter

Definition at line 642 of file SplineSurface.h.

29.485.5.11 BsplineBasis& Go::SplineSurface::basis_v ( ) [inline]

get a reference to the BsplineBasis for the second parameter

Returns

reference to the BsplineBasis for the second parameter

Definition at line 652 of file SplineSurface.h.

29.485.5.12 int Go::SplineSurface::boundaryIndex (Point & *param_pt1,* Point & *param_pt2*) const

If the two points pt1 and pt2 are on the same edge the edge index is returned, otherwise -1 is returned. Edges are counted anticlockwise, and starts with the edge (upar, 0). find whether two points are lying on the same surface boundary; if this is the case, return the index of the boundary (as specified in getBoundaryIdx()), else return 1

Returns

The boundary index on which the points lie, if they are found to both lie on the same boundary. In the opposite case, -1 is returned.

29.485.5.13 virtual BoundingBox Go::SplineSurface::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.485.5.14 bool Go::SplineSurface::checkElementarySurface ( )

Check to see if `this` corresponds to the ElementarySurface set by setElementarySurface(). NOTE: Not yet implemented!

29.485.5.15 static ClassType Go::SplineSurface::classType ( ) [inline], [static]

Definition at line 301 of file SplineSurface.h.

29.485.5.16 virtual SplineSurface* Go::SplineSurface::clone ( ) const [inline], [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ParamSurface.

Definition at line 307 of file SplineSurface.h.

29.485.5.17 virtual void Go::SplineSurface::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.485.5.18 virtual Point Go::SplineSurface::closestInDomain (double *u*, double *v*) const [virtual]

Fetch the parameter value in the parameter domain of the surface closest to the parameter pair (u,v)

Implements Go::ParamSurface.

29.485.5.19 virtual void Go::SplineSurface::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.485.5.20 std::vector<double>::iterator Go::SplineSurface::coefs_begin ( ) [inline]

Get an iterator to the start of the internal array of non-rational control points.

Returns

an (nonconst) iterator to the start of the internal array of non- rational control points

Definition at line 705 of file SplineSurface.h.

29.485.5.21 std::vector<double>::const_iterator Go::SplineSurface::coefs_begin ( ) const [inline]

Get a const iterator to the start of the internal array of non-rational control points.

Returns

a const iterator to the start of the internal array of non-rational control points.

Definition at line 719 of file SplineSurface.h.

29.485.5.22 std::vector<double>::iterator Go::SplineSurface::coefs_end ( ) [inline]

Get an iterator to the one-past-end position of the internal array of non- rational control points

Returns

an (nonconst) iterator to the one-past-end position of the internal array of non-rational control points

Definition at line 712 of file SplineSurface.h.

29.485.5.23 std::vector<double>::const_iterator Go::SplineSurface::coefs_end ( ) const [inline]

Get a const iterator to the one-past-end position of the internal array of non-rational control points.

Returns

a const iterator to the one-past-end position of the internal array of non-rational control points.

Definition at line 726 of file SplineSurface.h.

29.485.5.24 virtual CompositeBox Go::SplineSurface::compositeBox ( ) const [virtual]

Creates a composite box enclosing the surface. The composite box consists of an inner and an edge box. The inner box is supposed to be made from the interior of the surface, while the edge box is made from the boundary curves. The default implementation simply makes both boxes identical to the regular bounding box.

Returns

the CompositeBox of the surface, as specified above

Reimplemented from Go::ParamSurface.

29.485.5.25 void Go::SplineSurface::computeBasis (double *param[ ]*, std::vector< double > & *basisValues*, std::vector< double > & *basisDerivs_u*, std::vector< double > & *basisDerivs_v*, bool *evaluate_from_right* = true) const

Evaluate positions and first derivatives of all basis values in a given parameter pair For non-rationals this is an interface to BsplineBasis::computeBasisValues where the basis values in each parameter direction are multiplied to compute B_i(u)∗B_j(v), for rationals the routine evaluates the rational basis functions, i.e. the basis functions are divided by the denominator of the surface in the given parameter direction

Parameters

param	the parameter pair in which to compute
basisValues	the value of all basis functions, size equal to (degree_u+1)∗(degree_v+1)
basisDerivs	the derivative of all basis functions, same size as previous
evaluate_from_right	specifies directional derivatives, true=right, false=left, same behavious for both parameter directions

29.485.5.26 void Go::SplineSurface::computeBasis (const std::vector< double >::const_iterator & *bas_vals_u*, const std::vector< double >::const_iterator & *bas_vals_v*, int *left_u*, int *left_v*, std::vector< double > & *basisValues*, std::vector< double > & *basisDerivs_u*, std::vector< double > & *basisDerivs_v*) const

Evaluate positions and first derivatives of all basis values, when the B-splines and their derivatives have all been precalculated and are given as input

Parameters

bas_vals↩ _u	the basis values and derivatives in first parameter direction
bas_vals↩ _v	the basis values and derivatives in second parameter direction
left_u	index of first non-zero interval in first parameter direction
left_v	index of first non-zero interval in second parameter direction
basisValues	the value of all basis functions, size equal to (degree_u+1)∗(degree_v+1)
basisDerivs	the derivative of all basis functions, same size as previous

29.485.5.27 void Go::SplineSurface::computeBasis (double *param_u*, double *param_v*, BasisPtsSf & *result*) const

Compute basis values (position) in the parameter (param_u,param_v). Store result in a BasisPtsSf entity

29.485.5.28 void Go::SplineSurface::computeBasis (double *param_u*, double *param_v*, BasisDerivsSf & *result*, bool *evaluate_from_right* = true) const

Compute basis values (position and 1. derivatives) in the parameter (param_u,param_v). Store result in a Basis↩ DerivSf entity

29.485.5.29 void Go::SplineSurface::computeBasis (double *param_u*, double *param_v*, BasisDerivsSf2 & *result*, bool *evaluate_from_right* = true) const

Compute basis values (position and 1. and 2. derivatives) in the parameter (param_u,param_v). Store result in a BasisDerivSf2 entity

29.485.5.30 void Go::SplineSurface::computeBasisGrid (const Dvector & *param_u*, const Dvector & *param_v*, Dmatrix & *basisValues*) const

Evaluate positions of all basis values in a specified grid. For non-rationals this is an interface to BsplineBasis↩ ::computeBasisValues where the basis values in each parameter direction are multiplied to compute B_i(u)∗B_j(v), for rationals the routine evaluates the rational basis functions, i.e. the basis functions are divided by the denominator of the surface in the given parameter direction

Parameters

param_u	this vector holds all the numerical values for the first parameter where evaluation will tak place
param_v	this vector holds all the numerical values for the second parameter where evaluation will tak place
basisValues	the value of all basis functions. The first matrix dimension will correspond to all evaluation parameters, i.e. the size is param_u.size()∗param_v∗size(). The second dimension correspond to all coefficients, i.e. nmb_coef_u∗nmb_coef_v. Most entries in the matrix will be zero

29.485.5.31 void Go::SplineSurface::computeBasisGrid (const Dvector & *param_u*, const Dvector & *param_v*, std::vector< BasisPtsSf > & *result*) const

Compute basis grid (position) in the parameter pairs combined from param_u and param_v. Store result in a vector of BasisPtsSf.

29.485.5.32 void Go::SplineSurface::computeBasisGrid (const Dvector & *param_u*, const Dvector & *param_v*, Dmatrix & *basisValues*, Dmatrix & *basisDerivs_u*, Dmatrix & *basisDerivs_v*, bool *evaluate_from_right* = true) const

Evaluate positions and first derivatives of all basis values in a specified grid. For non-rationals this is an interface to BsplineBasis::computeBasisValues where the basis values in each parameter direction are multiplied to compute B_i(u)∗B_j(v), for rationals the routine evaluates the rational basis functions, i.e. the basis functions are divided by the denominator of the surface in the given parameter direction

Parameters

param_u	this vector holds all the numerical values for the first parameter where evaluation will tak place
param_v	this vector holds all the numerical values for the second parameter where evaluation will tak place
basisValues	the value of all basis functions. The first matrix dimension will correspond to all evaluation parameters, i.e. the size is param_u.size()∗param_v∗size(). The second dimension correspond to all coefficients, i.e. nmb_coef_u∗nmb_coef_v. Most entries in the matrix will be zero
basisDerivs_u	the derivative of all basis functions, size as above
basisDerivs_v	the derivative of all basis functions
evaluate_from_right	specifies directional derivatives, true=right, false=left

29.485.5.33 void Go::SplineSurface::computeBasisGrid (const Dvector & *param_u*, const Dvector & *param_v*, std::vector< BasisDerivsSf > & *result*, bool *evaluate_from_right* = true) const

Compute basis grid (position and 1. derivatives) in the parameter pairs combined from param_u and param_v. Store result in a vector of BasisDerivSf.

29.485.5.34 void Go::SplineSurface::computeBasisGrid (const Dvector & *param_u*, const Dvector & *param_v*, std::vector< BasisDerivsSf2 > & *result*, bool *evaluate_from_right* = true) const

Compute basis grid (position and 1. and 2. derivatives) in the parameter pairs combined from param_u and param_v. Store result in a vector of BasisDerivSf2.

29.485.5.35 SplineCurve∗ Go::SplineSurface::constParamCurve (double *parameter*, bool *pardir_is_u*) const

Generate and return a SplineCurve that represents a constant parameter curve on the surface

Parameters

parameter	value of the fixed parameter
pardir_is↩ _u	'true' if the first parameter is the running parameter, 'false' otherwise.

Returns

pointer to a newly constructed SplineCurve representing the specified constant parameter curve. It is the user's reponsibility to delete it when it is no longer needed.

29.485.5.36 void Go::SplineSurface::constParamCurve (double *parameter,* bool *pardir_is_u,* SplineCurve *&* *cv,* SplineCurve *&* *crosscv*) const

Generate and return two SplineCurves, representing a constant parameter curve on the surface as well as it cross-tangent curve.

Parameters

parameter	value of the fixed parameter
pardir_is_u	'true' if the first parameter is the running parameter, 'false' otherwise.
cv	upon function completion, 'cv' will point to a newly constructed SplineCurve representing the specified constant parameter curve. It is the user's responsibility to delete it when it is no longer needed.
crosscv	upon function completion, 'crosscv' will point to a newly constructed SplineCurve representing the cross-tangent curve of the specified constant parameter curve. It is the user's reponsibility to delete it when it is no longer needed.

29.485.5.37 virtual std::vector< shared_ptr<ParamCurve> > Go::SplineSurface::constParamCurves (double *parameter,* bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.485.5.38 virtual RectDomain Go::SplineSurface::containingDomain ( ) const [virtual]

Get a rectangular parameter domain that is guaranteed to contain the surface's parameterDomain(). It may be the same. There is no guarantee that this is the smallest domain containing the actual domain.

Returns

a RectDomain that is guaranteed to include the surface's total parameter domain.

Implements Go::ParamSurface.

29.485.5.39 std::vector<double>::iterator Go::SplineSurface::ctrl_begin ( ) [inline]

Get an iterator to the start of the internal array of active control points.

Returns

an (nonconst) iterator to the start of the internal array of rational or non-rational control points

Definition at line 761 of file SplineSurface.h.

29.485.5.40 std::vector<double>::const_iterator Go::SplineSurface::ctrl_begin ( ) const [inline]

Get a const iterator to the start of the internal array of active control points.

Returns

a const iterator to the start of the internal array of rational or non-rational control points.

Definition at line 775 of file SplineSurface.h.

29.485.5.41 std::vector<double>::iterator Go::SplineSurface::ctrl_end ( ) [inline]

Get an iterator to the one-past-end position of the internal array of active control points

Returns

an (nonconst) iterator to the one-past-end position of the internal array of rational or non-rational control points

Definition at line 768 of file SplineSurface.h.

29.485.5.42 std::vector<double>::const_iterator Go::SplineSurface::ctrl_end ( ) const [inline]

Get a const iterator to the one-past-end position of the internal array of active control points.

Returns

a const iterator to the one-past-end position of the internal array of rational or non-rational control points.

Definition at line 782 of file SplineSurface.h.

29.485.5.43 void Go::SplineSurface::deform (const std::vector< double > & *vec,* int *vdim* = 0)

Adds the given deformation vector to the coefficients.

29.485.5.44 SplineSurface* Go::SplineSurface::derivSurface (int *ider1,* int *ider2*) const

Get the derivative surface. Expresses the i,j-th derivative of a spline surface as a spline surface. Ported from sisl routine s1386.

Parameters

ider1	what derivative to use along the u parameter
ider2	what derivative to use along the v parameter

Returns

pointer to a newly constructed SplineSurface which is the derivative surface. User assumes ownership of this object, and is responsible for destroying it.

29.485.5.45 virtual int Go::SplineSurface::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.485.5.46 SplineCurve* Go::SplineSurface::edgeCurve (int *ccw_edge_number*) const

Here edge_number means: 0 -> bottom edge, 1 -> right edge, 2 -> top edge and 3 -> left edge. The returned pointer is new'ed and the responsibility of the caller. You should either delete it, or manage it with a smart pointer. Generate and return a SplineCurve representing one of the surface's four edges.

Parameters

ccw_edge_number	indicates which edge the user requests.

Returns

A pointer to a newly constructed SplineCurve representing the requested edge. It is the user's responsibility to delete it when it is no longer needed.

29.485.5.47 virtual int Go::SplineSurface::ElementBoundaryStatus (int *elem_ix,* double *eps*) [inline], [virtual]

Check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries of this ftSurface, is inside or outside

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y
eps	Intersection tolerance

Returns

-1: Not a spline surface or element index out of range 0: Outside trimmed volume 1: On boundary (intersection with boundary found) 2: Internal to trimmed surfaces Note that a touch with the boundaries of the underlying surface is not consdered a boundary intersection while touching a trimming curve is seen as an intersection

Reimplemented from Go::ParamSurface.

Definition at line 1274 of file SplineSurface.h.

29.485.5.48 virtual int Go::SplineSurface::ElementOnBoundary (int *elem_ix,* double *eps*) [inline], [virtual]

Check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries of this surface

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y
eps	Intersection tolerance

Returns

-1: Not a spline surface or element index out of range 0: Not on boundary or touching a boundary curve 1: On boundary (intersection with boundary found) Note that a touch with the boundaries of the underlying surfaces is not consdered a boundary intersection while touching a trimming curve is seen as an intersection

Reimplemented from Go::ParamSurface.

Definition at line 1257 of file SplineSurface.h.

29.485.5.49 double Go::SplineSurface::endparam (int *idx*) const [inline]

Get the end parameter value for the parameter direction idx.

Definition at line 388 of file SplineSurface.h.

29.485.5.50 virtual double Go::SplineSurface::endparam_u ( ) const [virtual]

Get the end value for the u-parameter

Returns

the end value for the u-parameter

29.485.5.51 virtual double Go::SplineSurface::endparam_v ( ) const [virtual]

Get the end value for the v-parameter

Returns

the end value for the v-parameter

29.485.5.52 virtual void Go::SplineSurface::evalGrid (int *num_u,* int *num_v,* double *umin,* double *umax,* double *vmin,* double *vmax,* std::vector< double > & *points,* double *nodata_val* = -9999) const [virtual]

Evaluate points in a grid The nodata value is applicable for bounded surfaces and will not be used in this context

Reimplemented from Go::ParamSurface.

29.485.5.53 void Go::SplineSurface::getBoundaryIdx (Point & *pt1,* Point & *pt2,* double *epsilon,* int & *bdindex,* double & *par1,* double & *par2,* double *knot_tol* = 1e-05) const

Given two points on the surface boundary, find the number of the corresponding boundary and the curve parameter of the closest points on this surface boundary.

Ordering of boundaries:

```
///                      1
///           ----------------------
///           |                      |
///         2 |                      | 3
///       v   |                      |
///       ^   ----------------------
///       |-> u            0
///
```

Parameters

pt1	point in geometry space
pt2	point in geometry space
epsilon	geometric tolerance
bdindex	if the two points are on a common boundary, the index of the boundary, otherwise -1.
par1	if bdindex is 0 or 1, the u parameter of pt1, otherwise the v parameter.
par2	if bdindex is 0 or 1, the u parameter of pt2, otherwise the v parameter.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

29.485.5.54 void Go::SplineSurface::getBoundaryIdx (Point & *pt1,* double *epsilon,* int & *bdindex,* double *knot_tol* = 1e-05) const

Given one point on the surface boundary, find the index number of the.

Parameters

pt1	the point we want to find the boundary for
epsilon	the geometric distance the point can have from a boundary and still be considered as laying on the boundary.
bdindex	the index of the boundary on which the point lies. If the point was found not to lie on any boundary, the value will be -1.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

29.485.5.55 virtual void Go::SplineSurface::getBoundaryInfo (Point & *pt1,* Point & *pt2,* double *epsilon,* SplineCurve *&
cv, SplineCurve *& *crosscv,* double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.485.5.56 void Go::SplineSurface::getBoundaryInfo (double *par1,* double *par2,* int *bdindex,* SplineCurve *& *cv,*
SplineCurve *& *crosscv,* double *knot_tol* = 1e-05) const

Get the boundary curve and the outward cross tangent curve between two parameter values on a given boundary.

Parameters

par1	first parameter along the boundary
par2	second parameter along the boundary
bdindex	index of the boundary in question. The boundaries are indexed as in getBoundaryIdx().
cv	returns a pointer to a generated SplineCurve representing the boundary between the given parameters. The user assumes ownership and is responsible for deletion.
crosscv	returns a pointer to a generated SplineCurve representing the cross tangent curve between the given parameters on the boundary. The direction is outwards from the surface. The user assumes ownership and is responsible for deletion.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

29.485.5.57 void Go::SplineSurface::getConstParamCurves (const std::vector< double > & *params_u,* const
std::vector< double > & *params_v,* std::vector< shared_ptr< SplineCurve > > & *curves_u,* std::vector<
shared_ptr< SplineCurve > > & *curves_v*)

Generate SplineCurves that represents constant parameter curves on the surface. Do this for both directions

Parameters

parameter	params_u the parameter values in u-directions for curves running along the v-direction
parameter	params_v the parameter values in v-directions for curves running along the u-direction
curves_u	upon function return, holds constant parameter curves for the u-direction parameters, the curves are running along the v-direction
curves_v	upon function return, holds constant parameter curves for the v-direction parameters, the curves are running along the u-direction

29.485.5.58 virtual void Go::SplineSurface::getCornerPoints (std::vector< std::pair< Point, Point > > & *corners*) const [virtual]

Return surface corners, geometric and parametric points in that sequence

Implements Go::ParamSurface.

29.485.5.59 virtual void Go::SplineSurface::getDegenerateCorners (std::vector< Point > & *deg_corners,* double *tol*) const [virtual]

Check for paralell and anti paralell partial derivatives in surface corners.

Implements Go::ParamSurface.

29.485.5.60 shared_ptr<ElementarySurface> Go::SplineSurface::getElementarySurface ( )

Get shared pointer to ElementarySurface, if it exists. If not, return empty shared pointer.

NOTE: The ElementarySurface returned by this function should ideally be the one corresponing to the current SplineSurface. However, there is no guarantee for this. One may check to see if this is the case by using checkElementarySurface().

29.485.5.61 std::vector<shared_ptr<SplineCurve> > Go::SplineSurface::getElementBdParCvs (int *elem_ix,* double *elem_par[ ]*)

Fetch curves in the parameter domain surrounding the specified element elem_par - parameter values of element boundaries, sequence umin, umax, vmin, vmax

29.485.5.62 void Go::SplineSurface::getWeights (std::vector< double > & *weights*) const

Return all weights corresponding to this surface, a non-rational volume has all weights equal to one

29.485.5.63 void Go::SplineSurface::gridEvaluator (int *num_u,* int *num_v,* std::vector< double > & *points,* std::vector< double > & *normals,* std::vector< double > & *param_u,* std::vector< double > & *param_v,* bool *normalize* = true) const

Evaluate points and normals on an entire grid, taking computational advantage over calculating all these values simultaneously rather than one-by-one.

Parameters

num_u	number of values to evaluate along first parameter direction
num_v	number of values to evaluate along second parameter direction
points	upon function return, this vector holds all the evaluated points
normals	upon function return, this vector holds all the evaluated normals
param_u	upon function return, this vector holds all the numerical values for the first parameter where evaluation has taken place
param_v	upon function return, this vector holds all the numerical values for the second parameter where evaluation has taken place.
normalize	tells whether the normal vectors should be normalized

29.485.5.64 void Go::SplineSurface::gridEvaluator (int *num_u*, int *num_v*, std::vector< double > & *points*, std::vector< double > & *param_u*, std::vector< double > & *param_v*) const [inline]

Evaluate points on an entire grid, taking computational advantage over calculating all these values simultaneously rather than one-by-one.

Parameters

num_u	number of values to evaluate along first parameter direction
num_v	number of values to evaluate along second parameter direction
points	upon function return, this vector holds all the evaluated points
param_u	upon function return, this vector holds all the numerical values for the first parameter where evaluation has taken place
param_v	upon function return, this vector holds all the numerical values for the second parameter where evaluation has taken place.

Definition at line 1003 of file SplineSurface.h.

29.485.5.65 void Go::SplineSurface::gridEvaluator (int *num_u*, int *num_v*, std::vector< double > & *points*, std::vector< double > & *param_u*, std::vector< double > & *param_v*, double *start_u*, double *end_u*, double *start_v*, double *end_v*) const

Evaluate points on an entire grid, taking computational advantage over calculating all these values simultaneously rather than one-by-one.

Parameters

num_u	number of values to evaluate along first parameter direction
num_v	number of values to evaluate along second parameter direction
points	upon function return, this vector holds all the evaluated points
param_u	upon function return, this vector holds all the numerical values for the first parameter where evaluation has taken place
param_v	upon function return, this vector holds all the numerical values for the second parameter where evaluation has taken place.
start_u	start value of first parameter range
end_u	end value of first parameter range
start_v	start value of second parameter range
end_v	end value of second parameter range

29.485.5.66 void Go::SplineSurface::gridEvaluator (std::vector< double > & *points*, const std::vector< double > & *param_u*, const std::vector< double > & *param_v*) const

Evaluate points on an entire grid, taking computational advantage over calculating all these values simultaneously rather than one-by-one.

Parameters

points	upon function return, this vector holds all the evaluated points
param_u	this vector holds all the numerical values for the first parameter where evaluation should take place
param_v	this vector holds all the numerical values for the second parameter where evaluation should take place

29.485.5.67 void Go::SplineSurface::gridEvaluator (const std::vector< double > & *params_u*, const std::vector< double > & *params_v*, std::vector< double > & *points*, std::vector< double > & *derivs_u*, std::vector< double > & *derivs_v*, bool *evaluate_from_right* = true) const

Evaluate points and derivatives on an entire grid, taking computational advantage over calculating all these values simultaneously rather than one-by-one.

Parameters

params_u	the values for the first parameter where evaluation takes place
params_v	the values for the second parameter where evaluation takes place
points	upon function return, this vector holds all the evaluated points
derivs_u	upon function return, this vector holds all derivations w.r.t. u
derivs_u	upon function return, this vector holds all derivations w.r.t. v
evaluate_from_right	specifies directional derivatives, true=right, false=left, same behaviour for both parameter directions

29.485.5.68 virtual bool Go::SplineSurface::inDomain (double *u*, double *v*, double *eps* = `1.0e-4`) const [virtual]

Check if a parameter pair lies inside the domain of this surface.

Implements Go::ParamSurface.

29.485.5.69 virtual int Go::SplineSurface::inDomain2 (double *u*, double *v*, double *eps* = `1.0e-4`) const [virtual]

Check if a parameter pair lies inside the domain of this surface return value = 0: outside = 1: internal = 2: at the boundary

Implements Go::ParamSurface.

29.485.5.70 void Go::SplineSurface::insertKnot_u (double *apar*)

Insert a new knot in the knotvector of the first parameter

Parameters

apar	the parameter value at which a new knot will be inserted

29.485.5.71 void Go::SplineSurface::insertKnot_u (const std::vector< double > & *new_knots*)

Insert new knots in the knotvector of the first parameter

Parameters

new_knots	a vector containing the parameter values of the new knots to insert.

29.485.5.72 void Go::SplineSurface::insertKnot_v (double *apar*)

Insert a new knot in the knotvector of the second parameter

Parameters

apar	the parameter value at which a new knot will be inserted

29.485.5.73 void Go::SplineSurface::insertKnot_v (const std::vector< double > & *new_knots*)

Insert new knots in the knotvector of the second parameter

Parameters

new_knots	a vector containing the parameter values of the new knots to insert.

29.485.5.74 virtual ClassType Go::SplineSurface::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.485.5.75 void Go::SplineSurface::interpolate (Interpolator & *interpolator1*, Interpolator & *interpolator2*, int *num_points1*, int *num_points2*, int *dim*, const double * *param1_start*, const double * *param2_start*, const double * *data_start*)

Remake 'this'surface to interpolate (or approximate) a given point grid.

Parameters

interpolator1	Interpolator to apply to the first parameter direction

Parameters

interpolator2	Interpolator to apply to the second parameter direction
num_points1	number of points to interpolate along the first parameter direction
num_points2	number of points to interpolate along the second parameter direction
dim	dimension of the points to interpolate (usually 3)
param1_start	pointer to the start of the input grid's parametrization along the first parameter
param2_start	pointer to the start of the input grid's parametrization along the second parameter
data_start	pointer to the start of the storage array for the data point grid to interpolate

29.485.5.76 virtual bool Go::SplineSurface::isAxisRotational (Point & *centre*, Point & *axis*, Point & *vec*, double & *angle*) [virtual]

Check if the surface is axis rotational. Only true if a connection to an axis rotational elementary surface exist

Reimplemented from Go::ParamSurface.

29.485.5.77 virtual bool Go::SplineSurface::isDegenerate (bool & *b*, bool & *r*, bool & *t*, bool & *l*, double *tolerance*) const [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

29.485.5.78 bool Go::SplineSurface::isElementarySurface ( ) [inline]

Query if the surface was generated from an ElementarySurface.

Definition at line 1286 of file SplineSurface.h.

29.485.5.79 virtual bool Go::SplineSurface::isPlanar (Point & *normal*, double *tol*) [virtual]

This surface is planar if it represents a plane or the spline surface is linear in both parameter direction and planar

Reimplemented from Go::ParamSurface.

29.485.5.80 virtual bool Go::SplineSurface::isSpline ( ) const [inline], [virtual]

Check if the surface is of type spline.

Reimplemented from Go::ParamSurface.

Definition at line 1210 of file SplineSurface.h.

29.485.5.81 double Go::SplineSurface::knotSpan (int *pardir,* int *iknot*) const

Returns the size of the knot interval (knot[iknot],knot[iknot+1]) in the specified direction. An index outside the legal range will result in a zero knot span

29.485.5.82 void Go::SplineSurface::makeBernsteinKnotsU ( )

Inserts knots in the u knot vector, such that all knots have multiplicity order

29.485.5.83 void Go::SplineSurface::makeBernsteinKnotsV ( )

Inserts knots in the v knot vector, such that all knots have multiplicity order

29.485.5.84 void Go::SplineSurface::makeSurfaceKRegular ( )

Ensure k-regularity of this surface in both parameter directions.

29.485.5.85 virtual SplineSurface* Go::SplineSurface::mirrorSurface (const Point & *pos,* const Point & *norm*) const [virtual]

Mirror a surface around a specified plane.

Reimplemented from Go::ParamSurface.

29.485.5.86 virtual double Go::SplineSurface::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.485.5.87 virtual void Go::SplineSurface::normal (Point & *n*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.485.5.88 SplineSurface* Go::SplineSurface::normal ( ) const

Not yet implemented.

29.485.5.89 DirectionCone Go::SplineSurface::normalCone (NormalConeMethod *method*) const

Returns a cone that contains the convex hull of all normalized tangents of the surface. Note: It is an overestimate.

Returns

the normal cone of the surface

29.485.5.90 virtual DirectionCone Go::SplineSurface::normalCone ( ) const [virtual]

Function that calls normalCone(NormalConeMethod) with method = SederbergMeyers. Needed because normalCone() is virtual! (Inherited from ParamSurface).

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.485.5.91 SplineSurface* Go::SplineSurface::normalSurface ( ) const

Returns the normal surface corresponding to this surface, as described in:
`Computing normal vector Bezier patches, Przemyslaw Kiciak, Computer Aided Design 18 (2001), 699-710.`

Returns

pointer to a newly created SplineSurface which is the normal surface. User assumes ownership of this object, and is responsible for destroying it.

29.485.5.92 int Go::SplineSurface::numberOfPatches_u ( ) const

Returns the number of knot intervals in u knot vector.

Returns

the number of knot intervals in the knotvector for the first parameter

29.485.5.93 int Go::SplineSurface::numberOfPatches_v ( ) const

Returns the number of knot intervals in v knot vector.

Returns

the number of knot intervals in the knotvector for the second parameter

29.485.5.94 int Go::SplineSurface::numCoefs_u ( ) const [inline]

Query the number of control points along the first parameter direction

Returns

the number of control points along the first parameter direction

Definition at line 664 of file SplineSurface.h.

29.485.5.95 int Go::SplineSurface::numCoefs_v ( ) const [inline]

Query the number of control points along the second parameter direction

Returns

the number of control points along the second parameter direction

Definition at line 669 of file SplineSurface.h.

29.485.5.96 int Go::SplineSurface::numElem ( ) const [inline]

Query the number of elements in the SplineSurface.

Definition at line 673 of file SplineSurface.h.

29.485.5.97 int Go::SplineSurface::numElem (int *pardir*) const [inline]

Query the number of elements in one parameter direction of the SplineSurface

Definition at line 680 of file SplineSurface.h.

29.485.5.98 virtual bool Go::SplineSurface::onBoundary (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies at the boundary of this surface.

Implements Go::ParamSurface.

29.485.5.99 int Go::SplineSurface::order_u ( ) const [inline]

Query the order of the BsplineBasis for the first parameter

Returns

the order of the BsplineBasis for the first parameter

Definition at line 688 of file SplineSurface.h.

29.485.5.100 int Go::SplineSurface::order_v ( ) const [inline]

Query the order of the BsplineBasis for the second parameter

Returns

the order of the BsplineBasis for the second parameter

Definition at line 693 of file SplineSurface.h.

29.485.5.101 virtual CurveLoop Go::SplineSurface::outerBoundaryLoop (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise, outer boundary loop of the surface.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a CurveLoop describing the anticlockwise, outer boundary loop of the surface. A negative degenerate_epsilon indicates that all curves, also the degenerate ones are wanted

Implements Go::ParamSurface.

29.485.5.102 virtual const RectDomain& Go::SplineSurface::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.485.5.103 virtual void Go::SplineSurface::point (Point & *pt,* double *upar,* double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.485.5.104 virtual void Go::SplineSurface::point (std::vector< Point > & *pts,* double *upar,* double *vpar,* int *derivs,* bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.

Parameters

upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.485.5.105 void Go::SplineSurface::pointsGrid (int *m1*, int *m2*, int *derivs*, const double * *basisvals1*, const double * *basisvals2*, const int * *knotint1*, const int * *knotint2*, double * *result*, double * *normals* = 0) const

Evaluate points and possibly normals in a regular grid. The B-spline basis functions must be pre evaluated. This is a convenience funtion lifted to the user interface to allow for better performance if several spline surfaces with the same spline spaces are to be evaluated in the same points. Must be used with care.

29.485.5.106 void Go::SplineSurface::raiseOrder (int *raise_u*, int *raise_v*)

Raise the order of the spline surface as indicated by parameters.

Parameters

raise_u	the order of the BsplineBasis associated with the first parameter will be raised this many times.
raise_v	the order of the BsplineBasis associated with the second parameter will be raised this many times.

29.485.5.107 bool Go::SplineSurface::rational ( ) const [inline]

Query whether the surface is rational

Returns

'true' if the surface is rational, 'false' otherwise

Definition at line 698 of file SplineSurface.h.

29.485.5.108 std::vector<double>::iterator Go::SplineSurface::rcoefs_begin ( ) [inline]

Get an iterator to the start of the internal array of *rational* control points.

Returns

an (nonconst) iterator ro the start of the internal array of rational control points.

Definition at line 733 of file SplineSurface.h.

29.485.5.109 std::vector<double>::const_iterator Go::SplineSurface::rcoefs_begin ( ) const [inline]

Get a const iterator to the start of the internal array of *rational* control points.

Returns

a const iterator to the start of the internal array of rational control points

Definition at line 747 of file SplineSurface.h.

29.485.5.110 std::vector<double>::iterator Go::SplineSurface::rcoefs_end ( ) [inline]

Get an iterator to the one-past-end position of the internal array of *rational* control points.

Returns

an (nonconst) iterator to the start of the internal array of rational control points.

Definition at line 740 of file SplineSurface.h.

29.485.5.111 std::vector<double>::const_iterator Go::SplineSurface::rcoefs_end ( ) const [inline]

Get a const iterator to the one-past-end position of the internal array of *rational* control points.

Returns

a const iterator to the one-past-end position of the internal array of rational control points.

Definition at line 754 of file SplineSurface.h.

29.485.5.112 virtual void Go::SplineSurface::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.485.5.113 void Go::SplineSurface::removeKnot_u (double *tpar*)

Remove a knot from the knotvector of the first parameter.

Parameters

tpar	the parameter value of the knot to be removed

29.485.5.114 void Go::SplineSurface::removeKnot_v (double *tpar*)

Remove a knot from the knotvector of the second parameter.

Parameters

tpar	the parameter value of the knot to be removed.

29.485.5.115 bool Go::SplineSurface::replaceBoundaryCurve (int *bd_nmb,* shared_ptr< SplineCurve > *bd_crv,* bool *unify* = true)

Replace one boundary curve of this surface Update spline spaces to enable replacement NB! Requires both the surface and the new boundary curve to be either rational or non-rational bd_nmb = 0: umin = 1: umax = 2: vmin = 3: vmax Return value: true if a replacement is performe

29.485.5.116 void Go::SplineSurface::replaceCoefficient (int *ix,* Point *coef*)

Replace one specified coefficient (local enumeration)

29.485.5.117 void Go::SplineSurface::representAsRational ( )

Ensure that the current surface is represented as a rational surface.

29.485.5.118 virtual void Go::SplineSurface::reverseParameterDirection (bool *direction_is_u*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

direction_is_u	if 'true', the first parameter direction will be reversed, otherwise, the second parameter direction will be reversed

Implements Go::ParamSurface.

29.485.5.119 double Go::SplineSurface::setAvBdWeight (double *wgt,* int *pardir,* bool *at_start*)

Set the average weight at one boundary to a given value (if rational) pardir = 0 : 1. parameter direction pardir = 1 : 2. parameter direction output : Variance between existing weights

29.485.5.120 void Go::SplineSurface::setElementarySurface (shared_ptr< ElementarySurface > *elsurf*)

Set shared pointer to the ElementarySurface that is represented by `this`.

NOTE: The current SplineSurface (i.e. `this`), must be created from the argument ElementarySurface by ElementarySurface::createSplineSurface(), otherwise undefined behaviour may occur. One may check to see if this is the case by using checkElementarySurface().

29.485.5.121 virtual void Go::SplineSurface::setParameterDomain (double *u1*, double *u2*, double *v1*, double *v2*) [virtual]

set the parameter domain to a given rectangle

Parameters

u1	new min. value of first parameter span
u2	new max. value of first parameter span
v1	new min. value of second parameter span
v2	new max. value of second parameter span

Reimplemented from Go::ParamSurface.

29.485.5.122 double Go::SplineSurface::startparam (int *idx*) const [inline]

Get the start parameter value for the parameter direction idx.

Definition at line 371 of file SplineSurface.h.

29.485.5.123 virtual double Go::SplineSurface::startparam_u ( ) const [virtual]

Get the start value for the u-parameter

Returns

the start value for the u-parameter

29.485.5.124 virtual double Go::SplineSurface::startparam_v ( ) const [virtual]

Get the start value for the v-parameter

Returns

the start value for the v-parameter

29.485.5.125 SplineSurface* Go::SplineSurface::subSurface (double *from_upar*, double *from_vpar*, double *to_upar*, double *to_vpar*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

Get a SplineSurface which represent a part of 'this' SplineSurface

Parameters

from_upar	start value for u-parameter in the sub-surface to be generated
from_vpar	start value for v-parameter in the sub-surface to be generated
to_upar	end value for u-parameter in the sub-surface to be generated
to_vpar	end value for v-parameter in the sub-surface to be generated
fuzzy	tolerance used to determine whether given parameter values are located directly *knot* values.

29.485.5.126 virtual std::vector<shared_ptr<ParamSurface> > Go::SplineSurface::subSurfaces (double *from_upar*, double *from_vpar*, double *to_upar*, double *to_vpar*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.485.5.127 void Go::SplineSurface::swap (SplineSurface & *other*)

quick swap of two SplineSurface objects with each other

29.485.5.128 virtual void Go::SplineSurface::swapParameterDirection ( ) [virtual]

Swaps the two parameter directions.

Implements Go::ParamSurface.

29.485.5.129 virtual DirectionCone Go::SplineSurface::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is↩ _u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.485.5.130 virtual void Go::SplineSurface::turnOrientation ( ) [virtual]

Turns the direction of the normal of the surface.

Implements Go::ParamSurface.

29.485.5.131 virtual void Go::SplineSurface::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

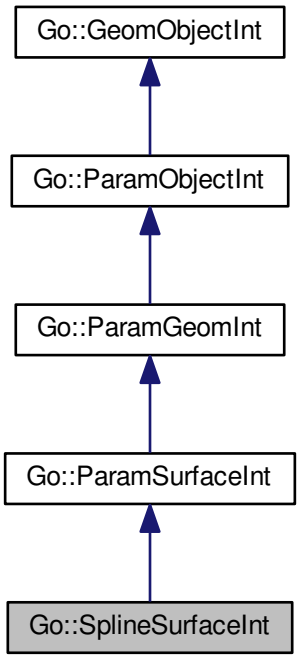
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/SplineSurface.h

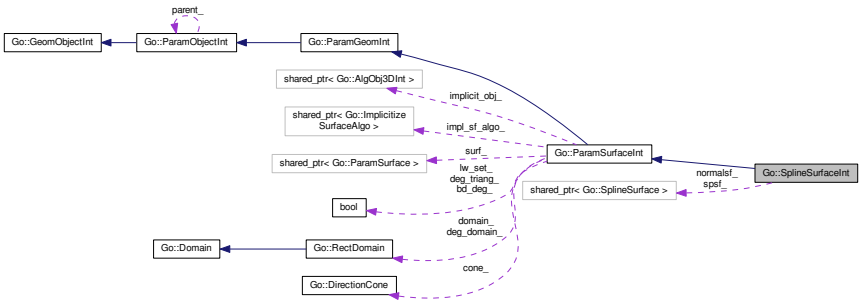
29.486 Go::SplineSurfaceInt Class Reference

```
#include <SplineSurfaceInt.h>
```

Inheritance diagram for Go::SplineSurfaceInt:



Collaboration diagram for Go::SplineSurfaceInt:



Public Member Functions

- SplineSurfaceInt (shared_ptr< ParamSurface > surf)

  Constructor.
- SplineSurfaceInt (shared_ptr< ParamSurface > surf, ParamGeomInt *parent)
- virtual ~SplineSurfaceInt ()

  Destructor.
- virtual shared_ptr< ParamSurfaceInt > makeIntObject (shared_ptr< ParamSurface > surf)

- virtual shared_ptr< ParamCurveInt > makeIntCurve (shared_ptr< ParamCurve > crv, ParamGeomInt *parent)
- virtual bool hasInnerKnots (int pardir) const
- virtual bool hasCriticalValsOrKnots (int pardir) const
- virtual std::vector< double > getInnerKnotVals (int pardir, bool sort=false) const
- virtual std::vector< double > getCriticalValsAndKnots (int pardir) const
- virtual int getMeshSize (int dir)
- virtual double paramFromMesh (int dir, int idx)
- virtual std::vector< double >::iterator getMesh ()

  Return the geometric sample mesh for the parametric function.
- virtual DirectionCone directionCone () const
- virtual DirectionCone reducedDirectionCone (bool reduce_at_bd[4], double epsge) const

  Make exact direction cone. Only applicable for Bezier case.
- virtual void getBoundaryObjects (std::vector< shared_ptr< BoundaryGeomInt > > &bd_objs)
- virtual int checkPeriodicity (int pardir) const
- virtual bool isSimple ()
- virtual bool isSpline ()
- virtual bool isIsoParametric (ParamCurveInt *curve, int dir, double par, double ptol, double tol)
- virtual double getOptimizedConeAngle (Point &axis1, Point &axis2)
- virtual void knotIntervalFuzzy (double &u, double &v, double utol, double vtol) const
- virtual double nextSegmentVal (int dir, double par, bool forward, double tol) const
- virtual RotatedBox getRotatedBox (std::vector< Point > &axis) const
- virtual void splitAtG0 (double angtol, std::vector< shared_ptr< ParamSurfaceInt > > &subG1)
- virtual shared_ptr< ParamSurfaceInt > getNormalSurface () const
- virtual bool canImplicitize ()
- virtual bool implicitize (double tol)
- virtual bool getImplicit (double tol, double &tol2, AlgObj3DInt &alg_obj_3d_int)
- SplineCurve * constParamCurve (double parameter, bool pardir_is_u) const
- shared_ptr< SplineSurface > getSplineSurface ()
- virtual shared_ptr< const SplineSurface > splineSurface () const
- void setImplicitDeg ()

  Choose a degree for the implicit representation.

Protected Attributes

- shared_ptr< SplineSurface > spsf_
- shared_ptr< SplineSurface > normalsf_

29.486.1 Detailed Description

This class represents the "intersection object" of a spline surface.

Definition at line 57 of file SplineSurfaceInt.h.

29.486.2 Constructor & Destructor Documentation

29.486.2.1 Go::SplineSurfaceInt::SplineSurfaceInt (shared_ptr< ParamSurface > *surf*) [explicit]

Constructor.

Parameters

surf	the parametric curve defining the intersection object.

29.486.2.2 Go::SplineSurfaceInt::SplineSurfaceInt (shared_ptr< ParamSurface > *surf*, ParamGeomInt * *parent*) [explicit]

Constructor.

Parameters

surf	the parametric curve defining the intersection object.
parent	the parent object to this object.

29.486.2.3 virtual Go::SplineSurfaceInt::~SplineSurfaceInt ( ) [inline], [virtual]

Destructor.

Definition at line 73 of file SplineSurfaceInt.h.

29.486.3 Member Function Documentation

29.486.3.1 virtual bool Go::SplineSurfaceInt::canImplicitize ( ) [virtual]

Check whether the objects fulfills the requirements to implicitize.

Returns

Return true if we may implicitize the object.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.2 virtual int Go::SplineSurfaceInt::checkPeriodicity (int *pardir*) const [virtual]

Check if the object is periodic in the specified direction. Analyze periodicity of surface based on number of repeating knots and control points. The return value is -1 if the surface ends are disjoint, otherwise k if cv is C^k continuous. These are sufficient but not necessary conditions for periodicity, so it is possible that a higher degree of periodicity exists. Should not be called on this layer, should be overruled by inherited class.

Parameters

pardir	the parameter direction in question.

Returns

-1 if the curve ends are disjoint, or k if the surface is proven to be C^k continuous.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.3 SplineCurve* Go::SplineSurfaceInt::constParamCurve (double *parameter*, bool *pardir_is_u*) const

Generate and return the specified isocurve.

Parameters

parameter	value of the fixed parameter.
pardir_is_u	'true' if the first parameter is the running parameter, 'false' otherwise.

Returns

Pointer to the created isocurve.

29.486.3.4 virtual DirectionCone Go::SplineSurfaceInt::directionCone ( ) const [virtual]

A cone which contains all normals of the object.

Returns

A cone which contains all normals of the object.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.5 virtual void Go::SplineSurfaceInt::getBoundaryObjects (std::vector< shared_ptr< BoundaryGeomInt > > & *bd_objs*) [virtual]

Return the boundary objects of this object.

Parameters

bd_objs	the boundary objects of this object.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.6 virtual std::vector<double> Go::SplineSurfaceInt::getCriticalValsAndKnots (int *pardir*) const [virtual]

Return the critical parameter values and inner knots for the object.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.7 virtual bool Go::SplineSurfaceInt::getImplicit (double *tol*, double & *tol2*, AlgObj3DInt & *alg_obj_3d_int*) [virtual]

Get the implicit representation of the object. Garbage is returned if we are not able to implicitize.

Parameters

tol	geometric tolerance for the implicitization procedure.
tol2	geometric estimate for the accuracy of the implicitized object. Not yet in use!!!
alg_obj_3d_int	the algebraic object containing the implicitized surface.

Returns

True if the implicitization was a success.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.8 virtual std::vector<double> Go::SplineSurfaceInt::getInnerKnotVals (int *pardir*, bool *sort* = false) const [virtual]

Return the inner knot values in the specified direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.
sort	the returned values may be sorted by the function.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.9 virtual std::vector<double>::iterator Go::SplineSurfaceInt::getMesh ( ) [virtual]

Return the geometric sample mesh for the parametric function.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.10 virtual int Go::SplineSurfaceInt::getMeshSize (int *dir*) [virtual]

Return the size of the geometric sample mesh in the specified direction.

Parameters

dir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.11 virtual shared_ptr<ParamSurfaceInt> Go::SplineSurfaceInt::getNormalSurface ( ) const [virtual]

Returns the normal surface corresponding to this surface.

Returns

Pointer to the SplineSurface defining the normal surface.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.12 virtual double Go::SplineSurfaceInt::getOptimizedConeAngle (Point & *axis1*, Point & *axis2*) [virtual]

We try to treat problems which will never result in a simple case by shrinking the domain slightly, resulting in smaller cones. This is useful for scenarios where the normals are parallell in a boundary point.

Parameters

axis1	first vector defining a projection plane
axis2	second vector defining a projection plane

Returns

The optimized cone angle

Reimplemented from Go::ParamSurfaceInt.

29.486.3.13 virtual RotatedBox Go::SplineSurfaceInt::getRotatedBox (std::vector< Point > & *axis*) const [virtual]

Create a box containing the geometric sample mesh in the input coordinate system.

Parameters

axis	the axis defining the coordinate system. The size of vector axis is 2, the last point is given as the cross product axis[0]axis[1].

Returns

The rotated box

Reimplemented from Go::ParamSurfaceInt.

29.486.3.14 shared_ptr<SplineSurface> Go::SplineSurfaceInt::getSplineSurface ( ) [inline]

Return pointer to the spline surface defining this object.

Returns

The spline surface defining this object.

Definition at line 257 of file SplineSurfaceInt.h.

29.486.3.15 virtual bool Go::SplineSurfaceInt::hasCriticalValsOrKnots (int *pardir*) const [virtual]

Return true if the object has any critical parameter values or inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.16 virtual bool Go::SplineSurfaceInt::hasInnerKnots (int *pardir*) const [virtual]

Return true if the object has any inner knots in the specified parameter direction.

Parameters

pardir	the parameter direction in question. Indexing starts at 0.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.17 virtual bool Go::SplineSurfaceInt::implicitize (double *tol*) [virtual]

Implicitize the object.

Parameters

tol	the geoemtric tolerance for the implicitization.

Returns

True if the implicitization was a success.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.18 virtual bool Go::SplineSurfaceInt::isIsoParametric (ParamCurveInt * *curve,* int *dir,* double *par,* double *ptol,* double *tol*) [virtual]

Check if a curve is an iso parametric curve in the current surface. NB! Only valid for splines

Reimplemented from Go::ParamSurfaceInt.

29.486.3.19 virtual bool Go::SplineSurfaceInt::isSimple ( ) [virtual]

Estimates if the current surface is simple enough for a singularity iteration. Checks the span of the normal cone and the size of the surface

Returns

True if the surface is characterized as simple.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.20 virtual bool Go::SplineSurfaceInt::isSpline ( ) [virtual]

Verify whether the object is a spline.

Returns

True if the object is a spline.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.21 virtual void Go::SplineSurfaceInt::knotIntervalFuzzy (double & *u,* double & *v,* double *utol,* double *vtol*) const [virtual]

Find the knot intervals for which u and v lie inside, moving the value u or v if they lie close to a knot.

Parameters

u	the *u* parameter value
v	the *v* parameter value
utol	the parametric tolerance deciding if the input parameter u should be moved.
vtol	the parametric tolerance deciding if the input parameter v should be moved.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.22 virtual shared_ptr<ParamCurveInt> Go::SplineSurfaceInt::makeIntCurve (shared_ptr< ParamCurve > *crv,* ParamGeomInt * *parent*) [virtual]

Return an intersection object for the input curve, using parameter parent as parent.

Parameters

crv	the parametric curve defining the intersection object.
parent	the parent to the created intersection object.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.23 virtual shared_ptr<ParamSurfaceInt> Go::SplineSurfaceInt::makeIntObject (shared_ptr< ParamSurface > *surf*) [virtual]

Return an intersection object for the input surface, using this object as parent.

Parameters

surf	the parametric surface defining the intersection object.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.24 virtual double Go::SplineSurfaceInt::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Return the value of the knot next to the input parameter par.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
par	the parameter value
forward	if true we return the closest knot to the right, otherwise the closest knot to the left.
tol	the tolerance to determine if *par* is already located on the start of the next segment.

Returns

The knot closest to the input parameter.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.25 virtual double Go::SplineSurfaceInt::paramFromMesh (int *dir,* int *idx*) [virtual]

Return the corresponding mesh parameter.

Parameters

dir	the parameter direction in question. Indexing starts at 0.
idx	the mesh idx in the specified direction. Indexing starts at 0.

Reimplemented from Go::ParamSurfaceInt.

29.486.3.26 virtual DirectionCone Go::SplineSurfaceInt::reducedDirectionCone (bool *reduce_at_bd[4]*, double *epsge*) const [virtual]

Make exact direction cone. Only applicable for Bezier case.

Reimplemented from Go::ParamGeomInt.

29.486.3.27 void Go::SplineSurfaceInt::setImplicitDeg ( )

Choose a degree for the implicit representation.

29.486.3.28 virtual shared_ptr<const SplineSurface> Go::SplineSurfaceInt::splineSurface ( ) const [inline], [virtual]

Return pointer to the spline surface defining this object.

Returns

The spline surface defining this object.

Definition at line 262 of file SplineSurfaceInt.h.

29.486.3.29 virtual void Go::SplineSurfaceInt::splitAtG0 (double *angtol*, std::vector< shared_ptr< ParamSurfaceInt > > & *subG1*) [virtual]

Requests from selfintersection computation. Split at G1 discontinuities.

Parameters

angtol	angular tolerance defining G1 discontinuity
subG1	vector of subdivided patches that are G1

Reimplemented from Go::ParamSurfaceInt.

29.486.4 Member Data Documentation

29.486.4.1 shared_ptr<SplineSurface> Go::SplineSurfaceInt::normalsf_ [mutable], [protected]

Definition at line 272 of file SplineSurfaceInt.h.

29.486.4.2 shared_ptr<SplineSurface> Go::SplineSurfaceInt::spsf_ [protected]

Definition at line 270 of file SplineSurfaceInt.h.

The documentation for this class was generated from the following file:

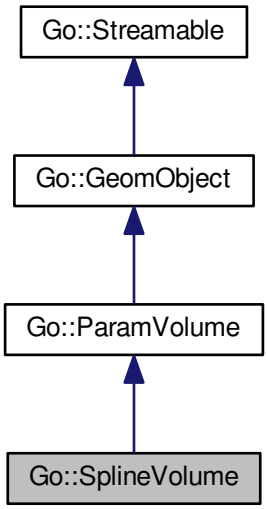
- intersections/include/GoTools/intersections/SplineSurfaceInt.h

29.487 Go::SplineVolume Class Reference

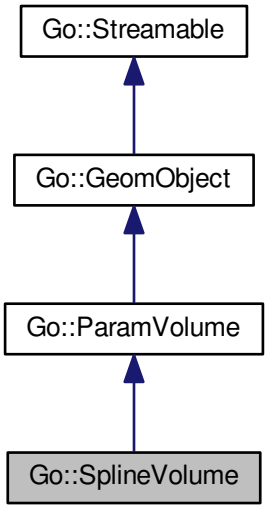
SplineVolume provides methodes for storing, reading and manipulating rational and non-rational B-spline volumes.

`#include <SplineVolume.h>`

Inheritance diagram for Go::SplineVolume:



Collaboration diagram for Go::SplineVolume:



Public Types

- typedef std::vector< double > Dvector
- typedef std::vector< Dvector > Dmatrix

Public Member Functions

- SplineVolume ()
- template<typename RandomIterator1 , typename RandomIterator2 , typename RandomIterator3 , typename RandomIterator4 > SplineVolume (int number1, int number2, int number3, int order1, int order2, int order3, RandomIterator1 knot1start, RandomIterator2 knot2start, RandomIterator3 knot3start, RandomIterator4 coefsstart, int dim, bool rational=false)
- template<typename RandomIterator > SplineVolume (const BsplineBasis &basis_u, const BsplineBasis &basis_v, const BsplineBasis &basis_w, RandomIterator coefsstart, int dim, bool rational=false)
- virtual ~SplineVolume ()

  Virtual destructor, enables safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual int dimension () const

  Return the dimension of the space in which the object lies (3 is expected).
- void swap (SplineVolume &other)

  quick swap of two SplineVolume objects with each other
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.

- virtual SplineVolume * clone () const
- virtual const Array< double, 6 > parameterSpan () const
- virtual void point (Point &pt, double upar, double vpar, double wpar) const
- virtual void point (std::vector< Point > &pts, double upar, double vpar, double wpar, int derivs, bool u_from_right=true, bool v_from_right=true, bool w_from_right=true, double resolution=1.0e-12) const
- virtual double startparam (int i) const
- virtual double endparam (int i) const
- virtual DirectionCone tangentCone (int pardir) const
- SplineVolume * derivVolume (int ider1, int ider2, int ider3) const
- SplineVolume * subVolume (double from_upar, double from_vpar, double from_wpar, double to_upar, double to_vpar, double to_wpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- std::vector< shared_ptr< SplineVolume > > split (std::vector< double > &param, int pardir, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, double &clo_w, Point &clo_pt, double &clo_dist, double epsilon, double *seed=0) const
- int closestCorner (const Point &pt, double &upar, double &vpar, double &wpar, Point &corner, double &dist) const
- void appendVolume (SplineVolume *vol, int join_dir, int cont, bool repar=true)
- virtual void reverseParameterDirection (int pardir)
- virtual void swapParameterDirection (int pardir1, int pardir2)
- const BsplineBasis & basis (int pardir) const
- int numCoefs (int pardir) const
- int order (int pardir) const
- int numElem () const

  Query the number of elements in the SplineVolume.
- int numElem (int pardir) const

  Query the number of elements in one parameter direction of.
- bool rational () const
- std::vector< double >::iterator coefs_begin ()
- std::vector< double >::iterator coefs_end ()
- std::vector< double >::const_iterator coefs_begin () const
- std::vector< double >::const_iterator coefs_end () const
- std::vector< double >::iterator rcoefs_begin ()
- std::vector< double >::iterator rcoefs_end ()
- std::vector< double >::const_iterator rcoefs_begin () const
- std::vector< double >::const_iterator rcoefs_end () const
- std::vector< double >::iterator ctrl_begin ()
- std::vector< double >::iterator ctrl_end ()
- std::vector< double >::const_iterator ctrl_begin () const
- std::vector< double >::const_iterator ctrl_end () const
- void replaceCoefficient (int ix, Point coef)

  Replace one specified coefficient (local enumeration)
- void getWeights (std::vector< double > &weights) const

  has all weights equal to one
- void setParameterDomain (double u1, double u2, double v1, double v2, double w1, double w2)
- void insertKnot (int pardir, double apar)
- void insertKnot (int pardir, const std::vector< double > &new_knots)
- void removeKnot (int pardir, double tpar)
- void makeBernsteinKnots (int pardir)
- int numberOfPatches (int pardir) const
- double knotSpan (int pardir, int iknot) const
- void raiseOrder (int raise_u, int raise_v, int raise_w)
- virtual SplineSurface * constParamSurface (double parameter, int pardir) const
- virtual std::vector< shared_ptr< ParamSurface > > getAllBoundarySurfaces () const

Fetch all boundary surfaces corresponding to the volume.

- std::vector< shared_ptr< SplineSurface > > getBoundarySurfaces (bool do_clear=false) const
- shared_ptr< SplineSurface > getBoundarySurface (int idx, bool do_clear=false) const

  Fetch one boundary surface.
- void getElementBdPar (int elem_ix, double elem_par[]) const
- std::vector< shared_ptr< SplineSurface > > getElementBdSfs (int elem_ix, double elem_par[]) const
- void gridEvaluator (int num_u, int num_v, int num_w, std::vector< double > &points, std::vector< double > &der_u, std::vector< double > &der_v, std::vector< double > &der_w, std::vector< double > &param_u, std::vector< double > &param_v, std::vector< double > &param_w, bool evaluate_from_right=true) const
- void gridEvaluator (const std::vector< double > &param_u, const std::vector< double > &param_v, const std::vector< double > &param_w, std::vector< double > &points, std::vector< double > &der_u, std::vector< double > &der_v, std::vector< double > &der_w, bool evaluate_from_right=true) const
- void gridEvaluator (int num_u, int num_v, int num_w, std::vector< double > &points, std::vector< double > &param_u, std::vector< double > &param_v, std::vector< double > &param_w) const
- void gridEvaluator (const std::vector< double > &param_u, const std::vector< double > &param_v, const std::vector< double > &param_w, std::vector< double > &points) const
- void computeBasis (double param[], std::vector< double > &basisValues, std::vector< double > &basisDerivs_u, std::vector< double > &basisDerivs_v, std::vector< double > &basisDerivs_w, bool evaluate_from_right=true) const
- void computeBasis (const std::vector< double >::const_iterator &bas_vals_u, const std::vector< double >::const_iterator &bas_vals_v, const std::vector< double >::const_iterator &bas_vals_w, int left_u, int left_v, int left_w, std::vector< double > &basisValues, std::vector< double > &basisDerivs_u, std::vector< double > &basisDerivs_v, std::vector< double > &basisDerivs_w) const
- void computeBasisGrid (const Dvector &param_u, const Dvector &param_v, const Dvector &param_w, Dmatrix &basisValues) const
- void computeBasis (double param_u, double param_v, double param_w, BasisPts &result) const
- void computeBasis (double param_u, double param_v, double param_w, BasisDerivs &result, bool evaluate_from_right=true) const
- void computeBasis (double param_u, double param_v, double param_w, BasisDerivs2 &result, bool evaluate_from_right=true) const
- void computeBasisGrid (const Dvector &param_u, const Dvector &param_v, const Dvector &param_w, std::vector< BasisPts > &result) const
- void computeBasisGrid (const Dvector &param_u, const Dvector &param_v, const Dvector &param_w, Dmatrix &basisValues, Dmatrix &basisDerivs_u, Dmatrix &basisDerivs_v, Dmatrix &basisDerivs_w, bool evaluate_from_right=true) const
- void computeBasisGrid (const Dvector &param_u, const Dvector &param_v, const Dvector &param_w, std::vector< BasisDerivs > &result, bool evaluate_from_right=true) const
- void computeBasisGrid (const Dvector &param_u, const Dvector &param_v, const Dvector &param_w, std::vector< BasisDerivs2 > &result, bool evaluate_from_right=true) const
- virtual double nextSegmentVal (int dir, double par, bool forward, double tol) const
- int volumePeriodicity (int pardir, double epsilon) const
- void checkDegeneracy (double tol, int is_degenerate[]) const
- bool isDegenerate (int which_sf, int &type, bool &b, bool &r, bool &t, bool &l, double tol) const
- virtual bool isSpline () const

  Check if the volume is of type spline.
- virtual SplineVolume * asSplineVolume ()

  Return the spline surface represented by this surface.
- virtual void translate (const Point &vec)

  Translate.
- void scale (double fac)

  Scale the coefficients of the volume with a given factor.
- void deform (const std::vector< double > &vec, int vdim=0)
- void add (const SplineVolume *other, double tol=1.0e-10)
- bool isLeftHanded ()

- void pointsGrid (int numu, int numv, int numw, std::vector< double >::iterator basisvals_u, std::vector< double >::iterator basisvals_v, std::vector< double >::iterator basisvals_w, std::vector< int >::iterator knotinter_u, std::vector< int >::iterator knotinter_v, std::vector< int >::iterator knotinter_w, int derivs, std::vector< double > &points) const

Static Public Member Functions

- static ClassType classType ()

29.487.1 Detailed Description

SplineVolume provides methodes for storing, reading and manipulating rational and non-rational B-spline volumes.

Non-rational B-spline volumes represented on the form

$$\sum_{i=1}^{n_1}\sum_{j=1}^{n_2}\sum_{k=1}^{n_3} P_{i,j,k}B_{i,o_1}(u)B_{j,o_2}(v)B_{k,o_3}(w),$$

where the B-spline coefficients are stored in a vector called coefs. The coefs are stored as

$$P_{0,0,0}, P_{1,0,0}, \ldots, P_{n_1,n_2,n_3},$$

where $P_{i,j,k}$ is represented as dim doubles.

NURBS volumes are represented on the form

$$\frac{\sum_{i=1}^{n_1}\sum_{j=1}^{n_2}\sum_{k=1}^{n_3} h_{i,j,k}P_{i,j,k}B_{i,o_1}(u)B_{j,o_2}(v)B_{k,o_3}(w)}{\sum_{i=1}^{n_1}\sum_{j=1}^{n_2}\sum_{k=1}^{n_3} h_{i,j,k}B_{i,o_1}(u)B_{j,o_2}(v)B_{k,o_3}(w)}$$

where $B_{i,o}$ is the i'th non-rational B-spline of order o. The Projected coefficients are stored in the coefs vector, i.e.

$$h_{0,0,0}\cdot P_{0,0,0}, h_{1,0,0}\cdot P_{1,0,0}, \ldots, h_{n_1,n_2,n_3}\cdot P_{n_1,n_2,n_3}.$$

In addition the coefficients for the volume in projective space are kept, i.e

$$P_{0,0,0}, h_{0,0,0}, P_{1,0,0}, h_{1,0,0}, \ldots, P_{n_1,n_2,n_3}, h_{n_1,n_2,n_3}.$$

With this representation volume is in the convex hull of the coefficients stored in coefs both for rational and non rational volumes.

Definition at line 201 of file SplineVolume.h.

29.487.2 Member Typedef Documentation

29.487.2.1 typedef std::vector<Dvector> Go::SplineVolume::Dmatrix

Definition at line 833 of file SplineVolume.h.

29.487.2.2 typedef std::vector<double> Go::SplineVolume::Dvector

Evaluate positions of all basis values in a specified grid. For non-rationals this is an interface to BsplineBasis::computeBasisValues where the basis values in each parameter direction are multiplied to compute B_i(u)*B_j(v)*B_k(w), for rationals the routine evaluates the rational basis functions, i.e. the basis functions are divided by the denominator of the volume in the given parameter direction

Parameters

param_u	this vector holds all the numerical values for the first parameter where evaluation will tak place
param_v	this vector holds all the numerical values for the second parameter where evaluation will tak place
param_w	this vector holds all the numerical values for the third parameter where evaluation will tak place
basisValues	the value of all basis functions. The first matrix dimension will correspond to all evaluation parameters, i.e. the size is param_u.size()∗param_v∗size()∗param_w.size(). The second dimension correspond to all coefficients, i.e. nmb_coef_u∗nmb_coef_v∗nmb_coef_w. Most entries in the matrix will be zero

Definition at line 832 of file SplineVolume.h.

29.487.3 Constructor & Destructor Documentation

29.487.3.1 Go::SplineVolume::SplineVolume ( ) [inline]

Creates an uninitialized SplineVolume, which can only be assigned to or read(...) into.

Definition at line 206 of file SplineVolume.h.

29.487.3.2 template<typename RandomIterator1 , typename RandomIterator2 , typename RandomIterator3 , typename RandomIterator4 > Go::SplineVolume::SplineVolume (int *number1,* int *number2,* int *number3,* int *order1,* int *order2,* int *order3,* RandomIterator1 *knot1start,* RandomIterator2 *knot2start,* RandomIterator3 *knot3start,* RandomIterator4 *coefsstart,* int *dim,* bool *rational* = false) [inline]

Create a SplineVolume by explicitly providing all spline-related information.

Parameters

number1	number of control points along the u-parameter
number2	number of control points along the v-parameter
number3	number of control points along the w-parameter
order1	BsplineBasis order along the u-parameter
order2	BsplineBasis order along the v-parameter
order3	BsplineBasis order along the w-parameter
knot1start	pointer to the array describing the knotvector for the u-parameter
knot2start	pointer to the array describing the knotvector for the v-parameter
knot3start	pointer to the array describing the knotvector for the w-parameter
coefsstart	pointer to the array where the control points are consecutively stored. The storage order is such that control points along the u-parameter have the shortest stride (stored right after each other), then comes the v-parameter and finally the w-parameter. If the volume is rational, pay attention to the comments below.
dim	dimension of the space in which the volume lies (usually 3).
rational	Specify whether the volume is rational or not. If the volume is rational, coefficients must be in the following format: wP1 wP2 .... wPdim w. Ie. a (dim+1)-dimensional form. (This is the same form that is used within SISL).

Definition at line 245 of file SplineVolume.h.

29.487.3.3 template<typename RandomIterator > Go::SplineVolume::SplineVolume (const BsplineBasis & *basis_u*, const BsplineBasis & *basis_v*, const BsplineBasis & *basis_w*, RandomIterator *coefsstart*, int *dim*, bool *rational* = false) [inline]

Create a SplineVolume by explicitly providing all spline-related information.

Parameters

basis_u	the BsplineBasis to be used along the u-direction
basis_v	the BsplineBasis to be used along the v-direction
basis_w	the BsplineBasis to be used along the v-direction
coefsstart	pointer to the array where the control points are consecutively stored. The storage order is such that control points along the u-parameter have the shortest stride (stored right after each other), then comes the v-parameter and finally the w-parameter. If the volume is rational, pay attention to the comments below.
dim	dimension of the space in which the volume lies (usually 3).
rational	Specify whether the volume is rational or not. If the volume is rational, coefficients must be in the following format: wP1 wP2 .... wPdim w. Ie. a (dim+1)-dimensional form. (This is the same form that is used within SISL).

Definition at line 297 of file SplineVolume.h.

29.487.3.4 virtual Go::SplineVolume::~SplineVolume ( ) [virtual]

Virtual destructor, enables safe inheritance.

29.487.4 Member Function Documentation

29.487.4.1 void Go::SplineVolume::add (const SplineVolume * *other*, double *tol* = 1.0e-10)

Add coefficients from another volume. Weights are not summed for rational cases Nothing is done and exception is raised if

- Spline spaces are different in any paramter direction (order or knot vectors are not identical)
- The geometry spaces of the volumes have different dimension
- One volume is rational while the other is not
- The weights are not equal within a given tolerance (only if volumes are rational)

Parameters

other	The other spline volume with coefficients to be added into this volume
tol	tolerance used to test if weights are considered equal in rational case

29.487.4.2 void Go::SplineVolume::appendVolume (SplineVolume * *vol*, int *join_dir*, int *cont*, bool *repar* = true)

Appends a volume to the end of 'this' volume along a specified parameter direction.

Parameters

vol	the volume to append to 'this' volume
join_dir	the parameter direction along which to extend 'this' volume by appending the 'vol' volume. If it is equal to 0, we will extend the volume along the u-parameter; if it equals 1, we will extend the volume along the v-parameter; if it equals 2, we will extend the volume along the w-parameter.
cont	continuity at jont, legal values are 0 and 1 (i,.e. C^0 or C^1-continuity).
repar	The parametrization of the concerned parameter in the other volume will *always* be shifted so that it starts where the parametrization of 'this' volume ends. However, if 'repar' is set to 'true', it will also be *scaled* as a function of position of control points close to the transition.

29.487.4.3 virtual SplineVolume* Go::SplineVolume::asSplineVolume ( ) [inline], [virtual]

Return the spline surface represented by this surface.

Reimplemented from Go::ParamVolume.

Definition at line 957 of file SplineVolume.h.

29.487.4.4 const BsplineBasis& Go::SplineVolume::basis (int *pardir*) const [inline]

get one of the BsplineBasises of the volume

Parameters

pardir	specify whether to return the BsplineBasis for the first parameter (0), for the second parameter (1) or the third (2) parameter.

Returns

const reference to the requested BsplineBasis.

Definition at line 471 of file SplineVolume.h.

29.487.4.5 virtual BoundingBox Go::SplineVolume::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.487.4.6 void Go::SplineVolume::checkDegeneracy (double *tol*, int *is_degenerate[]*) const

Check degeneracy

Parameters

tol	Tolerance used in test
is_degenerate	0 - Not degenerate, 1 - surface degenerate in specified boundary, 2 - surface degenerate to line, 3 - surface degenerate to point

29.487.4.7 static ClassType Go::SplineVolume::classType ( ) [inline], [static]

Definition at line 349 of file SplineVolume.h.

29.487.4.8 virtual SplineVolume* Go::SplineVolume::clone ( ) const [inline], [virtual]

make a clone of this volume and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ParamVolume.

Definition at line 352 of file SplineVolume.h.

29.487.4.9 int Go::SplineVolume::closestCorner (const Point & *pt,* double & *upar,* double & *vpar,* double & *wpar,* Point & *corner,* double & *dist*) const

Returns the corner closest to a given point together with the associated enumeration of the corner coefficient. In degenerate cases, the enumeration will reflect an arbitrary corner

29.487.4.10 virtual void Go::SplineVolume::closestPoint (const Point & *pt,* double & *clo_u,* double & *clo_v,* double & *clo_w,* Point & *clo_pt,* double & *clo_dist,* double *epsilon,* double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the volume.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_w	w parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
seed	pointer to parameter values where iteration starts.

Implements Go::ParamVolume.

29.487.4.11 std::vector<double>::iterator Go::SplineVolume::coefs_begin ( ) [inline]

Get an iterator to the start of the internal array of non-rational control points.

Returns

an (nonconst) iterator to the start of the internal array of non- rational control points

Definition at line 521 of file SplineVolume.h.

29.487.4.12 std::vector<double>::const_iterator Go::SplineVolume::coefs_begin ( ) const [inline]

Get a const iterator to the start of the internal array of non-rational control points.

Returns

a const iterator to the start of the internal array of non-rational control points.

Definition at line 535 of file SplineVolume.h.

29.487.4.13 std::vector<double>::iterator Go::SplineVolume::coefs_end ( ) [inline]

Get an iterator to the one-past-end position of the internal array of non- rational control points

Returns

an (nonconst) iterator to the one-past-end position of the internal array of non-rational control points

Definition at line 528 of file SplineVolume.h.

29.487.4.14 std::vector<double>::const_iterator Go::SplineVolume::coefs_end ( ) const [inline]

Get a const iterator to the one-past-end position of the internal array of non-rational control points.

Returns

a const iterator to the one-past-end position of the internal array of non-rational control points.

Definition at line 542 of file SplineVolume.h.

29.487.4.15 void Go::SplineVolume::computeBasis (double *param[ ]*, std::vector< double > & *basisValues*, std::vector< double > & *basisDerivs_u*, std::vector< double > & *basisDerivs_v*, std::vector< double > & *basisDerivs_w*, bool *evaluate_from_right* = true) const

Evaluate positions and first derivatives of all basis values in a given parameter tripple For non-rationals this is an interface to BsplineBasis::computeBasisValues where the basis values in each parameter direction are multiplied to compute B_i(u)∗B_j(v)∗B_k(w), for rationals the routine evaluates the rational basis functions, i.e. the basis functions are divided by the denominator of the volume in the given parameter direction

Parameters

param	the parameter tripple in which to compute
basisValues	the value of all basis functions, size equal to (degree_u+1)∗(degree_v+1)∗(degree_w+1)
basisDerivs_u	the derivative of all basis functions, same size as previous
basisDerivs_v	the derivative of all basis functions, same size as previous
basisDerivs_w	the derivative of all basis functions, same size as previous
evaluate_from_right	specifies directional derivatives, true=right, false=left

29.487.4.16 void Go::SplineVolume::computeBasis (const std::vector< double >::const_iterator & *bas_vals_u,* const std::vector< double >::const_iterator & *bas_vals_v,* const std::vector< double >::const_iterator & *bas_vals_w,* int *left_u,* int *left_v,* int *left_w,* std::vector< double > & *basisValues,* std::vector< double > & *basisDerivs_u,* std::vector< double > & *basisDerivs_v,* std::vector< double > & *basisDerivs_w*) const

29.487.4.17 void Go::SplineVolume::computeBasis (double *param_u,* double *param_v,* double *param_w,* BasisPts & *result*) const

29.487.4.18 void Go::SplineVolume::computeBasis (double *param_u,* double *param_v,* double *param_w,* BasisDerivs & *result,* bool *evaluate_from_right* = true) const

29.487.4.19 void Go::SplineVolume::computeBasis (double *param_u,* double *param_v,* double *param_w,* BasisDerivs2 & *result,* bool *evaluate_from_right* = true) const

29.487.4.20 void Go::SplineVolume::computeBasisGrid (const Dvector & *param_u,* const Dvector & *param_v,* const Dvector & *param_w,* Dmatrix & *basisValues*) const

29.487.4.21 void Go::SplineVolume::computeBasisGrid (const Dvector & *param_u,* const Dvector & *param_v,* const Dvector & *param_w,* std::vector< BasisPts > & *result*) const

29.487.4.22 void Go::SplineVolume::computeBasisGrid (const Dvector & *param_u,* const Dvector & *param_v,* const Dvector & *param_w,* Dmatrix & *basisValues,* Dmatrix & *basisDerivs_u,* Dmatrix & *basisDerivs_v,* Dmatrix & *basisDerivs_w,* bool *evaluate_from_right* = true) const

Evaluate positions and first derivatives of all basis values in a specified grid. For non-rationals this is an interface to BsplineBasis::computeBasisValues where the basis values in each parameter direction are multiplied to compute B_i(u)∗B_j(v)∗B_k(w), for rationals the routine evaluates the rational basis functions, i.e. the basis functions are divided by the denominator of the volume in the given parameter direction

Parameters

param_u	this vector holds all the numerical values for the first parameter where evaluation will tak place
param_v	this vector holds all the numerical values for the second parameter where evaluation will tak place
param_w	this vector holds all the numerical values for the third parameter where evaluation will tak place
basisValues	the value of all basis functions. The first matrix dimension will correspond to all evaluation parameters, i.e. the size is param_u.size()∗param_v∗size()∗param_w.size(). The second dimension correspond to all coefficients, i.e. nmb_coef_u∗nmb_coef_v∗nmb_coef_w. Most entries in the matrix will be zero
basisDerivs_u	the derivative of all basis functions, size as above
basisDerivs_v	the derivative of all basis functions
basisDerivs_w	the derivative of all basis functions
evaluate_from_right	specifies directional derivatives, true=right, false=left

29.487.4.23 void Go::SplineVolume::computeBasisGrid (const Dvector & *param_u,* const Dvector & *param_v,* const Dvector & *param_w,* std::vector< BasisDerivs > & *result,* bool *evaluate_from_right* = true) const

29.487.4.24 void Go::SplineVolume::computeBasisGrid (const Dvector & *param_u,* const Dvector & *param_v,* const Dvector & *param_w,* std::vector< BasisDerivs2 > & *result,* bool *evaluate_from_right* = true) const

29.487.4.25 virtual SplineSurface* Go::SplineVolume::constParamSurface (double *parameter,* int *pardir*) const [virtual]

Generate and return a SplineSurface that represents a constant parameter surface on the volume

Parameters

parameter	value of the fixed parameter
pardir	0 if the surface is constant in the u-parameter, 1 if the surface is constant in the v-parameter, 2 if the surface is constant in the w-parameter.

Returns

pointer to a newly constructed SplineSurface representing the specified constant parameter surface. It is the user's reponsibility to delete it when it is no longer needed.

Reimplemented from Go::ParamVolume.

29.487.4.26 std::vector<double>::iterator Go::SplineVolume::ctrl_begin ( ) [inline]

Get an iterator to the start of the internal array of active control points.

Returns

an (nonconst) iterator to the start of the internal array of rational or non-rational control points

Definition at line 577 of file SplineVolume.h.

29.487.4.27 std::vector<double>::const_iterator Go::SplineVolume::ctrl_begin ( ) const [inline]

Get a const iterator to the start of the internal array of active control points.

Returns

a const iterator to the start of the internal array of rational or non-rational control points.

Definition at line 591 of file SplineVolume.h.

29.487.4.28 std::vector<double>::iterator Go::SplineVolume::ctrl_end ( ) [inline]

Get an iterator to the one-past-end position of the internal array of active control points

Returns

an (nonconst) iterator to the one-past-end position of the internal array of rational or non-rational control points

Definition at line 584 of file SplineVolume.h.

29.487.4.29 std::vector<double>::const_iterator Go::SplineVolume::ctrl_end ( ) const [inline]

Get a const iterator to the one-past-end position of the internal array of active control points.

Returns

a const iterator to the one-past-end position of the internal array of rational or non-rational control points.

Definition at line 598 of file SplineVolume.h.

29.487.4.30 void Go::SplineVolume::deform (const std::vector< double > & *vec,* int *vdim* = 0)

Adds the given deformation vector to the coefficients. Similar as translate, but with separate vector for each point

29.487.4.31 SplineVolume* Go::SplineVolume::derivVolume (int *ider1,* int *ider2,* int *ider3*) const

Get the derivative volume. Expresses the i,j,k-th derivative of a spline volume as a spline volume.

Parameters

ider1	what derivative to use along the u parameter
ider2	what derivative to use along the v parameter
ider3	what derivative to use along the w parameter

Returns

pointer to a newly constructed SplineVolume which is the derivative volume. User assumes ownership of this object, and is responsible for destroying it.

29.487.4.32 virtual int Go::SplineVolume::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (3 is expected).

Implements Go::GeomObject.

29.487.4.33 virtual double Go::SplineVolume::endparam (int *i*) const [virtual]

Get the end value for the specified parameter direction.

Parameters

i	the parameter direction

Returns

the end value for the parameter direction given by the parameter pardir

29.487.4.34 virtual std::vector<shared_ptr<ParamSurface> > Go::SplineVolume::getAllBoundarySurfaces ( ) const [virtual]

Fetch all boundary surfaces corresponding to the volume.

Implements Go::ParamVolume.

29.487.4.35 shared_ptr<SplineSurface> Go::SplineVolume::getBoundarySurface (int *idx*, bool *do_clear* = false) const [inline]

Fetch one boundary surface.

Definition at line 682 of file SplineVolume.h.

29.487.4.36 std::vector<shared_ptr<SplineSurface> > Go::SplineVolume::getBoundarySurfaces (bool *do_clear* = false) const

Fetch all 6 boundary surfaces corresponding to the volume. Sequence: u_min, u_max, v_min, v_max, w_min, w_max

29.487.4.37 void Go::SplineVolume::getElementBdPar (int *elem_ix*, double *elem_par[ ]*) const

Fetch parameter boundaries of a specified element elem_par - parameter values of element boundaries, sequence umin, umax, vmin, vmax, wmin, wmax

29.487.4.38 std::vector<shared_ptr<SplineSurface> > Go::SplineVolume::getElementBdSfs (int *elem_ix*, double *elem_par[ ]*) const

Fetch all boundary surfaces of a specified element elem_par - parameter values of element boundaries, sequence umin, umax, vmin, vmax, wmin, wmax

29.487.4.39 void Go::SplineVolume::getWeights (std::vector< double > & *weights*) const

has all weights equal to one

Return all weights corresponding to this volume, a non-rational volume

29.487.4.40 void Go::SplineVolume::gridEvaluator (int *num_u*, int *num_v*, int *num_w*, std::vector< double > & *points*, std::vector< double > & *der_u*, std::vector< double > & *der_v*, std::vector< double > & *der_w*, std::vector< double > & *param_u*, std::vector< double > & *param_v*, std::vector< double > & *param_w*, bool *evaluate_from_right* = true) const

Evaluate points and derivatives on an entire grid, taking computational advantage over calculating all these values simultaneously rather than one-by-one.

Parameters

num_u	number of values to evaluate along first parameter direction
num_v	number of values to evaluate along second parameter direction
num_w	number of values to evaluate along third parameter directon
points	upon function return, this vector holds all the evaluated points
der_u	upon function return, this vector holds all first derivatives in the first parameter direction
der_v	upon function return, this vector holds all first derivatives in the second parameter direction
der_w	upon function return, this vector holds all first derivatives in the third parameter direction
param_u	upon function return, this vector holds all the numerical values for the first parameter where evaluation has taken place
param_v	upon function return, this vector holds all the numerical values for the second parameter where evaluation has taken place.
param_w	upon function return, this vector holds all the numerical values for the third parameter where evaluation has taken place.
evaluate_from_right	specifies directional derivatives, true=right, false=left same behaviour for all parameter directions

29.487.4.41 void Go::SplineVolume::gridEvaluator (const std::vector< double > & *param_u,* const std::vector< double > & *param_v,* const std::vector< double > & *param_w,* std::vector< double > & *points,* std::vector< double > & *der_u,* std::vector< double > & *der_v,* std::vector< double > & *der_w,* bool *evaluate_from_right* = true) const

Evaluate points and derivatives on an entire grid, taking computational advantage over calculating all these values simultaneously rather than one-by-one.

Parameters

param_u	this vector holds all the numerical values for the first parameter where evaluation will tak place
param_v	this vector holds all the numerical values for the second parameter where evaluation will tak place
param_w	this vector holds all the numerical values for the third parameter where evaluation will tak place
points	upon function return, this vector holds all the evaluated points
der_u	upon function return, this vector holds all first derivatives in the first parameter direction
der_v	upon function return, this vector holds all first derivatives in the second parameter direction
der_w	upon function return, this vector holds all first derivatives in the third parameter direction
evaluate_from_right	specifies directional derivatives, true=right, false=left same behaviour for all parameter directions

29.487.4.42 void Go::SplineVolume::gridEvaluator (int *num_u,* int *num_v,* int *num_w,* std::vector< double > & *points,* std::vector< double > & *param_u,* std::vector< double > & *param_v,* std::vector< double > & *param_w*) const

Evaluate points on an entire grid, taking computational advantage over calculating all these values simultaneously rather than one-by-one.

Parameters

num_u	number of values to evaluate along first parameter direction
num_v	number of values to evaluate along second parameter direction
num_w	number of values to evaluate along third parameter directon
points	upon function return, this vector holds all the evaluated points
param_u	upon function return, this vector holds all the numerical values for the first parameter where evaluation has taken place
param_v	upon function return, this vector holds all the numerical values for the second parameter where evaluation has taken place.
param_w	upon function return, this vector holds all the numerical values for the third parameter where evaluation has taken place.

29.487.4.43 void Go::SplineVolume::gridEvaluator (const std::vector< double > & *param_u,* const std::vector< double > & *param_v,* const std::vector< double > & *param_w,* std::vector< double > & *points*) const

Evaluate points on an entire grid, taking computational advantage over calculating all these values simultaneously rather than one-by-one.

Parameters

param_u	this vector holds all the numerical values for the first parameter where evaluation will tak place
param_v	this vector holds all the numerical values for the second parameter where evaluation will tak place
param_w	this vector holds all the numerical values for the third parameter where evaluation will tak place
points	upon function return, this vector holds all the evaluated points

29.487.4.44 void Go::SplineVolume::insertKnot (int *pardir,* double *apar*)

Insert a new knot in the knotvector of the given parameter direction

Parameters

pardir	parameter direction in which to insert the knots (u=0, v=1, w=2)
apar	the parameter value at which a new knot will be inserted

29.487.4.45 void Go::SplineVolume::insertKnot (int *pardir,* const std::vector< double > & *new_knots*)

Insert new knots in the knotvector of the given parameter direction

Parameters

pardir	parameter direction in which to insert the knots (u=0, v=1, w=2)
new_knots	a vector containing the parameter values of the new knots to insert.

29.487.4.46 virtual ClassType Go::SplineVolume::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.487.4.47 bool Go::SplineVolume::isDegenerate (int *which_sf*, int & *type*, bool & *b*, bool & *r*, bool & *t*, bool & *l*, double *tol*) const

Specify degeneracy

Parameters

which_sf	0=u_min, 1=u_max, 2=v_min, 3=v_max, 4=w_min, 5=w_max
type	0 - Not degenerate, 1 - surface degenerate in specified boundary, 2 - surface degenerate to line, 3 - surface degenerate to point
b	true if surface is degenerate along bottom curve (v=min for surface in parameterized
r	true if surface is degenerate along right curve
t	true if surface is degenerate along top curve
l	true if surface is degenerate along left curve
tol	Tolerance used in test

29.487.4.48 bool Go::SplineVolume::isLeftHanded ( )

Test if the volume is lefthanded. Returns false if volume does not lie in 3-dimensional space. The test is done by taking the XXX of the derivatives at the centre point. Assumes volume is not self intersecting, and has linearly independent derivatives at the centre.

29.487.4.49 virtual bool Go::SplineVolume::isSpline ( ) const [inline], [virtual]

Check if the volume is of type spline.

Reimplemented from Go::ParamVolume.

Definition at line 951 of file SplineVolume.h.

29.487.4.50 double Go::SplineVolume::knotSpan (int *pardir*, int *iknot*) const

Returns the size of the knot interval (knot[iknot],knot[iknot+1]) in the specified direction. An index outside the legal range will result in a zero knot span

29.487.4.51 void Go::SplineVolume::makeBernsteinKnots (int *pardir*)

Inserts knots in the specified knot vector, such that all knots have multiplicity order

Parameters

pardir	the parameter direction (0, 1, or 2)

29.487.4.52 virtual double Go::SplineVolume::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0, 1 or 2)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamVolume.

29.487.4.53 int Go::SplineVolume::numberOfPatches (int *pardir*) const

Returns the number of knot intervals in the specified knot vector.

Parameters

pardir	parameter direction

Returns

the number of knot intervals in the knotvector for the specified parameter direction

29.487.4.54 int Go::SplineVolume::numCoefs (int *pardir*) const [inline]

Query the number of control points along the specified parameter direction

Returns

the number of control points along the specified parameter direction

Definition at line 480 of file SplineVolume.h.

29.487.4.55 int Go::SplineVolume::numElem ( ) const [inline]

Query the number of elements in the SplineVolume.

Definition at line 497 of file SplineVolume.h.

29.487.4.56 int Go::SplineVolume::numElem (int *pardir*) const [inline]

Query the number of elements in one parameter direction of.

pardir = 0: u-direction, pardir = 1: vdirection, pardir = 2: wdirection

Definition at line 505 of file SplineVolume.h.

29.487.4.57 int Go::SplineVolume::order (int *pardir*) const [inline]

Query the order of the BsplineBasis for the specified parameter

Returns

the order of the BsplineBasis for the specified parameter

Definition at line 489 of file SplineVolume.h.

29.487.4.58 virtual const Array<double,6> Go::SplineVolume::parameterSpan ( ) const [virtual]

Return the parameter domain of the volume. This is an array containing the start and end parameter values. The spline's parameter i has its start value at the array position (2i) and its end parameter value at the array position (2i+1)

Returns

An array describing the parametric domain of the volume

Implements Go::ParamVolume.

29.487.4.59 virtual void Go::SplineVolume::point (Point & *pt,* double *upar,* double *vpar,* double *wpar*) const [virtual]

Evaluates the volume's position for a given parameter triple.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter
wpar	the third parameter

Implements Go::ParamVolume.

29.487.4.60 virtual void Go::SplineVolume::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, double *wpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, bool *w_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the volume's position and a certain number of derivatives for a given parameter triple.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function. Upon completion of the function, its first entry is the volume's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the volume tangents along the first, second and third parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dudw, dv2, dvdw, dw2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
wpar	the third parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
w_from_right	specify whether derivatives along the third parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamVolume.

29.487.4.61 void Go::SplineVolume::pointsGrid (int *numu*, int *numv*, int *numw*, std::vector< double >::iterator *basisvals_u*, std::vector< double >::iterator *basisvals_v*, std::vector< double >::iterator *basisvals_w*, std::vector< int >::iterator *knotinter_u*, std::vector< int >::iterator *knotinter_v*, std::vector< int >::iterator *knotinter_w*, int *derivs*, std::vector< double > & *points*) const

29.487.4.62 void Go::SplineVolume::raiseOrder (int *raise_u*, int *raise_v*, int *raise_w*)

Raise the order of the spline volume as indicated by parameters.

Parameters

raise_u	the order of the BsplineBasis associated with the first parameter will be raised this many times.
raise_v	the order of the BsplineBasis associated with the second parameter will be raised this many times.
raise_w	the order of the BsplineBasis associated with the third parameter will be raised this many times.

29.487.4.63 bool Go::SplineVolume::rational ( ) const [inline]

Query whether the volume is rational

Returns

'true' if the volume is rational, 'false' otherwise

Definition at line 514 of file SplineVolume.h.

29.487.4.64 std::vector<double>::iterator Go::SplineVolume::rcoefs_begin ( ) [inline]

Get an iterator to the start of the internal array of *rational* control points.

Returns

an (nonconst) iterator ro the start of the internal array of rational control points.

Definition at line 549 of file SplineVolume.h.

29.487.4.65 std::vector<double>::const_iterator Go::SplineVolume::rcoefs_begin ( ) const [inline]

Get a const iterator to the start of the internal array of *rational* control points.

Returns

a const iterator to the start of the internal array of rational control points

Definition at line 563 of file SplineVolume.h.

29.487.4.66 std::vector<double>::iterator Go::SplineVolume::rcoefs_end ( ) [inline]

Get an iterator to the one-past-end position of the internal array of *rational* control points.

Returns

an (nonconst) iterator to the start of the internal array of rational control points.

Definition at line 556 of file SplineVolume.h.

29.487.4.67 std::vector<double>::const_iterator Go::SplineVolume::rcoefs_end ( ) const [inline]

Get a const iterator to the one-past-end position of the internal array of *rational* control points.

Returns

a const iterator to the one-past-end position of the internal array of rational control points.

Definition at line 570 of file SplineVolume.h.

29.487.4.68 virtual void Go::SplineVolume::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.487.4.69 void Go::SplineVolume::removeKnot (int *pardir*, double *tpar*)

Remove a knot from the knotvector of the given parameter direction.

Parameters

pardir	the parameter direction (0, 1 or 2)
tpar	the parameter value of the knot to be removed

29.487.4.70 void Go::SplineVolume::replaceCoefficient (int *ix*, Point *coef*)

Replace one specified coefficient (local enumeration)

29.487.4.71 virtual void Go::SplineVolume::reverseParameterDirection (int *pardir*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

pardir	which parameter direction to reverse

Implements Go::ParamVolume.

29.487.4.72 void Go::SplineVolume::scale (double *fac*)

Scale the coefficients of the volume with a given factor.

29.487.4.73 void Go::SplineVolume::setParameterDomain (double *u1*, double *u2*, double *v1*, double *v2*, double *w1*, double *w2*)

Set the parameter domain to a given box

Parameters

u1	new min. value of first parameter span
u2	new max. value of first parameter span
v1	new min. value of second parameter span
v2	new max. value of second parameter span
w1	new min. value of third parameter span
w2	new max. value of third parameter span

29.487.4.74 std::vector<shared_ptr<SplineVolume> > Go::SplineVolume::split (std::vector< double > & *param*, int *pardir*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

29.487.4.75 virtual double Go::SplineVolume::startparam (int *i*) const [virtual]

Get the start value for the specified parameter direction.

Parameters

i	the parameter direction

Returns

the start value for the parameter direction given by the parameter pardir

29.487.4.76 SplineVolume* Go::SplineVolume::subVolume (double *from_upar*, double *from_vpar*, double *from_wpar*, double *to_upar*, double *to_vpar*, double *to_wpar*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

Get a SplineVolume which represents a part of 'this' SplineVolume

Parameters

from_upar	start value for u-parameter in the sub-volume to be generated
from_vpar	start value for v-parameter in the sub-volume to be generated
from_wpar	start value for w-parameter in the sub-volume to be generated
to_upar	end value for u-parameter in the sub-volume to be generated
to_vpar	end value for v-parameter in the sub-volume to be generated
to_wpar	end value for w-parameter in the sub-volume to be generated
fuzzy	tolerance used to determine whether given parameter values are located directly *knot* values.

29.487.4.77 void Go::SplineVolume::swap (SplineVolume & *other*)

quick swap of two SplineVolume objects with each other

29.487.4.78 virtual void Go::SplineVolume::swapParameterDirection (int *pardir1*, int *pardir2*) [virtual]

Swaps two parameter directions

Parameters

pardir1	One of the parameter directions (0, 1 or 2) to be swapped
pardir2	The other parameter direction (0, 1 or 2) to be swapped

Implements Go::ParamVolume.

29.487.4.79 virtual DirectionCone Go::SplineVolume::tangentCone (int *pardir*) const [virtual]

Creates a DirectionCone covering all tangents to this volume along a given parameter direction.

Parameters

pardir	if 1, the DirectionCone will be defined on basis of the volume's tangents along the first parameter direction. If 2, the second parameter direction will be used. If 3, the third parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this volume along the specified parameter direction.

Implements Go::ParamVolume.

29.487.4.80 virtual void Go::SplineVolume::translate (const Point & *vec*) [virtual]

Translate.

Implements Go::ParamVolume.

29.487.4.81 int Go::SplineVolume::volumePeriodicity (int *pardir*, double *epsilon*) const

Check if a volume is open, closed or parametric in a given parameter direction

Parameters

pardir	The parameter direction in which to check periodicity
epsilon	Tolerance used in computation \ return 0 - Open, i.e. multiple knots in end parameters and not closed 1 - Closed, multiple knots in end parameters $>$ 1 - Periodic knot vector with position and (result-1) derivative equal across the seem

29.487.4.82 virtual void Go::SplineVolume::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

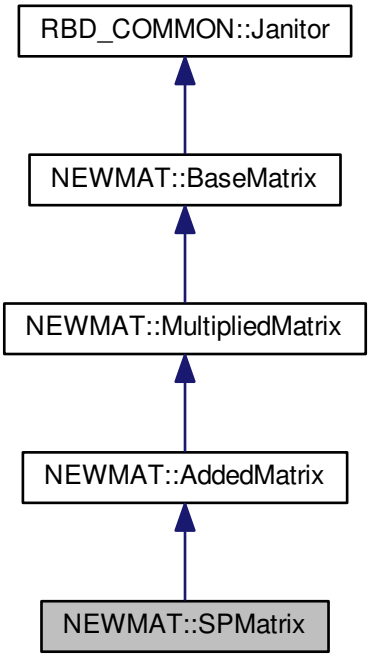
The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/SplineVolume.h

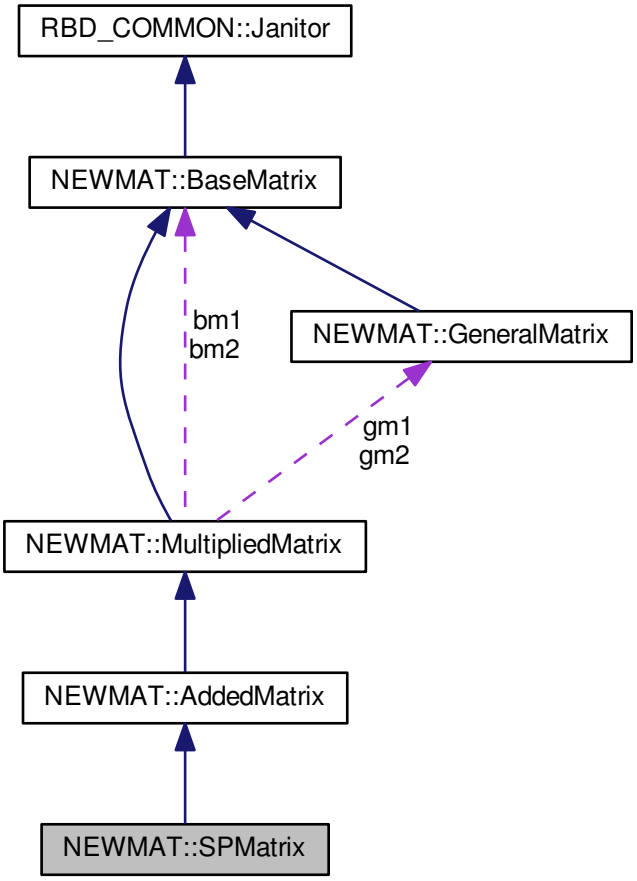
29.488 NEWMAT::SPMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::SPMatrix:



Collaboration diagram for NEWMAT::SPMatrix:



Public Member Functions

- ~SPMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Protected Member Functions

- SPMatrix (const BaseMatrix *bm1x, const BaseMatrix *bm2x)

Friends

- class BaseMatrix
- class GeneralMatrix
- class GenericMatrix
- SPMatrix SP (const BaseMatrix &, const BaseMatrix &)

Additional Inherited Members

29.488.1 Detailed Description

Definition at line 1210 of file newmat.h.

29.488.2 Constructor & Destructor Documentation

29.488.2.1 NEWMAT::SPMatrix::SPMatrix (const BaseMatrix * *bm1x*, const BaseMatrix * *bm2x*) [inline], [protected]

Definition at line 1213 of file newmat.h.

29.488.2.2 NEWMAT::SPMatrix::~SPMatrix ( ) [inline]

Definition at line 1220 of file newmat.h.

29.488.3 Member Function Documentation

29.488.3.1 MatrixBandWidth SPMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::AddedMatrix.

Definition at line 421 of file newmat4.cpp.

29.488.3.2 GeneralMatrix * SPMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::AddedMatrix.

Definition at line 681 of file newmat7.cpp.

29.488.4 Friends And Related Function Documentation

29.488.4.1 friend class BaseMatrix [friend]

Definition at line 1216 of file newmat.h.

29.488.4.2 friend class GeneralMatrix [friend]

Definition at line 1217 of file newmat.h.

29.488.4.3 friend class GenericMatrix [friend]

Definition at line 1218 of file newmat.h.

29.488.4.4 SPMatrix SP (const BaseMatrix & , const BaseMatrix &) [friend]

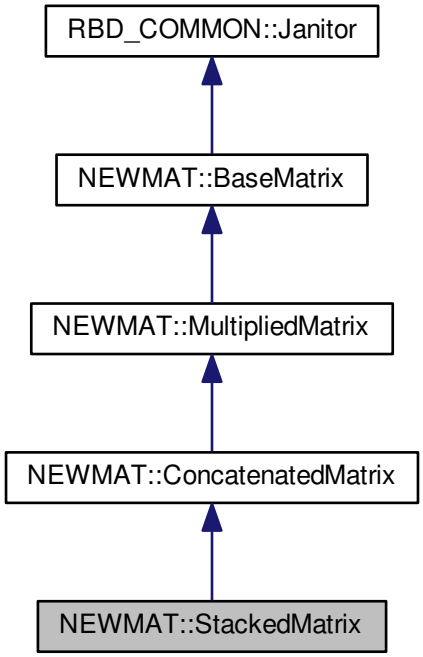
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp

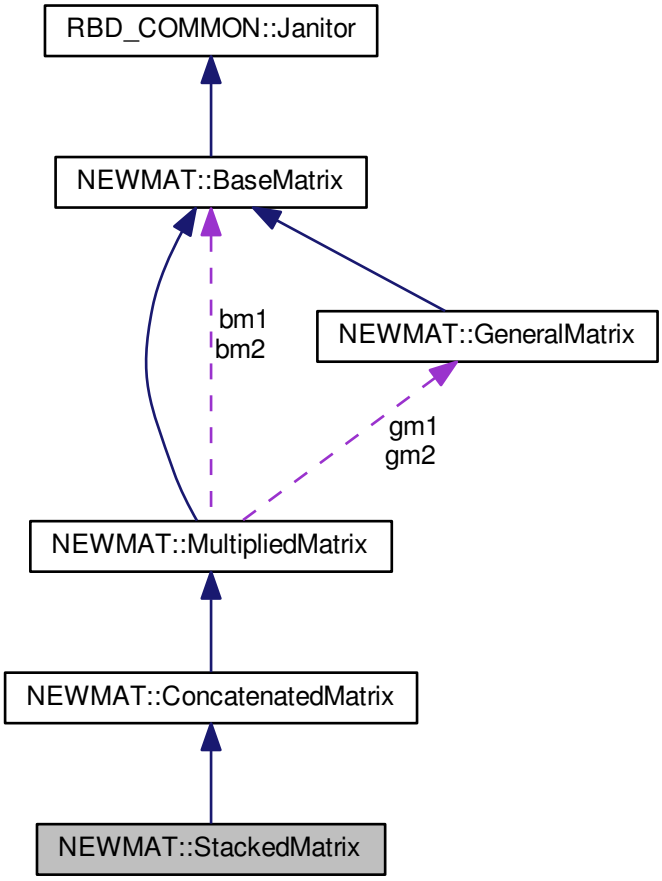
29.489 NEWMAT::StackedMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::StackedMatrix:



Collaboration diagram for NEWMAT::StackedMatrix:



Public Member Functions

- ~StackedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)

Protected Member Functions

- StackedMatrix (const BaseMatrix *bm1x, const BaseMatrix *bm2x)

Friends

- class BaseMatrix
- class GeneralMatrix
- class GenericMatrix

Additional Inherited Members

29.489.1 Detailed Description

Definition at line 1270 of file newmat.h.

29.489.2 Constructor & Destructor Documentation

29.489.2.1 NEWMAT::StackedMatrix::StackedMatrix (const BaseMatrix * *bm1x*, const BaseMatrix * *bm2x*) [inline], [protected]

Definition at line 1273 of file newmat.h.

29.489.2.2 NEWMAT::StackedMatrix::~StackedMatrix ( ) [inline]

Definition at line 1280 of file newmat.h.

29.489.3 Member Function Documentation

29.489.3.1 GeneralMatrix * StackedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::ConcatenatedMatrix.

Definition at line 835 of file newmat7.cpp.

29.489.4 Friends And Related Function Documentation

29.489.4.1 friend class BaseMatrix [friend]

Definition at line 1276 of file newmat.h.

29.489.4.2 friend class GeneralMatrix [friend]

Definition at line 1277 of file newmat.h.

29.489.4.3 friend class GenericMatrix [friend]

Definition at line 1278 of file newmat.h.

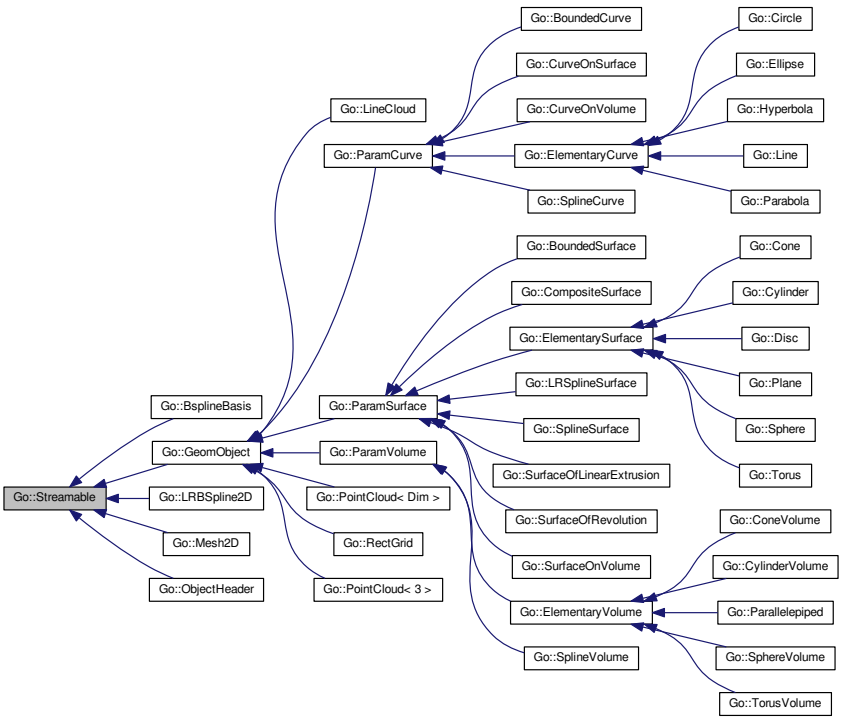
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat7.cpp

29.490 Go::Streamable Class Reference

`#include <Streamable.h>`

Inheritance diagram for Go::Streamable:



Classes

- class EofException

Public Member Functions

- virtual ~Streamable ()
- virtual void read (std::istream &is)=0
- virtual void write (std::ostream &os) const =0

29.490.1 Detailed Description

Base class for streamable objects, i.e., objects which can be read from and written to a stream.

Definition at line 56 of file Streamable.h.

29.490.2 Constructor & Destructor Documentation

29.490.2.1 virtual Go::Streamable::~Streamable ( ) [virtual]

29.490.3 Member Function Documentation

29.490.3.1 virtual void Go::Streamable::read (std::istream & *is*) [pure virtual]

read object from stream

Parameters

is	stream from which object is read

Implemented in Go::SplineVolume, Go::SplineSurface, Go::LRSplineSurface, Go::PointCloud< Dim >, Go::PointCloud< 3 >, Go::SplineCurve, Go::BoundedSurface, Go::CurveOnSurface, Go::BsplineBasis, Go::LRBSpline2D, Go::SurfaceOnVolume, Go::Disc, Go::CurveOnVolume, Go::ObjectHeader, Go::Torus, Go::RectGrid, Go::SurfaceOfRevolution, Go::Mesh2D, Go::Plane, Go::Cone, Go::Cylinder, Go::LineCloud, Go::BoundedCurve, Go::Sphere, Go::TorusVolume, Go::ConeVolume, Go::CylinderVolume, Go::SphereVolume, Go::Line, Go::Parallelepiped, Go::Circle, Go::Hyperbola, Go::Parabola, Go::Ellipse, Go::SurfaceOfLinearExtrusion, and Go::CompositeSurface.

29.490.3.2 virtual void Go::Streamable::write (std::ostream & *os*) const [pure virtual]

write object to stream

Parameters

os	stream to which object is written

Implemented in Go::SplineVolume, Go::SplineSurface, Go::PointCloud< Dim >, Go::PointCloud< 3 >, Go::LRSplineSurface, Go::SplineCurve, Go::BoundedSurface, Go::CurveOnSurface, Go::BsplineBasis, Go::SurfaceOnVolume, Go::LRBSpline2D, Go::Disc, Go::CurveOnVolume, Go::ObjectHeader, Go::Torus, Go::RectGrid, Go::SurfaceOfRevolution, Go::Mesh2D, Go::Plane, Go::Cone, Go::Cylinder, Go::LineCloud, Go::BoundedCurve, Go::Sphere, Go::TorusVolume, Go::ConeVolume, Go::CylinderVolume, Go::SphereVolume, Go::Line, Go::Parallelepiped, Go::Circle, Go::Hyperbola, Go::Parabola, Go::CompositeSurface, Go::Ellipse, and Go::SurfaceOfLinearExtrusion.

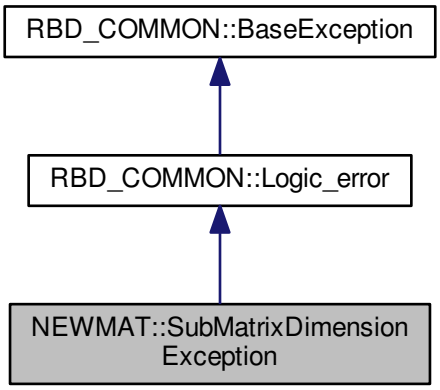
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/Streamable.h

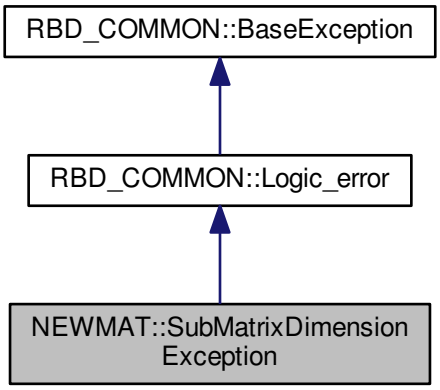
29.491 NEWMAT::SubMatrixDimensionException Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::SubMatrixDimensionException:



Collaboration diagram for NEWMAT::SubMatrixDimensionException:



Public Member Functions

- SubMatrixDimensionException ()

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.491.1 Detailed Description

Definition at line 1662 of file newmat.h.

29.491.2 Constructor & Destructor Documentation

29.491.2.1 SubMatrixDimensionException::SubMatrixDimensionException ( )

Definition at line 152 of file newmatex.cpp.

29.491.3 Member Data Documentation

29.491.3.1 unsigned long SubMatrixDimensionException::Select [static]

Definition at line 1665 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

29.492 Go::boxStructuring::SubSurfaceBoundingBox Class Reference

`#include <ClosestPointUtils.h>`

Public Member Functions

- SubSurfaceBoundingBox (shared_ptr< SurfaceData > surface_data, int pos_u, int pos_v, BoundingBox box, shared_ptr< RectDomain > par_domain)
- void setInside (bool inside)

  Set whether we know for sure this segment is entirely inside the parameter domain.
- bool inside () const

  Tell if the entire segment is known to be inside the parameter domain.
- bool inside (double par_u, double par_v) const
- int pos_u () const

  Get the segment position in the first direction in segment mesh of the surface.
- int pos_v () const

  Get the segment position in the second direction in segment mesh of the surface.
- BoundingBox box () const

  Get the geometry space bounding box of the image of the segment.
- shared_ptr< SurfaceData > surface_data () const

  Get the structure data of the surface.
- shared_ptr< RectDomain > par_domain () const

  Get the domain of the segment in the surface parameter domain.
- void add_polygon_corners (double par_u, double par_v)
- bool has_polygon () const

  Tell if any of the generated polygon inside the parameter domain hits this segment.
- int size_polygon () const

  Get the number of polygon points.
- void remove_polygon ()

  Remove the polygon information.

29.492.1 Detailed Description

Class for the preprocessed data on a specific segment on the tensor mesh sub structure on the parameter space of a surface in the surface model

Definition at line 165 of file ClosestPointUtils.h.

29.492.2 Constructor & Destructor Documentation

29.492.2.1 Go::boxStructuring::SubSurfaceBoundingBox::SubSurfaceBoundingBox (shared_ptr< SurfaceData > *surface_data,* int *pos_u,* int *pos_v,* BoundingBox *box,* shared_ptr< RectDomain > *par_domain*) [inline]

Constructor

- surface_data is the surface data of the surface for this segment
- pos_u and pos_v are the positions of this segment in the segment tensor mesh of the surface
- box is the bounding box in the geometry space of the surface
- par_domain holds the parameter domain of the segment (the bounding box in the parameter space)

Definition at line 174 of file ClosestPointUtils.h.

29.492.3 Member Function Documentation

29.492.3.1 void Go::boxStructuring::SubSurfaceBoundingBox::add_polygon_corners (double *par_u,* double *par_v*) [inline]

Add a point from the generated polygon inside the paramter domain of the surface The point is either inside or on the boudnary of the segment

Definition at line 296 of file ClosestPointUtils.h.

29.492.3.2 BoundingBox Go::boxStructuring::SubSurfaceBoundingBox::box ( ) const [inline]

Get the geometry space bounding box of the image of the segment.

Definition at line 277 of file ClosestPointUtils.h.

29.492.3.3 bool Go::boxStructuring::SubSurfaceBoundingBox::has_polygon ( ) const [inline]

Tell if any of the generated polygon inside the parameter domain hits this segment.

Definition at line 303 of file ClosestPointUtils.h.

29.492.3.4 bool Go::boxStructuring::SubSurfaceBoundingBox::inside ( ) const [inline]

Tell if the entire segment is known to be inside the parameter domain.

Definition at line 186 of file ClosestPointUtils.h.

29.492.3.5 bool Go::boxStructuring::SubSurfaceBoundingBox::inside (double *par_u,* double *par_v*) const [inline]

Tell if a specific point is guaranteed to be inside the parameter domain, by testing against an inside polygon of the entire parameter domain. Should always return false if the point is outside Should in most cases return true if the point is inside

Definition at line 195 of file ClosestPointUtils.h.

29.492.3.6 shared_ptr<RectDomain> Go::boxStructuring::SubSurfaceBoundingBox::par_domain ( ) const [inline]

Get the domain of the segment in the surface parameter domain.

Definition at line 289 of file ClosestPointUtils.h.

29.492.3.7 int Go::boxStructuring::SubSurfaceBoundingBox::pos_u ( ) const [inline]

Get the segment position in the first direction in segment mesh of the surface.

Definition at line 265 of file ClosestPointUtils.h.

29.492.3.8 int Go::boxStructuring::SubSurfaceBoundingBox::pos_v ( ) const [inline]

Get the segment position in the second direction in segment mesh of the surface.

Definition at line 271 of file ClosestPointUtils.h.

29.492.3.9 void Go::boxStructuring::SubSurfaceBoundingBox::remove_polygon ( ) [inline]

Remove the polygon information.

Definition at line 315 of file ClosestPointUtils.h.

29.492.3.10 void Go::boxStructuring::SubSurfaceBoundingBox::setInside (bool *inside*) [inline]

Set whether we know for sure this segment is entirely inside the parameter domain.

Definition at line 180 of file ClosestPointUtils.h.

29.492.3.11 int Go::boxStructuring::SubSurfaceBoundingBox::size_polygon ( ) const [inline]

Get the number of polygon points.

Definition at line 309 of file ClosestPointUtils.h.

29.492.3.12 shared_ptr<SurfaceData> Go::boxStructuring::SubSurfaceBoundingBox::surface_data ( ) const [inline]

Get the structure data of the surface.

Definition at line 283 of file ClosestPointUtils.h.

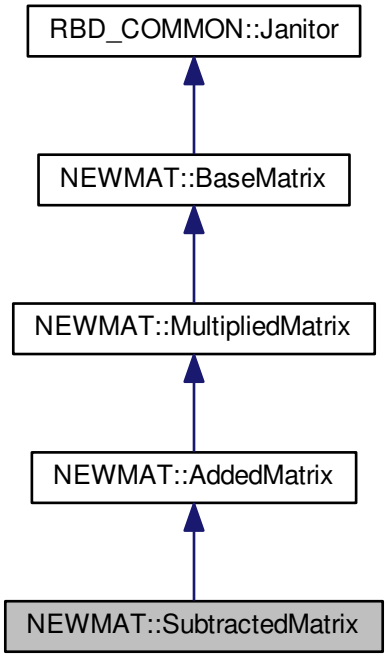
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/ClosestPointUtils.h

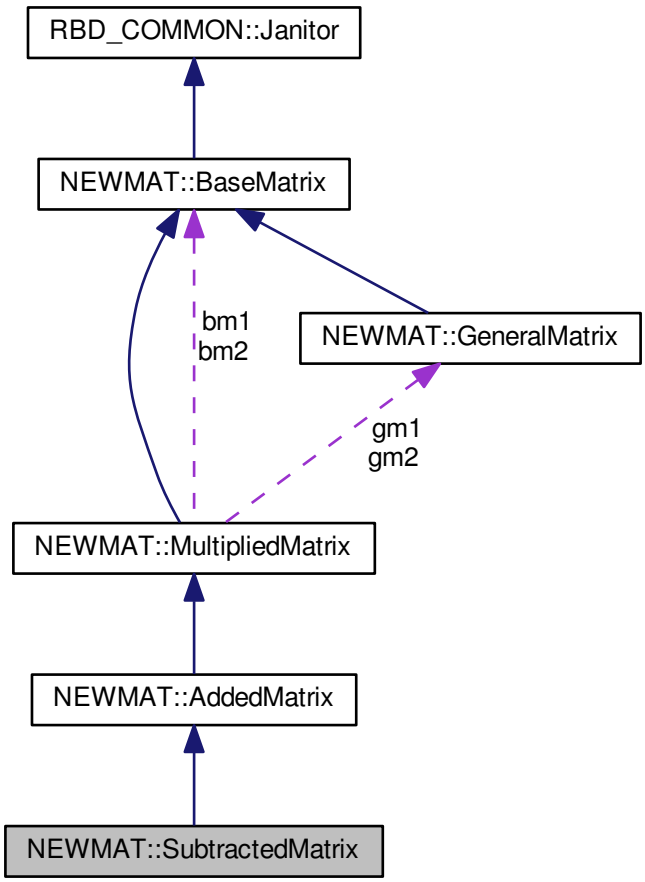
29.493 NEWMAT::SubtractedMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::SubtractedMatrix:



Collaboration diagram for NEWMAT::SubtractedMatrix:



Public Member Functions

- ~SubtractedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)

Friends

- class BaseMatrix
- class GeneralMatrix
- class GenericMatrix

Additional Inherited Members

29.493.1 Detailed Description

Definition at line 1298 of file newmat.h.

29.493.2 Constructor & Destructor Documentation

29.493.2.1 NEWMAT::SubtractedMatrix::~SubtractedMatrix ( ) [inline]

Definition at line 1306 of file newmat.h.

29.493.3 Member Function Documentation

29.493.3.1 GeneralMatrix * SubtractedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::AddedMatrix.

Definition at line 594 of file newmat7.cpp.

29.493.4 Friends And Related Function Documentation

29.493.4.1 friend class BaseMatrix [friend]

Definition at line 1302 of file newmat.h.

29.493.4.2 friend class GeneralMatrix [friend]

Definition at line 1303 of file newmat.h.

29.493.4.3 friend class GenericMatrix [friend]

Definition at line 1304 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat7.cpp

29.494 Go::LRSplineUtils::support_compare Struct Reference

`#include <LRSplineUtils.h>`

Public Member Functions

- bool operator() (const LRBSpline2D *b1, const LRBSpline2D *b2) const

29.494.1 Detailed Description

Definition at line 158 of file LRSplineUtils.h.

29.494.2 Member Function Documentation

29.494.2.1 bool Go::LRSplineUtils::support_compare::operator() (const LRBSpline2D * *b1*, const LRBSpline2D * *b2*) const [inline]

Definition at line 161 of file LRSplineUtils.h.

The documentation for this struct was generated from the following file:

- lrsplines2D/include/GoTools/lrsplines2D/LRSplineUtils.h

29.495 Go::SurfaceAssembly Class Reference

`#include <SurfaceAssembly.h>`

Public Member Functions

- SurfaceAssembly (shared_ptr< ParamSurfaceInt > surf, std::vector< std::pair< double, int > > u_div, std::vector< std::pair< double, int > > v_div, std::vector< RectDomain > sing_domain, double rel_par_res)
  Constructor.
- ~SurfaceAssembly ()
  Destructor.
- void resetSubIndex (int idx=0)
- void resetAssemblyIndex ()
- int getNmbSubSurface ()
- bool getNextSubSurface (shared_ptr< ParamSurfaceInt > &sub_sf, int &idx, int &sing_idx)
- bool getNextAssembly (shared_ptr< ParamSurfaceInt > &assembly, int &idx, bool &potential_sing)
- bool subSfNeighbour (int idx1, int idx2)
- bool doTouch (int idx1, int idx2)
- bool touchAtSingularity (int idx1, int idx2)
- bool isInPrevAssembly (int idx1, int idx2)
- bool isInFirstAssembly (shared_ptr< ParamSurfaceInt > sub_srf)
- int getSubSurfaceIndex (shared_ptr< ParamSurfaceInt > sub_srf, bool &at_end)
- std::vector< std::pair< double, int > > getUdiv ()
- std::vector< std::pair< double, int > > getVdiv ()

29.495.1 Detailed Description

Collection of sub surfaces used in computation of surface self intersections

Definition at line 50 of file SurfaceAssembly.h.

29.495.2 Constructor & Destructor Documentation

29.495.2.1 Go::SurfaceAssembly::SurfaceAssembly (shared_ptr< ParamSurfaceInt > *surf,* std::vector< std::pair< double, int > > *u_div,* std::vector< std::pair< double, int > > *v_div,* std::vector< RectDomain > *sing_domain,* double *rel_par_res*)

Constructor.

29.495.2.2 Go::SurfaceAssembly::~SurfaceAssembly ( )

Destructor.

29.495.3 Member Function Documentation

29.495.3.1 bool Go::SurfaceAssembly::doTouch (int *idx1,* int *idx2*)

29.495.3.2 bool Go::SurfaceAssembly::getNextAssembly (shared_ptr< ParamSurfaceInt > & *assembly,* int & *idx,* bool & *potential_sing*)

29.495.3.3 bool Go::SurfaceAssembly::getNextSubSurface (shared_ptr< ParamSurfaceInt > & *sub_sf,* int & *idx,* int & *sing_idx*)

29.495.3.4 int Go::SurfaceAssembly::getNmbSubSurface ( )

29.495.3.5 int Go::SurfaceAssembly::getSubSurfaceIndex (shared_ptr< ParamSurfaceInt > *sub_srf,* bool & *at_end*)

29.495.3.6 std::vector<std::pair<double,int> > Go::SurfaceAssembly::getUdiv ( ) [inline]

Definition at line 95 of file SurfaceAssembly.h.

29.495.3.7 std::vector<std::pair<double,int> > Go::SurfaceAssembly::getVdiv ( ) [inline]

Definition at line 100 of file SurfaceAssembly.h.

29.495.3.8 bool Go::SurfaceAssembly::isInFirstAssembly (shared_ptr< ParamSurfaceInt > *sub_srf*)

29.495.3.9 bool Go::SurfaceAssembly::isInPrevAssembly (int *idx1,* int *idx2*)

29.495.3.10 void Go::SurfaceAssembly::resetAssemblyIndex ( ) [inline]

Definition at line 67 of file SurfaceAssembly.h.

29.495.3.11 void Go::SurfaceAssembly::resetSubIndex (int *idx* = 0) [inline]

Definition at line 64 of file SurfaceAssembly.h.

29.495.3.12 bool Go::SurfaceAssembly::subSfNeighbour (int *idx1*, int *idx2*)

This function makes a check on whether two sub surfaces are neighbours, but if the surfaces meet at a singularity they are NOT classified as neighbours

29.495.3.13 bool Go::SurfaceAssembly::touchAtSingularity (int *idx1*, int *idx2*)

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/SurfaceAssembly.h

29.496 Go::boxStructuring::SurfaceData Class Reference

`#include <ClosestPointUtils.h>`

Public Member Functions

- SurfaceData (shared_ptr< ParamSurface > surface)
  Constructor.
- void setSegments (int segs_u, int segs_v)
  Set the number of segments in the mesh structure in both parameter directions.
- int segs_u () const
  Get the number of segments in first parameter direction.
- int segs_v () const
  Get the number of segments in second parameter direction.
- void setIndex (int index)
  Set the index of this surface in the BoundingBoxStructure instance.
- int index () const
  Get the index of this surface in the BoundingBoxStructure instance.
- void setSurfaceCopies (int nmb_copies)
  Set number of surface copies.
- shared_ptr< ParamSurface > surface (int idx) const
  Get a specific copy of the surface.
- void add_inside_point (Point pt)
  Add internal surface point.
- std::vector< Point > inside_points () const
  Get the internal surface points.

29.496.1 Detailed Description

Class for preprocessed data on a specific surface in the model The surface parameter domain is split into a tensor mesh of sub segments. The splitting is neither required to be regular nor follow knot vector lines (when the underlying surface is a spline surface), but the current code creating the mesh structure chooses regular splittings for elementary surfaces and internal knot vector values for spline surfaces. For trimmed surfaces (BoundedSurface instances), the structure is created on the underlying surface, thus a segment might be either entirely inside the parameter domain, interely outside the parameter domain, or split by the boundary

Definition at line 70 of file ClosestPointUtils.h.

29.496.2 Constructor & Destructor Documentation

29.496.2.1 Go::boxStructuring::SurfaceData::SurfaceData (shared_ptr< ParamSurface > *surface*) [inline]

Constructor.

Definition at line 76 of file ClosestPointUtils.h.

29.496.3 Member Function Documentation

29.496.3.1 void Go::boxStructuring::SurfaceData::add_inside_point (Point *pt*) [inline]

Add internal surface point.

Definition at line 130 of file ClosestPointUtils.h.

29.496.3.2 int Go::boxStructuring::SurfaceData::index ( ) const [inline]

Get the index of this surface in the BoundingBoxStructure instance.

Definition at line 107 of file ClosestPointUtils.h.

29.496.3.3 std::vector<Point> Go::boxStructuring::SurfaceData::inside_points ( ) const [inline]

Get the internal surface points.

Definition at line 136 of file ClosestPointUtils.h.

29.496.3.4 int Go::boxStructuring::SurfaceData::segs_u ( ) const [inline]

Get the number of segments in first parameter direction.

Definition at line 89 of file ClosestPointUtils.h.

29.496.3.5 int Go::boxStructuring::SurfaceData::segs_v ( ) const [inline]

Get the number of segments in second parameter direction.

Definition at line 95 of file ClosestPointUtils.h.

29.496.3.6 void Go::boxStructuring::SurfaceData::setIndex (int *index*) [inline]

Set the index of this surface in the BoundingBoxStructure instance.

Definition at line 101 of file ClosestPointUtils.h.

29.496.3.7 void Go::boxStructuring::SurfaceData::setSegments (int *segs_u*, int *segs_v*) [inline]

Set the number of segments in the mesh structure in both parameter directions.

Definition at line 82 of file ClosestPointUtils.h.

29.496.3.8 void Go::boxStructuring::SurfaceData::setSurfaceCopies (int *nmb_copies*) [inline]

Set number of surface copies.

Definition at line 113 of file ClosestPointUtils.h.

29.496.3.9 shared_ptr<ParamSurface> Go::boxStructuring::SurfaceData::surface (int *idx*) const [inline]

Get a specific copy of the surface.

Definition at line 124 of file ClosestPointUtils.h.

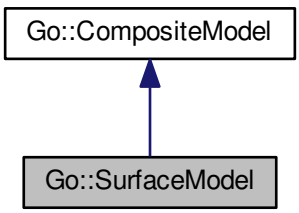
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/utils/ClosestPointUtils.h

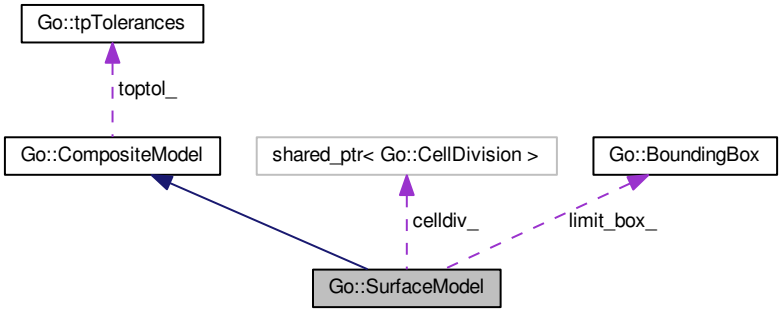
29.497 Go::SurfaceModel Class Reference

`#include <SurfaceModel.h>`

Inheritance diagram for Go::SurfaceModel:



Collaboration diagram for Go::SurfaceModel:



Public Member Functions

- SurfaceModel (double approxtol, double gap, double neighbour, double kink, double bend, std::vector< shared_ptr< ftSurface > > &faces, bool adjacency_set=false)
- SurfaceModel (std::vector< shared_ptr< ftSurface > > &faces, double space_epsilon, double kink=0.01, bool adjacency_set=false)
- SurfaceModel (double approxtol, double gap, double neighbour, double kink, double bend, std::vector< shared_ptr< ParamSurface > > &surfaces)
- SurfaceModel (const SurfaceModel &sm)
- virtual ~SurfaceModel ()

  Destructor.
- void setTolerances (double approxtol, double gap, double kink)
- void setTolerances (double approxtol, double gap, double neighbour, double kink, double bend)
- virtual SurfaceModel * asSurfaceModel ()
- virtual SurfaceModel * clone () const
- virtual int nmbEntities () const
- shared_ptr< ftSurface > getFace (int idx) const
- std::vector< shared_ptr< ftSurface > > allFaces () const
- shared_ptr< ParamSurface > getSurface (int idx) const
- shared_ptr< SplineSurface > getSplineSurface (int idx) const
- int getIndex (shared_ptr< ftSurface > face) const
- int getIndex (ftSurface *face) const
- int getIndex (ParamSurface *surf) const
- shared_ptr< ftSurface > fetchAsSharedPtr (ftFaceBase *face) const
- void swapFaces (int idx1, int idx2)
- void initializeCelldiv ()

  Creates the CellDivision object.
- const ftCell & getCell (int i) const
- void limitVolume (double xmin, double xmax, double ymin, double ymax, double zmin, double zmax)

  Set limiting volume to mark area of interest.
- bool pointWithinLimits (const ftPoint &point)
- bool pointWithinLimits (const Point &point)
- virtual void evaluate (int idx, double par[], Point &pnt) const
- virtual void evaluate (int idx, double par[], int nder, std::vector< Point > &der) const
- virtual void closestPoint (Point &pnt, Point &clo_pnt, int &idx, double clo_par[], double &dist)
- ftPoint closestPoint (const Point &point)

- ftPoint closestPoint (const ftPoint &point)
- virtual void extremalPoint (Point &dir, Point &ext_pnt, int &idx, double ext_par[])
- virtual BoundingBox boundingBox ()
- virtual BoundingBox boundingBox (int idx) const
- virtual bool isDegenerate (int idx) const
- bool isDegenerate (int idx, bool &b, bool &t, bool &l, bool &r) const
- virtual shared_ptr< IntResultsModel > intersect_plane (const ftPlane &plane)
- virtual shared_ptr< IntResultsModel > intersect (const ftLine &line)
- void intersect (const ftLine &line, ftCurve &int_curves, std::vector< ftPoint > &int_points)
- bool hit (const Point &point, const Point &dir, ftPoint &result)
- ftCurve intersect (const ftPlane &plane)
- void booleanIntersect (const ftPlane &plane)
- shared_ptr< SurfaceModel > trimWithPlane (const ftPlane &plane)
- std::vector< ftPoint > intersect (const ftLine &line, std::vector< bool > &represent_segment)
- std::vector< std::pair< ftPoint, double > > intersect (shared_ptr< SplineCurve > crv, std::vector< bool > &represent_segment)
- std::vector< shared_ptr< SurfaceModel > > splitSurfaceModels (shared_ptr< SurfaceModel > &model2)
- void splitSurfaceModel (std::vector< shared_ptr< ftSurface > > &faces, Body *model2, std::vector< std::vector< shared_ptr< ParamSurface > > > &result)
- bool doIntersect (shared_ptr< SplineSurface > sf)

  Check if a spline surface intersects the current surface model.
- virtual double curvature (int idx, double *par) const
- virtual void turn (int idx)
- virtual void turn ()
- void append (shared_ptr< ftSurface > face, bool set_twin=true, bool adjacency_set=false, bool remove_twins=false, int idx=-1)
- void append (std::vector< shared_ptr< ftSurface > > faces, bool adjacency_set=false, bool set_twin=true)
- void append (shared_ptr< SurfaceModel > anotherModel)
- bool removeFace (shared_ptr< ftSurface > face)
- void updateFaceTopology (shared_ptr< ftSurface > face)
- virtual void tesselate (std::vector< shared_ptr< GeneralMesh > > &meshes) const
- void tesselate (int uv_res, std::vector< shared_ptr< GeneralMesh > > &meshes) const
- virtual void tesselate (int resolution[], std::vector< shared_ptr< GeneralMesh > > &meshes) const
- virtual void tesselate (double density, std::vector< shared_ptr< GeneralMesh > > &meshes) const
- void tesselate (const std::vector< shared_ptr< ftFaceBase > > &faces, int uv_res, std::vector< shared_ptr< GeneralMesh > > &meshes) const
- void tesselate (const std::vector< shared_ptr< ftFaceBase > > &faces, int resolution[], std::vector< shared_ptr< GeneralMesh > > &meshes) const
- void tesselate (const std::vector< shared_ptr< ftFaceBase > > &faces, double density, std::vector< shared_ptr< GeneralMesh > > &meshes) const
- virtual void tesselatedCtrPolygon (std::vector< shared_ptr< LineCloud > > &ctr_pol) const
- void tesselatedCtrPolygon (const std::vector< shared_ptr< ftFaceBase > > &faces, std::vector< shared_ptr< LineCloud > > &ctr_pol) const
- void fetchSamplePoints (double density, std::vector< SamplePointData > &sample_points) const
- void setBoundaryCurves ()

  Set the elements in boundary_curves_ (based on top_table_).
- ftMessage buildTopology (int first_idx=0, bool set_twin_face_info=true)
- ftMessage setTopology ()
- void setVertexIdentity ()

  Add information about faces at the boundary meeting only in vertices.
- void setTwinFaceInfo ()

  Add information about twin faces.
- bool isClosed () const
- int nmbBoundaries () const

- ftCurve getBoundary (int whichbound)
- ftCurve getGaps ()
- void getGaps (std::vector< ftEdge * > &gaps)
- ftCurve getKinks ()
- void getKinks (std::vector< ftEdge * > &kinks)
- ftCurve getG1Disconts ()
- void getCorners (std::vector< ftEdge * > &corners)
- ftSurface * getSurface2 (int index) const
- std::vector< shared_ptr< SurfaceModel > > getConnectedModels () const
- void getInconsistentFacePairs (std::vector< std::pair< ftFaceBase *, ftFaceBase * > > &faces)
- void getOverlappingEdges (double tol, std::vector< std::pair< shared_ptr< ftEdgeBase >, shared_ptr< ftEdgeBase > > > &edges)
- shared_ptr< ftPointSet > triangulate (double density) const
- void getOverlappingFaces (double tol, std::vector< std::pair< ftSurface *, ftSurface * > > &faces)
- void getAllVertices (std::vector< shared_ptr< Vertex > > &vertices) const
- void getBoundaryVertices (std::vector< shared_ptr< Vertex > > &vertices) const
- std::vector< shared_ptr< ftEdge > > getBoundaryEdges () const
- std::vector< shared_ptr< ftEdge > > getBoundaryEdges (int boundary_idx) const
- std::vector< shared_ptr< ftEdge > > getUniqueInnerEdges () const
- Body * getBody ()

  Return body (if any)
- double getApproximationTol () const
- bool simplifyTrimLoops (double &max_dist)
- bool isAxisRotational (Point &centre, Point &axis, Point &vec, double &angle, double &min_ang)
- bool isLinearSwept (Point &pnt, Point &axis, double &len)
- std::vector< shared_ptr< ftSurface > > facesInPlane (Point &pnt, Point &axis)

  Fetch all planar faces lying in a specified plane.
- bool allSplines () const
- bool isCornerToCorner () const
- void makeCornerToCorner ()
- void makeCommonSplineSpaces ()

  Ensure that the blocks in the model has got common spline spaces.
- void enforceCoLinearCoefs ()
- void regularizeTwin (ftSurface *face, std::vector< shared_ptr< ftSurface > > &twinset)
- shared_ptr< ftSurface > mergeFaces (ftSurface *face1, int pardir1, double parval1, bool atstart1, ftSurface *face2, int pardir2, double parval2, bool atstart2, std::pair< Point, Point > co_par1, std::pair< Point, Point > co_par2, std::vector< Point > &seam_joints)
- shared_ptr< ftSurface > mergeSeamFaces (ftSurface *face1, ftSurface *face2, int pardir, std::vector< Point > &seam_joints)
- shared_ptr< ftSurface > mergeSeamCrvFaces (ftSurface *face1, ftSurface *face2, std::vector< Point > &seam_joints)
- void replaceRegularSurfaces ()
- shared_ptr< ftSurface > replaceRegularSurface (ftSurface *face, bool only_corner=false)
- void simplifyShell ()
- shared_ptr< SplineSurface > approxFaceSet (double &error, int degree=3)
- bool checkShellTopology ()

  Debug. Check topology.

Protected Member Functions

- SurfaceModel (double approxtol, double gap, double neighbour, double kink, double bend)
- void addSegment (ftCurve &cv, ftEdgeBase *edge, ftCurveType ty)

Protected Attributes

- double approxtol_
- double tol2d_
- std::vector< shared_ptr< ftFaceBase > > faces_
- std::vector< std::vector< shared_ptr< Loop > > > boundary_curves_
- shared_ptr< CellDivision > celldiv_
- std::vector< bool > face_checked_
- int highest_face_checked_
- BoundingBox limit_box_
- std::vector< std::pair< ftFaceBase *, ftFaceBase * > > inconsistent_orientation_

29.497.1 Detailed Description

A surface set or shell including topological information

Definition at line 81 of file SurfaceModel.h.

29.497.2 Constructor & Destructor Documentation

29.497.2.1 Go::SurfaceModel::SurfaceModel (double *approxtol*, double *gap*, double *neighbour*, double *kink*, double *bend*, std::vector< shared_ptr< ftSurface > > & *faces*, bool *adjacency_set* = false)

Constructor taking a vector of faces

Parameters

approxtol	Approximation error tolerance.
gap	If the distance between two points are less than 'gap' they are viewed as identical.
neighbour	Maximum distance between surfaces viewed as adjacent.
kink	If two adjacent surfaces meet with an angle less than 'kink', they are seen as G1 continous. (angles in radians)
bend	If two surfaces meet along a common boundary and corresponding surface normals form an angle which is larger than 'bend', there is an intentional sharp edge between the surfaces.(angles in radians)
faces	A vector of faces.
adjacency_set	True if the application knows that twin information between edges is set.

29.497.2.2 Go::SurfaceModel::SurfaceModel (std::vector< shared_ptr< ftSurface > > & *faces*, double *space_epsilon*, double *kink* = 0.01, bool *adjacency_set* = false)

Constructor taking a vector of faces.

Parameters

faces	A vector of faces.
space_epsilon	
kink	
adjacency_set	

29.497.2.3 Go::SurfaceModel::SurfaceModel (double *approxtol,* double *gap,* double *neighbour,* double *kink,* double *bend,* std::vector< shared_ptr< ParamSurface > > & *surfaces*)

Constructor taking a vector of parametric surfaces

Parameters

approxtol	Approximation error tolerance. Not used.
gap	If the distance between two points is less than 'gap' they are viewed as identical.
neighbour	Maximum distance between surfaces or curves viewed as adjacent.
kink	If two adjacent surfaces meet with an angle less than 'kink', they are seen as G1 continous. (angles in radians)
bend	If two surfaces meet along a common boundary and corresponding surface normals form an angle which is larger than 'bend', there is an intentional sharp edge between the surfaces.(angles in radians)
surfaces	A vector of surfaces.

29.497.2.4 Go::SurfaceModel::SurfaceModel (double *approxtol,* double *gap,* double *neighbour,* double *kink,* double *bend*) [protected]

29.497.2.5 Go::SurfaceModel::SurfaceModel (const SurfaceModel & *sm*)

Constructor Create shallow copy of another SurfaceModel

Parameters

sm	The SurfaceModel to be copied

29.497.2.6 virtual Go::SurfaceModel::~SurfaceModel ( ) [virtual]

Destructor.

29.497.3 Member Function Documentation

29.497.3.1 void Go::SurfaceModel::addSegment (ftCurve & *cv,* ftEdgeBase * *edge,* ftCurveType *ty*) [protected]

29.497.3.2 std::vector<shared_ptr<ftSurface> > Go::SurfaceModel::allFaces ( ) const

Return all faces

Returns

Vector of pointer to all faces

29.497.3.3 bool Go::SurfaceModel::allSplines ( ) const

Check if all entities are NURBS

Returns

Whether all entities are NURBS

29.497.3.4 void Go::SurfaceModel::append (shared_ptr< ftSurface > *face*, bool *set_twin* = true, bool *adjacency_set* = false, bool *remove_twins* = false, int *idx* = -1)

Append a new face to the surface model. The face is included in the topological structure

Parameters

face	The new face
set_twin	If true, set twin face info.

29.497.3.5 void Go::SurfaceModel::append (std::vector< shared_ptr< ftSurface > > *faces*, bool *adjacency_set* = false, bool *set_twin* = true)

Append a vector of faces to the surface model. The faces are included in the topological structure

Parameters

faces	Vector of pointers to the new faces

29.497.3.6 void Go::SurfaceModel::append (shared_ptr< SurfaceModel > *anotherModel*)

Append all faces from another surface model. The faces are included in the topological structure

Parameters

anotherModel	Pointer to the other surface model

29.497.3.7 shared_ptr<SplineSurface> Go::SurfaceModel::approxFaceSet (double & *error*, int *degree* = 3)

Approximate surface sets with 4 boundaries with a spline surface If the set has more than 4 corners, no surface will be produced

29.497.3.8 virtual SurfaceModel* Go::SurfaceModel::asSurfaceModel ( ) [inline], [virtual]

Return surface model pointer

Returns

Pointer to this SurfaceModel

Reimplemented from Go::CompositeModel.

Definition at line 176 of file SurfaceModel.h.

29.497.3.9 void Go::SurfaceModel::booleanIntersect (const ftPlane & *plane*)

Intersect the model with a plane and trim this model with respect to the plane, the part of the model at the positive side of the plane is removed.

Parameters

plane	The plane.

29.497.3.10 virtual BoundingBox Go::SurfaceModel::boundingBox ( ) [virtual]

Bounding box of the entire surface model

Returns

Bounding box

Implements Go::CompositeModel.

29.497.3.11 virtual BoundingBox Go::SurfaceModel::boundingBox (int *idx*) const [virtual]

Bounding box corresponding to one surface

Parameters

idx	Index of surface

Returns

Bounding box of surface with index idx.

Implements Go::CompositeModel.

29.497.3.12 ftMessage Go::SurfaceModel::buildTopology (int *first_idx* = 0, bool *set_twin_face_info* = true)

Construct the topology information regarding the input geometry.

Returns

Messages

29.497.3.13 bool Go::SurfaceModel::checkShellTopology ( )

Debug. Check topology.

29.497.3.14 virtual SurfaceModel* Go::SurfaceModel::clone ( ) const [inline], [virtual]

Make a copy of the current model

Returns

Pointer to a copy of this SurfaceModel

Reimplemented from Go::CompositeModel.

Definition at line 183 of file SurfaceModel.h.

29.497.3.15 virtual void Go::SurfaceModel::closestPoint (Point & *pnt*, Point & *clo_pnt*, int & *idx*, double *clo_par[ ]*, double & *dist*) [virtual]

Closest point between a given point and this surface model Returns one point

Parameters

pnt	Input point
clo_pnt	Found closest point
idx	Index of surface where the closest point is found
clo_par[ ]	Parameter value corresponding to the closest point
dist	Distance between input point and found closest point

Implements Go::CompositeModel.

29.497.3.16 ftPoint Go::SurfaceModel::closestPoint (const Point & *point*)

Closest point between a given point and this surface model

Parameters

point	Input point

Returns

Closest point

29.497.3.17 ftPoint Go::SurfaceModel::closestPoint (const ftPoint & *point*) [inline]

Closest point between a given point and this surface model

Parameters

point	Input point

Returns

Closest point

Definition at line 304 of file SurfaceModel.h.

29.497.3.18 virtual double Go::SurfaceModel::curvature (int *idx*, double * *par*) const [inline], [virtual]

Curvature of an entity (Curve or Surface), Only Curve is implemented yet.

Parameters

idx	Index of entity
par	Parameter value at which to compute curvature

Returns

The curvature.

Implements Go::CompositeModel.

Definition at line 454 of file SurfaceModel.h.

29.497.3.19 bool Go::SurfaceModel::doIntersect (shared_ptr< SplineSurface > *sf*)

Check if a spline surface intersects the current surface model.

29.497.3.20 void Go::SurfaceModel::enforceCoLinearCoefs ( )

Modify adjacent spline surfaces from having almost co-linear coefficients to exact co-linearity

29.497.3.21 virtual void Go::SurfaceModel::evaluate (int *idx*, double *par[]*, Point & *pnt*) const [virtual]

Evaluate position

Parameters

idx	Index of surface
par[]	Parameter value
pnt	Result

Implements Go::CompositeModel.

29.497.3.22 virtual void Go::SurfaceModel::evaluate (int *idx*, double *par[]*, int *nder*, std::vector< Point > & *der*) const [virtual]

Evaluate position and a number of derivatives The sequence is position, first derivative in first parameter direction, first derivative in second parameter direction, second derivative in first parameter direction, mixed second derivative etc.

Parameters

idx	Index
par	Parameter value
nder	Number of derivatives to compute, 0=only position
der	Result

Implements Go::CompositeModel.

29.497.3.23 virtual void Go::SurfaceModel::extremalPoint (Point & *dir*, Point & *ext_pnt*, int & *idx*, double *ext_par[]*) [virtual]

Extremal point(s) in a given direction Note that the found extremal point may be less accurate for trimmed surfaces

Parameters

dir	Direction
ext_pnt	Found extremal point
idx	Index of surface where the extremal point is found
ext_par[]	Parameter value of extremal point

Implements Go::CompositeModel.

29.497.3.24 std::vector<shared_ptr<ftSurface> > Go::SurfaceModel::facesInPlane (Point & *pnt*, Point & *axis*)

Fetch all planar faces lying in a specified plane.

29.497.3.25 shared_ptr<ftSurface> Go::SurfaceModel::fetchAsSharedPtr (ftFaceBase * *face*) const

Return a specified face as a shared pointer

Parameters

face	Pointer to face

Returns

Shared pointer to face

29.497.3.26 void Go::SurfaceModel::fetchSamplePoints (double *density*, std::vector< SamplePointData > & *sample_points*) const

Fetch sample points from all faces including surface normal and curvature information. The distribution is computed from the input parameter density

29.497.3.27 void Go::SurfaceModel::getAllVertices (std::vector< shared_ptr< Vertex > > & *vertices*) const

Return all vertices associated with this surface model

Return values

vertices	Vector of pointers to all vertices.

29.497.3.28 double Go::SurfaceModel::getApproximationTol ( ) const [inline]

Return approximation tolerance.

Returns

Approximation tolerance.

Definition at line 744 of file SurfaceModel.h.

29.497.3.29 Body* Go::SurfaceModel::getBody ( )

Return body (if any)

29.497.3.30 ftCurve Go::SurfaceModel::getBoundary (int *whichbound*)

Return a given boundary (may be a hole).

Parameters

whichbound	refers to element number in boundary_curves_.

Returns

boundary curve

29.497.3.31 std::vector<shared_ptr<ftEdge> > Go::SurfaceModel::getBoundaryEdges ( ) const

Fetch all edges at all the boundaries of this model

Return values

edges	Vector of pointers to edges at the boundaries.

29.497.3.32 std::vector<shared_ptr<ftEdge> > Go::SurfaceModel::getBoundaryEdges (int *boundary_idx*) const

Fetch all edges at one of the boundaries of this model

Parameters

boundary_idx	Index of one boundary

Return values

edges	Vector of pointers to the edges at one boundary.

29.497.3.33 void Go::SurfaceModel::getBoundaryVertices (std::vector< shared_ptr< Vertex > > & *vertices*) const

Fetch vertices at the boundaries

Return values

vertices	Vector of pointers to vertices at the boundaries.

29.497.3.34 const ftCell& Go::SurfaceModel::getCell (int *i*) const

Return a cell in the cell division

Parameters

i	Index of cell

Returns

The cell

29.497.3.35 std::vector<shared_ptr<SurfaceModel> > Go::SurfaceModel::getConnectedModels ( ) const

Return all compact face sets

29.497.3.36 void Go::SurfaceModel::getCorners (std::vector< ftEdge * > & *corners*)

Information about kinks on an alternative format

29.497.3.37 shared_ptr<ftSurface> Go::SurfaceModel::getFace (int *idx*) const

Return one face

Parameters

idx	Index of face

Returns

Pointer to face with index idx

29.497.3.38 ftCurve Go::SurfaceModel::getG1Disconts ( )

Return information about all G1 discontinuities.

29.497.3.39 ftCurve Go::SurfaceModel::getGaps ( )

Return information about all gaps.

29.497.3.40 void Go::SurfaceModel::getGaps (std::vector< ftEdge * > & *gaps*)

Information about gaps on an alternative format

29.497.3.41 void Go::SurfaceModel::getInconsistentFacePairs (std::vector< std::pair< ftFaceBase *, ftFaceBase * > > & *faces*) [inline]

Return pointers to pairs of faces that have a problem with the consistency of the face orientation

Definition at line 692 of file SurfaceModel.h.

29.497.3.42 int Go::SurfaceModel::getIndex (shared_ptr< ftSurface > *face*) const

Given a face in the surface model, return the index of this face

Parameters

face	Shared pointer to face

Returns

Index to face

29.497.3.43 int Go::SurfaceModel::getIndex (ftSurface * *face*) const

Given a face in the surface model, return the index of this face

Parameters

face	Pointer to face

Returns

Index to face

29.497.3.44 int Go::SurfaceModel::getIndex (ParamSurface * *surf*) const

Given a surface in the surface model, return the index of this face

Parameters

surf	Pointer to surface

Returns

Index to face

29.497.3.45 ftCurve Go::SurfaceModel::getKinks ( )

Return information about all kinks.

29.497.3.46 void Go::SurfaceModel::getKinks (std::vector< ftEdge * > & *kinks*)

Information about kinks on an alternative format

29.497.3.47 void Go::SurfaceModel::getOverlappingEdges (double *tol*, std::vector< std::pair< shared_ptr< ftEdgeBase >, shared_ptr< ftEdgeBase > > > & *edges*)

Return pointers to pairs of overlapping edges.

Parameters

tol	Overlap tolerance

Return values

edges	Vector of pairs of overlapping edges

29.497.3.48 void Go::SurfaceModel::getOverlappingFaces (double *tol*, std::vector< std::pair< ftSurface *, ftSurface * > > & *faces*)

Return pointers to pairs of overlapping faces.

Parameters

tol	Overlap tolerance

Return values

faces	Vector of pairs of overlapping faces

29.497.3.49 shared_ptr<SplineSurface> Go::SurfaceModel::getSplineSurface (int *idx*) const

Return one surface as SplineSurface if possible

Parameters

idx	Index of surface

Returns

Pointer to SplineSurface

29.497.3.50 shared_ptr<ParamSurface> Go::SurfaceModel::getSurface (int *idx*) const

Return one surface

Parameters

idx	Index of surface

Returns

Pointer to ParamSurface

29.497.3.51 ftSurface* Go::SurfaceModel::getSurface2 (int *index*) const

Return single surface

29.497.3.52 std::vector<shared_ptr<ftEdge> > Go::SurfaceModel::getUniqueInnerEdges ( ) const

Fetch all interval unique inner edges in this model, i.e. a ftEdge for each boundary edge with a twin, only one of the edges in the pair is returned.

Return values

Vector	of pointers unique inner edges

29.497.3.53 bool Go::SurfaceModel::hit (const Point & *point,* const Point & *dir,* ftPoint & *result*)

Test if a line with direction 'dir' through the point 'point' hits this surface model. If it hits, return 'true' and the intersection point closest to 'point'.

Parameters

point	Point on the line.
dir	Line direction.

Return values

result	Closest intersection point.

Returns

Whether the line hits or not.

29.497.3.54 void Go::SurfaceModel::initializeCelldiv ( )

Creates the CellDivision object.

29.497.3.55 virtual shared_ptr<IntResultsModel> Go::SurfaceModel::intersect (const ftLine & *line*) [virtual]

Intersection with a line. Expected output is points, probably one point. Curves can occur in special configurations

Parameters

line	The line.

Returns

Pointer to an IntResultsModel.

Implements Go::CompositeModel.

29.497.3.56 void Go::SurfaceModel::intersect (const ftLine & *line,* ftCurve & *int_curves,* std::vector< ftPoint > & *int_points*)

Intersection with a line. Expected output is points, probably one point. Curves can occur in special configurations

Parameters

line	Consist of one point and one direction represented by Point.

Return values

int_curves	Intersection curves, one curve may cross several of the surfaces in the model, but each curve is connected and simple.
int_points	Found intersection points.

29.497.3.57 ftCurve Go::SurfaceModel::intersect (const ftPlane & *plane*)

Intersect the surface model with a plane.

Parameters

plane	The plane.

Returns

Intersection curve.

29.497.3.58 std::vector<ftPoint> Go::SurfaceModel::intersect (const ftLine & *line,* std::vector< bool > & *represent_segment*)

Intersect the model with a line.

Parameters

line	The intersecting line

Return values

represent_segment	???

Returns

Vector of intersection points

29.497.3.59 std::vector<std::pair<ftPoint, double> > Go::SurfaceModel::intersect (shared_ptr< SplineCurve > *crv*, std::vector< bool > & *represent_segment*)

Intersect the model with a SplineCurve.

Parameters

crv	The intersecting SplineCurve.

Return values

represent_segment	???

Returns

Vector of pairs of intersection points and their curve parameter value

29.497.3.60 virtual shared_ptr<IntResultsModel> Go::SurfaceModel::intersect_plane (const ftPlane & *plane*) [virtual]

Intersection with a plane.

Parameters

plane	The plane.

Returns

Pointer to an IntResultsModel.

Implements Go::CompositeModel.

29.497.3.61 bool Go::SurfaceModel::isAxisRotational (Point & *centre*, Point & *axis*, Point & *vec*, double & *angle*, double & *min_ang*)

Check if a surface model represents a rotational object and extract the eventual rotational axis and angle

29.497.3.62 bool Go::SurfaceModel::isClosed ( ) const

Check if the SurfaceModel is a closed shell

Returns

true if closed, *false* if open

29.497.3.63 bool Go::SurfaceModel::isCornerToCorner ( ) const

Check if the model has got a corner-to-corner configuaration

Returns

Whether the model has got a corner-to-corner configuaration

29.497.3.64 virtual bool Go::SurfaceModel::isDegenerate (int *idx*) const [virtual]

Whether one particular surface is degenerated such that one boundary degenerates to a point

Parameters

idx	Index of surface

Returns

Whether the surface is degenerated

Implements Go::CompositeModel.

29.497.3.65 bool Go::SurfaceModel::isDegenerate (int *idx*, bool & *b*, bool & *t*, bool & *l*, bool & *r*) const

Whether one particular surface is degenerated More specific information, relevant only for surfaces

Parameters

idx	Index of surface

Return values

b	The bottom curve degenerates to a point
t	The top curve degenerates to a point
l	The left curve degenerates to a point
r	The right curve degenerates to a point

Returns

Whether the surface is degenerated

29.497.3.66 bool Go::SurfaceModel::isLinearSwept (Point & *pnt*, Point & *axis*, double & *len*)

Check if a surface model represents a simple linearily swept object that can be generated by sweeping a set of planar surfaces along a vector parallel to the plane normal. Return plane information and distance of sweep

29.497.3.67 void Go::SurfaceModel::limitVolume (double *xmin,* double *xmax,* double *ymin,* double *ymax,* double *zmin,* double *zmax*)

Set limiting volume to mark area of interest.

29.497.3.68 void Go::SurfaceModel::makeCommonSplineSpaces ( )

Ensure that the blocks in the model has got common spline spaces.

29.497.3.69 void Go::SurfaceModel::makeCornerToCorner ( )

Ensure that the blocks in the model meet in a corner-to-corner configuration. NB! This function must not be applied to closed surface sets.

29.497.3.70 shared_ptr<ftSurface> Go::SurfaceModel::mergeFaces (ftSurface * *face1,* int *pardir1,* double *parval1,* bool *atstart1,* ftSurface * *face2,* int *pardir2,* double *parval2,* bool *atstart2,* std::pair< Point, Point > *co_par1,* std::pair< Point, Point > *co_par2,* std::vector< Point > & *seam_joints*)

Merge two faces

Returns

Pointer to resulting face

29.497.3.71 shared_ptr<ftSurface> Go::SurfaceModel::mergeSeamCrvFaces (ftSurface * *face1,* ftSurface * *face2,* std::vector< Point > & *seam_joints*)

Merge two faces

Returns

Pointer to resulting face

29.497.3.72 shared_ptr<ftSurface> Go::SurfaceModel::mergeSeamFaces (ftSurface * *face1,* ftSurface * *face2,* int *pardir,* std::vector< Point > & *seam_joints*)

Merge two faces

Returns

Pointer to resulting face

29.497.3.73 int Go::SurfaceModel::nmbBoundaries ( ) const

Return the number of boundaries of a surface set (including holes).

29.497.3.74 virtual int Go::SurfaceModel::nmbEntities ( ) const [virtual]

Number of simple entities

Returns

Number of simple entities

Implements Go::CompositeModel.

29.497.3.75 bool Go::SurfaceModel::pointWithinLimits (const ftPoint & *point*)

Check if a point is within the volume of interest.

Parameters

point	The point to check.

Returns

Whether the point is within the limits.

29.497.3.76 bool Go::SurfaceModel::pointWithinLimits (const Point & *point*)

Check if a point is within the volume of interest.

Parameters

point	The point to check.

Returns

Whether the point is within the limits.

29.497.3.77 void Go::SurfaceModel::regularizeTwin (ftSurface * *face*, std::vector< shared_ptr< ftSurface > > & *twinset*)

Regularize face to mimic the division of a twin surface

Parameters

face	

Return values

twinset	

29.497.3.78 bool Go::SurfaceModel::removeFace (shared_ptr< ftSurface > *face*)

Remove one face from the face set

Parameters

face	Pointer to the face to be removed

Returns

Whether the face was removed

29.497.3.79 shared_ptr<ftSurface> Go::SurfaceModel::replaceRegularSurface (ftSurface * *face*, bool *only_corner* = false)

29.497.3.80 void Go::SurfaceModel::replaceRegularSurfaces ( )

Approximate regular trimmed surfaces with spline surfaces and replace

29.497.3.81 void Go::SurfaceModel::setBoundaryCurves ( )

Set the elements in boundary_curves_ (based on top_table_).

29.497.3.82 void Go::SurfaceModel::setTolerances (double *approxtol*, double *gap*, double *kink*)

Set or reset topology tolerances

Parameters

approxtol	Approximation error tolerance.
gap	If the distance between two points is less than 'gap' they are viewed as identical.
kink	If two adjacent surfaces meet with an angle less than 'kink', they are seen as G1 continous. (angles in radians)

29.497.3.83 void Go::SurfaceModel::setTolerances (double *approxtol*, double *gap*, double *neighbour*, double *kink*, double *bend*)

Set or reset topology tolerances

Parameters

approxtol	Approximation error tolerance. Not used.
gap	If the distance between two points is less than 'gap' they are viewed as identical.
neighbour	Maximum distance between surfaces or curves viewed as adjacent.
kink	If two adjacent surfaces meet with an angle less than 'kink', they are seen as G1 continous. (angles in radians)

Parameters

bend	If two surfaces meet along a common boundary and corresponding surface normals form an angle which is larger than 'bend', there is an intentional sharp edge between the surfaces.(angles in radians)

29.497.3.84 ftMessage Go::SurfaceModel::setTopology ( )

Fetch the topology information from twin information in the input geometry.

Returns

Messages

29.497.3.85 void Go::SurfaceModel::setTwinFaceInfo ( )

Add information about twin faces.

29.497.3.86 void Go::SurfaceModel::setVertexIdentity ( )

Add information about faces at the boundary meeting only in vertices.

29.497.3.87 void Go::SurfaceModel::simplifyShell ( )

Simplify current shell by merging surfaces with a smooth connection both with regard to the surfaces themselves and the associated boundary curves. The common boundary must be isoparametric in both surfaces

29.497.3.88 bool Go::SurfaceModel::simplifyTrimLoops (double & *max_dist*)

Simplify fragmented trimming loops

Return values

max_dist	Maximum local distorsion around the transitions. ???

Returns

Whether any faces were modified.

29.497.3.89 void Go::SurfaceModel::splitSurfaceModel (std::vector< shared_ptr< ftSurface > > & *faces,* Body * *model2,* std::vector< std::vector< shared_ptr< ParamSurface > > > & *result*)

Split a surface models according to a set of faces belonging to a specified surface model

29.497.3.90 std::vector<shared_ptr<SurfaceModel> > Go::SurfaceModel::splitSurfaceModels (shared_ptr< SurfaceModel > & *model2*)

Split two surface models according to intersections between them.

Parameters

model2	The other model.

Returns

Vector of new surface models.

29.497.3.91 void Go::SurfaceModel::swapFaces (int *idx1*, int *idx2*)

Switches the ordering of the faces internal in this construction. To be used if the order in which the faces are handled has a significance

29.497.3.92 virtual void Go::SurfaceModel::tesselate (std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate surface model Tesselate all surfaces with respect to a default resolution

Return values

meshes	Tesselated model

Implements Go::CompositeModel.

29.497.3.93 void Go::SurfaceModel::tesselate (int *uv_res*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const

Tesselate all surfaces with respect to a given total resolution. The resolution in each parameter direction is set from the method

Parameters

uv_res	Tesselation resolution

Return values

meshes	Tesselated model

29.497.3.94 virtual void Go::SurfaceModel::tesselate (int *resolution[ ]*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate all surfaces with respect to given resolutions in each parameter direction.

Parameters

resolution[]	Tesselation resolution

Return values

meshes	Tesselated model

Implements Go::CompositeModel.

29.497.3.95 virtual void Go::SurfaceModel::tesselate (double *density*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate all surfaces with respect to a given tesselation density

Parameters

density	Tesselation density

Return values

meshes	Tesselated model

Implements Go::CompositeModel.

29.497.3.96 void Go::SurfaceModel::tesselate (const std::vector< shared_ptr< ftFaceBase > > & *faces*, int *uv_res*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const

Tesselate specified surfaces with respect to a given total resolution. The resolution in each parameter direction is set from the method

Parameters

faces	Specified surfaces
uv_res	Tesselation resolution

Return values

meshes	Tesselated surfaces

29.497.3.97 void Go::SurfaceModel::tesselate (const std::vector< shared_ptr< ftFaceBase > > & *faces*, int *resolution[]*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const

Tesselate specified surfaces with respect to given resolutions in each parameter direction.

Parameters

faces	Specified surfaces
resolution[]	Tesselation resolutions

Return values

meshes	Tesselated model

29.497.3.98 void Go::SurfaceModel::tesselate (const std::vector< shared_ptr< ftFaceBase > > & *faces*, double *density*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const

Tesselate specified surfaces with respect to a given tesselation density

Parameters

faces	Specified surfaces
density	Tesselation density

Return values

meshes	Tesselated model

29.497.3.99 virtual void Go::SurfaceModel::tesselatedCtrPolygon (std::vector< shared_ptr< LineCloud > > & *ctr_pol*) const [virtual]

Return a tesselation of the control polygon of all surfaces

Return values

ctr_pol	Tesselation of the control polygon of all surfaces.

Implements Go::CompositeModel.

29.497.3.100 void Go::SurfaceModel::tesselatedCtrPolygon (const std::vector< shared_ptr< ftFaceBase > > & *faces*, std::vector< shared_ptr< LineCloud > > & *ctr_pol*) const

Return a tesselation of the control polygon of specified surfaces

Parameters

faces	Specified surfaces

Return values

ctr_pol	Tesselation of the control polygon of the specified surfaces.

29.497.3.101 shared_ptr<ftPointSet> Go::SurfaceModel::triangulate (double *density*) const

Triangulate the complete surface set with a prescribed point density. NB! The density may be adjusted if the number of points become too high and it is used as an indicator, not an absolute measure.

29.497.3.102 shared_ptr<SurfaceModel> Go::SurfaceModel::trimWithPlane (const ftPlane & *plane*)

Intersect the model with a plane and return the surface model trimmed with respect to this plane, the part of the model at the positive side of the plane is removed.

Parameters

plane	The plane.

Returns

Pointer to trimmed surface model

29.497.3.103 virtual void Go::SurfaceModel::turn (int *idx*) [virtual]

Turn parameter directions of one surface Will turn the orientation of the surface normal An update in the topology structures is required.

Parameters

idx	Index of surface

Implements Go::CompositeModel.

29.497.3.104 virtual void Go::SurfaceModel::turn ( ) [virtual]

Turn parameter directions of all surfaces An update in the topology structures is required.

Implements Go::CompositeModel.

29.497.3.105 void Go::SurfaceModel::updateFaceTopology (shared_ptr< ftSurface > *face*)

Update neighbourhood information related to face

Parameters

face	Pointer to the face

29.497.4 Member Data Documentation

29.497.4.1 double Go::SurfaceModel::approxtol_ [protected]

Definition at line 837 of file SurfaceModel.h.

29.497.4.2 std::vector<std::vector<shared_ptr<Loop> > > Go::SurfaceModel::boundary_curves_ [protected]

Definition at line 851 of file SurfaceModel.h.

29.497.4.3 shared_ptr<CellDivision> Go::SurfaceModel::celldiv_ [protected]

Definition at line 853 of file SurfaceModel.h.

29.497.4.4 std::vector<bool> Go::SurfaceModel::face_checked_ [mutable], [protected]

Definition at line 854 of file SurfaceModel.h.

29.497.4.5 std::vector<shared_ptr<ftFaceBase> > Go::SurfaceModel::faces_ [protected]

Definition at line 847 of file SurfaceModel.h.

29.497.4.6 int Go::SurfaceModel::highest_face_checked_ [mutable], [protected]

Definition at line 855 of file SurfaceModel.h.

29.497.4.7 std::vector<std::pair<ftFaceBase*, ftFaceBase*> > Go::SurfaceModel::inconsistent_orientation_ [protected]

Definition at line 859 of file SurfaceModel.h.

29.497.4.8 BoundingBox Go::SurfaceModel::limit_box_ [protected]

Definition at line 857 of file SurfaceModel.h.

29.497.4.9 double Go::SurfaceModel::tol2d_ [protected]

Definition at line 838 of file SurfaceModel.h.

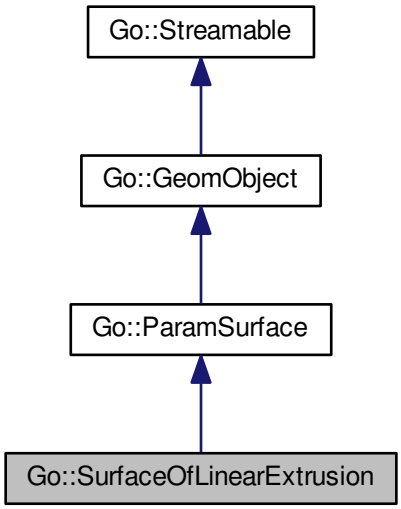
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/SurfaceModel.h

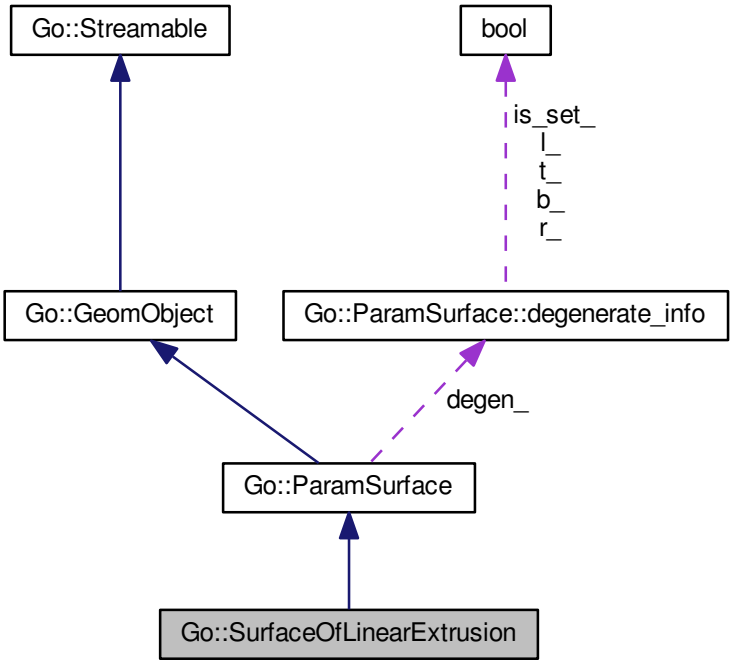
29.498 Go::SurfaceOfLinearExtrusion Class Reference

```
#include <SurfaceOfLinearExtrusion.h>
```

Inheritance diagram for Go::SurfaceOfLinearExtrusion:



Collaboration diagram for Go::SurfaceOfLinearExtrusion:



Public Member Functions

- SurfaceOfLinearExtrusion ()
- SurfaceOfLinearExtrusion (shared_ptr< SplineCurve > curve, Point axis_dir, bool isSwapped=false)
- virtual ~SurfaceOfLinearExtrusion ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual SurfaceOfLinearExtrusion * clone () const
- const RectDomain & parameterDomain () const
- virtual RectDomain containingDomain () const
- virtual bool inDomain (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies inside the domain of this surface.
- virtual int inDomain2 (double u, double v, double eps=1.0e-4) const
- virtual bool onBoundary (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies at the boundary of this surface.
- virtual Point closestInDomain (double u, double v) const

- CurveLoop outerBoundaryLoop (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- DirectionCone normalCone () const
- DirectionCone tangentCone (bool pardir_is_u) const
- void point (Point &pt, double upar, double vpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_↩ from_right=true, double resolution=1.0e-12) const
- void normal (Point &n, double upar, double vpar) const
- std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- bool isBounded () const
- std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- void turnOrientation ()

  Turns the direction of the normal of the surface.
- void reverseParameterDirection (bool direction_is_u)
- void swapParameterDirection ()

  Swaps the two parameter directions.
- virtual double area (double tol) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const
- virtual void getCornerPoints (std::vector< std::pair< Point, Point > > &corners) const

  Return surface corners, geometric and parametric points in that sequence.
- Point getAxisDir () const

  Direction of axis of extrusion.
- shared_ptr< SplineCurve > getCurve () const

  Generating curve, i.e. the curve that are rotated around the axis.
- void setParameterBounds (double from_upar, double from_vpar, double to_upar, double to_vpar)

  Limit the surface by limiting the parameter domain.
- SurfaceOfLinearExtrusion * subSurface (double from_upar, double from_vpar, double to_upar, double to_↩ vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const

  Pick part of surface.
- SplineSurface * geometrySurface () const

  Return spline representation of the surface of revolution.
- SplineSurface * createSplineSurface () const

  Create a SplineSurface representation of the surface of revolution.
- virtual bool isSwapped () const

Static Public Member Functions

- static ClassType classType ()

Additional Inherited Members

29.498.1 Detailed Description

Definition at line 55 of file SurfaceOfLinearExtrusion.h.

29.498.2 Constructor & Destructor Documentation

29.498.2.1 Go::SurfaceOfLinearExtrusion::SurfaceOfLinearExtrusion ( ) [inline]

Default constructor. Constructs an uninitialized SurfaceOfLinearExtrusion which can only be assigned to or read into.

Definition at line 61 of file SurfaceOfLinearExtrusion.h.

29.498.2.2 Go::SurfaceOfLinearExtrusion::SurfaceOfLinearExtrusion (shared_ptr< SplineCurve > *curve,* Point *axis_dir,* bool *isSwapped* = false)

Constructor. Input is the location and normalized direction of the axis, and the SplineCurve that is swept out by the revolution.

29.498.2.3 virtual Go::SurfaceOfLinearExtrusion::~SurfaceOfLinearExtrusion ( ) [virtual]

Virtual destructor - ensures safe inheritance.

29.498.3 Member Function Documentation

29.498.3.1 std::vector<CurveLoop> Go::SurfaceOfLinearExtrusion::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.498.3.2 virtual double Go::SurfaceOfLinearExtrusion::area (double *tol*) const [virtual]

Compute the total area of this surface up to some tolerance

Parameters

tol	the relative tolerance when approximating the area, i.e. stop iteration when error becomes smaller than tol/(surface area)

Returns

the area calculated

Implements Go::ParamSurface.

29.498.3.3 virtual BoundingBox Go::SurfaceOfLinearExtrusion::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.498.3.4 static ClassType Go::SurfaceOfLinearExtrusion::classType ( ) [static]

29.498.3.5 virtual SurfaceOfLinearExtrusion* Go::SurfaceOfLinearExtrusion::clone ( ) const [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ParamSurface.

29.498.3.6 void Go::SurfaceOfLinearExtrusion::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.498.3.7 virtual Point Go::SurfaceOfLinearExtrusion::closestInDomain (double *u*, double *v*) const [virtual]

Return the parameter value in the domain of this surface closest to the parameter pair (u,v).

Implements Go::ParamSurface.

29.498.3.8 void Go::SurfaceOfLinearExtrusion::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.498.3.9 std::vector<shared_ptr<ParamCurve> > Go::SurfaceOfLinearExtrusion::constParamCurves (double *parameter*, bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.498.3.10 virtual RectDomain Go::SurfaceOfLinearExtrusion::containingDomain ( ) const [virtual]

Get a rectangular parameter domain that is guaranteed to contain the surface's parameterDomain(). It may be the same. There is no guarantee that this is the smallest domain containing the actual domain.

Returns

a RectDomain that is guaranteed to include the surface's total parameter domain.

Implements Go::ParamSurface.

29.498.3.11 SplineSurface* Go::SurfaceOfLinearExtrusion::createSplineSurface ( ) const

Create a SplineSurface representation of the surface of revolution.

29.498.3.12 virtual int Go::SurfaceOfLinearExtrusion::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.498.3.13 SplineSurface* Go::SurfaceOfLinearExtrusion::geometrySurface ( ) const

Return spline representation of the surface of revolution.

29.498.3.14 Point Go::SurfaceOfLinearExtrusion::getAxisDir ( ) const [inline]

Direction of axis of extrusion.

Definition at line 195 of file SurfaceOfLinearExtrusion.h.

29.498.3.15 void Go::SurfaceOfLinearExtrusion::getBoundaryInfo (Point & *pt1*, Point & *pt2*, double *epsilon*, SplineCurve *& *cv*, SplineCurve *& *crosscv*, double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.498.3.16 virtual void Go::SurfaceOfLinearExtrusion::getCornerPoints (std::vector< std::pair< Point, Point > > & *corners*) const [virtual]

Return surface corners, geometric and parametric points in that sequence.

Implements Go::ParamSurface.

29.498.3.17 shared_ptr<SplineCurve> Go::SurfaceOfLinearExtrusion::getCurve ( ) const [inline]

Generating curve, i.e. the curve that are rotated around the axis.

Definition at line 199 of file SurfaceOfLinearExtrusion.h.

29.498.3.18 virtual void Go::SurfaceOfLinearExtrusion::getDegenerateCorners (std::vector< Point > & *deg_corners*, double *tol*) const [virtual]

Check for parallel and anti parallel partial derivatives in surface corners

Implements Go::ParamSurface.

29.498.3.19 virtual bool Go::SurfaceOfLinearExtrusion::inDomain (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies inside the domain of this surface.

Implements Go::ParamSurface.

29.498.3.20 virtual int Go::SurfaceOfLinearExtrusion::inDomain2 (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies inside the domain of this surface return value = 0: outside = 1: internal = 2: at the boundary

Implements Go::ParamSurface.

29.498.3.21 virtual ClassType Go::SurfaceOfLinearExtrusion::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.498.3.22 bool Go::SurfaceOfLinearExtrusion::isBounded ( ) const

29.498.3.23 virtual bool Go::SurfaceOfLinearExtrusion::isSwapped ( ) const [virtual]

29.498.3.24 double Go::SurfaceOfLinearExtrusion::nextSegmentVal (int *dir*, double *par*, bool *forward*, double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.498.3.25 void Go::SurfaceOfLinearExtrusion::normal (Point & *n*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.498.3.26 DirectionCone Go::SurfaceOfLinearExtrusion::normalCone ( ) const [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.498.3.27 virtual bool Go::SurfaceOfLinearExtrusion::onBoundary (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies at the boundary of this surface.

Implements Go::ParamSurface.

29.498.3.28 CurveLoop Go::SurfaceOfLinearExtrusion::outerBoundaryLoop (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise, outer boundary loop of the surface.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a CurveLoop describing the anticlockwise, outer boundary loop of the surface. A negative degenerate_epsilon indicates that all curves, also the degenerate ones are wanted

Implements Go::ParamSurface.

29.498.3.29 const RectDomain& Go::SurfaceOfLinearExtrusion::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.498.3.30 void Go::SurfaceOfLinearExtrusion::point (Point & *pt*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.498.3.31 void Go::SurfaceOfLinearExtrusion::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.

Parameters

upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.498.3.32 virtual void Go::SurfaceOfLinearExtrusion::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.498.3.33 void Go::SurfaceOfLinearExtrusion::reverseParameterDirection (bool *direction_is_u*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

direction_is_u	if 'true', the first parameter direction will be reversed, otherwise, the second parameter direction will be reversed

Implements Go::ParamSurface.

29.498.3.34 void Go::SurfaceOfLinearExtrusion::setParameterBounds (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar*)

Limit the surface by limiting the parameter domain.

29.498.3.35 SurfaceOfLinearExtrusion* Go::SurfaceOfLinearExtrusion::subSurface (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

Pick part of surface.

29.498.3.36 std::vector<shared_ptr<ParamSurface> > Go::SurfaceOfLinearExtrusion::subSurfaces (double *from_upar*, double *from_vpar*, double *to_upar*, double *to_vpar*, double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.498.3.37 void Go::SurfaceOfLinearExtrusion::swapParameterDirection ( ) [virtual]

Swaps the two parameter directions.

Implements Go::ParamSurface.

29.498.3.38 DirectionCone Go::SurfaceOfLinearExtrusion::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.498.3.39 void Go::SurfaceOfLinearExtrusion::turnOrientation ( ) [virtual]

Turns the direction of the normal of the surface.

Implements Go::ParamSurface.

29.498.3.40 virtual void Go::SurfaceOfLinearExtrusion::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

The documentation for this class was generated from the following file:

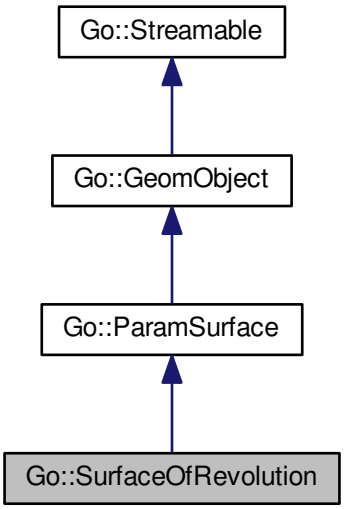
- gotools-core/include/GoTools/geometry/SurfaceOfLinearExtrusion.h

29.499 Go::SurfaceOfRevolution Class Reference

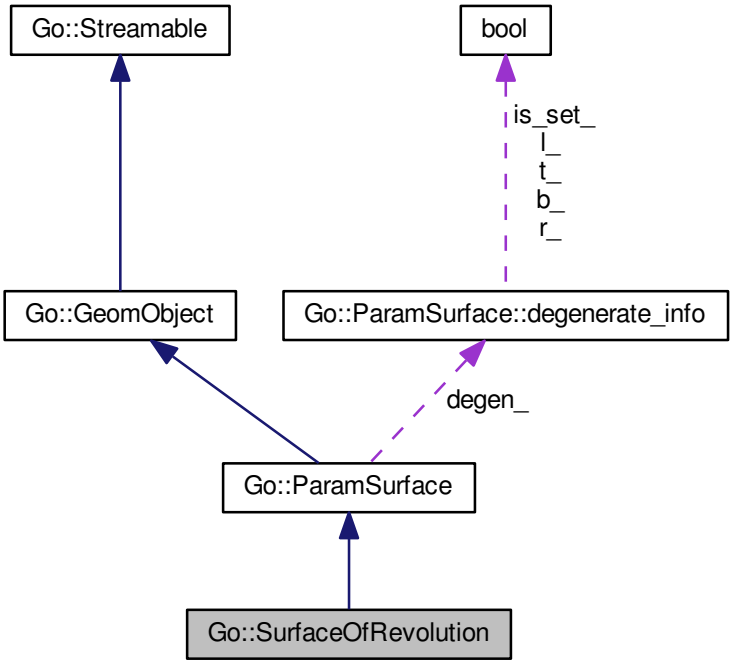
Class that represents a surface of revolution. A SurfaceOfRevolution is swept out by a SplineCurve that is rotated around an axis with a complete revolution, and is thereby a parametric surface.

`#include <SurfaceOfRevolution.h>`

Inheritance diagram for Go::SurfaceOfRevolution:



Collaboration diagram for Go::SurfaceOfRevolution:



Public Member Functions

- SurfaceOfRevolution ()
- SurfaceOfRevolution (Point location, Point axis_dir, shared_ptr< SplineCurve > curve, bool isSwapped=false)
- virtual ~SurfaceOfRevolution ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual SurfaceOfRevolution * clone () const
- const RectDomain & parameterDomain () const
- virtual RectDomain containingDomain () const
- virtual bool inDomain (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies inside the domain of this surface.
- virtual int inDomain2 (double u, double v, double eps=1.0e-4) const
- virtual bool onBoundary (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies at the boundary of this surface.

- virtual Point closestInDomain (double u, double v) const
- CurveLoop outerBoundaryLoop (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- DirectionCone normalCone () const
- DirectionCone tangentCone (bool pardir_is_u) const
- void point (Point &pt, double upar, double vpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_↩ from_right=true, double resolution=1.0e-12) const
- void normal (Point &n, double upar, double vpar) const
- std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- void turnOrientation ()

  Turns the direction of the normal of the surface.
- void reverseParameterDirection (bool direction_is_u)
- void swapParameterDirection ()

  Swaps the two parameter directions.
- virtual double area (double tol) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const
- virtual void getCornerPoints (std::vector< std::pair< Point, Point > > &corners) const

  Return surface corners, geometric and parametric points in that sequence.
- Point getLocation () const

  Point on axis of revolution.
- Point getAxisDir () const

  Direction of axis of revolution.
- shared_ptr< SplineCurve > getCurve () const

  Generating curve, i.e. the curve that are rotated around the axis.
- void setParameterBounds (double from_upar, double from_vpar, double to_upar, double to_vpar)

  Limit the surface by limiting the parameter domain.
- SurfaceOfRevolution * subSurface (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const

  Pick part of surface.
- SplineSurface * geometrySurface () const

  Return spline representation of the surface of revolution.
- SplineSurface * createSplineSurface () const

  Create a SplineSurface representation of the surface of revolution.
- shared_ptr< Circle > getCircle (double vpar) const
- virtual bool isSwapped () const

Static Public Member Functions

- static ClassType classType ()

Additional Inherited Members

29.499.1 Detailed Description

Class that represents a surface of revolution. A SurfaceOfRevolution is swept out by a SplineCurve that is rotated around an axis with a complete revolution, and is thereby a parametric surface.

The parametrization of the surface is given in terms of a location **C**, an axis line **V**, and the spline curve $\lambda(v)$ with parameter *v:*

$$\sigma(u,v) = C + (\lambda(v) - C)\cos u + ((\lambda(v) - C) \cdot V)V(1 - \cos u) + V \times (\lambda(v) - C)\sin u$$

The parameter *u* is bounded by: $0 \leq u \leq 2\pi$. The axis **V** is normalized.

The curve λ must be such that it doesn't lead to a self-intersecting surface.

Definition at line 77 of file SurfaceOfRevolution.h.

29.499.2 Constructor & Destructor Documentation

29.499.2.1 Go::SurfaceOfRevolution::SurfaceOfRevolution ( ) [inline]

Default constructor. Constructs an uninitialized SurfaceOfRevolution which can only be assigned to or read into.

Definition at line 83 of file SurfaceOfRevolution.h.

29.499.2.2 Go::SurfaceOfRevolution::SurfaceOfRevolution (Point *location,* Point *axis_dir,* shared_ptr< SplineCurve > *curve,* bool *isSwapped* = false)

Constructor. Input is the location and normalized direction of the axis, and the SplineCurve that is swept out by the revolution.

29.499.2.3 virtual Go::SurfaceOfRevolution::~SurfaceOfRevolution ( ) [virtual]

Virtual destructor - ensures safe inheritance.

29.499.3 Member Function Documentation

29.499.3.1 std::vector<CurveLoop> Go::SurfaceOfRevolution::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.499.3.2 virtual double Go::SurfaceOfRevolution::area (double *tol*) const [virtual]

Compute the total area of this surface up to some tolerance

Parameters

tol	the relative tolerance when approximating the area, i.e. stop iteration when error becomes smaller than tol/(surface area)

Returns

the area calculated

Implements Go::ParamSurface.

29.499.3.3 virtual BoundingBox Go::SurfaceOfRevolution::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.499.3.4 static ClassType Go::SurfaceOfRevolution::classType ( ) [static]

29.499.3.5 virtual SurfaceOfRevolution* Go::SurfaceOfRevolution::clone ( ) const [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ParamSurface.

29.499.3.6 void Go::SurfaceOfRevolution::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.499.3.7 virtual Point Go::SurfaceOfRevolution::closestInDomain (double *u*, double *v*) const [virtual]

Return the parameter value in the domain of this surface closest to the parameter pair (u,v).

Implements Go::ParamSurface.

29.499.3.8 void Go::SurfaceOfRevolution::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.499.3.9 std::vector<shared_ptr<ParamCurve> > Go::SurfaceOfRevolution::constParamCurves (double *parameter*, bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.499.3.10 virtual RectDomain Go::SurfaceOfRevolution::containingDomain ( ) const [virtual]

Get a rectangular parameter domain that is guaranteed to contain the surface's parameterDomain(). It may be the same. There is no guarantee that this is the smallest domain containing the actual domain.

Returns

a RectDomain that is guaranteed to include the surface's total parameter domain.

Implements Go::ParamSurface.

29.499.3.11 SplineSurface* Go::SurfaceOfRevolution::createSplineSurface ( ) const

Create a SplineSurface representation of the surface of revolution.

29.499.3.12 virtual int Go::SurfaceOfRevolution::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.499.3.13 SplineSurface* Go::SurfaceOfRevolution::geometrySurface ( ) const

Return spline representation of the surface of revolution.

29.499.3.14 Point Go::SurfaceOfRevolution::getAxisDir ( ) const [inline]

Direction of axis of revolution.

Definition at line 219 of file SurfaceOfRevolution.h.

29.499.3.15 void Go::SurfaceOfRevolution::getBoundaryInfo (Point & *pt1*, Point & *pt2*, double *epsilon*, SplineCurve *& *cv*, SplineCurve *& *crosscv*, double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.499.3.16 shared_ptr<Circle> Go::SurfaceOfRevolution::getCircle (double *vpar*) const

Get the circle for a given v parameter.

Parameters

vpar	v parameter

Returns

A circle for the corresponding v parameter. If the v parameter is bounded, only a segment of a full circle is returned.

29.499.3.17 virtual void Go::SurfaceOfRevolution::getCornerPoints (std::vector< std::pair< Point, Point > > & *corners*) const [virtual]

Return surface corners, geometric and parametric points in that sequence.

Implements Go::ParamSurface.

29.499.3.18 shared_ptr<SplineCurve> Go::SurfaceOfRevolution::getCurve ( ) const [inline]

Generating curve, i.e. the curve that are rotated around the axis.

Definition at line 223 of file SurfaceOfRevolution.h.

29.499.3.19 virtual void Go::SurfaceOfRevolution::getDegenerateCorners (std::vector< Point > & *deg_corners*, double *tol*) const [virtual]

Check for parallel and anti parallel partial derivatives in surface corners

Implements Go::ParamSurface.

29.499.3.20 Point Go::SurfaceOfRevolution::getLocation ( ) const [inline]

Point on axis of revolution.

Definition at line 215 of file SurfaceOfRevolution.h.

29.499.3.21 virtual bool Go::SurfaceOfRevolution::inDomain (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies inside the domain of this surface.

Implements Go::ParamSurface.

29.499.3.22 virtual int Go::SurfaceOfRevolution::inDomain2 (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies inside the domain of this surface return value = 0: outside = 1: internal = 2: at the boundary

Implements Go::ParamSurface.

29.499.3.23 virtual ClassType Go::SurfaceOfRevolution::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.499.3.24 virtual bool Go::SurfaceOfRevolution::isSwapped ( ) const [virtual]

29.499.3.25 double Go::SurfaceOfRevolution::nextSegmentVal (int *dir*, double *par*, bool *forward*, double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.499.3.26 void Go::SurfaceOfRevolution::normal (Point & *n*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.499.3.27 DirectionCone Go::SurfaceOfRevolution::normalCone ( ) const [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.499.3.28 virtual bool Go::SurfaceOfRevolution::onBoundary (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies at the boundary of this surface.

Implements Go::ParamSurface.

29.499.3.29 CurveLoop Go::SurfaceOfRevolution::outerBoundaryLoop (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise, outer boundary loop of the surface.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a CurveLoop describing the anticlockwise, outer boundary loop of the surface. A negative degenerate_epsilon indicates that all curves, also the degenerate ones are wanted

Implements Go::ParamSurface.

29.499.3.30 const RectDomain& Go::SurfaceOfRevolution::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the sisl_dependent module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.499.3.31 void Go::SurfaceOfRevolution::point (Point & *pt*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.499.3.32 void Go::SurfaceOfRevolution::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.499.3.33 virtual void Go::SurfaceOfRevolution::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.499.3.34 void Go::SurfaceOfRevolution::reverseParameterDirection (bool *direction_is_u*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

direction_is↩ _u	if 'true', the first parameter direction will be reversed, otherwise, the second parameter direction will be reversed

Implements Go::ParamSurface.

29.499.3.35 void Go::SurfaceOfRevolution::setParameterBounds (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar*)

Limit the surface by limiting the parameter domain.

29.499.3.36 SurfaceOfRevolution* Go::SurfaceOfRevolution::subSurface (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

Pick part of surface.

29.499.3.37 std::vector<shared_ptr<ParamSurface> > Go::SurfaceOfRevolution::subSurfaces (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.499.3.38 void Go::SurfaceOfRevolution::swapParameterDirection ( ) [virtual]

Swaps the two parameter directions.

Implements Go::ParamSurface.

29.499.3.39 DirectionCone Go::SurfaceOfRevolution::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.499.3.40 void Go::SurfaceOfRevolution::turnOrientation ( ) [virtual]

Turns the direction of the normal of the surface.

Implements Go::ParamSurface.

29.499.3.41 virtual void Go::SurfaceOfRevolution::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

The documentation for this class was generated from the following file:

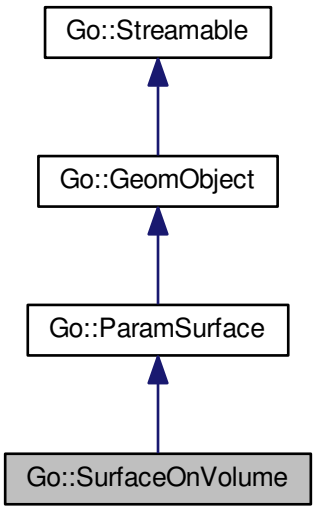
- gotools-core/include/GoTools/geometry/SurfaceOfRevolution.h

29.500 Go::SurfaceOnVolume Class Reference

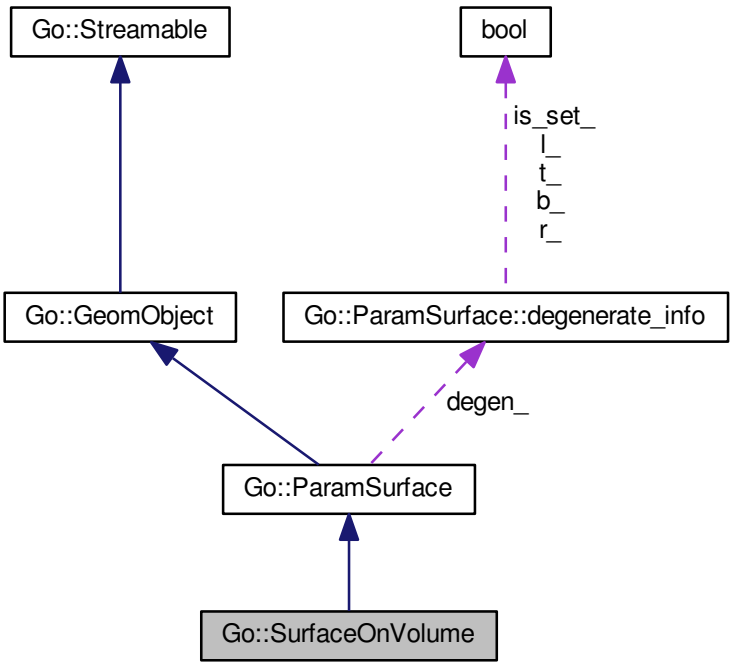
A surface living on a parametric volume. It either has got information about the surface in geometry space and in the parameter domain of the volume or both. The surface may have information on whether it is a constant parameter or boundary surface on the volume.

```
#include <SurfaceOnVolume.h>
```

Inheritance diagram for Go::SurfaceOnVolume:



Collaboration diagram for Go::SurfaceOnVolume:



Public Member Functions

- SurfaceOnVolume ()

  Empty constructor.
- SurfaceOnVolume (shared_ptr< ParamVolume > vol, shared_ptr< ParamSurface > parsurf, shared_ptr< ParamSurface > spacesurf, bool preferparameter)
- SurfaceOnVolume (shared_ptr< ParamVolume > vol, shared_ptr< ParamSurface > spacesurf, int constdir, double constpar, int boundary, bool swapped, int orientation=0)
- SurfaceOnVolume (shared_ptr< ParamVolume > vol, int constdir, double constpar, int boundary)
- SurfaceOnVolume (shared_ptr< ParamVolume > vol, shared_ptr< ParamSurface > spacesurf, shared_ptr< ParamSurface > parsurf, bool prefer_parameter, int constdir, double constpar, int boundary, bool swapped)
- SurfaceOnVolume (const SurfaceOnVolume &other)

  Assignment constructor.
- virtual ~SurfaceOnVolume ()

  Destructor.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual BoundingBox boundingBox () const

  Axis align box surrounding this object.
- virtual int dimension () const

  Dimension of geometry space.
- virtual ClassType instanceType () const

  Return the class type identifier of type SurfaceOnVolume.
- virtual SurfaceOnVolume * clone () const
- virtual SplineSurface * asSplineSurface ()

  Return the spline surface represented by this surface, if any.
- virtual const Domain & parameterDomain () const
- virtual RectDomain containingDomain () const
- virtual bool inDomain (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies inside the domain of this surface.
- virtual int inDomain2 (double u, double v, double eps=1.0e-4) const
- virtual bool onBoundary (double u, double v, double eps=1.0e-4) const

  Check if a parameter pair lies at the boundary of this surface.
- virtual Point closestInDomain (double u, double v) const
- virtual CurveLoop outerBoundaryLoop (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- virtual std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EP↩ SILON) const
- virtual DirectionCone normalCone () const
- virtual DirectionCone tangentCone (bool pardir_is_u) const
- virtual CompositeBox compositeBox () const
- virtual void point (Point &pt, double upar, double vpar) const
- virtual void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_from_right=true, double resolution=1.0e-12) const
- virtual void normal (Point &n, double upar, double vpar) const
- virtual std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- virtual std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- virtual double nextSegmentVal (int dir, double par, bool forward, double tol) const
- virtual void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const
- virtual void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const

- virtual void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- virtual void turnOrientation ()

  Turns the direction of the normal of the surface.
- virtual void reverseParameterDirection (bool direction_is_u)
- virtual void swapParameterDirection ()

  Swaps the two parameter directions.
- virtual double area (double tol) const
- virtual bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for paralell and anti paralell partial derivatives in surface corners.
- virtual void getCornerPoints (std::vector< std::pair< Point, Point > > &corners) const
- virtual bool isIsoTrimmed (double tol) const

  Check if the current surface is trimmed along constant parameter curves.
- int whichBoundary (double tol, int &orientation, bool &swap) const
- Point volumeParameter (double u_par, double v_par) const

  Volume parameter corresponding to surface parameter.
- shared_ptr< const ParamVolume > getVolume () const

  Get volume.
- shared_ptr< ParamVolume > getVolume ()

  Get volume.
- void setVolume (shared_ptr< ParamVolume > volume)

  Set/replace volume. NB! Use care.
- shared_ptr< const ParamSurface > parameterSurface () const

  Get parameter surface.
- shared_ptr< ParamSurface > parameterSurface ()

  Get parameter surface.
- shared_ptr< const ParamSurface > spaceSurface () const

  Get space surface.
- shared_ptr< ParamSurface > spaceSurface ()

  Get space surface.
- void setSpaceSurface (shared_ptr< ParamSurface > spacesurf)

  For internal use. Careful!
- bool parPref () const
- double getConstVal () const

  Fetch the constant parameter value of the volume associated with this surface.
- int getConstDir () const

  Fetch the constant parameter direction of the volume, if any, associated.
- void unsetParamSurf ()

  Unset parameter surface information.
- virtual bool isLinear (Point &dir1, Point &dir2, double tol)

  Check if the surface is linear in one or both parameter directions.
- virtual int ElementOnBoundary (int elem_ix, double eps)
- virtual int ElementBoundaryStatus (int elem_ix, double eps)

Static Public Member Functions

- static ClassType classType ()

  Return the class type identifier of type SurfaceOnVolumeBoundedSurface.

Additional Inherited Members

29.500.1 Detailed Description

A surface living on a parametric volume. It either has got information about the surface in geometry space and in the parameter domain of the volume or both. The surface may have information on whether it is a constant parameter or boundary surface on the volume.

Definition at line 54 of file SurfaceOnVolume.h.

29.500.2 Constructor & Destructor Documentation

29.500.2.1 Go::SurfaceOnVolume::SurfaceOnVolume ( )

Empty constructor.

29.500.2.2 Go::SurfaceOnVolume::SurfaceOnVolume (shared_ptr< **ParamVolume** > *vol*, shared_ptr< **ParamSurface** > *parsurf*, shared_ptr< **ParamSurface** > *spacesurf*, **bool** *preferparameter*)

Constructor given associated volue, the surface in the parameter plane of this volume and the corresponding surface in geometry space. One surface representation may be a dummy. In that case the parameter indicating which surface representation is the master, must be set accordingly

Parameters

vol	associated volume
parsurf	surface in parameter domain of the volume
spacesurf	surface in geometry space
preferparameter	true if the parameter surface is the master

29.500.2.3 Go::SurfaceOnVolume::SurfaceOnVolume (shared_ptr< **ParamVolume** > *vol*, shared_ptr< **ParamSurface** > *spacesurf*, int *constdir*, **double** *constpar*, int *boundary*, **bool** *swapped*, int *orientation* = 0)

Constructor given the volume, the surface in geometry space and constant parameter information related to the surface

Parameters

vol	associated volume
spacesurf	surface in geometry space
constdir	0 = not set, 1 = u-parameter constant, 2 = v-parameter constant, 3 = w-parameter constant
constpar	value of constant parameter
boundary	index: -1=no, 0=umin, 1=umax, 2=vmin, 3=vmax, 4=wmin, 5=wmax
swapped	orientation of surface related to underlying volume

29.500.2.4 Go::SurfaceOnVolume::SurfaceOnVolume (shared_ptr< ParamVolume > *vol,* int *constdir,* double *constpar,* int *boundary*)

Constructor given volume and constant parameter information. Must only be used if the constant parameter information is set

29.500.2.5 Go::SurfaceOnVolume::SurfaceOnVolume (shared_ptr< ParamVolume > *vol,* shared_ptr< ParamSurface > *spacesurf,* shared_ptr< ParamSurface > *parsurf,* bool *prefer_parameter,* int *constdir,* double *constpar,* int *boundary,* bool *swapped*)

Constructor to be used if all information is known

Parameters

vol	associated volume
parsurf	surface in parameter domain of the volume
spacesurf	surface in geometry space
constdir	0 = not set, 1 = u-parameter constant, 2 = v-parameter constant, 3 = w-parameter constant
constpar	value of constant parameter
boundary	index: -1=no, 0=umin, 1=umax, 2=vmin, 3=vmax, 4=wmin, 5=wmax
swapped	orientation of surface related to underlying volume

29.500.2.6 Go::SurfaceOnVolume::SurfaceOnVolume (const SurfaceOnVolume & *other*)

Assignment constructor.

29.500.2.7 virtual Go::SurfaceOnVolume::~SurfaceOnVolume ( ) [virtual]

Destructor.

29.500.3 Member Function Documentation

29.500.3.1 virtual std::vector<CurveLoop> Go::SurfaceOnVolume::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.500.3.2 virtual double Go::SurfaceOnVolume::area (double *tol*) const [virtual]

Compute the total area of this surface up to some tolerance

Parameters

tol	the relative tolerance when approximating the area, i.e. stop iteration when error becomes smaller than tol/(surface area)

Returns

the area calculated

Implements Go::ParamSurface.

29.500.3.3 virtual SplineSurface* Go::SurfaceOnVolume::asSplineSurface ( ) [inline], [virtual]

Return the spline surface represented by this surface, if any.

Reimplemented from Go::ParamSurface.

Definition at line 150 of file SurfaceOnVolume.h.

29.500.3.4 virtual BoundingBox Go::SurfaceOnVolume::boundingBox ( ) const [virtual]

Axis align box surrounding this object.

Implements Go::GeomObject.

29.500.3.5 static ClassType Go::SurfaceOnVolume::classType ( ) [inline], [static]

Return the class type identifier of type SurfaceOnVolumeBoundedSurface.

Definition at line 138 of file SurfaceOnVolume.h.

29.500.3.6 virtual SurfaceOnVolume* Go::SurfaceOnVolume::clone ( ) const [inline], [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ParamSurface.

Definition at line 144 of file SurfaceOnVolume.h.

29.500.3.7 virtual void Go::SurfaceOnVolume::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.500.3.8 virtual Point Go::SurfaceOnVolume::closestInDomain (double *u*, double *v*) const [virtual]

Return the closest parameter pair in the domain of this surface, given an initial parameter pair

Implements Go::ParamSurface.

29.500.3.9 virtual void Go::SurfaceOnVolume::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.500.3.10 virtual CompositeBox Go::SurfaceOnVolume::compositeBox ( ) const [virtual]

Creates a composite box enclosing the surface. The composite box consists of an inner and an edge box. The inner box is supposed to be made from the interior of the surface, while the edge box is made from the boundary curves. The default implementation simply makes both boxes identical to the regular bounding box.

Returns

the CompositeBox of the surface, as specified above

Reimplemented from Go::ParamSurface.

29.500.3.11 virtual std::vector<shared_ptr<ParamCurve> > Go::SurfaceOnVolume::constParamCurves (double *parameter*, bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.500.3.12 virtual RectDomain Go::SurfaceOnVolume::containingDomain ( ) const [virtual]

Get a rectangular parameter domain that is guaranteed to contain the surface's parameterDomain(). It may be the same. There is no guarantee that this is the smallest domain containing the actual domain.

Returns

a RectDomain that is guaranteed to include the surface's total parameter domain.

Implements Go::ParamSurface.

29.500.3.13 virtual int Go::SurfaceOnVolume::dimension ( ) const [virtual]

Dimension of geometry space.

Implements Go::GeomObject.

29.500.3.14 virtual int Go::SurfaceOnVolume::ElementBoundaryStatus (int *elem_ix*, double *eps*) [inline], [virtual]

Check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries of this ftSurface, is inside or outside

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y
eps	Intersection tolerance

Returns

-1: Not a spline surface or element index out of range 0: Outside trimmed volume 1: On boundary (intersection with boundary found) 2: Internal to trimmed surfaces Note that a touch with the boundaries of the underlying surface is not consdered a boundary intersection while touching a trimming curve is seen as an intersection

Reimplemented from Go::ParamSurface.

Definition at line 547 of file SurfaceOnVolume.h.

29.500.3.15 virtual int Go::SurfaceOnVolume::ElementOnBoundary (int *elem_ix*, double *eps*) [inline], [virtual]

Check if a polynomial element (for spline surfaces) intersects the (trimming) boundaries of this surface

Parameters

elem_ix	Element index counted according to distinct knot values. Sequence of coordinates: x runs fastest, then y
eps	Intersection tolerance

Returns

-1: Not a spline surface or element index out of range 0: Not on boundary or touching a boundary curve 1: On boundary (intersection with boundary found) Note that a touch with the boundaries of the underlying surfaces is not consdered a boundary intersection while touching a trimming curve is seen as an intersection

Reimplemented from Go::ParamSurface.

Definition at line 527 of file SurfaceOnVolume.h.

29.500.3.16 virtual void Go::SurfaceOnVolume::getBoundaryInfo (Point & *pt1*, Point & *pt2*, double *epsilon*, SplineCurve *& *cv*, SplineCurve *& *crosscv*, double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.500.3.17 int Go::SurfaceOnVolume::getConstDir ( ) const [inline]

Fetch the constant parameter direction of the volume, if any, associated.

Parameters

return	value: 0 = not set, 1 = u-parameter constant, 2 = v-parameter constant, 3 = w-parameter constant

Definition at line 505 of file SurfaceOnVolume.h.

29.500.3.18 double Go::SurfaceOnVolume::getConstVal ( ) const [inline]

Fetch the constant parameter value of the volume associated with this surface.

Definition at line 495 of file SurfaceOnVolume.h.

29.500.3.19 virtual void Go::SurfaceOnVolume::getCornerPoints (std::vector< std::pair< Point, Point > > & *corners*) const [virtual]

Return surface corners, i.e joints betwee trimming curves, geometric and parametric points in that sequence

Implements Go::ParamSurface.

29.500.3.20 virtual void Go::SurfaceOnVolume::getDegenerateCorners (std::vector< Point > & *deg_corners,* double *tol*) const [virtual]

Check for paralell and anti paralell partial derivatives in surface corners.

Implements Go::ParamSurface.

29.500.3.21 shared_ptr<const ParamVolume> Go::SurfaceOnVolume::getVolume ( ) const [inline]

Get volume.

Definition at line 441 of file SurfaceOnVolume.h.

29.500.3.22 shared_ptr<ParamVolume> Go::SurfaceOnVolume::getVolume ( ) [inline]

Get volume.

Definition at line 447 of file SurfaceOnVolume.h.

29.500.3.23 virtual bool Go::SurfaceOnVolume::inDomain (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies inside the domain of this surface.

Implements Go::ParamSurface.

29.500.3.24 virtual int Go::SurfaceOnVolume::inDomain2 (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies inside the domain of this surface return value = 0: outside = 1: internal = 2: at the boundary

Implements Go::ParamSurface.

29.500.3.25 virtual ClassType Go::SurfaceOnVolume::instanceType ( ) const [virtual]

Return the class type identifier of type SurfaceOnVolume.

Implements Go::GeomObject.

29.500.3.26 virtual bool Go::SurfaceOnVolume::isDegenerate (bool & *b*, bool & *r*, bool & *t*, bool & *l*, double *tolerance*) const [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

29.500.3.27 virtual bool Go::SurfaceOnVolume::isIsoTrimmed (double *tol*) const [virtual]

Check if the current surface is trimmed along constant parameter curves.

Reimplemented from Go::ParamSurface.

29.500.3.28 virtual bool Go::SurfaceOnVolume::isLinear (Point & *dir1,* Point & *dir2,* double *tol*) [virtual]

Check if the surface is linear in one or both parameter directions.

Reimplemented from Go::ParamSurface.

29.500.3.29 virtual double Go::SurfaceOnVolume::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.500.3.30 virtual void Go::SurfaceOnVolume::normal (Point & *n,* double *upar,* double *vpar*) const [virtual]

Evaluates the surface normal for a given parameter pair

Parameters

n	the computed normal will be written to this variable
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.500.3.31 virtual DirectionCone Go::SurfaceOnVolume::normalCone ( ) const [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.500.3.32 virtual bool Go::SurfaceOnVolume::onBoundary (double *u*, double *v*, double *eps* = 1.0e-4) const [virtual]

Check if a parameter pair lies at the boundary of this surface.

Implements Go::ParamSurface.

29.500.3.33 virtual CurveLoop Go::SurfaceOnVolume::outerBoundaryLoop (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise, outer boundary loop of the surface.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a CurveLoop describing the anticlockwise, outer boundary loop of the surface.

Implements Go::ParamSurface.

29.500.3.34 virtual const Domain& Go::SurfaceOnVolume::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the sisl_dependent module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.500.3.35 shared_ptr<const ParamSurface> Go::SurfaceOnVolume::parameterSurface ( ) const [inline]

Get parameter surface.

Definition at line 459 of file SurfaceOnVolume.h.

29.500.3.36 shared_ptr<ParamSurface> Go::SurfaceOnVolume::parameterSurface ( ) [inline]

Get parameter surface.

Definition at line 465 of file SurfaceOnVolume.h.

29.500.3.37 bool Go::SurfaceOnVolume::parPref ( ) const [inline]

Query whether the parameter surface or the space surface is prefered for computation in this object.

Definition at line 491 of file SurfaceOnVolume.h.

29.500.3.38 virtual void Go::SurfaceOnVolume::point (Point & *pt*, double *upar*, double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.500.3.39 virtual void Go::SurfaceOnVolume::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.500.3.40 virtual void Go::SurfaceOnVolume::read (std::istream & *is*) [virtual]

Read surface on volume information from file Not implemented

Implements Go::Streamable.

29.500.3.41 virtual void Go::SurfaceOnVolume::reverseParameterDirection (bool *direction_is_u*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

direction_is_u	if 'true', the first parameter direction will be reversed, otherwise, the second parameter direction will be reversed

Implements Go::ParamSurface.

29.500.3.42 void Go::SurfaceOnVolume::setSpaceSurface (shared_ptr< ParamSurface > *spacesurf*) [inline]

For internal use. Careful!

Definition at line 484 of file SurfaceOnVolume.h.

29.500.3.43 void Go::SurfaceOnVolume::setVolume (shared_ptr< ParamVolume > *volume*) [inline]

Set/replace volume. NB! Use care.

Definition at line 453 of file SurfaceOnVolume.h.

29.500.3.44 shared_ptr<const ParamSurface> Go::SurfaceOnVolume::spaceSurface ( ) const [inline]

Get space surface.

Definition at line 471 of file SurfaceOnVolume.h.

29.500.3.45 shared_ptr<ParamSurface> Go::SurfaceOnVolume::spaceSurface ( ) [inline]

Get space surface.

Definition at line 477 of file SurfaceOnVolume.h.

29.500.3.46 virtual std::vector<shared_ptr<ParamSurface> > Go::SurfaceOnVolume::subSurfaces (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.500.3.47 virtual void Go::SurfaceOnVolume::swapParameterDirection ( ) [virtual]

Swaps the two parameter directions.

Implements Go::ParamSurface.

29.500.3.48 virtual DirectionCone Go::SurfaceOnVolume::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.500.3.49 virtual void Go::SurfaceOnVolume::turnOrientation ( ) [virtual]

Turns the direction of the normal of the surface.

Implements Go::ParamSurface.

29.500.3.50 void Go::SurfaceOnVolume::unsetParamSurf ( )

Unset parameter surface information.

29.500.3.51 Point Go::SurfaceOnVolume::volumeParameter (double *u_par,* double *v_par*) const

Volume parameter corresponding to surface parameter.

29.500.3.52 int Go::SurfaceOnVolume::whichBoundary (double *tol,* int & *orientation,* bool & *swap*) const

Info on relation to corresponding volume Return value: -1=none, 0=umin, 1=umax, 2=vmin, 3=vmax, 4=wmin, 5=wmax orientation = -1 and return value >= 0: the orientation of the surface compared to the volume boundary is not known or the two surfaces are coincident but not identical

29.500.3.53 virtual void Go::SurfaceOnVolume::write (std::ostream & *os*) const [virtual]

Write surface on volume information to file for visualization purposes If the geometry space surface exists, only that surface is written

Implements Go::Streamable.

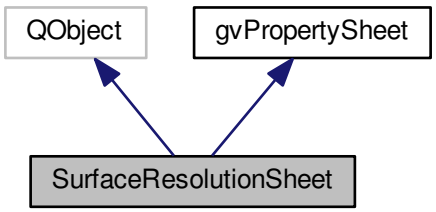
The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/SurfaceOnVolume.h

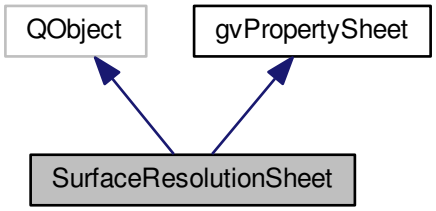
29.501 SurfaceResolutionSheet Class Reference

`#include <SurfaceResolutionSheet.h>`

Inheritance diagram for SurfaceResolutionSheet:



Collaboration diagram for SurfaceResolutionSheet:



Public Slots

- void ok ()

Signals

- void return_value (int, int)

Public Member Functions

- SurfaceResolutionSheet (int ures=20, int vres=20)
- virtual void createSheet (QWidget *parent, gvObserver *obs)

29.501.1 Detailed Description

Documentation ... etc

Definition at line 58 of file SurfaceResolutionSheet.h.

29.501.2 Constructor & Destructor Documentation

29.501.2.1 SurfaceResolutionSheet::SurfaceResolutionSheet (int *ures* = 20, int *vres* = 20) [inline]

Definition at line 64 of file SurfaceResolutionSheet.h.

29.501.3 Member Function Documentation

29.501.3.1 virtual void SurfaceResolutionSheet::createSheet (QWidget * *parent*, gvObserver * *obs*) [virtual]

Implements gvPropertySheet.

29.501.3.2 void SurfaceResolutionSheet::ok ( ) [slot]

29.501.3.3 void SurfaceResolutionSheet::return_value (int , int) [signal]

The documentation for this class was generated from the following file:

- viewlib/include/GoTools/viewlib/SurfaceResolutionSheet.h

29.502 Go::SweepSurfaceCreator Class Reference

Functionality to create a spline surface by linear or rotational sweep.

```
#include <SweepSurfaceCreator.h>
```

Public Member Functions

- virtual ~SweepSurfaceCreator ()

Static Public Member Functions

- static SplineSurface * linearSweptSurface (const SplineCurve &curv1, const SplineCurve &curv2, const Point &pt)
- static SplineSurface * rotationalSweptSurface (const SplineCurve &curve, double angle, const Point &pt, const Point &axis)

29.502.1 Detailed Description

Functionality to create a spline surface by linear or rotational sweep.

Definition at line 51 of file SweepSurfaceCreator.h.

29.502.2 Constructor & Destructor Documentation

29.502.2.1 virtual Go::SweepSurfaceCreator::~SweepSurfaceCreator ( ) [inline], [virtual]

Definition at line 57 of file SweepSurfaceCreator.h.

29.502.3 Member Function Documentation

29.502.3.1 static SplineSurface* Go::SweepSurfaceCreator::linearSweptSurface (const SplineCurve & *curv1,* const SplineCurve & *curv2,* const Point & *pt*) [static]

Create a linearly swept surface as a tensor product of two curves. If P is the point to be swept, and the curves have B-spline coefficients C_i and D_j, then the surface has B-spline coefficients $C_i + D_j - P$. If the point lies on the first curve, the first curve will be swept along the second curve. If the point lies on the second curve, the second curve will be swept along the first curve.

Parameters

curv1	the first curve
curv2	the second curve
pt	the point to be swept

Returns

a pointer to the swept surface

29.502.3.2 static SplineSurface* Go::SweepSurfaceCreator::rotationalSweptSurface (const SplineCurve & *curve,* double *angle,* const Point & *pt,* const Point & *axis*) [static]

Create a surface as the rotation of a curve around an axis

Parameters

curve	the curve
angle	the rotation angle (in radians). If less than 2π, it is truncated down to 2π. If more than -2π, it is truncated up to -2π.
pt	a point on the rotation axis
axis	a vector describing the direction of the rotation axis

Returns

a pointer to the rotated surface

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/geometry/SweepSurfaceCreator.h

29.503 Go::SweepVolumeCreator Class Reference

Class with static methods for volume creation by sweep methods.

`#include <SweepVolumeCreator.h>`

Public Member Functions

- virtual ~SweepVolumeCreator ()

Static Public Member Functions

- static SplineVolume * linearSweptVolume (const SplineSurface &surface, const SplineCurve &curve, const Point &pt)
- static SplineVolume * rotationalSweptVolume (const SplineSurface &surface, double angle, const Point &pt, const Point &axis)

29.503.1 Detailed Description

Class with static methods for volume creation by sweep methods.

Definition at line 53 of file SweepVolumeCreator.h.

29.503.2 Constructor & Destructor Documentation

29.503.2.1 virtual Go::SweepVolumeCreator::~SweepVolumeCreator ( ) [inline], [virtual]

Definition at line 59 of file SweepVolumeCreator.h.

29.503.3 Member Function Documentation

29.503.3.1 static SplineVolume* Go::SweepVolumeCreator::linearSweptVolume (const SplineSurface & *surface,* const SplineCurve & *curve,* const Point & *pt*) [static]

Create a linearly swept volume as a tensor product of a surface and a curve. If P is the point to be swept, the surface has B-spline coefficients $S_{i,j}$ and the curve has B-spline coefficients C_k then the volume has B-spline coefficients $S_{i,j} + C_k - P$. If the point lies on the curve, the curve will be swept along the surface. If the point lies on the surface, the surface will be swept along the curve.

Parameters

surface	the surface
curve	the curve
pt	the point to be swept

Returns

a pointer to the swept volume

29.503.3.2 static SplineVolume* Go::SweepVolumeCreator::rotationalSweptVolume (const SplineSurface & *surface,* double *angle,* const Point & *pt,* const Point & *axis*) [static]

Create a volume as the rotation of a surface around an axis

Parameters

surface	the surface
angle	the rotation angle (in radians). If more than 2π, it is truncated down to 2π. If less than -2π, it is truncated up to -2π.
pt	a point on the rotation axis
axis	a vector describing the direction of the rotation axis

Returns

a pointer to the rotated volume

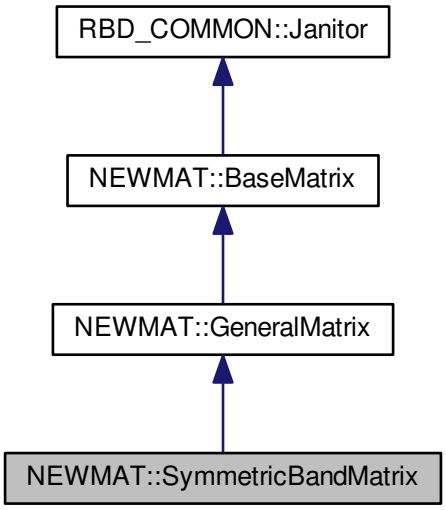
The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/SweepVolumeCreator.h

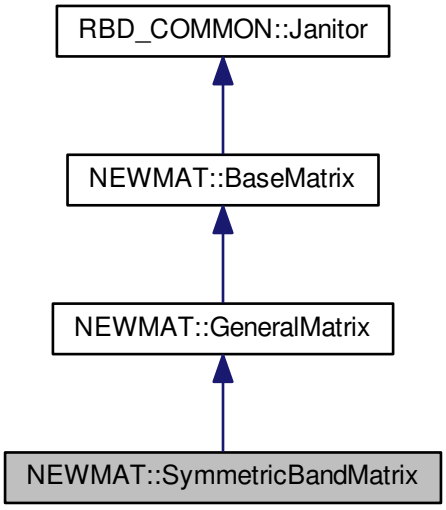
29.504 NEWMAT::SymmetricBandMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::SymmetricBandMatrix:



Collaboration diagram for NEWMAT::SymmetricBandMatrix:



Public Member Functions

- SymmetricBandMatrix ()

- ~SymmetricBandMatrix ()
- SymmetricBandMatrix (int n, int lb)
- SymmetricBandMatrix (const BaseMatrix &)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- void operator= (const SymmetricBandMatrix &m)
- Real & operator() (int, int)
- Real & element (int, int)
- Real operator() (int, int) const
- Real element (int, int) const
- MatrixType Type () const
- SymmetricBandMatrix (const SymmetricBandMatrix &gm)
- GeneralMatrix * MakeSolver ()
- Real SumSquare () const
- Real SumAbsoluteValue () const
- Real Sum () const
- Real MaximumAbsoluteValue () const
- Real MinimumAbsoluteValue () const
- Real Maximum () const
- Real Minimum () const
- Real Trace () const
- LogAndSign LogDeterminant () const
- void GetRow (MatrixRowCol &)
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &)
- void RestoreCol (MatrixRowCol &)
- void RestoreCol (MatrixColX &)
- GeneralMatrix * Transpose (TransposedMatrix *, MatrixType)
- void ReSize (int, int)
- void ReSize (const GeneralMatrix &A)
- bool SameStorageType (const GeneralMatrix &A) const
- void ReSizeForAdd (const GeneralMatrix &A, const GeneralMatrix &B)
- void ReSizeForSP (const GeneralMatrix &A, const GeneralMatrix &B)
- MatrixBandWidth BandWidth () const
- void SetParameters (const GeneralMatrix *)

Public Attributes

- int lower

Additional Inherited Members

29.504.1 Detailed Description

Definition at line 1017 of file newmat.h.

29.504.2 Constructor & Destructor Documentation

29.504.2.1 NEWMAT::SymmetricBandMatrix::SymmetricBandMatrix ( ) [inline]

Definition at line 1024 of file newmat.h.

29.504.2.2 NEWMAT::SymmetricBandMatrix::~SymmetricBandMatrix ( ) [inline]

Definition at line 1025 of file newmat.h.

29.504.2.3 NEWMAT::SymmetricBandMatrix::SymmetricBandMatrix (int *n*, int *lb*) [inline]

Definition at line 1026 of file newmat.h.

29.504.2.4 NEWMAT::SymmetricBandMatrix::SymmetricBandMatrix (const BaseMatrix &)

29.504.2.5 NEWMAT::SymmetricBandMatrix::SymmetricBandMatrix (const SymmetricBandMatrix & *gm*) [inline]

Definition at line 1041 of file newmat.h.

29.504.3 Member Function Documentation

29.504.3.1 MatrixBandWidth SymmetricBandMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 529 of file bandmat.cpp.

29.504.3.2 Real& NEWMAT::SymmetricBandMatrix::element (int , int)

29.504.3.3 Real NEWMAT::SymmetricBandMatrix::element (int , int) const

29.504.3.4 void NEWMAT::SymmetricBandMatrix::GetCol (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.504.3.5 void NEWMAT::SymmetricBandMatrix::GetCol (MatrixColX &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.504.3.6 void SymmetricBandMatrix::GetRow (MatrixRowCol & *mrc*) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 648 of file newmat3.cpp.

29.504.3.7 LogAndSign SymmetricBandMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 439 of file bandmat.cpp.

29.504.3.8 GeneralMatrix * SymmetricBandMatrix::MakeSolver ( ) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 421 of file bandmat.cpp.

29.504.3.9 Real NEWMAT::SymmetricBandMatrix::Maximum ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 1050 of file newmat.h.

29.504.3.10 Real NEWMAT::SymmetricBandMatrix::MaximumAbsoluteValue ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 1046 of file newmat.h.

29.504.3.11 Real NEWMAT::SymmetricBandMatrix::Minimum ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 1051 of file newmat.h.

29.504.3.12 Real NEWMAT::SymmetricBandMatrix::MinimumAbsoluteValue ( ) const [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 1048 of file newmat.h.

29.504.3.13 Real& NEWMAT::SymmetricBandMatrix::operator() (int , int)

29.504.3.14 Real NEWMAT::SymmetricBandMatrix::operator() (int , int) const

29.504.3.15 void NEWMAT::SymmetricBandMatrix::operator= (const BaseMatrix &)

29.504.3.16 void NEWMAT::SymmetricBandMatrix::operator= (Real *f*) [inline]

Definition at line 1029 of file newmat.h.

29.504.3.17 void NEWMAT::SymmetricBandMatrix::operator= (const SymmetricBandMatrix & *m*) [inline]

Definition at line 1030 of file newmat.h.

29.504.3.18 void NEWMAT::SymmetricBandMatrix::ReSize (int , int)

29.504.3.19 void SymmetricBandMatrix::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 457 of file bandmat.cpp.

29.504.3.20 void SymmetricBandMatrix::ReSizeForAdd (const GeneralMatrix & *A*, const GeneralMatrix & *B*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 482 of file bandmat.cpp.

29.504.3.21 void SymmetricBandMatrix::ReSizeForSP (const GeneralMatrix & *A*, const GeneralMatrix & *B*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 494 of file bandmat.cpp.

29.504.3.22 void NEWMAT::SymmetricBandMatrix::RestoreCol (MatrixRowCol &) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 1057 of file newmat.h.

29.504.3.23 void NEWMAT::SymmetricBandMatrix::RestoreCol (MatrixColX &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

29.504.3.24 bool SymmetricBandMatrix::SameStorageType (const GeneralMatrix & *A*) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 475 of file bandmat.cpp.

29.504.3.25 void SymmetricBandMatrix::SetParameters (const GeneralMatrix * *gmx*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 445 of file bandmat.cpp.

29.504.3.26 Real SymmetricBandMatrix::Sum ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 555 of file bandmat.cpp.

29.504.3.27 Real SymmetricBandMatrix::SumAbsoluteValue ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 545 of file bandmat.cpp.

29.504.3.28 Real SymmetricBandMatrix::SumSquare ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 535 of file bandmat.cpp.

29.504.3.29 Real SymmetricBandMatrix::Trace ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 590 of file newmat8.cpp.

29.504.3.30 GeneralMatrix * SymmetricBandMatrix::Transpose (TransposedMatrix *, MatrixType *mt*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 436 of file bandmat.cpp.

29.504.3.31 MatrixType SymmetricBandMatrix::Type ( ) const [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 396 of file newmat4.cpp.

29.504.4 Member Data Documentation

29.504.4.1 int NEWMAT::SymmetricBandMatrix::lower

Definition at line 1023 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/bandmat.cpp
- newmat/src/newmat3.cpp
- newmat/src/newmat4.cpp
- newmat/src/newmat8.cpp

29.505 NEWMAT::SymmetricEigenAnalysis Class Reference

```
#include <newmatap.h>
```

Public Member Functions

- SymmetricEigenAnalysis (const SymmetricMatrix &)

29.505.1 Detailed Description

Definition at line 63 of file newmatap.h.

29.505.2 Constructor & Destructor Documentation

29.505.2.1 NEWMAT::SymmetricEigenAnalysis::SymmetricEigenAnalysis (const SymmetricMatrix &)

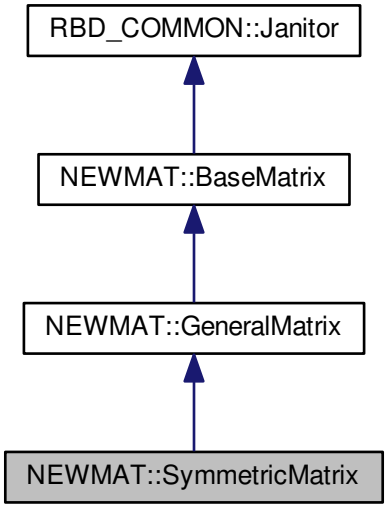
The documentation for this class was generated from the following file:

- newmat/include/newmatap.h

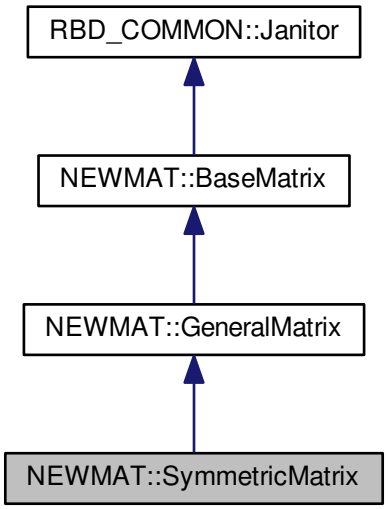
29.506 NEWMAT::SymmetricMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::SymmetricMatrix:



Collaboration diagram for NEWMAT::SymmetricMatrix:



Public Member Functions

- SymmetricMatrix ()
- ~SymmetricMatrix ()
- SymmetricMatrix (ArrayLengthSpecifier)
- SymmetricMatrix (const BaseMatrix &)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- void operator= (const SymmetricMatrix &m)
- Real & operator() (int, int)
- Real & element (int, int)
- Real operator() (int, int) const
- Real element (int, int) const
- MatrixType Type () const
- SymmetricMatrix (const SymmetricMatrix &gm)
- Real SumSquare () const
- Real SumAbsoluteValue () const
- Real Sum () const
- Real Trace () const
- void GetRow (MatrixRowCol &)
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &)
- void RestoreCol (MatrixRowCol &)
- void RestoreCol (MatrixColX &)
- GeneralMatrix * Transpose (TransposedMatrix *, MatrixType)
- void ReSize (int)
- void ReSize (const GeneralMatrix &A)

Additional Inherited Members

29.506.1 Detailed Description

Definition at line 634 of file newmat.h.

29.506.2 Constructor & Destructor Documentation

29.506.2.1 NEWMAT::SymmetricMatrix::SymmetricMatrix ( ) [inline]

Definition at line 638 of file newmat.h.

29.506.2.2 NEWMAT::SymmetricMatrix::~SymmetricMatrix ( ) [inline]

Definition at line 639 of file newmat.h.

29.506.2.3 NEWMAT::SymmetricMatrix::SymmetricMatrix (ArrayLengthSpecifier)

29.506.2.4 NEWMAT::SymmetricMatrix::SymmetricMatrix (const BaseMatrix &)

29.506.2.5 NEWMAT::SymmetricMatrix::SymmetricMatrix (const SymmetricMatrix & *gm*) [inline]

Definition at line 654 of file newmat.h.

29.506.3 Member Function Documentation

29.506.3.1 Real& NEWMAT::SymmetricMatrix::element (int , int)

29.506.3.2 Real NEWMAT::SymmetricMatrix::element (int , int) const

29.506.3.3 void NEWMAT::SymmetricMatrix::GetCol (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.506.3.4 void NEWMAT::SymmetricMatrix::GetCol (MatrixColX &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.506.3.5 void SymmetricMatrix::GetRow (MatrixRowCol & *mrc*) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 397 of file newmat3.cpp.

29.506.3.6 Real& NEWMAT::SymmetricMatrix::operator() (int , int)

29.506.3.7 Real NEWMAT::SymmetricMatrix::operator() (int , int) const

29.506.3.8 void NEWMAT::SymmetricMatrix::operator= (const BaseMatrix &)

29.506.3.9 void NEWMAT::SymmetricMatrix::operator= (Real *f*) [inline]

Definition at line 643 of file newmat.h.

29.506.3.10 void NEWMAT::SymmetricMatrix::operator= (const SymmetricMatrix & *m*) [inline]

Definition at line 644 of file newmat.h.

29.506.3.11 void NEWMAT::SymmetricMatrix::ReSize (int)

29.506.3.12 void SymmetricMatrix::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 279 of file newmat4.cpp.

29.506.3.13 void NEWMAT::SymmetricMatrix::RestoreCol (MatrixRowCol &) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 662 of file newmat.h.

29.506.3.14 void NEWMAT::SymmetricMatrix::RestoreCol (MatrixColX &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

29.506.3.15 Real SymmetricMatrix::Sum ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 411 of file newmat8.cpp.

29.506.3.16 Real SymmetricMatrix::SumAbsoluteValue ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 395 of file newmat8.cpp.

29.506.3.17 Real SymmetricMatrix::SumSquare ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 382 of file newmat8.cpp.

29.506.3.18 Real SymmetricMatrix::Trace ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 554 of file newmat8.cpp.

29.506.3.19 GeneralMatrix * SymmetricMatrix::Transpose (TransposedMatrix *, MatrixType *mt*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 53 of file newmat5.cpp.

29.506.3.20 MatrixType SymmetricMatrix::Type ( ) const [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 386 of file newmat4.cpp.

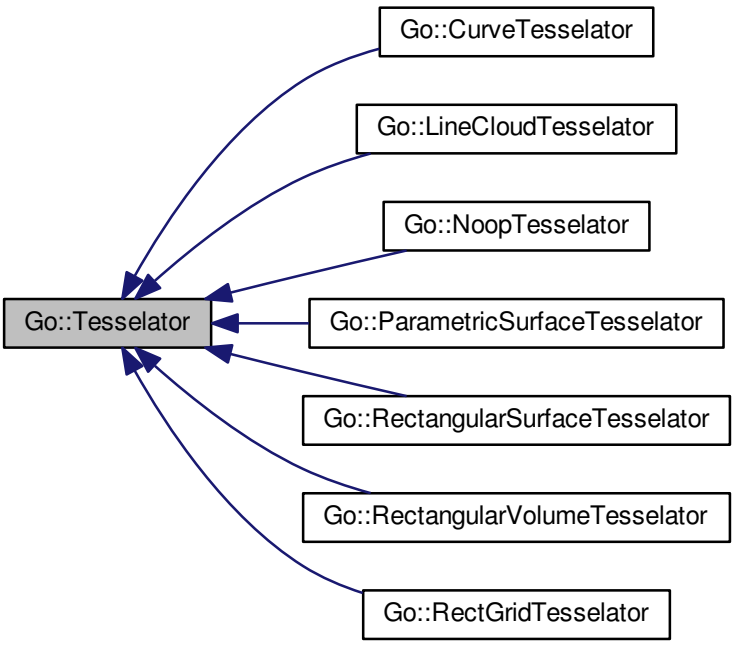
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat3.cpp
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp
- newmat/src/newmat8.cpp

29.507 Go::Tesselator Class Reference

`#include <Tesselator.h>`

Inheritance diagram for Go::Tesselator:



Public Member Functions

- virtual ~Tesselator ()
  Destructor.
- virtual void tesselate ()=0
  Perform tesselation.

29.507.1 Detailed Description

Tesselator: super class for tesselators.

Definition at line 53 of file Tesselator.h.

29.507.2 Constructor & Destructor Documentation

29.507.2.1 virtual Go::Tesselator::~Tesselator ( ) [virtual]

Destructor.

29.507.3 Member Function Documentation

29.507.3.1 virtual void Go::Tesselator::tesselate ( ) [pure virtual]

Perform tesselation.

Implemented in Go::RectangularVolumeTesselator, Go::RectangularSurfaceTesselator, Go::ParametricSurface↩Tesselator, Go::CurveTesselator, Go::RectGridTesselator, Go::LineCloudTesselator, and Go::NoopTesselator.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/Tesselator.h

29.508 TestClass Class Reference

Public Member Functions

- TestClass ()
- ReturnMatrix Sum ()

29.508.1 Detailed Description

Definition at line 19 of file tmtb.cpp.

29.508.2 Constructor & Destructor Documentation

29.508.2.1 TestClass::TestClass ( )

Definition at line 28 of file tmtb.cpp.

29.508.3 Member Function Documentation

29.508.3.1 ReturnMatrix TestClass::Sum ( )

Definition at line 39 of file tmtb.cpp.

The documentation for this class was generated from the following file:

- newmat/app/tmtb.cpp

29.509 Go::TestInDomain Class Reference

IntersectionPoolUtils. predicate for STL function.

`#include <IntersectionPoolUtils.h>`

Public Types

- typedef const shared_ptr< IntersectionLink > argument_type
- typedef bool result_type

Public Member Functions

- TestInDomain (const ParamObjectInt *obj1, const ParamObjectInt *obj2, shared_ptr< IntersectionPoint > ref_point)
- bool operator() (const shared_ptr< IntersectionLink > &I) const

29.509.1 Detailed Description

IntersectionPoolUtils. predicate for STL function.

Definition at line 168 of file IntersectionPoolUtils.h.

29.509.2 Member Typedef Documentation

29.509.2.1 typedef const shared_ptr<IntersectionLink> Go::TestInDomain::argument_type

Definition at line 213 of file IntersectionPoolUtils.h.

29.509.2.2 typedef bool Go::TestInDomain::result_type

Definition at line 214 of file IntersectionPoolUtils.h.

29.509.3 Constructor & Destructor Documentation

29.509.3.1 Go::TestInDomain::TestInDomain (const ParamObjectInt * *obj1*, const ParamObjectInt * *obj2*, shared_ptr< IntersectionPoint > *ref_point*) [inline]

Definition at line 172 of file IntersectionPoolUtils.h.

29.509.4 Member Function Documentation

29.509.4.1 bool Go::TestInDomain::operator() (const shared_ptr< IntersectionLink > & *l*) const [inline]

Definition at line 194 of file IntersectionPoolUtils.h.

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionPoolUtils.h

29.510 time_lapse Class Reference

`#include <tmt.h>`

Public Member Functions

- time_lapse ()
- ~time_lapse ()

29.510.1 Detailed Description

Definition at line 11 of file tmt.h.

29.510.2 Constructor & Destructor Documentation

29.510.2.1 time_lapse::time_lapse ( )

29.510.2.2 time_lapse::~time_lapse ( )

The documentation for this class was generated from the following file:

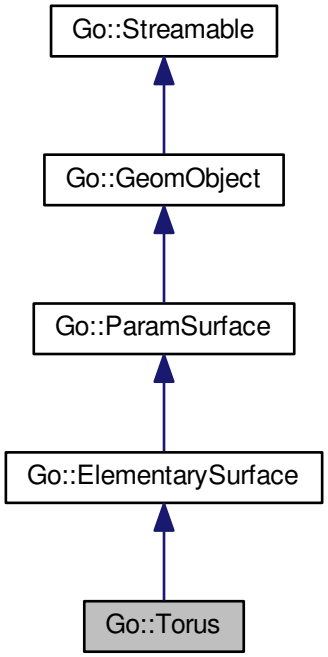
- newmat/include/tmt.h

29.511 Go::Torus Class Reference

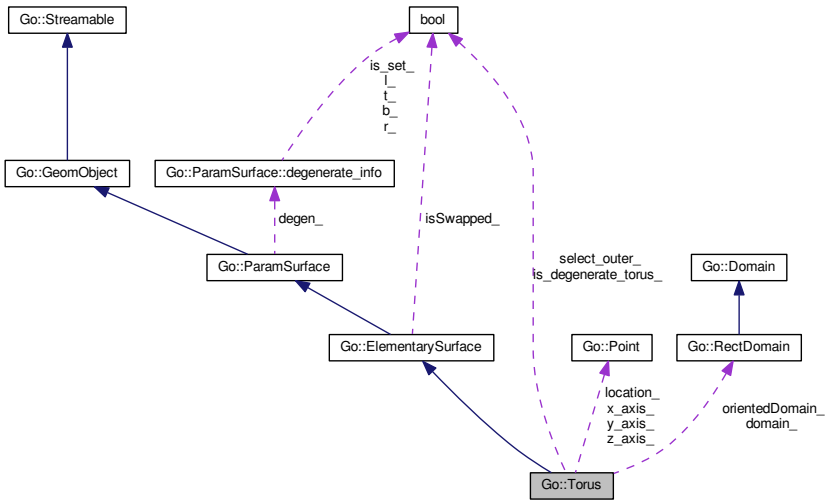
Class that represents a torus. It is a subclass of ElementarySurface, and thus has a parametrization. A torus may be degenerate. Then the minor radius is greater than the major radius, and it is in principle selfintersecting.

`#include <Torus.h>`

Inheritance diagram for Go::Torus:



Collaboration diagram for Go::Torus:



Public Member Functions

- Torus ()
- Torus (double major_radius, double minor_radius, Point location, Point z_axis, Point x_axis, bool select_outer=true, bool isSwapped=false)
- virtual ~Torus ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual Torus * clone () const
- const RectDomain & parameterDomain () const
- std::vector< CurveLoop > allBoundaryLoops (double degenerate_epsilon=DEFAULT_SPACE_EPSILON) const
- DirectionCone normalCone () const
- DirectionCone tangentCone (bool pardir_is_u) const
- void point (Point &pt, double upar, double vpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, int derivs, bool u_from_right=true, bool v_from_right=true, double resolution=1.0e-12) const
- void normal (Point &n, double upar, double vpar) const
- std::vector< shared_ptr< ParamCurve > > constParamCurves (double parameter, bool pardir_is_u) const
- std::vector< shared_ptr< ParamSurface > > subSurfaces (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *domain_of_interest=NULL, double *seed=0) const

- void closestBoundaryPoint (const Point &pt, double &clo_u, double &clo_v, Point &clo_pt, double &clo_dist, double epsilon, const RectDomain *rd=NULL, double *seed=0) const
- void getBoundaryInfo (Point &pt1, Point &pt2, double epsilon, SplineCurve *&cv, SplineCurve *&crosscv, double knot_tol=1e-05) const
- bool isDegenerate (bool &b, bool &r, bool &t, bool &l, double tolerance) const
- bool isBounded () const
- bool isClosed (bool &closed_dir_u, bool &closed_dir_v) const

  Check if the surface is closed.
- virtual void getDegenerateCorners (std::vector< Point > &deg_corners, double tol) const

  Check for paralell and anti paralell partial derivatives in surface corners.
- double getMajorRadius () const

  Fetch major radius.
- double getMinorRadius () const

  Fetch major radius.
- Point getLocation () const

  Fetch centre.
- void getCoordinateAxes (Point &x_axis, Point &y_axis, Point &z_axis) const

  Local coordinate axes.
- bool getSelectOuter () const
- void setSelectOuter (bool select_outer)
- double getPhi () const
- bool isDegenerateTorus () const
- virtual void setParameterBounds (double from_upar, double from_vpar, double to_upar, double to_vpar)

  Limit the surface by limiting the parameter domain.
- Torus * subSurface (double from_upar, double from_vpar, double to_upar, double to_vpar, double fuzzy=DEFAULT_PARAMETER_EPSILON) const

  Return the part of the torus surface limited by the parameter bounds.
- virtual SplineSurface * geometrySurface () const

  Create a SplineSurface representation of the Torus.
- virtual SplineSurface * createSplineSurface () const

  Create a SplineSurface representation of the Torus.
- shared_ptr< Circle > getMajorCircle (double vpar) const
- shared_ptr< Circle > getMinorCircle (double upar) const

Static Public Member Functions

- static ClassType classType ()

Protected Member Functions

- void setCoordinateAxes ()
- void setDegenerateInfo ()
- void setDefaultDomain ()

Protected Attributes

- double major_radius_
- double minor_radius_
- Point location_
- Point z_axis_
- Point x_axis_
- Point y_axis_
- bool is_degenerate_torus_
- bool select_outer_
- double phi_
- RectDomain domain_
- RectDomain orientedDomain_

29.511.1 Detailed Description

Class that represents a torus. It is a subclass of ElementarySurface, and thus has a parametrization. A torus may be degenerate. Then the minor radius is greater than the major radius, and it is in principle selfintersecting.

A nondegenerate Torus has a natural parametrization in terms of the two angles *u* and *v:* **p**(*u*, *v*) = **C** + (*R* + *r* cos *v*)((cos *u*) **x** + (sin *u*) **y**) + (*r* sin *v*) **z**, where **C** is a position vector, *R* is the major radius, *r* is the minor radius, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $0 \leq u, v \leq 2\pi$. The dimension is 3.

If the Torus is degenerate, there is an additional boolean parameter, `select_outer`, which selects the inner or outer (non-selfintersecting) part of the surface. This restricts the parametrization by: $-\phi \leq v \leq \phi$, if `select_outer` is `true`, and $\phi \leq v \leq 2\pi - \phi$, if `select_outer` is `false`. `select_outer` affects the direction of the normal, which always points outwards.

Definition at line 78 of file Torus.h.

29.511.2 Constructor & Destructor Documentation

29.511.2.1 Go::Torus::Torus ( ) [inline]

Default constructor. Constructs an uninitialized Torus which can only be assigned to or read into.

Definition at line 83 of file Torus.h.

29.511.2.2 Go::Torus::Torus (double *major_radius,* double *minor_radius,* Point *location,* Point *z_axis,* Point *x_axis,* bool *select_outer* = true, bool *isSwapped* = false)

Constructor. Input is the major and minor radii, the location, the direction of the z-axis and the (possibly approximate) x-axis. The local coordinate axes are normalized even if `z_axis` and/or `x_axis` are not unit vectors. If degenerate, one may also provide the select_outer flag.

29.511.2.3 virtual Go::Torus::~Torus ( ) [virtual]

Virtual destructor - ensures safe inheritance.

29.511.3 Member Function Documentation

29.511.3.1 std::vector<CurveLoop> Go::Torus::allBoundaryLoops (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) const [virtual]

Returns the anticlockwise outer boundary loop of the surface, together with clockwise loops of any interior boundaries, such that the surface always is 'to the left of' the loops.

Parameters

degenerate_epsilon	edges whose length is smaller than this value are ignored.

Returns

a vector containing CurveLoops. The first of these describe the outer boundary of the surface (clockwise), whereas the others describe boundaries of interior holes (clockwise).

Implements Go::ParamSurface.

29.511.3.2 virtual BoundingBox Go::Torus::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.511.3.3 static ClassType Go::Torus::classType ( ) [inline], [static]

Definition at line 112 of file Torus.h.

29.511.3.4 virtual Torus* Go::Torus::clone ( ) const [virtual]

make a clone of this surface and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementarySurface.

29.511.3.5 void Go::Torus::closestBoundaryPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *rd* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the boundary of the surface.

See also

closestPoint()

Implements Go::ParamSurface.

29.511.3.6 void Go::Torus::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, const RectDomain * *domain_of_interest* = NULL, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the surface.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
domain_of_interest	pointer to parameter domain in which to search for closest point. If a NULL pointer is used, the entire surface is searched.
seed	pointer to parameter values where iteration starts.

Reimplemented from Go::ParamSurface.

29.511.3.7 std::vector<shared_ptr<ParamCurve> > Go::Torus::constParamCurves (double *parameter*, bool *pardir_is_u*) const [virtual]

Get the curve(s) obtained by intersecting the surface with one of its constant parameter curves. For surfaces without holes, this will be the parameter curve itself; for surfaces with interior holes this may be a collection of several, disjoint curves.

Parameters

parameter	parameter value for the constant parameter (either u or v)
pardir_is_u	specify whether the *moving* parameter (as opposed to the *constant* parameter) is the first ('true') or the second ('false') one.

Returns

a vector containing shared pointers to the obtained, newly constructed constant-parameter curves.

Implements Go::ParamSurface.

29.511.3.8 virtual SplineSurface* Go::Torus::createSplineSurface ( ) const [virtual]

Create a SplineSurface representation of the Torus.

Implements Go::ElementarySurface.

29.511.3.9 virtual int Go::Torus::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.511.3.10 virtual SplineSurface* Go::Torus::geometrySurface ( ) const [virtual]

Create a SplineSurface representation of the Torus.

Implements Go::ElementarySurface.

29.511.3.11 void Go::Torus::getBoundaryInfo (Point & *pt1*, Point & *pt2*, double *epsilon*, SplineCurve *& *cv*, SplineCurve *& *crosscv*, double *knot_tol* = 1e-05) const [virtual]

Get the boundary curve segment between two points on the boundary, as well as the cross-tangent curve. If the given points are not positioned on the same boundary (within a certain tolerance), no curves will be created.

Parameters

pt1	the first point on the boundary, given by the user
pt2	the second point on the boundary, given by the user
epsilon	the tolerance used when determining whether the given points are lying on a boundary, and if they do, whether they both lie on the *same* boundary.
cv	upon return, this will point to a newly created curve representing the boundary curve between 'pt1' and 'pt2'. The user assumes ownership of this object and is responsible for its deletion. No curve is created if the given points are not found to lie on the same boundary.
crosscv	upon return, this will point to a newly created curve representing the cross-boundary curve between 'pt1' and 'pt2' The user assumes ownership of this object and is responsible for its deletion. The direction is outwards from the surface. No curve is created if the given points are not found to lie on the same boundary.
knot_tol	tolerance used when working with the knot-vector, to specify how close a parameter value must be to a knot in order to be considered 'on' the knot.

Implements Go::ParamSurface.

29.511.3.12 void Go::Torus::getCoordinateAxes (Point & *x_axis*, Point & *y_axis*, Point & *z_axis*) const [inline]

Local coordinate axes.

Definition at line 209 of file Torus.h.

29.511.3.13 virtual void Go::Torus::getDegenerateCorners (std::vector< Point > & *deg_corners*, double *tol*) const [virtual]

Check for paralell and anti paralell partial derivatives in surface corners.

Implements Go::ParamSurface.

29.511.3.14 Point Go::Torus::getLocation ( ) const [inline]

Fetch centre.

Definition at line 205 of file Torus.h.

29.511.3.15 shared_ptr<Circle> Go::Torus::getMajorCircle (double *vpar*) const

Get the major circle for a given v parameter.

Parameters

vpar	v parameter

Returns

A circle for the corresponding v parameter. If the v parameter is bounded, only a segment of a full circle is returned.

29.511.3.16 double Go::Torus::getMajorRadius ( ) const [inline]

Fetch major radius.

Definition at line 197 of file Torus.h.

29.511.3.17 shared_ptr<Circle> Go::Torus::getMinorCircle (double *upar*) const

Get the minor circle for a given u parameter.

Parameters

upar	u parameter

Returns

A circle for the corresponding u parameter. If the u parameter is bounded, only a segment of a full circle is returned.

29.511.3.18 double Go::Torus::getMinorRadius ( ) const [inline]

Fetch major radius.

Definition at line 201 of file Torus.h.

29.511.3.19 double Go::Torus::getPhi ( ) const [inline]

arccos(-major_radius/minor_radius). Used in degeneracy checks and to set the parameter domain of the surface

Definition at line 231 of file Torus.h.

29.511.3.20 bool Go::Torus::getSelectOuter ( ) const [inline]

Fetch the `select_outer` flag. If the torus is not degenerate, this function has no effect. If the torus is degenerate, and the value of the flag is changed, this will change the parameter domain of the surface to the appropriate default.

Definition at line 220 of file Torus.h.

29.511.3.21 virtual ClassType Go::Torus::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.511.3.22 bool Go::Torus::isBounded ( ) const [virtual]

Query if parametrization is bounded. All four parameter bounds must be finite for this to be true.

Returns

true if bounded, *false* otherwise

Reimplemented from Go::ElementarySurface.

29.511.3.23 bool Go::Torus::isClosed (bool & *closed_dir_u,* bool & *closed_dir_v*) const [virtual]

Check if the surface is closed.

Reimplemented from Go::ElementarySurface.

29.511.3.24 bool Go::Torus::isDegenerate (bool & *b,* bool & *r,* bool & *t,* bool & *l,* double *tolerance*) const [virtual]

The order of the edge indicators (bottom, right, top, left) matches the edge_number of edgeCurve(). Query whether any of the four boundary curves are degenerate (zero length) within a certain tolerance. In the below, we refer to 'u' as the first parameter and 'v' as the second.

Parameters

b	'true' upon return of function if the boundary (v = v_min) is degenerate
r	'true' upon return of function if the boundary (v = v_max) is degenerate
t	'true' upon return of function if the boundary (u = u_min) is degenerate
l	'true' upon return of function if the boundary (u = u_max) is degenerate
tolerance	boundaries are considered degenerate if their length is shorter than this value, given by the user

Returns

'true' if at least one boundary curve was found to be degenerate, 'false' otherwise.

Reimplemented from Go::ParamSurface.

29.511.3.25 bool Go::Torus::isDegenerateTorus ( ) const [inline]

Query if the Torus is degenerate. Note that a Torus may be degnerate, although the parameter domain might not represent a degnerate patch. Thus, isDegenerateTorus() might return `true` and isDegerate() might return `false` at the same time.

Definition at line 238 of file Torus.h.

29.511.3.26 double Go::Torus::nextSegmentVal (int *dir,* double *par,* bool *forward,* double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0 or 1)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamSurface.

29.511.3.27 void Go::Torus::normal (Point & *n,* double *upar,* double *vpar*) const [virtual]

The normal to the torus. The normal always points *outwards* from the surface, as seen from the circle of radius `major_radius_`. Thus, if the torus is degenerate and `select_outer_` is `false`, then the direction of the normal is opposite to $\partial p/\partial u \times \partial p \partial v$.

Implements Go::ParamSurface.

29.511.3.28 DirectionCone Go::Torus::normalCone ( ) const [virtual]

Creates a DirectionCone covering all normals to this surface.

Returns

a DirectionCone (not necessarily the smallest) containing all normals to this surface.

Implements Go::ParamSurface.

29.511.3.29 const RectDomain& Go::Torus::parameterDomain ( ) const [virtual]

Return the parameter domain of the surface. This may be a simple rectangular domain (RectDomain) or any other subclass of Domain (such as GoCurveBoundedDomain, found in the `sisl_dependent` module).

Returns

a Domain object describing the parametric domain of the surface

Implements Go::ParamSurface.

29.511.3.30 void Go::Torus::point (Point & *pt,* double *upar,* double *vpar*) const [virtual]

Evaluates the surface's position for a given parameter pair.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter

Implements Go::ParamSurface.

29.511.3.31 void Go::Torus::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the surface's position and a certain number of derivatives for a given parameter pair.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function, and should be equal to (derivs+1) $*$ (derivs+2) / 2. Upon completion of the function, its first entry is the surface's position at the given parameter pair. Then, if 'derivs' $>$ 0, the two next entries will be the surface tangents along the first and second parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dv2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamSurface.

29.511.3.32 virtual void Go::Torus::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.511.3.33 void Go::Torus::setCoordinateAxes ( ) [protected]

29.511.3.34 void Go::Torus::setDefaultDomain ( ) [protected]

29.511.3.35 void Go::Torus::setDegenerateInfo ( ) [protected]

29.511.3.36 virtual void Go::Torus::setParameterBounds (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar*) [virtual]

Limit the surface by limiting the parameter domain.

Implements Go::ElementarySurface.

29.511.3.37 void Go::Torus::setSelectOuter (bool *select_outer*)

Set the `select_outer` flag. If the torus is not degenerate, this function has no effect. If the torus is degenerate, and the value of the flag is changed, this will change the parameter domain of the surface to the appropriate default.

29.511.3.38 Torus* Go::Torus::subSurface (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const

Return the part of the torus surface limited by the parameter bounds.

29.511.3.39 std::vector<shared_ptr<ParamSurface> > Go::Torus::subSurfaces (double *from_upar,* double *from_vpar,* double *to_upar,* double *to_vpar,* double *fuzzy* = DEFAULT_PARAMETER_EPSILON) const [virtual]

Get the surface(s) obtained by cropping the parameter domain of this surface between given values for the first and second parameter. In general, for surfaces with no interior holes, the result will be *one* surface; however, for surfaces with interior holes, the result might be *several disjoint* surfaces.

Parameters

from_upar	lower value for the first parameter in the subdomain
from_vpar	lower value for the second parameter in the subdomain
to_upar	upper value for the first parameter in the subdomain
to_vpar	upper value for the second parameter in the subdomain
fuzzy	tolerance used when determining intersection with interior boundaries

Returns

a vector contained shared pointers to the obtained, newly constructed sub-surfaces.

Implements Go::ParamSurface.

29.511.3.40 DirectionCone Go::Torus::tangentCone (bool *pardir_is_u*) const [virtual]

Creates a DirectionCone covering all tangents to this surface along a given parameter direction.

Parameters

pardir_is_u	if 'true', then the DirectionCone will be defined on basis of the surface's tangents along the first parameter direction. Otherwise the second parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this surface along the specified parameter direction.

Implements Go::ParamSurface.

29.511.3.41 virtual void Go::Torus::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

29.511.4 Member Data Documentation

29.511.4.1 RectDomain Go::Torus::domain_ [protected]

Definition at line 282 of file Torus.h.

29.511.4.2 bool Go::Torus::is_degenerate_torus_ [protected]

Definition at line 278 of file Torus.h.

29.511.4.3 Point Go::Torus::location_ [protected]

Definition at line 274 of file Torus.h.

29.511.4.4 double Go::Torus::major_radius_ [protected]

Definition at line 272 of file Torus.h.

29.511.4.5 double Go::Torus::minor_radius_ [protected]

Definition at line 273 of file Torus.h.

29.511.4.6 RectDomain Go::Torus::orientedDomain_ [mutable], [protected]

Definition at line 283 of file Torus.h.

29.511.4.7 double Go::Torus::phi_ [protected]

Definition at line 280 of file Torus.h.

29.511.4.8 bool Go::Torus::select_outer_ [protected]

Definition at line 279 of file Torus.h.

29.511.4.9 Point Go::Torus::x_axis_ [protected]

Definition at line 276 of file Torus.h.

29.511.4.10 Point Go::Torus::y_axis_ [protected]

Definition at line 277 of file Torus.h.

29.511.4.11 Point Go::Torus::z_axis_ [protected]

Definition at line 275 of file Torus.h.

The documentation for this class was generated from the following file:

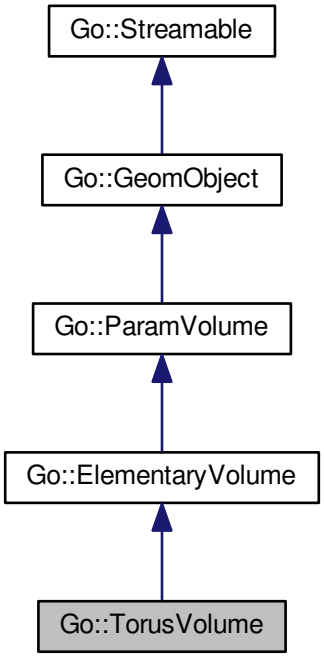
- gotools-core/include/GoTools/geometry/Torus.h

29.512 Go::TorusVolume Class Reference

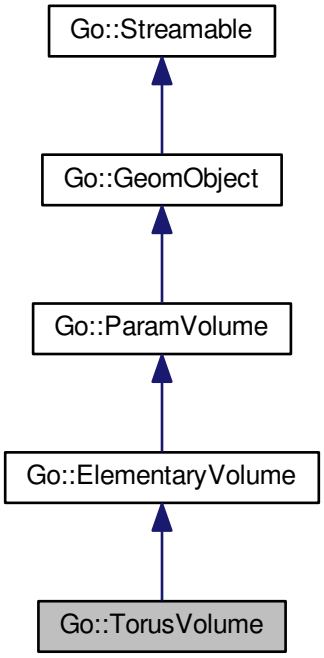
Class that represents a solid torus, maybe with empty interior like a circular pipe, and/or a section (not full revolution along the main axis). It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius *u* and two angles *v* and *w:* **p**(*u*, *v*, *w*) = **C** + (*R* + *u* cos *w*)((cos *v*) **x** + (sin *v*) **y**) + (*u* sin *w*) **z**, where **C** is a position vector, *R* is the major radius, and **x**, **y** and **z** are the (local) axes. The parametrization for a full solid torus is bounded by: $0 \leq u \leq r$, $0 \leq v, w \leq 2\pi$, where *r* is the minor axis. A bended pipe will have a positive minimal limit for *u*, while a torus segment will have other limits for *v*. The dimension is 3.

`#include <TorusVolume.h>`

Inheritance diagram for Go::TorusVolume:



Collaboration diagram for Go::TorusVolume:



Public Member Functions

- TorusVolume ()
- TorusVolume (double major_radius, double minor_radius, Point location, Point z_axis, Point x_axis)
- virtual ~TorusVolume ()

  Virtual destructor - ensures safe inheritance.
- virtual void read (std::istream &is)
- virtual void write (std::ostream &os) const
- virtual int dimension () const

  Return the dimension of the space in which the object lies (usually 2 or 3)
- virtual ClassType instanceType () const

  Return the class type identifier of a given, derived instance of GeomObject.
- virtual BoundingBox boundingBox () const

  Return the object's bounding box.
- virtual TorusVolume * clone () const
- DirectionCone tangentCone (int pardir) const
- const Array< double, 6 > parameterSpan () const
- void point (Point &pt, double upar, double vpar, double wpar) const
- void point (std::vector< Point > &pts, double upar, double vpar, double wpar, int derivs, bool u_from_right=true, bool v_from_right=true, bool w_from_right=true, double resolution=1.0e-12) const
- double nextSegmentVal (int dir, double par, bool forward, double tol) const
- void closestPoint (const Point &pt, double &clo_u, double &clo_v, double &clo_w, Point &clo_pt, double &clo_dist, double epsilon, double *seed=0) const
- void reverseParameterDirection (int pardir)

- void swapParameterDirection (int pardir1, int pardir2)
- virtual std::vector< shared_ptr< ParamSurface > > getAllBoundarySurfaces () const

  Fetch all boundary surfaces corresponding to the volume.
- virtual void translate (const Point &vec)

  Translate.
- SplineVolume * geometryVolume () const

  Make a NURBS representation of the object.
- void setParameters (double from_par, double to_par, int pardir)

  Restrict the size of the torus in one parameter direction.
- void useCentreDegen ()
- void useCornerDegen ()

Static Public Member Functions

- static ClassType classType ()

29.512.1 Detailed Description

Class that represents a solid torus, maybe with empty interior like a circular pipe, and/or a section (not full revolution along the main axis). It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius *u* and two angles *v* and *w:* **p**(*u*, *v*, *w*) = **C** + (*R* + *u* cos *w*)((cos *v*) **x** + (sin *v*) **y**) + (*u* sin *w*) **z**, where **C** is a position vector, *R* is the major radius, and **x**, **y** and **z** are the (local) axes. The parametrization for a full solid torus is bounded by: $0 \leq u \leq r$, $0 \leq v, w \leq 2\pi$, where *r* is the minor axis. A bended pipe will have a positive minimal limit for *u*, while a torus segment will have other limits for *v*. The dimension is 3.

Definition at line 68 of file TorusVolume.h.

29.512.2 Constructor & Destructor Documentation

29.512.2.1 Go::TorusVolume::TorusVolume ( ) [inline]

Default constructor. Constructs an uninitialized TorusVolume which can only be assigned to or read into.

Definition at line 73 of file TorusVolume.h.

29.512.2.2 Go::TorusVolume::TorusVolume (double *major_radius*, double *minor_radius*, Point *location*, Point *z_axis*, Point *x_axis*)

Constructor. Input is the major and minor radii, the location, the direction of the z-axis and the (possibly approximate) x-axis.

29.512.2.3 virtual Go::TorusVolume::~TorusVolume ( ) [virtual]

Virtual destructor - ensures safe inheritance.

29.512.3 Member Function Documentation

29.512.3.1 virtual BoundingBox Go::TorusVolume::boundingBox ( ) const [virtual]

Return the object's bounding box.

Implements Go::GeomObject.

29.512.3.2 static ClassType Go::TorusVolume::classType ( ) [inline], [static]

Definition at line 99 of file TorusVolume.h.

29.512.3.3 virtual TorusVolume* Go::TorusVolume::clone ( ) const [virtual]

make a clone of this volume and return a pointer to it (user is responsible for clearing up memory afterwards).

Returns

pointer to cloned object

Implements Go::ElementaryVolume.

29.512.3.4 void Go::TorusVolume::closestPoint (const Point & *pt*, double & *clo_u*, double & *clo_v*, double & *clo_w*, Point & *clo_pt*, double & *clo_dist*, double *epsilon*, double * *seed* = 0) const [virtual]

Iterates to the closest point to pt on the volume.

Parameters

pt	the point to find the closest point to
clo_u	u parameter of the closest point
clo_v	v parameter of the closest point
clo_w	w parameter of the closest point
clo_pt	the geometric position of the closest point
clo_dist	the distance between pt and clo_pt
epsilon	parameter tolerance (will in any case not be higher than sqrt(machine_precision) x magnitude of solution
seed	pointer to parameter values where iteration starts.

Implements Go::ParamVolume.

29.512.3.5 virtual int Go::TorusVolume::dimension ( ) const [virtual]

Return the dimension of the space in which the object lies (usually 2 or 3)

Implements Go::GeomObject.

29.512.3.6 SplineVolume* Go::TorusVolume::geometryVolume ( ) const [virtual]

Make a NURBS representation of the object.

Implements Go::ElementaryVolume.

29.512.3.7 virtual std::vector<shared_ptr<ParamSurface> > Go::TorusVolume::getAllBoundarySurfaces ( ) const [virtual]

Fetch all boundary surfaces corresponding to the volume.

Implements Go::ParamVolume.

29.512.3.8 virtual ClassType Go::TorusVolume::instanceType ( ) const [virtual]

Return the class type identifier of a given, derived instance of GeomObject.

Implements Go::GeomObject.

29.512.3.9 double Go::TorusVolume::nextSegmentVal (int *dir*, double *par*, bool *forward*, double *tol*) const [virtual]

Determine the parameter value of the start of the 'next segment' from a parameter value, along a given parameter direction. A 'segment' is here defined as a parameter interval in which there will be no discontinuities in derivatives or other artifacts. For spline objects, a segment will typically be the interval between two consecutive, non-coincident knots.

Parameters

dir	the parameter direction in which we search for the next segment (0, 1 or 2)
par	the parameter value starting from which we search for the start value of the next segment
forward	define whether we shall move forward ('true') or backwards when searching along this parameter
tol	tolerance used for determining whether the 'par' is already located *on* the next segment value

Returns

the value of the start value of the next segment (or the end of the previous segment, if we are moving backwards...)

Implements Go::ParamVolume.

29.512.3.10 const Array<double,6> Go::TorusVolume::parameterSpan ( ) const [virtual]

Return the parameter domain of the volume. This is an array containing the start and end parameter values. The spline's parameter i has its start value at the array position (2i) and its end parameter value at the array position (2i+1)

Returns

An array describing the parametric domain of the volume

Implements Go::ParamVolume.

29.512.3.11 void Go::TorusVolume::point (Point & *pt*, double *upar*, double *vpar*, double *wpar*) const [virtual]

Evaluates the volume's position for a given parameter triple.

Parameters

pt	the result of the evaluation is written here
upar	the first parameter
vpar	the second parameter
wpar	the third parameter

Implements Go::ParamVolume.

29.512.3.12 void Go::TorusVolume::point (std::vector< Point > & *pts*, double *upar*, double *vpar*, double *wpar*, int *derivs*, bool *u_from_right* = true, bool *v_from_right* = true, bool *w_from_right* = true, double *resolution* = 1.0e-12) const [virtual]

Evaluates the volume's position and a certain number of derivatives for a given parameter triple.

Parameters

pts	the vector containing the evaluated values. Its size must be set by the user prior to calling this function. Upon completion of the function, its first entry is the volume's position at the given parameter pair. Then, if 'derivs' > 0, the two next entries will be the volume tangents along the first, second and third parameter direction. The next three entries are the second- and cross derivatives, in the order (du2, dudv, dudw, dv2, dvdw, dw2), and similar for even higher derivatives.
upar	the first parameter
vpar	the second parameter
wpar	the third parameter
derivs	number of requested derivatives
u_from_right	specify whether derivatives along the first parameter are to be calculated from the right ('true', default) or from the left ('false')
v_from_right	specify whether derivatives along the second parameter are to be calculated from the right ('true', default) or from the left ('false')
w_from_right	specify whether derivatives along the third parameter are to be calculated from the right ('true', default) or from the left ('false')
resolution	tolerance used when determining whether parameters are located at special values of the parameter domain (in particualar; knot values in case of spline objects.

Implements Go::ParamVolume.

29.512.3.13 virtual void Go::TorusVolume::read (std::istream & *is*) [virtual]

read object from stream

Parameters

is	stream from which object is read

Implements Go::Streamable.

29.512.3.14 void Go::TorusVolume::reverseParameterDirection (int *pardir*) [virtual]

Reverses the direction of the basis in input direction.

Parameters

pardir	which parameter direction to reverse

Implements Go::ParamVolume.

29.512.3.15 void Go::TorusVolume::setParameters (double *from_par,* double *to_par,* int *pardir*)

Restrict the size of the torus in one parameter direction.

29.512.3.16 void Go::TorusVolume::swapParameterDirection (int *pardir1,* int *pardir2*) [virtual]

Swaps two parameter directions

Parameters

pardir1	One of the parameter directions (0, 1 or 2) to be swapped
pardir2	The other parameter direction (0, 1 or 2) to be swapped

Implements Go::ParamVolume.

29.512.3.17 DirectionCone Go::TorusVolume::tangentCone (int *pardir*) const [virtual]

Creates a DirectionCone covering all tangents to this volume along a given parameter direction.

Parameters

pardir	if 1, the DirectionCone will be defined on basis of the volume's tangents along the first parameter direction. If 2, the second parameter direction will be used. If 3, the third parameter direction will be used.

Returns

a DirectionCone (not necessarily the smallest) containing all tangents to this volume along the specified parameter direction.

Implements Go::ParamVolume.

29.512.3.18 virtual void Go::TorusVolume::translate (const Point & *vec*) [virtual]

Translate.

Implements Go::ParamVolume.

29.512.3.19 void Go::TorusVolume::useCentreDegen ( ) [inline]

A NURBS representation will be a disc with degenereracy in the centre rotated around the centre

Definition at line 156 of file TorusVolume.h.

29.512.3.20 void Go::TorusVolume::useCornerDegen ( ) [inline]

A NURBS representation will be a disc with degenerate corners rotated around the centre

Definition at line 161 of file TorusVolume.h.

29.512.3.21 virtual void Go::TorusVolume::write (std::ostream & *os*) const [virtual]

write object to stream

Parameters

os	stream to which object is written

Implements Go::Streamable.

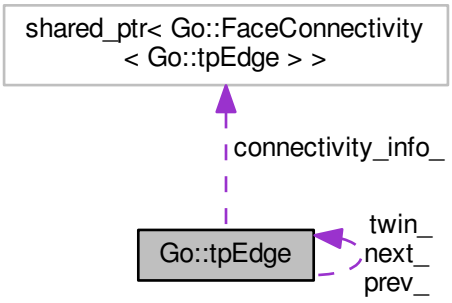
The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/TorusVolume.h

29.513 Go::tpEdge Class Reference

`#include <tpEdge.h>`

Collaboration diagram for Go::tpEdge:



Public Member Functions

- virtual ~tpEdge ()

  Empty destructor.
- tpEdge * next ()

  Next edge in the edge loop.
- tpEdge * twin ()
- virtual double tMin () const =0

  Start parameter value of edge.
- virtual double tMax () const =0

  End parameter value of edge.
- virtual tpFace * face ()=0

  The face corresponding to this edge.
- virtual BoundingBox boundingBox ()=0

  Coordinate box surrounding this edge.
- virtual void setEntryId (int id)=0

  Id of edge. Default set to -1.
- virtual tpEdge * split (double t)=0
- virtual Point point (double t) const =0

  Evaluate position.
- virtual Point normal (double t) const =0

  Evaluate normal of associated face.
- virtual void closestpoint (const Point &pt, double &clo_t, Point &clo_pt, double &clo_dist, double const *seed=0) const =0

  Closest point on this edge to a given point.
- tpEdge ()

  Default constructor.
- tpEdge * prev ()

  Previous edge in the edge loop.
- virtual int entryId ()=0

  Get id of edge.
- virtual void connectAfter (tpEdge *edge)

  Add the edge edge to the edge loop after this edge.

- virtual void closeLoop (tpEdge *last)
- virtual void disconnectThis ()

  Remove this edge from the edge loop it belongs to.
- virtual void connectTwin (tpEdge *twin, int &status)
- virtual void disconnectTwin ()
- bool onBoundary ()
- void adjacentEdges (bool at_start_of_edge, std::vector< tpEdge * > &adjacent, std::vector< bool > &at_start)
- virtual Point tangent (double t) const =0

  Evaluate tangent.
- tpJointType checkContinuity (tpEdge *nextedge, double neighbour, double gap, double bend, double kink) const
- bool hasConnectivityInfo ()
- shared_ptr< FaceConnectivity< tpEdge > > getConnectivityInfo ()
- void setConnectivityInfo (shared_ptr< FaceConnectivity< tpEdge > > info)

  corresponding to this edge and the adjacent face along this edge
- void resetConnectivityInfo ()

  Mark the connectivity information associated to this edge as outdated.

Protected Attributes

- tpEdge * next_
- tpEdge * prev_
- tpEdge * twin_
- shared_ptr< FaceConnectivity< tpEdge > > connectivity_info_

29.513.1 Detailed Description

tpEdge is an abstract interface for a half-edge topology structure. Suggested (and minimal) structure of template edgeType when using FaceAdjacency.

Author

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See also

faceType

Definition at line 63 of file tpEdge.h.

29.513.2 Constructor & Destructor Documentation

29.513.2.1 virtual Go::tpEdge::~tpEdge ( ) [virtual]

Empty destructor.

29.513.2.2 Go::tpEdge::tpEdge ( )

Default constructor.

29.513.3 Member Function Documentation

29.513.3.1 void Go::tpEdge::adjacentEdges (bool *at_start_of_edge,* std::vector< tpEdge * > & *adjacent,* std::vector< bool > & *at_start*)

Consider the 'node' or 'corner' implied by the startpoint (if at_start_of_edge is true) or endpoint (if it is false). The vector adjacent is filled with all edges with that 'node' as a startpoint (indicated by a true at the corresponding place in the at_start vector) or endpoint (false in at_start). The edge originally asked for is not included.

29.513.3.2 virtual BoundingBox Go::tpEdge::boundingBox ( ) [pure virtual]

Coordinate box surrounding this edge.

29.513.3.3 tpJointType Go::tpEdge::checkContinuity (tpEdge * *nextedge,* double *neighbour,* double *gap,* double *bend,* double *kink*) const

Compute the continuity between this edge and nextedge given the necessary continuity parameters. 0 = g1 continuity, 1 = not quite g1, 2 = g0 continuity, 3 = gap, 4 = discontinuous, 5 = last segment

29.513.3.4 virtual void Go::tpEdge::closeLoop (tpEdge * *last*) [virtual]

Close edge loop by setting the appropriate pointers between this edge and last edge

29.513.3.5 virtual void Go::tpEdge::closestpoint (const Point & *pt,* double & *clo_t,* Point & *clo_pt,* double & *clo_dist,* double const * *seed* = 0) const [pure virtual]

Closest point on this edge to a given point.

29.513.3.6 virtual void Go::tpEdge::connectAfter (tpEdge * *edge*) [virtual]

Add the edge edge to the edge loop after this edge.

29.513.3.7 virtual void Go::tpEdge::connectTwin (tpEdge * *twin,* int & *status*) [virtual]

Set adjacency between the face connected to this edge and the face connected to twin by setting twin pointers

29.513.3.8 virtual void Go::tpEdge::disconnectThis ( ) [virtual]

Remove this edge from the edge loop it belongs to.

29.513.3.9 virtual void Go::tpEdge::disconnectTwin ( ) [virtual]

Disconnect this edge from its twin, i.e. remove adjacency information between the face connected to this edge and the face connected to the twin edge

29.513.3.10 virtual int Go::tpEdge::entryId ( ) [pure virtual]

Get id of edge.

29.513.3.11 virtual tpFace* Go::tpEdge::face ( ) [pure virtual]

The face corresponding to this edge.

29.513.3.12 shared_ptr<FaceConnectivity<tpEdge> > Go::tpEdge::getConnectivityInfo ( ) [inline]

Fetch the continuity information regarding the joint between the face corresponding to this edge and the adjacent face along this edge

Definition at line 160 of file tpEdge.h.

29.513.3.13 bool Go::tpEdge::hasConnectivityInfo ( ) [inline]

Check if this edge has access to continuity information regarding the joint between the face corresponding to this edge and the adjacent face along this edge

Definition at line 153 of file tpEdge.h.

29.513.3.14 tpEdge* Go::tpEdge::next ( )

Next edge in the edge loop.

29.513.3.15 virtual Point Go::tpEdge::normal (double *t*) const [pure virtual]

Evaluate normal of associated face.

29.513.3.16 bool Go::tpEdge::onBoundary ( ) [inline]

Check if this edge lies on the boundary of the associated face set, i.e. it has no neighbour

Definition at line 129 of file tpEdge.h.

29.513.3.17 virtual Point Go::tpEdge::point (double *t*) const [pure virtual]

Evaluate position.

29.513.3.18 tpEdge* Go::tpEdge::prev ( )

Previous edge in the edge loop.

29.513.3.19 void Go::tpEdge::resetConnectivityInfo ( ) [inline]

Mark the connectivity information associated to this edge as outdated.

Definition at line 173 of file tpEdge.h.

29.513.3.20 void Go::tpEdge::setConnectivityInfo (shared_ptr< FaceConnectivity< tpEdge > > *info*) [inline]

corresponding to this edge and the adjacent face along this edge

Store the continuity information regarding the joint between the face

Definition at line 167 of file tpEdge.h.

29.513.3.21 virtual void Go::tpEdge::setEntryId (int *id*) [pure virtual]

Id of edge. Default set to -1.

29.513.3.22 virtual tpEdge* Go::tpEdge::split (double *t*) [pure virtual]

Split should be implemented so that the new edge (returned by the function), is fully connected. It should also be created by operator new, so callers should keep in mind that they are responsible for managing the lifetime of the new edge.

29.513.3.23 virtual Point Go::tpEdge::tangent (double *t*) const [pure virtual]

Evaluate tangent.

29.513.3.24 virtual double Go::tpEdge::tMax ( ) const [pure virtual]

End parameter value of edge.

29.513.3.25 virtual double Go::tpEdge::tMin ( ) const [pure virtual]

Start parameter value of edge.

29.513.3.26 tpEdge* Go::tpEdge::twin ( )

The corresponding edge on the neighbouring face. If no such neighbour exists, the function returns null.

29.513.4 Member Data Documentation

29.513.4.1 shared_ptr<FaceConnectivity<tpEdge> > Go::tpEdge::connectivity_info_ [protected]

Definition at line 183 of file tpEdge.h.

29.513.4.2 tpEdge* Go::tpEdge::next_ [protected]

Definition at line 180 of file tpEdge.h.

29.513.4.3 tpEdge* Go::tpEdge::prev_ [protected]

Definition at line 181 of file tpEdge.h.

29.513.4.4 tpEdge* Go::tpEdge::twin_ [protected]

Definition at line 182 of file tpEdge.h.

The documentation for this class was generated from the following file:

- topology/include/GoTools/topology/tpEdge.h

29.514 Go::tpFace Class Reference

`#include <tpFace.h>`

Public Member Functions

- virtual ~tpFace ()
  Destructor.
- virtual std::vector< shared_ptr< tpEdge > > createInitialEdges (double degenerate_epsilon=DEFAULT_SPACE_EPSILON)=0
- virtual std::vector< shared_ptr< tpEdge > > startEdges ()=0
  Return pointers to first part of all bd cvs.
- virtual Point point (double u, double v) const =0
  Evaluate point on face.
- virtual Point normal (double u, double v) const =0
  Evaluate surface normal.
- virtual BoundingBox boundingBox ()=0
  The bounding box corresponding to this face.
- virtual int getId ()=0
  Return id, default id is -1.
- virtual void isolateFace ()
  Remove all adjacency information related to this face.

29.514.1 Detailed Description

tpFace - Minimal structure of template faceType when using FaceAdjacency. The interface is limited to the functionality required to compute adjacency information in a set of faces and to remove this face from a face set, i.e. remove all topology pointers related to this face.

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See also

Class1

Definition at line 67 of file tpFace.h.

29.514.2 Constructor & Destructor Documentation

29.514.2.1 virtual Go::tpFace::~tpFace ( ) [virtual]

Destructor.

29.514.3 Member Function Documentation

29.514.3.1 virtual BoundingBox Go::tpFace::boundingBox ( ) [pure virtual]

The bounding box corresponding to this face.

29.514.3.2 virtual std::vector<shared_ptr<tpEdge> > Go::tpFace::createInitialEdges (double *degenerate_epsilon* = DEFAULT_SPACE_EPSILON) [pure virtual]

Compute the edges associated to this face or fetch already existing edges

29.514.3.3 virtual int Go::tpFace::getId ( ) [pure virtual]

Return id, default id is -1.

29.514.3.4 virtual void Go::tpFace::isolateFace ( ) [virtual]

Remove all adjacency information related to this face.

29.514.3.5 virtual Point Go::tpFace::normal (double *u*, double *v*) const [pure virtual]

Evaluate surface normal.

29.514.3.6 virtual Point Go::tpFace::point (double *u*, double *v*) const [pure virtual]

Evaluate point on face.

29.514.3.7 virtual std::vector<shared_ptr<tpEdge> > Go::tpFace::startEdges ( ) [pure virtual]

Return pointers to first part of all bd cvs.

The documentation for this class was generated from the following file:

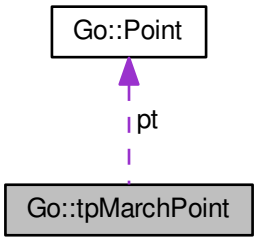
- topology/include/GoTools/topology/tpFace.h

29.515 Go::tpMarchPoint Class Reference

Helper class for marching.

`#include <tpTopologyTable.h>`

Collaboration diagram for Go::tpMarchPoint:



Public Member Functions

- tpMarchPoint (const Go::Point &p, double pa, double pa2, double d, double ca, int s)
- bool operator< (const tpMarchPoint &other) const

Public Attributes

- Go::Point pt
- double par
- double par2
- double dist
- double cos_ang
- int status

29.515.1 Detailed Description

Helper class for marching.

Definition at line 119 of file tpTopologyTable.h.

29.515.2 Constructor & Destructor Documentation

29.515.2.1 Go::tpMarchPoint::tpMarchPoint (const Go::Point & *p,* double *pa,* double *pa2,* double *d,* double *ca,* int *s*) [inline]

Definition at line 128 of file tpTopologyTable.h.

29.515.3 Member Function Documentation

29.515.3.1 bool Go::tpMarchPoint::operator< (const tpMarchPoint & *other*) const [inline]

Definition at line 132 of file tpTopologyTable.h.

29.515.4 Member Data Documentation

29.515.4.1 double Go::tpMarchPoint::cos_ang

Definition at line 126 of file tpTopologyTable.h.

29.515.4.2 double Go::tpMarchPoint::dist

Definition at line 125 of file tpTopologyTable.h.

29.515.4.3 double Go::tpMarchPoint::par

Definition at line 123 of file tpTopologyTable.h.

29.515.4.4 double Go::tpMarchPoint::par2

Definition at line 124 of file tpTopologyTable.h.

29.515.4.5 Go::Point Go::tpMarchPoint::pt

Definition at line 122 of file tpTopologyTable.h.

29.515.4.6 int Go::tpMarchPoint::status

Definition at line 127 of file tpTopologyTable.h.

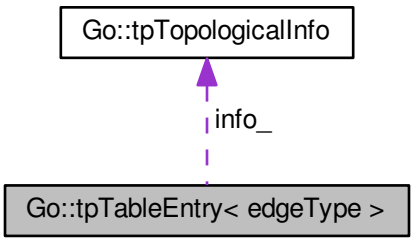
The documentation for this class was generated from the following file:

- topology/include/GoTools/topology/tpTopologyTable.h

29.516 Go::tpTableEntry< edgeType > Class Template Reference

`#include <tpTopologyTable.h>`

Collaboration diagram for Go::tpTableEntry< edgeType >:



Public Member Functions

- tpTableEntry (edgeType *e1, edgeType *e2, const tpTopologicalInfo &info)
- const tpTopologicalInfo & Info ()

Public Attributes

- edgeType * e1_
- edgeType * e2_
- tpTopologicalInfo info_

29.516.1 Detailed Description

template<class edgeType>
class Go::tpTableEntry< edgeType >

tpTableEntry - Short description. Detailed description.

Definition at line 103 of file tpTopologyTable.h.

29.516.2 Constructor & Destructor Documentation

29.516.2.1 template<class edgeType > Go::tpTableEntry< edgeType >::tpTableEntry (edgeType * *e1*, edgeType * *e2*, const tpTopologicalInfo & *info*) [inline]

Definition at line 109 of file tpTopologyTable.h.

29.516.3 Member Function Documentation

29.516.3.1 template<class edgeType > const tpTopologicalInfo& Go::tpTableEntry< edgeType >::Info ( ) [inline]

Definition at line 114 of file tpTopologyTable.h.

29.516.4 Member Data Documentation

29.516.4.1 template<class edgeType > edgeType* Go::tpTableEntry< edgeType >::e1_

Definition at line 106 of file tpTopologyTable.h.

29.516.4.2 template<class edgeType > edgeType* Go::tpTableEntry< edgeType >::e2_

Definition at line 107 of file tpTopologyTable.h.

29.516.4.3 template<class edgeType > tpTopologicalInfo Go::tpTableEntry< edgeType >::info_

Definition at line 108 of file tpTopologyTable.h.

The documentation for this class was generated from the following file:

- topology/include/GoTools/topology/tpTopologyTable.h

29.517 Go::tpTolerances Struct Reference

`#include <tpTolerances.h>`

Public Member Functions

- tpTolerances (double g, double n, double k, double b)
- tpTolerances (const tpTolerances &tol)

Public Attributes

- double gap

  Tolerance for when two faces are assumed to be C0 continous.
- double neighbour

  Tolerance for when two faces are assumed to be neighbours.
- double kink

  Tolerance for when two adjacent faces are assumed to be C1 continous.
- double bend

29.517.1 Detailed Description

tpTolerances - Tolerances used in adjacency analysis for faces

Definition at line 48 of file tpTolerances.h.

29.517.2 Constructor & Destructor Documentation

29.517.2.1 Go::tpTolerances::tpTolerances (double *g*, double *n*, double *k*, double *b*) [inline]

Definition at line 60 of file tpTolerances.h.

29.517.2.2 Go::tpTolerances::tpTolerances (const tpTolerances & *tol*) [inline]

Definition at line 63 of file tpTolerances.h.

29.517.3 Member Data Documentation

29.517.3.1 double Go::tpTolerances::bend

Tolerance for when two adjacent faces are assumed to have an intentially smooth connection

Definition at line 59 of file tpTolerances.h.

29.517.3.2 double Go::tpTolerances::gap

Tolerance for when two faces are assumed to be C0 continous.

Definition at line 52 of file tpTolerances.h.

29.517.3.3 double Go::tpTolerances::kink

Tolerance for when two adjacent faces are assumed to be C1 continous.

Definition at line 56 of file tpTolerances.h.

29.517.3.4 double Go::tpTolerances::neighbour

Tolerance for when two faces are assumed to be neighbours.

Definition at line 54 of file tpTolerances.h.

The documentation for this struct was generated from the following file:

- topology/include/GoTools/topology/tpTolerances.h

29.518 Go::tpTopologicalInfo Struct Reference

`#include <tpTopologyTable.h>`

Public Member Functions

- int BestStatus () const
  The highest continuity between the two faces.
- int WorstStatus () const
  The lowest continuity between the two faces.

Public Attributes

- std::vector< int > status_
- std::vector< std::pair< double, double > > parameters_
  Parameter intervals limiting the areas of the found state of continuity.

29.518.1 Detailed Description

A structure storing the connectivity information between two adjacent faces. Used with tpTopologyTable

Definition at line 64 of file tpTopologyTable.h.

29.518.2 Member Function Documentation

29.518.2.1 int Go::tpTopologicalInfo::BestStatus ( ) const [inline]

The highest continuity between the two faces.

Definition at line 81 of file tpTopologyTable.h.

29.518.2.2 int Go::tpTopologicalInfo::WorstStatus ( ) const [inline]

The lowest continuity between the two faces.

Definition at line 90 of file tpTopologyTable.h.

29.518.3 Member Data Documentation

29.518.3.1 std::vector< std::pair<double, double> > Go::tpTopologicalInfo::parameters_

Parameter intervals limiting the areas of the found state of continuity.

Definition at line 78 of file tpTopologyTable.h.

29.518.3.2 std::vector<int> Go::tpTopologicalInfo::status_

The status is: 0 : edges join smoothly. G^1. 1 : edges join, but normals are slightly discontinous. A kink. 2 : edges join, but the normals are discontinous. G^0. 3 : edges almost join. A gap. 4 : edges are totally discontinous. The minimal tpTopologicalInfo has a one-element status vector and a two-element parameters vector

Definition at line 76 of file tpTopologyTable.h.

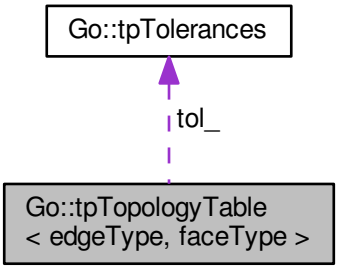
The documentation for this struct was generated from the following file:

- topology/include/GoTools/topology/tpTopologyTable.h

29.519 Go::tpTopologyTable< edgeType, faceType > Class Template Reference

`#include <tpTopologyTable.h>`

Collaboration diagram for Go::tpTopologyTable< edgeType, faceType >:



Public Member Functions

- tpTopologyTable (double tol_gap, double tol_neighbour, double tol_kink, double tol_bend)
- ~tpTopologyTable ()
- void setTolerances (const tpTolerances &tol)

  Changes the tolerances used in constructing the table.
- tpTolerances getTolerances ()
- void prepareTable (const std::vector< shared_ptr< faceType > > &faces)
- void constructTable (const std::vector< shared_ptr< faceType > > &faces, bool test_orientation=false)
- void addEntry (edgeType *e1, edgeType *e2, double min1, double max1, double min2, double max2, const tpTopologicalInfo &info, int status)
- std::vector< edgeType * > connectTwins (edgeType *e1, edgeType *e2, double min1, double max1, double min2, double max2, int &status)
- void BoundaryLoops (std::vector< std::vector< edgeType * > > &loopvec)
- void BoundaryLoops (std::vector< std::vector< shared_ptr< edgeType > > > &loopvec)
- void disjointObjects (std::vector< std::vector< faceType * > > &grouped_faces)
- void cornersAndKinks (std::vector< edgeType * > &vec)
- const tpTopologicalInfo & info (int n)

  Returns the raw topological info element.
- std::vector< edgeType * > edgesBoundingFace (faceType *face) const

  Returns all edges bounding a specific face.
- const std::vector< tpTableEntry< edgeType > > & connectedEdges () const

  Returns a const reference to a vector representing twin edges.
- const void getInconsistentFaces (std::vector< std::pair< faceType *, faceType * > > &faces)

  Returns information about face pair with an orientation inconsistency.
- void Validate ()
- void setTable (const std::vector< shared_ptr< faceType > > &faces)
- void removeFaceFromTable (shared_ptr< faceType > face)
- void addFaceToTable (shared_ptr< faceType > face)
- void updateTableEntry (edgeType *e1, edgeType *e2)

Protected Attributes

- std::vector< tpTableEntry< edgeType > > table_
- std::vector< shared_ptr< edgeType > > edges_
- tpTolerances tol_
- std::vector< std::pair< faceType *, faceType * > > orientation_inconsist_

29.519.1 Detailed Description

template<class edgeType, class faceType>
class Go::tpTopologyTable< edgeType, faceType >

tpTopologyTable - Encapsulates a topology structure. Should be used only for static faces sets.

This class encapsulates a topology structure. It points to external (to this class) surface objects, which are gotten as input to the PrepareTable() and ConstructTable() members. It is implemented in terms of edgeType objects in a half-edge data structure, and many members operate on and/or return pointers to the edgeType objects owned by the tpTopologyTable object.

Author

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See also

edgeType
faceType

Definition at line 161 of file tpTopologyTable.h.

29.519.2 Constructor & Destructor Documentation

29.519.2.1 template<class edgeType , class faceType > Go::tpTopologyTable< edgeType, faceType >::tpTopologyTable (double *tol_gap,* double *tol_neighbour,* double *tol_kink,* double *tol_bend*) [inline]

Constructor. Detailed description.

Definition at line 179 of file tpTopologyTable.h.

29.519.2.2 template<class edgeType , class faceType > Go::tpTopologyTable< edgeType, faceType >::~tpTopologyTable ( ) [inline]

Destructor. Detailed description.

Definition at line 188 of file tpTopologyTable.h.

29.519.3 Member Function Documentation

29.519.3.1 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::addEntry (edgeType * *e1,* edgeType * *e2,* double *min1,* double *max1,* double *min2,* double *max2,* const tpTopologicalInfo & *info,* int *status*) [inline]

In the AddEntry() function, the min? and max? arguments are the parameter values associated with the endpoints of the curve segments. min1 <= max1 and min2 <= max2. BUT the edges may very well run in different directions, and the point on the first edge corresponding to min1 may be adjacent to either the min2- or the max2- corresponding point on the second edge.

Definition at line 334 of file tpTopologyTable.h.

29.519.3.2 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::addFaceToTable (shared_ptr< faceType > *face*) [inline]

Definition at line 766 of file tpTopologyTable.h.

29.519.3.3 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::BoundaryLoops (std::vector< std::vector< edgeType * > > & *loopvec*) [inline]

Returns all boundary loops. Keep in mind that calling next() on elements on the boundary will not iterate around the boundary, but around the face the edge comes from.

Definition at line 431 of file tpTopologyTable.h.

29.519.3.4 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::BoundaryLoops (std::vector< std::vector< shared_ptr< edgeType > > > & *loopvec*) [inline]

Definition at line 470 of file tpTopologyTable.h.

29.519.3.5 template<class edgeType , class faceType > const std::vector<tpTableEntry<edgeType> >& Go::tpTopologyTable< edgeType, faceType >::connectedEdges ( ) const [inline]

Returns a const reference to a vector representing twin edges.

Definition at line 638 of file tpTopologyTable.h.

29.519.3.6 template<class edgeType , class faceType > std::vector<edgeType*> Go::tpTopologyTable< edgeType, faceType >::connectTwins (edgeType * *e1,* edgeType * *e2,* double *min1,* double *max1,* double *min2,* double *max2,* int & *status*) [inline]

Returns pointer to (vector of) twin edges. Updates topological structure and, if necessary, splits edges.

Definition at line 373 of file tpTopologyTable.h.

29.519.3.7 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::constructTable (const std::vector< shared_ptr< faceType > > & *faces,* bool *test_orientation* = false) [inline]

Definition at line 218 of file tpTopologyTable.h.

29.519.3.8 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::cornersAndKinks (std::vector< edgeType * > & *vec*) [inline]

Only gives the first of every pair of edges representing a cornering edge or kink edge.

Definition at line 589 of file tpTopologyTable.h.

29.519.3.9 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::disjointObjects (std::vector< std::vector< faceType * > > & *grouped_faces*) [inline]

Definition at line 523 of file tpTopologyTable.h.

29.519.3.10 template<class edgeType , class faceType > std::vector<edgeType*> Go::tpTopologyTable< edgeType, faceType >::edgesBoundingFace (faceType * *face*) const [inline]

Returns all edges bounding a specific face.

Definition at line 613 of file tpTopologyTable.h.

29.519.3.11 template<class edgeType , class faceType > const void Go::tpTopologyTable< edgeType, faceType >::getInconsistentFaces (std::vector< std::pair< faceType *, faceType * > > & *faces*) [inline]

Returns information about face pair with an orientation inconsistency.

Definition at line 646 of file tpTopologyTable.h.

29.519.3.12 template<class edgeType , class faceType > tpTolerances Go::tpTopologyTable< edgeType, faceType >::getTolerances ( ) [inline]

Definition at line 202 of file tpTopologyTable.h.

29.519.3.13 template<class edgeType , class faceType > const tpTopologicalInfo& Go::tpTopologyTable< edgeType, faceType >::info (int *n*) [inline]

Returns the raw topological info element.

Definition at line 603 of file tpTopologyTable.h.

29.519.3.14 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::prepareTable (const std::vector< shared_ptr< faceType > > & *faces*) [inline]

Definition at line 209 of file tpTopologyTable.h.

29.519.3.15 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::removeFaceFromTable (shared_ptr< faceType > *face*) [inline]

Definition at line 714 of file tpTopologyTable.h.

29.519.3.16 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::setTable (const std::vector< shared_ptr< faceType > > & *faces*) [inline]

Definition at line 677 of file tpTopologyTable.h.

29.519.3.17 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::setTolerances (const tpTolerances & *tol*) [inline]

Changes the tolerances used in constructing the table.

Definition at line 195 of file tpTopologyTable.h.

29.519.3.18 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::updateTableEntry (edgeType * *e1,* edgeType * *e2*) [inline]

Definition at line 875 of file tpTopologyTable.h.

29.519.3.19 template<class edgeType , class faceType > void Go::tpTopologyTable< edgeType, faceType >::Validate ( ) [inline]

Definition at line 654 of file tpTopologyTable.h.

29.519.4 Member Data Documentation

29.519.4.1 template<class edgeType , class faceType > std::vector< shared_ptr<edgeType> > Go::tpTopologyTable< edgeType, faceType >::edges_ [protected]

Definition at line 169 of file tpTopologyTable.h.

29.519.4.2 template<class edgeType , class faceType > std::vector<std::pair<faceType*, faceType* > > Go::tpTopologyTable< edgeType, faceType >::orientation_inconsist_ [protected]

Definition at line 172 of file tpTopologyTable.h.

29.519.4.3 template<class edgeType , class faceType > std::vector< tpTableEntry<edgeType> > Go::tpTopologyTable< edgeType, faceType >::table_ [protected]

Definition at line 165 of file tpTopologyTable.h.

29.519.4.4 template<class edgeType , class faceType > tpTolerances Go::tpTopologyTable< edgeType, faceType >::tol_ [protected]

Definition at line 170 of file tpTopologyTable.h.

The documentation for this class was generated from the following file:

- topology/include/GoTools/topology/tpTopologyTable.h

29.520 RBD_COMMON::Tracer Class Reference

`#include <myexcept.h>`

Collaboration diagram for RBD_COMMON::Tracer:

Public Member Functions

- Tracer (const char *)
- ~Tracer ()
- void ReName (const char *)

Friends

- class BaseException

- static Tracer * last
- static void PrintTrace ()
- static void AddTrace ()

29.520.1 Detailed Description

Definition at line 66 of file myexcept.h.

29.520.2 Constructor & Destructor Documentation

29.520.2.1 RBD_COMMON::Tracer::Tracer (const char * e) [inline]

Definition at line 101 of file myexcept.h.

29.520.2.2 RBD_COMMON::Tracer::~Tracer ( ) [inline]

Definition at line 104 of file myexcept.h.

29.520.3 Member Function Documentation

29.520.3.1 void Tracer::AddTrace ( ) [static]

Definition at line 116 of file myexcept.cpp.

29.520.3.2 void Tracer::PrintTrace ( ) [static]

Definition at line 109 of file myexcept.cpp.

29.520.3.3 void RBD_COMMON::Tracer::ReName (const char * e) [inline]

Definition at line 106 of file myexcept.h.

29.520.4 Friends And Related Function Documentation

29.520.4.1 friend class BaseException [friend]

Definition at line 77 of file myexcept.h.

29.520.5 Member Data Documentation

29.520.5.1 Tracer * Tracer::last [static]

Definition at line 76 of file myexcept.h.

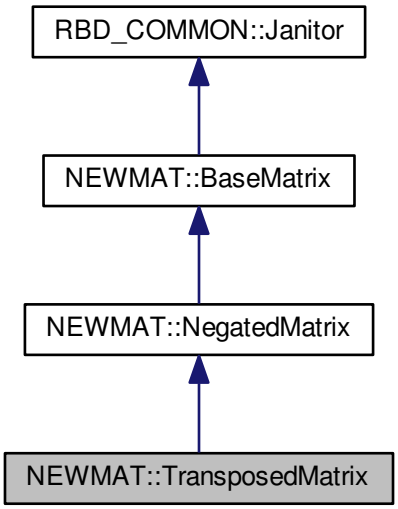
The documentation for this class was generated from the following files:

- newmat/include/myexcept.h
- newmat/src/myexcept.cpp

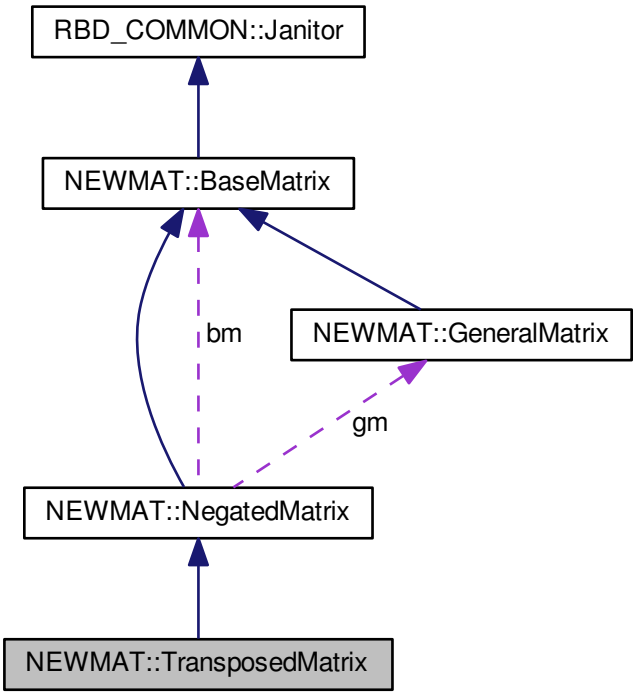
29.521 NEWMAT::TransposedMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::TransposedMatrix:



Collaboration diagram for NEWMAT::TransposedMatrix:



Public Member Functions

- ~TransposedMatrix ()
- GeneralMatrix * Evaluate (MatrixType mt=MatrixTypeUnSp)
- MatrixBandWidth BandWidth () const

Friends

- class BaseMatrix

Additional Inherited Members

29.521.1 Detailed Description

Definition at line 1381 of file newmat.h.

29.521.2 Constructor & Destructor Documentation

29.521.2.1 NEWMAT::TransposedMatrix::~TransposedMatrix ( ) [inline]

Definition at line 1386 of file newmat.h.

29.521.3 Member Function Documentation

29.521.3.1 MatrixBandWidth TransposedMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 471 of file newmat4.cpp.

29.521.3.2 GeneralMatrix * TransposedMatrix::Evaluate (MatrixType *mt* = MatrixTypeUnSp) [virtual]

Reimplemented from NEWMAT::NegatedMatrix.

Definition at line 278 of file newmat5.cpp.

29.521.4 Friends And Related Function Documentation

29.521.4.1 friend class BaseMatrix [friend]

Definition at line 1384 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat4.cpp
- newmat/src/newmat5.cpp

29.522 Go::Triangle Class Reference

`#include <RegularMesh.h>`

Public Member Functions

- Triangle (int index)
- void setIndex (int i)
- int index () const

29.522.1 Detailed Description

Documentation ...

Definition at line 52 of file RegularMesh.h.

29.522.2 Constructor & Destructor Documentation

29.522.2.1 Go::Triangle::Triangle (int *index*) [inline],[explicit]

Definition at line 55 of file RegularMesh.h.

29.522.3 Member Function Documentation

29.522.3.1 int Go::Triangle::index ( ) const [inline]

Definition at line 57 of file RegularMesh.h.

29.522.3.2 void Go::Triangle::setIndex (int *i*) [inline]

Definition at line 56 of file RegularMesh.h.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/tesselator/RegularMesh.h

29.523 hetriang::Triangulation Class Reference

Triangulation class for the half-edge data structure with adaption to TTL.

`#include <ttlTriang.h>`

Public Member Functions

- Triangulation ()
- ~Triangulation ()
- void createDelaunay (std::vector< Go::ttlPoint * >::iterator first, std::vector< Go::ttlPoint * >::iterator last)

  Create Delaunay triangulation from a set of points.
- Edge * initTwoEnclosingTriangles (std::vector< Go::ttlPoint * >::iterator first, std::vector< Go::ttlPoint * >::iterator last)
- void swapEdge (Edge &diagonal)
- Edge * splitTriangle (Edge &edge, const Go::ttlPoint &point)
- void removeTriangle (Edge &edge)
- void reverse_splitTriangle (Edge &edge)
- Dart createDart ()

  Create an arbitrary CCW dart.
- const std::list< Edge * > & getLeadingEdges () const

  Get a list of "triangles" (one leading half-edge per triangle)
- int noTriangles () const
- std::list< Edge * > * getEdges (bool skip_boundary_edges=false) const

  One half-edge for each arc.
- void optimizeDelaunay ()

Swap edges until the triangulation is Delaunay.

- Edge * getConstrainedEdges (Go::ttlPoint point) const

  Returns the start and stop-edge on a constrained edge with spesified nodes.

- bool checkDelaunay () const

  Check if this triangulation is Delaunay.

- Edge * getInteriorNode () const

  Get an arbitrary interior node (as the source node of the returned edge)

- Edge * getBoundaryEdge () const

  Get an arbitrary boundary edge.

- void printEdges (std::ofstream &os) const

  Print edges for plotting with, e.g., gnuplot.

Protected Member Functions

- void addLeadingEdge (Edge *edge)
- bool removeLeadingEdgeFromList (Edge *leadingEdge)
- void cleanAll ()

Protected Attributes

- std::list< Edge * > leadingEdges_

29.523.1 Detailed Description

Triangulation class for the half-edge data structure with adaption to TTL.

Definition at line 116 of file ttlTriang.h.

29.523.2 Constructor & Destructor Documentation

29.523.2.1 hetriang::Triangulation::Triangulation ( ) [inline]

Definition at line 124 of file ttlTriang.h.

29.523.2.2 hetriang::Triangulation::~Triangulation ( ) [inline]

Definition at line 125 of file ttlTriang.h.

29.523.3 Member Function Documentation

29.523.3.1 void hetriang::Triangulation::addLeadingEdge (Edge * *edge*) [inline], [protected]

Definition at line 119 of file ttlTriang.h.

29.523.3.2 bool hetriang::Triangulation::checkDelaunay ( ) const

Check if this triangulation is Delaunay.

29.523.3.3 void hetriang::Triangulation::cleanAll ( ) [protected]

29.523.3.4 Dart hetriang::Triangulation::createDart ( )

Create an arbitrary CCW dart.

29.523.3.5 void hetriang::Triangulation::createDelaunay (std::vector< Go::ttlPoint * >::iterator *first,* std::vector< Go::ttlPoint * >::iterator *last*)

Create Delaunay triangulation from a set of points.

29.523.3.6 Edge* hetriang::Triangulation::getBoundaryEdge ( ) const

Get an arbitrary boundary edge.

29.523.3.7 Edge* hetriang::Triangulation::getConstrainedEdges (Go::ttlPoint *point*) const

Returns the start and stop-edge on a constrained edge with spesified nodes.

29.523.3.8 std::list<Edge*>* hetriang::Triangulation::getEdges (bool *skip_boundary_edges* = false) const

One half-edge for each arc.

29.523.3.9 Edge* hetriang::Triangulation::getInteriorNode ( ) const

Get an arbitrary interior node (as the source node of the returned edge)

29.523.3.10 const std::list<Edge*>& hetriang::Triangulation::getLeadingEdges ( ) const [inline]

Get a list of "triangles" (one leading half-edge per triangle)

Definition at line 148 of file ttlTriang.h.

29.523.3.11 Edge* hetriang::Triangulation::initTwoEnclosingTriangles (std::vector< Go::ttlPoint * >::iterator *first,* std::vector< Go::ttlPoint * >::iterator *last*)

When using rectangular boundary - loop through all points and expand. (Called from createDelaunay(...) when starting)

29.523.3.12 int hetriang::Triangulation::noTriangles ( ) const [inline]

Definition at line 149 of file ttlTriang.h.

29.523.3.13 void hetriang::Triangulation::optimizeDelaunay ( )

Swap edges until the triangulation is Delaunay.

29.523.3.14 void hetriang::Triangulation::printEdges (std::ofstream & *os*) const

Print edges for plotting with, e.g., gnuplot.

29.523.3.15 bool hetriang::Triangulation::removeLeadingEdgeFromList (Edge * *leadingEdge*) [protected]

29.523.3.16 void hetriang::Triangulation::removeTriangle (Edge & *edge*)

29.523.3.17 void hetriang::Triangulation::reverse_splitTriangle (Edge & *edge*)

29.523.3.18 Edge* hetriang::Triangulation::splitTriangle (Edge & *edge,* const Go::ttlPoint & *point*)

29.523.3.19 void hetriang::Triangulation::swapEdge (Edge & *diagonal*)

29.523.4 Member Data Documentation

29.523.4.1 std::list<Edge*> hetriang::Triangulation::leadingEdges_ [protected]

Definition at line 118 of file ttlTriang.h.

The documentation for this class was generated from the following file:

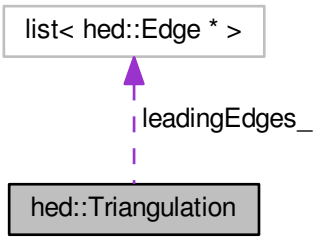
- compositemodel/include/GoTools/compositemodel/ttlTriang.h

29.524 hed::Triangulation Class Reference

Triangulation class for the half-edge data structure with adaption to TTL.

`#include <HeTriang.h>`

Collaboration diagram for hed::Triangulation:



Public Member Functions

- Triangulation ()

  Default constructor.
- Triangulation (const Triangulation &tr)

  Copy constructor.
- ~Triangulation ()

  Destructor.
- void createDelaunay (std::vector< Node * >::iterator first, std::vector< Node * >::iterator last)

  Creates a Delaunay triangulation from a set of points.
- Edge * initTwoEnclosingTriangles (std::vector< Node * >::iterator first, std::vector< Node * >::iterator last)

  Creates an initial Delaunay triangulation from two enclosing triangles.
- void swapEdge (Edge &diagonal)

  Swaps the edge associated with diagonal.
- Edge * splitTriangle (Edge &edge, Node &point)

  Splits the triangle associated with edge into three new triangles joining at point.
- void removeTriangle (Edge &edge)

  Removes the boundary triangle associated with edge.
- void reverse_splitTriangle (Edge &edge)

  The reverse operation of removeTriangle.
- Dart createDart ()

  Creates an arbitrary CCW dart.
- const list< Edge * > & getLeadingEdges () const

  Returns a list of "triangles" (one leading half-edge for each triangle)
- int noTriangles () const

  Returns the number of triangles.
- list< Edge * > * getEdges (bool skip_boundary_edges=false) const

  Returns a list of half-edges (one half-edge for each arc)
- void flagNodes (bool flag) const

  Sets flag in all the nodes.
- list< Node * > * getNodes () const

  Returns a list of nodes. This function requires TTL_USE_NODE_FLAG to be defined.
- void optimizeDelaunay ()

  Swaps edges until the triangulation is Delaunay (constrained edges are not swapped)
- bool checkDelaunay () const

  Checks if the triangulation is Delaunay.
- Edge * getInteriorNode () const

  Returns an arbitrary interior node (as the source node of the returned edge)
- Edge * getBoundaryEdge () const

  Returns an arbitrary boundary edge.
- void printEdges (std::ofstream &os) const

  Print edges for plotting with, e.g., gnuplot.

Protected Member Functions

- void addLeadingEdge (Edge *edge)
- bool removeLeadingEdgeFromList (Edge *leadingEdge)
- void cleanAll ()

Protected Attributes

- list< Edge * > leadingEdges_

29.524.1 Detailed Description

Triangulation class for the half-edge data structure with adaption to TTL.

Definition at line 220 of file HeTriang.h.

29.524.2 Constructor & Destructor Documentation

29.524.2.1 hed::Triangulation::Triangulation ( ) [inline]

Default constructor.

Definition at line 230 of file HeTriang.h.

29.524.2.2 hed::Triangulation::Triangulation (const Triangulation & *tr*) [inline]

Copy constructor.

Definition at line 233 of file HeTriang.h.

29.524.2.3 hed::Triangulation::~Triangulation ( ) [inline]

Destructor.

Definition at line 239 of file HeTriang.h.

29.524.3 Member Function Documentation

29.524.3.1 void hed::Triangulation::addLeadingEdge (Edge * *edge*) [inline], [protected]

Definition at line 224 of file HeTriang.h.

29.524.3.2 bool Triangulation::checkDelaunay ( ) const

Checks if the triangulation is Delaunay.

Definition at line 608 of file HeTriang.cpp.

29.524.3.3 void Triangulation::cleanAll ( ) [protected]

Definition at line 363 of file HeTriang.cpp.

29.524.3.4 Dart Triangulation::createDart ( )

Creates an arbitrary CCW dart.

Definition at line 326 of file HeTriang.cpp.

29.524.3.5 void hed::Triangulation::createDelaunay (std::vector< Node * >::iterator *first*, std::vector< Node * >::iterator *last*)

Creates a Delaunay triangulation from a set of points.

29.524.3.6 void hed::Triangulation::flagNodes (bool *flag*) const

Sets flag in all the nodes.

29.524.3.7 Edge * Triangulation::getBoundaryEdge ( ) const

Returns an arbitrary boundary edge.

Definition at line 719 of file HeTriang.cpp.

29.524.3.8 list< Edge * > * Triangulation::getEdges (bool *skip_boundary_edges* = false) const

Returns a list of half-edges (one half-edge for each arc)

Definition at line 423 of file HeTriang.cpp.

29.524.3.9 Edge * Triangulation::getInteriorNode ( ) const

Returns an arbitrary interior node (as the source node of the returned edge)

Definition at line 681 of file HeTriang.cpp.

29.524.3.10 const list<Edge*>& hed::Triangulation::getLeadingEdges ( ) const [inline]

Returns a list of "triangles" (one leading half-edge for each triangle)

Definition at line 274 of file HeTriang.h.

29.524.3.11 list<Node*>* hed::Triangulation::getNodes ( ) const

Returns a list of nodes. This function requires TTL_USE_NODE_FLAG to be defined.

See also

Node.

29.524.3.12 Edge* hed::Triangulation::initTwoEnclosingTriangles (std::vector< Node * >::iterator *first*, std::vector< Node * >::iterator *last*)

Creates an initial Delaunay triangulation from two enclosing triangles.

29.524.3.13 int hed::Triangulation::noTriangles ( ) const [inline]

Returns the number of triangles.

Definition at line 277 of file HeTriang.h.

29.524.3.14 void Triangulation::optimizeDelaunay ( )

Swaps edges until the triangulation is Delaunay (constrained edges are not swapped)

Definition at line 648 of file HeTriang.cpp.

29.524.3.15 void hed::Triangulation::printEdges (std::ofstream & *os*) const

Print edges for plotting with, e.g., gnuplot.

29.524.3.16 bool Triangulation::removeLeadingEdgeFromList (Edge * *leadingEdge*) [protected]

Definition at line 334 of file HeTriang.cpp.

29.524.3.17 void Triangulation::removeTriangle (Edge & *edge*)

Removes the boundary triangle associated with edge.

Definition at line 197 of file HeTriang.cpp.

29.524.3.18 void Triangulation::reverse_splitTriangle (Edge & *edge*)

The reverse operation of removeTriangle.

Definition at line 252 of file HeTriang.cpp.

29.524.3.19 Edge * Triangulation::splitTriangle (Edge & *edge*, Node & *point*)

Splits the triangle associated with edge into three new triangles joining at point.

Definition at line 448 of file HeTriang.cpp.

29.524.3.20 void Triangulation::swapEdge (Edge & *diagonal*)

Swaps the edge associated with diagonal.

Definition at line 542 of file HeTriang.cpp.

29.524.4 Member Data Documentation

29.524.4.1 list<Edge*> hed::Triangulation::leadingEdges_ [protected]

Definition at line 223 of file HeTriang.h.

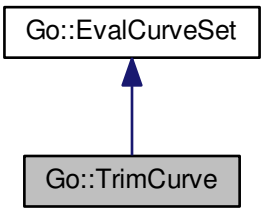
The documentation for this class was generated from the following files:

- ttl/include/ttl/halfedge/HeTriang.h
- ttl/src/halfedge/HeTriang.cpp

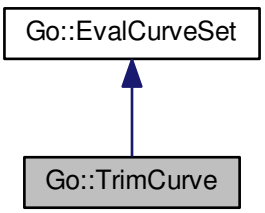
29.525 Go::TrimCurve Class Reference

`#include <TrimCurve.h>`

Inheritance diagram for Go::TrimCurve:



Collaboration diagram for Go::TrimCurve:



Public Member Functions

- TrimCurve (CurveOnSurface *bd_crv)

  Constructor given the CurveOnSurface curve representing the trim curve.
- TrimCurve (CurveOnSurface *bd_crv, double start, double end)
- TrimCurve (Point startpt, Point endpt, CurveOnSurface *bd_crv)
- virtual ~TrimCurve ()

  virtual destructor ensures safe inheritance
- std::vector< Point > eval (double t)
- virtual void eval (double t, int n, std::vector< std::vector< Point > > &der)
- virtual double start ()
- virtual double end ()
- virtual int dim ()

  Inherited from EvalCurveSet::dim().
- virtual bool approximationOK (double par, const std::vector< Point > &approxpos, double tol1, double tol2)
- virtual int nmbCvs ()

29.525.1 Detailed Description

This class represents the curve obtained by projecting a given 3D curve onto a given part of a given 3D surface. Used to improve the accuracy of an already existing trimming curve.

Definition at line 59 of file TrimCurve.h.

29.525.2 Constructor & Destructor Documentation

29.525.2.1 Go::TrimCurve::TrimCurve (CurveOnSurface * *bd_crv*)

Constructor given the CurveOnSurface curve representing the trim curve.

29.525.2.2 Go::TrimCurve::TrimCurve (CurveOnSurface * *bd_crv*, double *start*, double *end*)

Constructor given the CurveOnSurface curve representing the trim curve limited in the parameter domain

29.525.2.3 Go::TrimCurve::TrimCurve (Point *startpt*, Point *endpt*, CurveOnSurface * *bd_crv*)

Constructor given the CurveOnSurface curve representing the trim curve limited in the geometry space

29.525.2.4 virtual Go::TrimCurve::~TrimCurve ( ) [virtual]

virtual destructor ensures safe inheritance

29.525.3 Member Function Documentation

29.525.3.1 virtual bool Go::TrimCurve::approximationOK (double *par*, const std::vector< Point > & *approxpos*, double *tol1*, double *tol2*) [virtual]

Inherited from EvalCurveSet::approximationOK(). For this class, the specified tolerances are not used; the internally stored 'epsgeo' value is used as tolerance (this value was specified in the constructor).

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	unused
tol2	unused

Returns

'true' if the curve approximates the point at the parameter, 'false' otherwise.

Implements Go::EvalCurveSet.

29.525.3.2 virtual int Go::TrimCurve::dim ( ) [virtual]

Inherited from EvalCurveSet::dim().

Implements Go::EvalCurveSet.

29.525.3.3 virtual double Go::TrimCurve::end ( ) [virtual]

End parameter of domain.

Returns

end parameter of the spline space.

Implements Go::EvalCurveSet.

29.525.3.4 std::vector<Point> Go::TrimCurve::eval (double *t*) [virtual]

Evaluate the curves.

Parameters

t	parameter in which to evaluate.

Returns

the evaluated points for the curve set.

Implements Go::EvalCurveSet.

29.525.3.5 virtual void Go::TrimCurve::eval (double *t*, int *n*, std::vector< std::vector< Point > > & *der*) [virtual]

Evaluate the curve derivatives.

Parameters

t	parameter in which to evaluate.
n	number of derivatives to compute.
der	the evaluated points up to the n'th derivative for the curve set.

Implements Go::EvalCurveSet.

29.525.3.6 virtual int Go::TrimCurve::nmbCvs ( ) [virtual]

The number of curves in the curve set.

Returns

the number of curves in the curve set.

Implements Go::EvalCurveSet.

29.525.3.7 virtual double Go::TrimCurve::start ( ) [virtual]

Start parameter of domain.

Returns

start parameter of the spline space.

Implements Go::EvalCurveSet.

The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/TrimCurve.h

29.526 Go::ttlPoint Class Reference

`#include <ttlPoint.h>`

Public Member Functions

- ttlPoint (PointIter pnt_iter, double x, double y, double z=0.0)
  Constructor.
- ~ttlPoint ()
  Destructor.
- const PointIter & pnt_iter () const
- double x () const
- double y () const
- double z () const

29.526.1 Detailed Description

Utility class for representing a ftSamplePoint with additional parameter value. Useful when dealing with sets of surfaces treated as one.

Definition at line 51 of file ttlPoint.h.

29.526.2 Constructor & Destructor Documentation

29.526.2.1 Go::ttlPoint::ttlPoint (PointIter *pnt_iter,* double *x,* double *y,* double *z* = 0.0) [inline]

Constructor.

Definition at line 56 of file ttlPoint.h.

29.526.2.2 Go::ttlPoint::~ttlPoint ( ) [inline]

Destructor.

Definition at line 59 of file ttlPoint.h.

29.526.3 Member Function Documentation

29.526.3.1 const PointIter& Go::ttlPoint::pnt_iter ( ) const [inline]

Definition at line 61 of file ttlPoint.h.

29.526.3.2 double Go::ttlPoint::x ( ) const [inline]

Definition at line 62 of file ttlPoint.h.

29.526.3.3 double Go::ttlPoint::y ( ) const [inline]

Definition at line 63 of file ttlPoint.h.

29.526.3.4 double Go::ttlPoint::z ( ) const [inline]

Definition at line 64 of file ttlPoint.h.

The documentation for this class was generated from the following file:

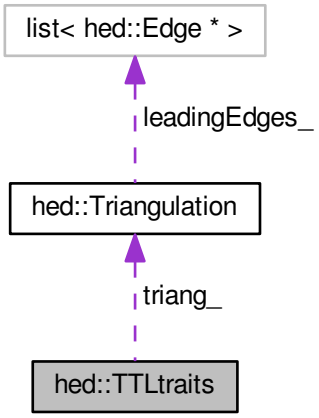
- compositemodel/include/GoTools/compositemodel/ttlPoint.h

29.527 hed::TTLtraits Struct Reference

Traits class (static struct) for the half-edge data structure.

`#include <HeTraits.h>`

Collaboration diagram for hed::TTLtraits:



Public Types

- typedef double real_type

Static Public Member Functions

Geometric Predicates

- static real_type scalarProduct2d (const Dart &v1, const Dart &v2)
- static real_type scalarProduct2d (const Dart &v, const Node &p)
- static real_type crossProduct2d (const Dart &v1, const Dart &v2)
- static real_type crossProduct2d (const Dart &v, const Node &p)
- static real_type orient2d (const Dart &n1, const Dart &n2, const Node &p)
- static real_type orient2d (const Dart &n1, const Dart &n2, const Dart &p)

Functions for Delaunay Triangulation

- static void swapEdge (Dart &dart)
- static void splitTriangle (Dart &dart, Node &point)

Functions for removing nodes

- static void reverse_splitTriangle (Dart &dart)
- static void removeBoundaryTriangle (Dart &d)

Static Public Attributes

- static Triangulation * triang_ = NULL

29.527.1 Detailed Description

Traits class (static struct) for the half-edge data structure.

The member functions are those required by different function templates in the TTL. Documentation is given here to explain what actions should be carried out on the actual data structure as required by the functions in the ttl namespace.

The source code of `HeTraits.h` shows how the traits class is implemented for the half-edge data structure.

See also

Application Programming Interface to TTL (API)

Definition at line 70 of file HeTraits.h.

29.527.2 Member Typedef Documentation

29.527.2.1 typedef double hed::TTLtraits::real_type

The floating point type used in calculations involving scalar products and cross products.

Definition at line 78 of file HeTraits.h.

29.527.3 Member Function Documentation

29.527.3.1 static real_type hed::TTLtraits::crossProduct2d (const Dart & *v1*, const Dart & *v2*) [inline], [static]

Cross product between two vectors in the plane represented as darts. The z-component of the cross product is returned.
ttl_util::crossProduct2d can be used.

Definition at line 121 of file HeTraits.h.

29.527.3.2 static real_type hed::TTLtraits::crossProduct2d (const Dart & *v*, const Node & *p*) [inline], [static]

Cross product between two vectors in the plane. The first vector is represented by a dart *v*, and the second vector has direction from the source node of *v* to the point *p*. The z-component of the cross product is returned.
ttl_util::crossProduct2d can be used.

Definition at line 137 of file HeTraits.h.

29.527.3.3 static real_type hed::TTLtraits::orient2d (const Dart & *n1,* const Dart & *n2,* const Node & *p*) [inline], [static]

Let *n1* and *n2* be the nodes associated with two darts, and let *p* be a point in the plane. Return a positive value if *n1*, *n2*, and *p* occur in counterclockwise order; a negative value if they occur in clockwise order; and zero if they are collinear.

Definition at line 150 of file HeTraits.h.

29.527.3.4 static real_type hed::TTLtraits::orient2d (const Dart & *n1,* const Dart & *n2,* const Dart & *p*) [inline], [static]

This is the same predicate as represented with the function above, but with a slighty different interface: The last parameter is given as a dart where the source node of the dart represents a point in the plane. This function is required for constrained triangulation.

Definition at line 166 of file HeTraits.h.

29.527.3.5 static void hed::TTLtraits::removeBoundaryTriangle (Dart & *d*) [inline], [static]

Removes a triangle with an edge at the boundary of the triangulation in the actual data structure

Definition at line 290 of file HeTraits.h.

29.527.3.6 static void hed::TTLtraits::reverse_splitTriangle (Dart & *dart*) [inline], [static]

The reverse operation of TTLtraits::splitTriangle. This function is only required for functions that involve removal of interior nodes; see for example ttl::removeInteriorNode.

Definition at line 281 of file HeTraits.h.

29.527.3.7 static real_type hed::TTLtraits::scalarProduct2d (const Dart & *v1,* const Dart & *v2*) [inline], [static]

Scalar product between two 2D vectors represented as darts.
ttl_util::scalarProduct2d can be used.

Definition at line 93 of file HeTraits.h.

29.527.3.8 static real_type hed::TTLtraits::scalarProduct2d (const Dart & *v,* const Node & *p*) [inline], [static]

Scalar product between two 2D vectors. The first vector is represented by a dart *v*, and the second vector has direction from the source node of *v* to the point *p*.
ttl_util::scalarProduct2d can be used.

Definition at line 108 of file HeTraits.h.

29.527.3.9 static void hed::TTLtraits::splitTriangle (Dart & *dart,* Node & *point*) [inline], [static]

Splits the triangle associated with *dart* in the actual data structure into three new triangles joining at *point*.

Parameters

dart	Output: A CCW dart incident with the new node; see the figure.

Definition at line 257 of file HeTraits.h.

29.527.3.10 static void hed::TTLtraits::swapEdge (Dart & *dart*) [inline], [static]

Swaps the edge associated with *dart* in the actual data structure.

Parameters

dart	Some of the functions require a dart as output. If this is required by the actual function, the dart should be delivered back in a position as seen if it was glued to the edge when swapping (rotating) the edge CCW; see the figure.

Note

- If the edge is *constrained*, or if it should not be swapped for some other reason, this function need not do the actual swap of the edge.
- Some functions in TTL require that `swapEdge` is implemented such that darts outside the quadrilateral are not affected by the swap.

Definition at line 241 of file HeTraits.h.

29.527.4 Member Data Documentation

29.527.4.1 Triangulation * TTLtraits::triang_ = NULL [static]

Definition at line 73 of file HeTraits.h.

The documentation for this struct was generated from the following files:

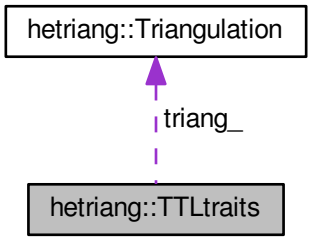
- ttl/include/ttl/halfedge/HeTraits.h
- ttl/src/halfedge/HeTriang.cpp

29.528 hetriang::TTLtraits Struct Reference

Traits class (static struct) for the half-edge data structure.

`#include <ttlTraits.h>`

Collaboration diagram for hetriang::TTLtraits:



Public Types

- typedef double real_type

Static Public Member Functions

Geometric Predicates

- static real_type scalarProduct2d (const Dart &v1, const Dart &v2)
- static real_type scalarProduct2d (const Dart &v, const Go::ttlPoint &p)
- static real_type crossProduct2d (const Dart &v1, const Dart &v2)
- static real_type crossProduct2d (const Dart &v, const Go::ttlPoint &p)
- static real_type orient2d (const Dart &n1, const Dart &n2, const Go::ttlPoint &p)
- static real_type orient2d (const Dart &n1, const Dart &n2, const Dart &p)

Functions for Delaunay Triangulation

- static void swapEdge (Dart &dart)
- static void splitTriangle (Dart &dart, Go::ttlPoint &point)

Functions for removing nodes

- static void reverse_splitTriangle (Dart &dart)
- static void removeBoundaryTriangle (Dart &d)

Static Public Attributes

- static Triangulation * triang_

29.528.1 Detailed Description

Traits class (static struct) for the half-edge data structure.

The member functions are those required by different function templates in the TTL. Documentation is given here to explain what actions should be carried out on the actual data structure as required by the functions in the ttl namespace.

The source code of `HeTraits.h` shows how the traits class is implemented for the half-edge data structure.

See also

Application Programming Interface to TTL (API)

Definition at line 67 of file ttlTraits.h.

29.528.2 Member Typedef Documentation

29.528.2.1 typedef double hetriang::TTLtraits::real_type

The floating point type used in calculations involving scalar products and cross products.

Definition at line 75 of file ttlTraits.h.

29.528.3 Member Function Documentation

29.528.3.1 static real_type hetriang::TTLtraits::crossProduct2d (const Dart & *v1*, const Dart & *v2*) [inline], [static]

Cross product between two vectors in the plane represented as darts.
The z-component of the cross product is returned.
ttl_util::crossProduct2d can be used.

Definition at line 102 of file ttlTraits.h.

29.528.3.2 static real_type hetriang::TTLtraits::crossProduct2d (const Dart & *v*, const Go::ttlPoint & *p*) [inline], [static]

Cross product between two vectors in the plane.
The first vector is represented by a dart *v*, and the second vector has direction from the source node of *v* to the point *p*.
The z-component of the cross product is returned.
ttl_util::crossProduct2d can be used.

Definition at line 114 of file ttlTraits.h.

29.528.3.3 static real_type hetriang::TTLtraits::orient2d (const Dart & *n1*, const Dart & *n2*, const Go::ttlPoint & *p*) [inline], [static]

Let *n1* and *n2* be the nodes associated with two darts, and let *p* be a point in the plane. Return a positive value if *n1*, *n2*, and *p* occur in counterclockwise order; a negative value if they occur in clockwise order; and zero if they are collinear.

Definition at line 126 of file ttlTraits.h.

29.528.3.4 static real_type hetriang::TTLtraits::orient2d (const Dart & *n1*, const Dart & *n2*, const Dart & *p*) [inline], [static]

Definition at line 134 of file ttlTraits.h.

29.528.3.5 static void hetriang::TTLtraits::removeBoundaryTriangle (Dart & *d*) [inline], [static]

Removes a triangle with an edge at the boundary of the triangulation in the actual data structure

Definition at line 219 of file ttlTraits.h.

29.528.3.6 static void hetriang::TTLtraits::reverse_splitTriangle (Dart & *dart*) [inline], [static]

The reverse operation of TTLtraits::splitTriangle.
This function is only required for functions that involve removal of interior nodes; see for example ttl::removeInteriorNode.

Definition at line 213 of file ttlTraits.h.

29.528.3.7 static real_type hetriang::TTLtraits::scalarProduct2d (const Dart & *v1*, const Dart & *v2*) [inline], [static]

Scalar product between two 2D vectors represented as darts.
ttl_util::scalarProduct2d can be used.

Definition at line 82 of file ttlTraits.h.

29.528.3.8 static real_type hetriang::TTLtraits::scalarProduct2d (const Dart & *v*, const Go::ttlPoint & *p*) [inline], [static]

Scalar product between two 2D vectors.
The first vector is represented by a dart *v*, and the second vector has direction from the source node of *v* to the point *p*.
ttl_util::scalarProduct2d can be used.

Definition at line 93 of file ttlTraits.h.

29.528.3.9 static void hetriang::TTLtraits::splitTriangle (Dart & *dart*, Go::ttlPoint & *point*) [inline], [static]

Splits the triangle associated with *dart* in the actual data structure into three new triangles joining at *point*.

Return values

dart	A CCW dart incident with the new node

Definition at line 197 of file ttlTraits.h.

29.528.3.10 static void hetriang::TTLtraits::swapEdge (Dart & *dart*) [inline], [static]

Swaps the edge associated with *dart* in the actual data structure.

Return values

dart	Some of the functions require a dart as output. If this is required by the actual function, the dart should be delivered back in a position as seen if it was glued to the edge when swapping (rotating) the edge CCW; see the figure.

Note

Some functions in TTL require that `swapEdge` is implemented such that darts outside the quadrilateral are not affected by the swap.

Definition at line 185 of file ttlTraits.h.

29.528.4 Member Data Documentation

29.528.4.1 Triangulation* hetriang::TTLtraits::triang_ [static]

Definition at line 70 of file ttlTraits.h.

The documentation for this struct was generated from the following file:

- compositemodel/include/GoTools/compositemodel/ttlTraits.h

29.529 UnfNodeType Class Reference

`#include <PrPathTriangleSeq.h>`

Public Member Functions

- void printNode ()

Public Attributes

- Go::Vector2D n_
- int origine_

29.529.1 Detailed Description

UnfNodeType - used in PrPathTriangleSeq

Definition at line 70 of file PrPathTriangleSeq.h.

29.529.2 Member Function Documentation

29.529.2.1 void UnfNodeType::printNode ( )

29.529.3 Member Data Documentation

29.529.3.1 Go::Vector2D UnfNodeType::n_

Definition at line 73 of file PrPathTriangleSeq.h.

29.529.3.2 int UnfNodeType::origine_

Definition at line 74 of file PrPathTriangleSeq.h.

The documentation for this class was generated from the following file:

- parametrization/include/GoTools/parametrization/PrPathTriangleSeq.h

29.530 Go::CoonsPatchGen::UnKnownError Class Reference

Exception class.

```
#include <CoonsPatchGen.h>
```

29.530.1 Detailed Description

Exception class.

Definition at line 63 of file CoonsPatchGen.h.

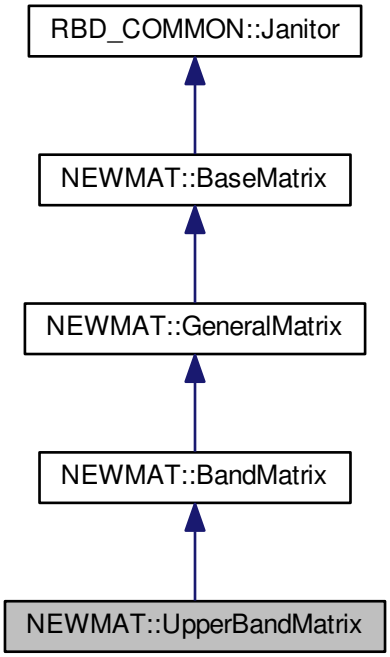
The documentation for this class was generated from the following file:

- gotools-core/include/GoTools/creators/CoonsPatchGen.h

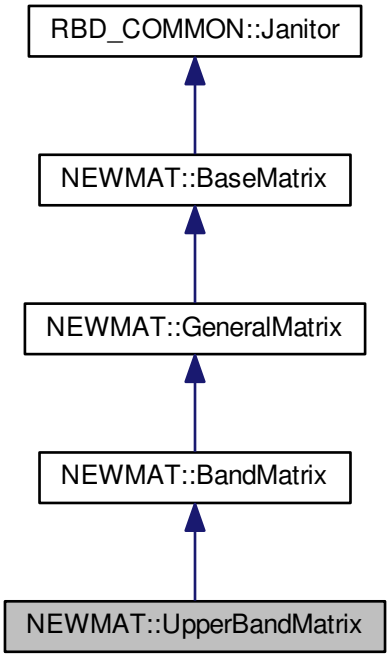
29.531 NEWMAT::UpperBandMatrix Class Reference

```
#include <newmat.h>
```

Inheritance diagram for NEWMAT::UpperBandMatrix:



Collaboration diagram for NEWMAT::UpperBandMatrix:



Public Member Functions

- UpperBandMatrix ()
- ~UpperBandMatrix ()
- UpperBandMatrix (int n, int ubw)
- UpperBandMatrix (const BaseMatrix &)
- void operator= (const BaseMatrix &)
- void operator= (Real f)
- void operator= (const UpperBandMatrix &m)
- MatrixType Type () const
- UpperBandMatrix (const UpperBandMatrix &gm)
- GeneralMatrix * MakeSolver ()
- void Solver (MatrixColX &, const MatrixColX &)
- LogAndSign LogDeterminant () const
- void ReSize (int, int, int)
- void ReSize (int n, int ubw)
- void ReSize (const GeneralMatrix &A)
- Real & operator() (int, int)
- Real operator() (int, int) const
- Real & element (int, int)
- Real element (int, int) const

Additional Inherited Members

29.531.1 Detailed Description

Definition at line 951 of file newmat.h.

29.531.2 Constructor & Destructor Documentation

29.531.2.1 NEWMAT::UpperBandMatrix::UpperBandMatrix ( ) [inline]

Definition at line 955 of file newmat.h.

29.531.2.2 NEWMAT::UpperBandMatrix::~UpperBandMatrix ( ) [inline]

Definition at line 956 of file newmat.h.

29.531.2.3 NEWMAT::UpperBandMatrix::UpperBandMatrix (int *n*, int *ubw*) [inline]

Definition at line 957 of file newmat.h.

29.531.2.4 NEWMAT::UpperBandMatrix::UpperBandMatrix (const BaseMatrix &)

29.531.2.5 NEWMAT::UpperBandMatrix::UpperBandMatrix (const UpperBandMatrix & *gm*) [inline]

Definition at line 965 of file newmat.h.

29.531.3 Member Function Documentation

29.531.3.1 Real& NEWMAT::UpperBandMatrix::element (int , int)

29.531.3.2 Real NEWMAT::UpperBandMatrix::element (int , int) const

29.531.3.3 LogAndSign UpperBandMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::BandMatrix.

Definition at line 412 of file bandmat.cpp.

29.531.3.4 GeneralMatrix* NEWMAT::UpperBandMatrix::MakeSolver ( ) [inline], [virtual]

Reimplemented from NEWMAT::BandMatrix.

Definition at line 966 of file newmat.h.

29.531.3.5 Real& NEWMAT::UpperBandMatrix::operator() (int , int)

29.531.3.6 Real NEWMAT::UpperBandMatrix::operator() (int , int) const

29.531.3.7 void NEWMAT::UpperBandMatrix::operator= (const BaseMatrix &)

29.531.3.8 void NEWMAT::UpperBandMatrix::operator= (Real *f*) [inline]

Definition at line 961 of file newmat.h.

29.531.3.9 void NEWMAT::UpperBandMatrix::operator= (const UpperBandMatrix & *m*) [inline]

Definition at line 962 of file newmat.h.

29.531.3.10 void NEWMAT::UpperBandMatrix::ReSize (int , int , int) [virtual]

Reimplemented from NEWMAT::BandMatrix.

29.531.3.11 void NEWMAT::UpperBandMatrix::ReSize (int *n*, int *ubw*) [inline]

Definition at line 970 of file newmat.h.

29.531.3.12 void NEWMAT::UpperBandMatrix::ReSize (const GeneralMatrix & *A*) [inline], [virtual]

Reimplemented from NEWMAT::BandMatrix.

Definition at line 972 of file newmat.h.

29.531.3.13 void UpperBandMatrix::Solver (MatrixColX & *mcout*, const MatrixColX & *mcin*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 353 of file bandmat.cpp.

29.531.3.14 MatrixType UpperBandMatrix::Type ( ) const [virtual]

Reimplemented from NEWMAT::BandMatrix.

Definition at line 394 of file newmat4.cpp.

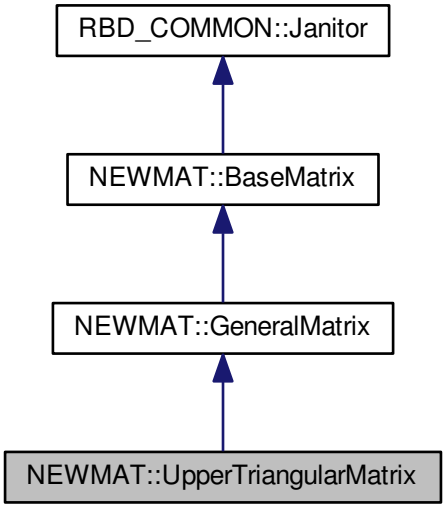
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/bandmat.cpp
- newmat/src/newmat4.cpp

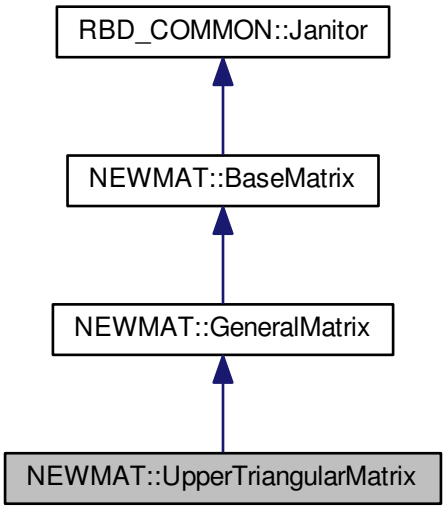
29.532 NEWMAT::UpperTriangularMatrix Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::UpperTriangularMatrix:



Collaboration diagram for NEWMAT::UpperTriangularMatrix:



Public Member Functions

- UpperTriangularMatrix ()
- ~UpperTriangularMatrix ()
- UpperTriangularMatrix (ArrayLengthSpecifier)
- void operator= (const BaseMatrix &)
- void operator= (const UpperTriangularMatrix &m)
- UpperTriangularMatrix (const BaseMatrix &)
- UpperTriangularMatrix (const UpperTriangularMatrix &gm)
- void operator= (Real f)
- Real & operator() (int, int)
- Real & element (int, int)
- Real operator() (int, int) const
- Real element (int, int) const
- MatrixType Type () const
- GeneralMatrix * MakeSolver ()
- void Solver (MatrixColX &, const MatrixColX &)
- LogAndSign LogDeterminant () const
- Real Trace () const
- void GetRow (MatrixRowCol &)
- void GetCol (MatrixRowCol &)
- void GetCol (MatrixColX &)
- void RestoreCol (MatrixRowCol &)
- void RestoreCol (MatrixColX &c)
- void NextRow (MatrixRowCol &)
- void ReSize (int)
- void ReSize (const GeneralMatrix &A)
- MatrixBandWidth BandWidth () const

Additional Inherited Members

29.532.1 Detailed Description

Definition at line 670 of file newmat.h.

29.532.2 Constructor & Destructor Documentation

29.532.2.1 NEWMAT::UpperTriangularMatrix::UpperTriangularMatrix ( ) [inline]

Definition at line 674 of file newmat.h.

29.532.2.2 NEWMAT::UpperTriangularMatrix::~UpperTriangularMatrix ( ) [inline]

Definition at line 675 of file newmat.h.

29.532.2.3 NEWMAT::UpperTriangularMatrix::UpperTriangularMatrix (ArrayLengthSpecifier)

29.532.2.4 NEWMAT::UpperTriangularMatrix::UpperTriangularMatrix (const BaseMatrix &)

29.532.2.5 NEWMAT::UpperTriangularMatrix::UpperTriangularMatrix (const UpperTriangularMatrix & *gm*) [inline]

Definition at line 681 of file newmat.h.

29.532.3 Member Function Documentation

29.532.3.1 MatrixBandWidth UpperTriangularMatrix::BandWidth ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 406 of file newmat4.cpp.

29.532.3.2 Real& NEWMAT::UpperTriangularMatrix::element (int , int)

29.532.3.3 Real NEWMAT::UpperTriangularMatrix::element (int , int) const

29.532.3.4 void NEWMAT::UpperTriangularMatrix::GetCol (MatrixRowCol &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.532.3.5 void NEWMAT::UpperTriangularMatrix::GetCol (MatrixColX &) [virtual]

Implements NEWMAT::GeneralMatrix.

29.532.3.6 void UpperTriangularMatrix::GetRow (MatrixRowCol & *mrc*) [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 272 of file newmat3.cpp.

29.532.3.7 LogAndSign UpperTriangularMatrix::LogDeterminant ( ) const [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 664 of file newmat8.cpp.

29.532.3.8 GeneralMatrix* NEWMAT::UpperTriangularMatrix::MakeSolver ( ) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 692 of file newmat.h.

29.532.3.9 void UpperTriangularMatrix::NextRow (MatrixRowCol & *mrc*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 329 of file newmat3.cpp.

29.532.3.10 Real& NEWMAT::UpperTriangularMatrix::operator() (int , int)

29.532.3.11 Real NEWMAT::UpperTriangularMatrix::operator() (int , int) const

29.532.3.12 void NEWMAT::UpperTriangularMatrix::operator= (const BaseMatrix &)

29.532.3.13 void NEWMAT::UpperTriangularMatrix::operator= (const UpperTriangularMatrix & *m*) [inline]

Definition at line 678 of file newmat.h.

29.532.3.14 void NEWMAT::UpperTriangularMatrix::operator= (Real *f*) [inline]

Definition at line 682 of file newmat.h.

29.532.3.15 void NEWMAT::UpperTriangularMatrix::ReSize (int)

29.532.3.16 void UpperTriangularMatrix::ReSize (const GeneralMatrix & *A*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 303 of file newmat4.cpp.

29.532.3.17 void NEWMAT::UpperTriangularMatrix::RestoreCol (MatrixRowCol &) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

29.532.3.18 void NEWMAT::UpperTriangularMatrix::RestoreCol (MatrixColX & *c*) [inline], [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 700 of file newmat.h.

29.532.3.19 void UpperTriangularMatrix::Solver (MatrixColX & *mcout*, const MatrixColX & *mcin*) [virtual]

Reimplemented from NEWMAT::GeneralMatrix.

Definition at line 51 of file newmat7.cpp.

29.532.3.20 Real UpperTriangularMatrix::Trace ( ) const [virtual]

Reimplemented from NEWMAT::BaseMatrix.

Definition at line 572 of file newmat8.cpp.

29.532.3.21 MatrixType UpperTriangularMatrix::Type ( ) const [virtual]

Implements NEWMAT::GeneralMatrix.

Definition at line 387 of file newmat4.cpp.

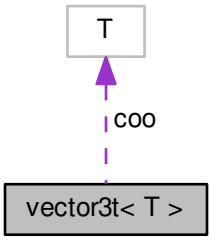
The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmat3.cpp
- newmat/src/newmat4.cpp
- newmat/src/newmat7.cpp
- newmat/src/newmat8.cpp

29.533 vector3t< T > Class Template Reference

```
#include <jonvec.h>
```

Collaboration diagram for vector3t< T >:



Public Member Functions

- vector3t ()
- vector3t (const T a, const T b, const T c)
- vector3t (const float *a)
- vector3t (const double *a)
- ~vector3t (void)
- const T * raw (void) const
- T x (void) const
- T y (void) const
- T z (void) const
- T & x (void)
- T & y (void)
- T & z (void)
- void setx (const T a)
- void sety (const T a)
- void setz (const T a)
- bool operator== (const vector3t &v) const
- bool operator< (const vector3t &v) const
- bool operator> (const vector3t &v) const
- bool operator!= (const vector3t &v) const
- const vector3t operator+ (const vector3t &v) const
- vector3t & operator+= (const vector3t &v)
- vector3t & operator-= (const vector3t &v)
- vector3t & operator-= (const T &d)
- vector3t & operator+= (const T &d)
- vector3t & operator*= (const double x)
- vector3t & operator/= (const double x)
- const vector3t operator- (const vector3t &v) const
- const vector3t operator- (const T &d) const
- const vector3t operator- (void) const
- T operator* (const vector3t &v) const
- vector3t operator/ (const vector3t &v) const
- const vector3t & clamp (const vector3t &v0, const vector3t &v1)
- void min (const vector3t &v)
- void max (const vector3t &v)
- vector3t & conv (const vector3t &v)
- vector3t reciprocal (void) const
- vector3t & rescale (const vector3t &mi, const vector3t &ma, const vector3t &new_mi, const vector3t &new↩ _ma)
- T length_squared (void) const
- T length (void) const
- void normalize (void)
- vector3t normalized (void) const
- void print (void) const
- void print2 (void) const
- void print3 (void) const
- T min_coo (void) const
- T max_coo (void) const
- bool dequal (const vector3t< T > &v) const
- bool dequal2 (const vector3t< T > &v) const
- bool dequal3 (const vector3t< T > &v) const
- bool dequal_2d (const vector3t< T > &v) const
- void rotate_xy (const double cosa, const double sina)
- void rotate_xz (const double cosa, const double sina)
- void rotate_yz (const double cosa, const double sina)

Public Attributes

- T coo [3]

Friends

- const friend vector3t operator* (const T &a, const vector3t &v)
- const friend vector3t operator+ (const double &a, const vector3t &v)
- const friend vector3t operator+ (const float &a, const vector3t &v)
- T cosangle (const vector3t &v0, const vector3t &v1)
- vector3t conv2 (const vector3t &v1, const vector3t &v2)

29.533.1 Detailed Description

template<typename T>
class vector3t< T >

Definition at line 74 of file jonvec.h.

29.533.2 Constructor & Destructor Documentation

29.533.2.1 template<typename T> vector3t< T >::vector3t ( ) [inline]

Definition at line 79 of file jonvec.h.

29.533.2.2 template<typename T> vector3t< T >::vector3t (const T *a*, const T *b*, const T *c*) [inline]

Definition at line 85 of file jonvec.h.

29.533.2.3 template<typename T> vector3t< T >::vector3t (const float * *a*) [inline]

Definition at line 91 of file jonvec.h.

29.533.2.4 template<typename T> vector3t< T >::vector3t (const double * *a*) [inline]

Definition at line 97 of file jonvec.h.

29.533.2.5 template<typename T> vector3t< T >::~vector3t (void) [inline]

Definition at line 116 of file jonvec.h.

29.533.3 Member Function Documentation

29.533.3.1 template<typename T> const vector3t& vector3t< T >::clamp (const vector3t< T > & *v0,* const vector3t< T > & *v1*) [inline]

Definition at line 289 of file jonvec.h.

29.533.3.2 template<typename T> vector3t& vector3t< T >::conv (const vector3t< T > & *v*) [inline]

Definition at line 340 of file jonvec.h.

29.533.3.3 template<typename T> bool vector3t< T >::dequal (const vector3t< T > & *v*) const [inline]

Definition at line 424 of file jonvec.h.

29.533.3.4 template<typename T> bool vector3t< T >::dequal2 (const vector3t< T > & *v*) const [inline]

Definition at line 429 of file jonvec.h.

29.533.3.5 template<typename T> bool vector3t< T >::dequal3 (const vector3t< T > & *v*) const [inline]

Definition at line 437 of file jonvec.h.

29.533.3.6 template<typename T> bool vector3t< T >::dequal_2d (const vector3t< T > & *v*) const [inline]

Definition at line 445 of file jonvec.h.

29.533.3.7 template<typename T> T vector3t< T >::length (void) const [inline]

Definition at line 375 of file jonvec.h.

29.533.3.8 template<typename T> T vector3t< T >::length_squared (void) const [inline]

Definition at line 370 of file jonvec.h.

29.533.3.9 template<typename T> void vector3t< T >::max (const vector3t< T > & *v*) [inline]

Definition at line 317 of file jonvec.h.

29.533.3.10 template<typename T> T vector3t< T >::max_coo (void) const [inline]

Definition at line 419 of file jonvec.h.

29.533.3.11 template<typename T> void vector3t< T >::min (const vector3t< T > & *v*) [inline]

Definition at line 311 of file jonvec.h.

29.533.3.12 template<typename T> T vector3t< T >::min_coo (void) const [inline]

Definition at line 414 of file jonvec.h.

29.533.3.13 template<typename T> void vector3t< T >::normalize (void) [inline]

Definition at line 381 of file jonvec.h.

29.533.3.14 template<typename T> vector3t vector3t< T >::normalized (void) const [inline]

Definition at line 389 of file jonvec.h.

29.533.3.15 template<typename T> bool vector3t< T >::operator!= (const vector3t< T > & *v*) const [inline]

Definition at line 172 of file jonvec.h.

29.533.3.16 template<typename T> T vector3t< T >::operator* (const vector3t< T > & *v*) const [inline]

Definition at line 269 of file jonvec.h.

29.533.3.17 template<typename T> vector3t& vector3t< T >::operator*= (const double *x*) [inline]

Definition at line 222 of file jonvec.h.

29.533.3.18 template<typename T> const vector3t vector3t< T >::operator+ (const vector3t< T > & *v*) const [inline]

Definition at line 183 of file jonvec.h.

29.533.3.19 template<typename T> vector3t& vector3t< T >::operator+= (const vector3t< T > & *v*) [inline]

Definition at line 188 of file jonvec.h.

29.533.3.20 template<typename T> vector3t& vector3t< T >::operator+= (const T & *d*) [inline]

Definition at line 215 of file jonvec.h.

29.533.3.21 template<typename T> const vector3t vector3t< T >::operator- (const vector3t< T > & *v*) const [inline]

Definition at line 235 of file jonvec.h.

29.533.3.22 template<typename T> const vector3t vector3t< T >::operator- (const T & *d*) const [inline]

Definition at line 241 of file jonvec.h.

29.533.3.23 template<typename T> const vector3t vector3t< T >::operator- (void) const [inline]

Definition at line 246 of file jonvec.h.

29.533.3.24 template<typename T> vector3t& vector3t< T >::operator-= (const vector3t< T > & *v*) [inline]

Definition at line 201 of file jonvec.h.

29.533.3.25 template<typename T> vector3t& vector3t< T >::operator-= (const T & *d*) [inline]

Definition at line 208 of file jonvec.h.

29.533.3.26 template<typename T> vector3t vector3t< T >::operator/ (const vector3t< T > & *v*) const [inline]

Definition at line 274 of file jonvec.h.

29.533.3.27 template<typename T> vector3t& vector3t< T >::operator/= (const double *x*) [inline]

Definition at line 229 of file jonvec.h.

29.533.3.28 template<typename T> bool vector3t< T >::operator< (const vector3t< T > & *v*) const [inline]

Definition at line 160 of file jonvec.h.

29.533.3.29 template<typename T> bool vector3t< T >::operator== (const vector3t< T > & *v*) const [inline]

Definition at line 150 of file jonvec.h.

29.533.3.30 template<typename T> bool vector3t< T >::operator> (const vector3t< T > & *v*) const [inline]

Definition at line 164 of file jonvec.h.

29.533.3.31 template<typename T> void vector3t< T >::print (void) const [inline]

Definition at line 394 of file jonvec.h.

29.533.3.32 template<typename T> void vector3t< T >::print2 (void) const [inline]

Definition at line 401 of file jonvec.h.

29.533.3.33 template<typename T> void vector3t< T >::print3 (void) const [inline]

Definition at line 408 of file jonvec.h.

29.533.3.34 template<typename T> const T* vector3t< T >::raw (void) const [inline]

Definition at line 124 of file jonvec.h.

29.533.3.35 template<typename T> vector3t vector3t< T >::reciprocal (void) const [inline]

Definition at line 356 of file jonvec.h.

29.533.3.36 template<typename T> vector3t& vector3t< T >::rescale (const vector3t< T > & *mi,* const vector3t< T > & *ma,* const vector3t< T > & *new_mi,* const vector3t< T > & *new_ma*) [inline]

Definition at line 363 of file jonvec.h.

29.533.3.37 template<typename T> void vector3t< T >::rotate_xy (const double *cosa,* const double *sina*) [inline]

Definition at line 451 of file jonvec.h.

29.533.3.38 template<typename T> void vector3t< T >::rotate_xz (const double *cosa,* const double *sina*) [inline]

Definition at line 460 of file jonvec.h.

29.533.3.39 template<typename T> void vector3t< T >::rotate_yz (const double *cosa,* const double *sina*) [inline]

Definition at line 468 of file jonvec.h.

29.533.3.40 template<typename T> void vector3t< T >::setx (const T *a*) [inline]

Definition at line 143 of file jonvec.h.

29.533.3.41 template<typename T> void vector3t< T >::sety (const T *a*) [inline]

Definition at line 144 of file jonvec.h.

29.533.3.42 template<typename T> void vector3t< T >::setz (const T *a*) [inline]

Definition at line 145 of file jonvec.h.

29.533.3.43 template<typename T> T vector3t< T >::x (void) const [inline]

Definition at line 133 of file jonvec.h.

29.533.3.44 template<typename T> T& vector3t< T >::x (void) [inline]

Definition at line 136 of file jonvec.h.

29.533.3.45 template<typename T> T vector3t< T >::y (void) const [inline]

Definition at line 134 of file jonvec.h.

29.533.3.46 template<typename T> T& vector3t< T >::y (void) [inline]

Definition at line 137 of file jonvec.h.

29.533.3.47 template<typename T> T vector3t< T >::z (void) const [inline]

Definition at line 135 of file jonvec.h.

29.533.3.48 template<typename T> T& vector3t< T >::z (void) [inline]

Definition at line 138 of file jonvec.h.

29.533.4 Friends And Related Function Documentation

29.533.4.1 template<typename T> vector3t conv2 (const vector3t< T > & *v1,* const vector3t< T > & *v2*) [friend]

Definition at line 348 of file jonvec.h.

29.533.4.2 template<typename T> T cosangle (const vector3t< T > & *v0,* const vector3t< T > & *v1*) [friend]

Definition at line 284 of file jonvec.h.

29.533.4.3 template<typename T> const friend vector3t operator* (const T & *a*, const vector3t< T > & *v*) [friend]

Definition at line 254 of file jonvec.h.

29.533.4.4 template<typename T> const friend vector3t operator+ (const double & *a*, const vector3t< T > & *v*) [friend]

Definition at line 260 of file jonvec.h.

29.533.4.5 template<typename T> const friend vector3t operator+ (const float & *a*, const vector3t< T > & *v*) [friend]

Definition at line 264 of file jonvec.h.

29.533.5 Member Data Documentation

29.533.5.1 template<typename T> T vector3t< T >::coo[3]

Definition at line 77 of file jonvec.h.

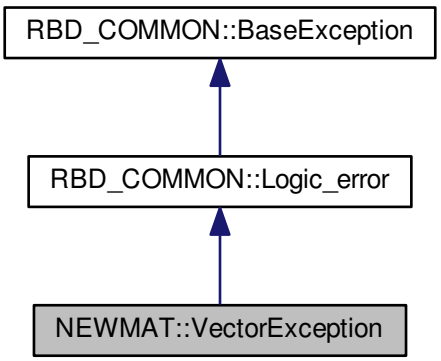
The documentation for this class was generated from the following file:

- sisl/examples/viewer/include/jonvec.h

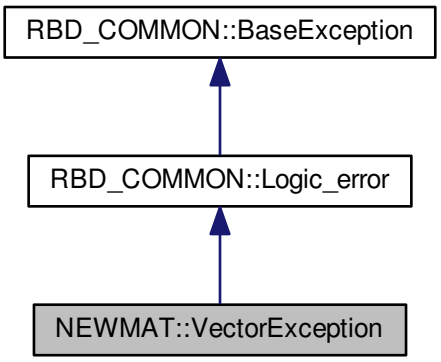
29.534 NEWMAT::VectorException Class Reference

`#include <newmat.h>`

Inheritance diagram for NEWMAT::VectorException:



Collaboration diagram for NEWMAT::VectorException:



Public Member Functions

- VectorException ()
- VectorException (const GeneralMatrix &A)

Static Public Attributes

- static unsigned long Select

Additional Inherited Members

29.534.1 Detailed Description

Definition at line 1647 of file newmat.h.

29.534.2 Constructor & Destructor Documentation

29.534.2.1 VectorException::VectorException ( )

Definition at line 127 of file newmatex.cpp.

29.534.2.2 VectorException::VectorException (const GeneralMatrix & *A*)

Definition at line 134 of file newmatex.cpp.

29.534.3 Member Data Documentation

29.534.3.1 unsigned long VectorException::Select [static]

Definition at line 1650 of file newmat.h.

The documentation for this class was generated from the following files:

- newmat/include/newmat.h
- newmat/src/newmatex.cpp

29.535 Go::Vertex Class Reference

The vertex class represents the vertex entity in a boundary represented solid or face set.

`#include <Vertex.h>`

Public Member Functions

- Vertex (Point vertex_point)

  Constructor. Give the geometric position of the vertex.
- Vertex (Point vertex_point, std::vector< ftEdge * > edges)
- Vertex (Point vertex_point, ftEdge *edges)
- Vertex (ftEdge *edge, bool at_start)
- ~Vertex ()

  Destructor.
- void joinVertex (shared_ptr< Vertex > other)
- void addEdge (ftEdge *edge)

  Add a new edge to this vertex. Used in topology build.
- void removeEdge (ftEdge *edge)
- void disconnectTwin (ftEdge *edge)
- std::vector< ftEdge * > allEdges () const

  Returns all edges meeting in this vertex including twins.
- std::vector< ftEdge * > uniqueEdges ()
- std::vector< ftEdge * > uniqueEdges (Body *bd)
- int nmbUniqueEdges ()
- int nmbUniqueEdges (Body *bd)
- std::vector< ftEdge * > freeEdges ()

  Get edges which are not associated a face.
- ftEdge * getEdge (int idx)
- Point getVertexPoint ()

  Get the geometrical position associated to this vertex.
- void setVertexPoint (Point vertex_point)

  Set the geometrical position associated to this vertex.
- std::vector< ftSurface * > faces () const

  Get all faces meeting in this vertex.
- std::vector< ftSurface * > faces (Body *bd) const

  Get all faces belonging to a given body meeting in this vertex.
- std::vector< std::pair< ftSurface *, Point > > getFaces ()

- std::vector< std::pair< ftSurface *, Point > > getFaces (Body *bd)
- void averageVertexPos ()

  Average corners of spline surfaces corresponding to this vertex.
- Point getFacePar (ftSurface *face)

  Get parameter of associated face corresponding to vertex.
- std::vector< Body * > getBodies ()

  Get all boides meeting in this vertex.
- double getDist (shared_ptr< Vertex > other_point)

  The distance between this vertex an another vertex.
- bool hasEdge (ftEdge *edge) const

  Check if the vertex is connected to the given edge.
- bool hasFace (ftSurface *face) const

  Check if the vertex is adjacent to the given face.
- bool hasEdgeSingle (ftEdge *edge) const
- bool meetInVertex (ftEdge *e1, ftEdge *e2) const

  Check if two given edges meet in this vertex.
- bool isBoundaryVertex () const
- bool sameEdge (Vertex *other) const

  Check if this vertex and the other vertex belongs to the same edge.
- bool sameFace (Vertex *other) const

  Check if this vertex and the other vertex belongs to the same face.
- bool sameUnderlyingSurface (Vertex *other) const
- bool connectedToSameVertex (Vertex *other) const
- Vertex * getCommonVertex (Vertex *other) const
- ftEdge * getCommonEdge (Vertex *other) const

  Get the edge associated with two vertices, if any.
- ftEdge * getCommonEdgeInFace (Vertex *other, ftSurface *face) const
- std::vector< ftSurface * > getCommonFaces (Vertex *other) const

  Get the faces associated with two vertices, if any.
- std::vector< ftEdge * > getFaceEdges (ftSurface *face) const

  Get the edges meeting in this vertex associated with a given face.
- bool isCornerInFace (ftSurface *face, double tol)

  Check if the vertex is a corner in the given face.
- std::vector< shared_ptr< Vertex > > getNextVertex (ftSurface *face) const

  Fetch the next vertices in the given face.
- void getEdgeDiscontinuities (std::vector< std::pair< ftEdge *, ftEdge * > > &gaps, double tol, std::vector< std::pair< ftEdge *, ftEdge * > > &kinks, double angtol, double angmax) const
- void reOrganize ()

  Reorganize edges according to twin information.
- bool checkVertexTopology ()

  Check the consistency of the edge information in this vertex.

29.535.1 Detailed Description

The vertex class represents the vertex entity in a boundary represented solid or face set.

Definition at line 57 of file Vertex.h.

29.535.2 Constructor & Destructor Documentation

29.535.2.1 Go::Vertex::Vertex (Point *vertex_point*)

Constructor. Give the geometric position of the vertex.

29.535.2.2 Go::Vertex::Vertex (Point *vertex_point,* std::vector< ftEdge * > *edges*)

Constructor. Give the geometric position of the vertex and associated edges

29.535.2.3 Go::Vertex::Vertex (Point *vertex_point,* ftEdge * *edges*)

Constructor. Give the geometric position of the vertex and one associated edge

29.535.2.4 Go::Vertex::Vertex (ftEdge * *edge,* bool *at_start*)

Constructor. Give one associated edge and an indication on which of the two vertices belonging to this edge should be constructed

29.535.2.5 Go::Vertex::~Vertex ( )

Destructor.

29.535.3 Member Function Documentation

29.535.3.1 void Go::Vertex::addEdge (ftEdge * *edge*)

Add a new edge to this vertex. Used in topology build.

29.535.3.2 std::vector<ftEdge*> Go::Vertex::allEdges ( ) const

Returns all edges meeting in this vertex including twins.

29.535.3.3 void Go::Vertex::averageVertexPos ( )

Average corners of spline surfaces corresponding to this vertex.

29.535.3.4 bool Go::Vertex::checkVertexTopology ( )

Check the consistency of the edge information in this vertex.

29.535.3.5 bool Go::Vertex::connectedToSameVertex (Vertex * *other*) const

Check if this vertex and the other vertex are connected to the same vertex

29.535.3.6 void Go::Vertex::disconnectTwin (ftEdge * *edge*)

Given an edge connected to this vertex, remove twin information about the edge in the vertex. Used in connetion with topology changes in the associated model

29.535.3.7 std::vector<ftSurface*> Go::Vertex::faces ( ) const

Get all faces meeting in this vertex.

29.535.3.8 std::vector<ftSurface*> Go::Vertex::faces (Body * *bd*) const

Get all faces belonging to a given body meeting in this vertex.

29.535.3.9 std::vector<ftEdge*> Go::Vertex::freeEdges ( )

Get edges which are not associated a face.

29.535.3.10 std::vector<Body*> Go::Vertex::getBodies ( )

Get all boides meeting in this vertex.

29.535.3.11 ftEdge* Go::Vertex::getCommonEdge (Vertex * *other*) const

Get the edge associated with two vertices, if any.

29.535.3.12 ftEdge* Go::Vertex::getCommonEdgeInFace (Vertex * *other,* ftSurface * *face*) const

Fetch the edge, if any, joining this vertex with the vertex other belonging to the specified face

29.535.3.13 std::vector<ftSurface*> Go::Vertex::getCommonFaces (Vertex * *other*) const

Get the faces associated with two vertices, if any.

29.535.3.14 Vertex* Go::Vertex::getCommonVertex (Vertex * *other*) const

Fetch the vertex connected (through an edge) to both this and the other vertex, if any

29.535.3.15 **double Go::Vertex::getDist (shared_ptr< Vertex > *other_point*)** [inline]

The distance between this vertex an another vertex.

Definition at line 161 of file Vertex.h.

29.535.3.16 **ftEdge* Go::Vertex::getEdge (int *idx*)** [inline]

Get the specified edge, twin edges are counted once and it is arbitrary which twin edge is returned

Definition at line 120 of file Vertex.h.

29.535.3.17 **void Go::Vertex::getEdgeDiscontinuities (std::vector< std::pair< ftEdge *, ftEdge * > > & *gaps,* double *tol,* std::vector< std::pair< ftEdge *, ftEdge * > > & *kinks,* double *angtol,* double *angmax*) const**

Collect attached edges where the distance between the endpoints are larger than the specified tolerance or where the curves meet with an angle that are more than the kink tolerance, but less than the corner tolerance

29.535.3.18 **std::vector<ftEdge*> Go::Vertex::getFaceEdges (ftSurface * *face*) const**

Get the edges meeting in this vertex associated with a given face.

29.535.3.19 **Point Go::Vertex::getFacePar (ftSurface * *face*)**

Get parameter of associated face corresponding to vertex.

29.535.3.20 **std::vector<std::pair<ftSurface*, Point> > Go::Vertex::getFaces ( )**

Get all faces meeting in this vertex and the parameter value in the face corresponding to the vertex

29.535.3.21 **std::vector<std::pair<ftSurface*, Point> > Go::Vertex::getFaces (Body * *bd*)**

Get all faces belonging to a given body meeting in this vertex and the parameter value in the face corresponding to the vertex

29.535.3.22 **std::vector<shared_ptr<Vertex> > Go::Vertex::getNextVertex (ftSurface * *face*) const**

Fetch the next vertices in the given face.

29.535.3.23 **Point Go::Vertex::getVertexPoint ( )** [inline]

Get the geometrical position associated to this vertex.

Definition at line 126 of file Vertex.h.

29.535.3.24 bool Go::Vertex::hasEdge (ftEdge * *edge*) const

Check if the vertex is connected to the given edge.

29.535.3.25 bool Go::Vertex::hasEdgeSingle (ftEdge * *edge*) const

Check if the vertex is connected to the given edge, and this edge is represented in the vertex with no twin

29.535.3.26 bool Go::Vertex::hasFace (ftSurface * *face*) const

Check if the vertex is adjacent to the given face.

29.535.3.27 bool Go::Vertex::isBoundaryVertex ( ) const

Check if this vertex lies at a model boundary, i.e. is connected to edges with no twin

29.535.3.28 bool Go::Vertex::isCornerInFace (ftSurface * *face,* double *tol*)

Check if the vertex is a corner in the given face.

29.535.3.29 void Go::Vertex::joinVertex (shared_ptr< Vertex > *other*)

Vertices belonging to two adjacent edges are represented as one entity. Used in topology build

29.535.3.30 bool Go::Vertex::meetInVertex (ftEdge * *e1,* ftEdge * *e2*) const

Check if two given edges meet in this vertex.

29.535.3.31 int Go::Vertex::nmbUniqueEdges ( ) [inline]

Number of unique edges meeting in this vertex, twin edges are counted only once

Definition at line 108 of file Vertex.h.

29.535.3.32 int Go::Vertex::nmbUniqueEdges (Body * *bd*)

29.535.3.33 void Go::Vertex::removeEdge (ftEdge * *edge*)

Remove an edge from this vertex. Used in connetion with topology changes in the associated model

29.535.3.34 void Go::Vertex::reOrganize ( )

Reorganize edges according to twin information.

29.535.3.35 bool Go::Vertex::sameEdge (Vertex * *other*) const

Check if this vertex and the other vertex belongs to the same edge.

29.535.3.36 bool Go::Vertex::sameFace (Vertex * *other*) const

Check if this vertex and the other vertex belongs to the same face.

29.535.3.37 bool Go::Vertex::sameUnderlyingSurface (Vertex * *other*) const

Check if this vertex and the other vertex belongs to the same underlying surface (one surface can give rise to several faces)

29.535.3.38 void Go::Vertex::setVertexPoint (Point *vertex_point*) [inline]

Set the geometrical position associated to this vertex.

Definition at line 132 of file Vertex.h.

29.535.3.39 std::vector<ftEdge*> Go::Vertex::uniqueEdges ( )

Returns all geometrically unique edges meeting in this vertex. One edge is return for a pair of twins.

29.535.3.40 std::vector<ftEdge*> Go::Vertex::uniqueEdges (Body * *bd*)

Returns all edges belonging to a given body. Twin edges are represented only as one edge

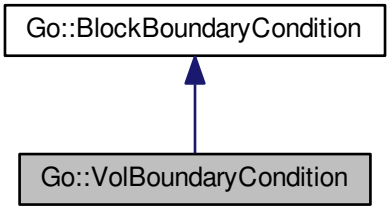
The documentation for this class was generated from the following file:

- compositemodel/include/GoTools/compositemodel/Vertex.h

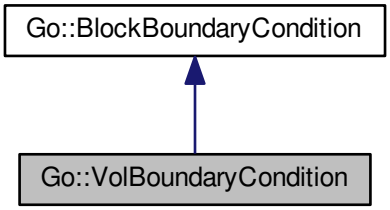
29.536 Go::VolBoundaryCondition Class Reference

`#include <VolBoundaryCondition.h>`

Inheritance diagram for Go::VolBoundaryCondition:



Collaboration diagram for Go::VolBoundaryCondition:



Public Member Functions

- VolBoundaryCondition (int face_nmb, BdConditionType type, BdCondFunctor *fbd, std::vector< std::pair< double, double > > &domain, VolSolution *solution)
- VolBoundaryCondition (int face_nmb, BdConditionType type, const Point &const_val, std::vector< std::pair< double, double > > &domain, VolSolution *solution)
- virtual ~VolBoundaryCondition ()
- virtual void getCoefficientsEnumeration (std::vector< int > &local_enumeration)
- virtual void getCoefficientsEnumeration (std::vector< int > &local_enumeration_bd, std::vector< int > &local_enumeration_bd2)
- virtual void getBdCoefficients (std::vector< std::pair< int, Point > > &coefs)
- virtual void getBdCoefficients (std::vector< std::pair< int, Point > > &coefs_bd, std::vector< std::pair< int, Point > > &coefs_inner)
- void getBasisFunctions (int index_of_Gauss_point1, int index_of_Gauss_point2, int &const_dir, vector< double > &basisValues, vector< double > &basisDerivs_u, vector< double > &basisDerivs_v) const
- shared_ptr< SplineSurface > getSplineApproximation () const
- virtual void update ()
- virtual void updateBoundaryValue (BdCondFunctor *fbd)
- int faceNumber () const
- virtual tpTolerances getTolerances () const

Additional Inherited Members

29.536.1 Detailed Description

Definition at line 67 of file VolBoundaryCondition.h.

29.536.2 Constructor & Destructor Documentation

29.536.2.1 Go::VolBoundaryCondition::VolBoundaryCondition (int *face_nmb,* BdConditionType *type,* BdCondFunctor * *fbd,* std::vector< std::pair< double, double > > & *domain,* VolSolution * *solution*)

29.536.2.2 Go::VolBoundaryCondition::VolBoundaryCondition (int *face_nmb,* BdConditionType *type,* const Point & *const_val,* std::vector< std::pair< double, double > > & *domain,* VolSolution * *solution*)

29.536.2.3 virtual Go::VolBoundaryCondition::~VolBoundaryCondition ( ) [virtual]

29.536.3 Member Function Documentation

29.536.3.1 int Go::VolBoundaryCondition::faceNumber ( ) const

29.536.3.2 void Go::VolBoundaryCondition::getBasisFunctions (int *index_of_Gauss_point1,* int *index_of_Gauss_point2,* int & *const_dir,* vector< double > & *basisValues,* vector< double > & *basisDerivs_u,* vector< double > & *basisDerivs_v*) const

29.536.3.3 virtual void Go::VolBoundaryCondition::getBdCoefficients (std::vector< std::pair< int, Point > > & *coefs*) [virtual]

Implements Go::BlockBoundaryCondition.

29.536.3.4 virtual void Go::VolBoundaryCondition::getBdCoefficients (std::vector< std::pair< int, Point > > & *coefs_bd,* std::vector< std::pair< int, Point > > & *coefs_inner*) [virtual]

Implements Go::BlockBoundaryCondition.

29.536.3.5 virtual void Go::VolBoundaryCondition::getCoefficientsEnumeration (std::vector< int > & *local_enumeration*) [virtual]

Implements Go::BlockBoundaryCondition.

29.536.3.6 virtual void Go::VolBoundaryCondition::getCoefficientsEnumeration (std::vector< int > & *local_enumeration_bd,* std::vector< int > & *local_enumeration_bd2*) [virtual]

Implements Go::BlockBoundaryCondition.

29.536.3.7 shared_ptr<SplineSurface> Go::VolBoundaryCondition::getSplineApproximation ( ) const

29.536.3.8 virtual tpTolerances Go::VolBoundaryCondition::getTolerances ( ) const [virtual]

Implements Go::BlockBoundaryCondition.

29.536.3.9 virtual void Go::VolBoundaryCondition::update ( ) [virtual]

Implements Go::BlockBoundaryCondition.

29.536.3.10 virtual void Go::VolBoundaryCondition::updateBoundaryValue (BdCondFunctor * *fbd*) [virtual]

Implements Go::BlockBoundaryCondition.

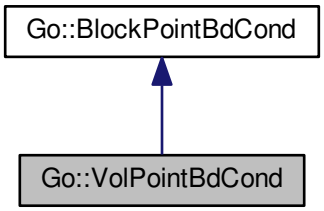
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/VolBoundaryCondition.h

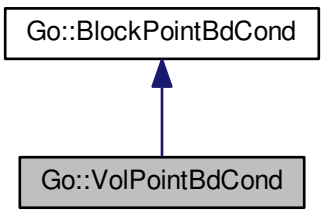
29.537 Go::VolPointBdCond Class Reference

`#include <VolPointBdCond.h>`

Inheritance diagram for Go::VolPointBdCond:



Collaboration diagram for Go::VolPointBdCond:



Public Member Functions

- VolPointBdCond (int face_nmb, double param[ ], Point &condition_value)
- ~VolPointBdCond ()
- virtual void getCoefficientsEnumeration (std::vector< int > &local_enumeration) const
- virtual Point getConditionValue () const
- double * getParam () const
- virtual void getInterpolationFactors (std::vector< std::pair< int, double > > &factors) const
- int faceNumber () const

29.537.1 Detailed Description

Definition at line 56 of file VolPointBdCond.h.

29.537.2 Constructor & Destructor Documentation

29.537.2.1 Go::VolPointBdCond::VolPointBdCond (int *face_nmb,* double *param[ ],* Point & *condition_value*)

29.537.2.2 Go::VolPointBdCond::~VolPointBdCond ( )

29.537.3 Member Function Documentation

29.537.3.1 int Go::VolPointBdCond::faceNumber ( ) const

29.537.3.2 virtual void Go::VolPointBdCond::getCoefficientsEnumeration (std::vector< int > & *local_enumeration*) const [virtual]

Implements Go::BlockPointBdCond.

29.537.3.3 virtual Point Go::VolPointBdCond::getConditionValue ( ) const [virtual]

Implements Go::BlockPointBdCond.

29.537.3.4 virtual void Go::VolPointBdCond::getInterpolationFactors (std::vector< std::pair< int, double > > & *factors*) const [virtual]

Implements Go::BlockPointBdCond.

29.537.3.5 double* Go::VolPointBdCond::getParam ( ) const

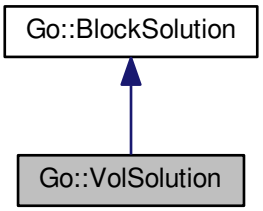
The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/VolPointBdCond.h

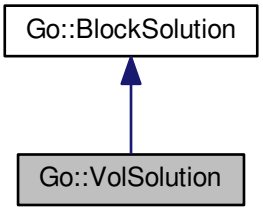
29.538 Go::VolSolution Class Reference

`#include <VolSolution.h>`

Inheritance diagram for Go::VolSolution:



Collaboration diagram for Go::VolSolution:



Public Member Functions

- VolSolution (IsogeometricVolBlock *parent, shared_ptr< SplineVolume > sol_vol)
- virtual ~VolSolution ()
- virtual VolSolution * asVolSolution ()
- void addBoundaryCondition (int face_nmb, BdConditionType type, Go::Point &const_val, std::vector< std::pair< double, double > > &domain)
- void addBoundaryCondition (int face_nmb, BdConditionType type, BdCondFunctor *fbd, std::vector< std::pair< double, double > > &domain)
- void addDirichletPointBdCond (double param[], Point &condition_value)
- int getNmbOfBoundaryConditions () const
- shared_ptr< VolBoundaryCondition > getBoundaryCondition (int index) const
- void getFaceBoundaryConditions (int face_number, std::vector< shared_ptr< VolBoundaryCondition > > &bd_cond) const
- void getFaceBoundaryConditions (std::vector< shared_ptr< VolBoundaryCondition > > &bd_cond) const
- virtual int getNmbOfPointBdConditions () const

- shared_ptr< VolPointBdCond > getPointBdCondition (int index) const
- void getFacePointBdConditions (int face_number, std::vector< shared_ptr< VolPointBdCond > > &bd_cond) const
- void getPointBdCond (std::vector< shared_ptr< VolPointBdCond > > &bd_cond) const
- virtual bool matchingSplineSpace (BlockSolution *other) const
- virtual void getMatchingCoefficients (BlockSolution *other, std::vector< std::pair< int, int > > &enumeration, int match_pos=0) const
- virtual void getBoundaryCoefficients (int boundary, std::vector< int > &enumeration) const
- virtual void getBoundaryCoefficients (int boundary, std::vector< int > &enumeration_bd, std::vector< int > &enumeration_bd2) const
- virtual void makeMatchingSplineSpace (BlockSolution *other)
- virtual void increaseDegree (int new_degree, int pardir)
- virtual void insertKnots (const std::vector< int > &knot_intervals, int pardir)
- virtual void insertKnots (const std::vector< double > &knots, int pardir)
- virtual void erasePreEvaluatedBasisFunctions ()
- virtual void performPreEvaluation (std::vector< std::vector< double > > &Gauss_par)
- void getBasisFunctions (int index_of_Gauss_point1, int index_of_Gauss_point2, int index_of_Gauss_point3, vector< double > &basisValues, vector< double > &basisDerivs_u, vector< double > &basisDerivs_v, vector< double > &basisDerivs_w) const
- void getBasisFunctions (double param1, double param2, double param3, vector< double > &basisValues, vector< double > &basisDerivs_u, vector< double > &basisDerivs_v, vector< double > &basisDerivs_w) const
- void getBasisFunctionValues (int basis_func_id_u, int basis_func_id_v, int basis_func_id_w, std::vector< int > &index_of_Gauss_points1, std::vector< int > &index_of_Gauss_points2, std::vector< int > &index_of_Gauss_points3, std::vector< double > &basisValues, std::vector< double > &basisDerivs_u, std::vector< double > &basisDerivs_v, std::vector< double > &basisDerivs_w) const
- void getBasisFunctionValues (int basis_func_id_u, int basis_func_id_v, int basis_func_id_w, int knot_ind_u, int knot_ind_v, int knot_ind_w, std::vector< int > &index_of_Gauss_points1, std::vector< int > &index_of_Gauss_points2, std::vector< int > &index_of_Gauss_points3, std::vector< double > &basisValues, std::vector< double > &basisDerivs_u, std::vector< double > &basisDerivs_v, std::vector< double > &basisDerivs_w) const
- virtual double getJacobian (std::vector< int > &index_of_Gauss_point) const
- virtual void valuesInGaussPoint (const std::vector< int > &index_of_Gauss_point, std::vector< Point > &derivs) const
- virtual void setSolutionCoefficients (const std::vector< double > &coefs)
- shared_ptr< SplineVolume > getSolutionVolume () const
- shared_ptr< SplineVolume > getGeometryVolume () const
- void setMinimumDegree (int degree)
- void refineToGeometry (int pardir)
- virtual int nmbCoefs () const
- virtual int nmbCoefs (int pardir) const
- virtual int degree (int pardir) const
- virtual std::vector< double > knots (int pardir) const
- virtual std::vector< double > distinctKnots (int pardir) const
- virtual BsplineBasis basis (int pardir) const
- virtual int dimension () const
- virtual void updateConditions ()
- void getGaussParameter (int index_of_Gauss_point1, int index_of_Gauss_point2, int const_dir, double &par1, double &par2) const
- virtual tpTolerances getTolerances () const

29.538.1 Detailed Description

Definition at line 84 of file VolSolution.h.

29.538.2 Constructor & Destructor Documentation

29.538.2.1 Go::VolSolution::VolSolution (IsogeometricVolBlock * *parent,* shared_ptr< SplineVolume > *sol_vol*)

29.538.2.2 virtual Go::VolSolution::~VolSolution ( ) [virtual]

29.538.3 Member Function Documentation

29.538.3.1 void Go::VolSolution::addBoundaryCondition (int *face_nmb,* BdConditionType *type,* Go::Point & *const_val,* std::vector< std::pair< double, double > > & *domain*)

29.538.3.2 void Go::VolSolution::addBoundaryCondition (int *face_nmb,* BdConditionType *type,* BdCondFunctor * *fbd,* std::vector< std::pair< double, double > > & *domain*)

29.538.3.3 void Go::VolSolution::addDirichletPointBdCond (double *param[ ],* Point & *condition_value*)

29.538.3.4 virtual VolSolution* Go::VolSolution::asVolSolution ( ) [virtual]

Reimplemented from Go::BlockSolution.

29.538.3.5 virtual BsplineBasis Go::VolSolution::basis (int *pardir*) const [virtual]

Implements Go::BlockSolution.

29.538.3.6 virtual int Go::VolSolution::degree (int *pardir*) const [virtual]

Implements Go::BlockSolution.

29.538.3.7 virtual int Go::VolSolution::dimension ( ) const [virtual]

Implements Go::BlockSolution.

29.538.3.8 virtual std::vector<double> Go::VolSolution::distinctKnots (int *pardir*) const [virtual]

Implements Go::BlockSolution.

29.538.3.9 virtual void Go::VolSolution::erasePreEvaluatedBasisFunctions ( ) [virtual]

Implements Go::BlockSolution.

29.538.3.10 void Go::VolSolution::getBasisFunctions (int *index_of_Gauss_point1,* int *index_of_Gauss_point2,* int *index_of_Gauss_point3,* vector< **double** > & *basisValues,* vector< **double** > & *basisDerivs_u,* vector< **double** > & *basisDerivs_v,* vector< **double** > & *basisDerivs_w*) const

29.538.3.11 void Go::VolSolution::getBasisFunctions (**double** *param1,* **double** *param2,* **double** *param3,* vector< **double** > & *basisValues,* vector< **double** > & *basisDerivs_u,* vector< **double** > & *basisDerivs_v,* vector< **double** > & *basisDerivs_w*) const

29.538.3.12 void Go::VolSolution::getBasisFunctionValues (int *basis_func_id_u,* int *basis_func_id_v,* int *basis_func_id_w,* std::vector< int > & *index_of_Gauss_points1,* std::vector< int > & *index_of_Gauss_points2,* std::vector< int > & *index_of_Gauss_points3,* std::vector< **double** > & *basisValues,* std::vector< **double** > & *basisDerivs_u,* std::vector< **double** > & *basisDerivs_v,* std::vector< **double** > & *basisDerivs_w*) const

29.538.3.13 void Go::VolSolution::getBasisFunctionValues (int *basis_func_id_u,* int *basis_func_id_v,* int *basis_func_id_w,* int *knot_ind_u,* int *knot_ind_v,* int *knot_ind_w,* std::vector< int > & *index_of_Gauss_points1,* std::vector< int > & *index_of_Gauss_points2,* std::vector< int > & *index_of_Gauss_points3,* std::vector< **double** > & *basisValues,* std::vector< **double** > & *basisDerivs_u,* std::vector< **double** > & *basisDerivs_v,* std::vector< **double** > & *basisDerivs_w*) const

29.538.3.14 virtual void Go::VolSolution::getBoundaryCoefficients (int *boundary,* std::vector< int > & *enumeration*) const [virtual]

Implements Go::BlockSolution.

29.538.3.15 virtual void Go::VolSolution::getBoundaryCoefficients (int *boundary,* std::vector< int > & *enumeration_bd,* std::vector< int > & *enumeration_bd2*) const [virtual]

Implements Go::BlockSolution.

29.538.3.16 shared_ptr<**VolBoundaryCondition**> Go::VolSolution::getBoundaryCondition (int *index*) const

29.538.3.17 void Go::VolSolution::getFaceBoundaryConditions (int *face_number,* std::vector< shared_ptr< **VolBoundaryCondition** > > & *bd_cond*) const

29.538.3.18 void Go::VolSolution::getFaceBoundaryConditions (std::vector< shared_ptr< **VolBoundaryCondition** > > & *bd_cond*) const

29.538.3.19 void Go::VolSolution::getFacePointBdConditions (int *face_number,* std::vector< shared_ptr< **VolPointBdCond** > > & *bd_cond*) const

29.538.3.20 void Go::VolSolution::getGaussParameter (int *index_of_Gauss_point1,* int *index_of_Gauss_point2,* int *const_dir,* **double** & *par1,* **double** & *par2*) const

29.538.3.21 shared_ptr<**SplineVolume**> Go::VolSolution::getGeometryVolume ( ) const

29.538.3.22 virtual **double** Go::VolSolution::getJacobian (std::vector< int > & *index_of_Gauss_point*) const [virtual]

Implements Go::BlockSolution.

29.538.3.23 virtual void Go::VolSolution::getMatchingCoefficients (BlockSolution * *other,* std::vector< std::pair< int, int > > & *enumeration,* int *match_pos* = 0) const [virtual]

Implements Go::BlockSolution.

29.538.3.24 int Go::VolSolution::getNmbOfBoundaryConditions ( ) const

29.538.3.25 virtual int Go::VolSolution::getNmbOfPointBdConditions ( ) const [virtual]

Implements Go::BlockSolution.

29.538.3.26 void Go::VolSolution::getPointBdCond (std::vector< shared_ptr< VolPointBdCond > > & *bd_cond*) const

29.538.3.27 shared_ptr<VolPointBdCond> Go::VolSolution::getPointBdCondition (int *index*) const

29.538.3.28 shared_ptr<SplineVolume> Go::VolSolution::getSolutionVolume ( ) const

29.538.3.29 virtual tpTolerances Go::VolSolution::getTolerances ( ) const [virtual]

Implements Go::BlockSolution.

29.538.3.30 virtual void Go::VolSolution::increaseDegree (int *new_degree,* int *pardir*) [virtual]

Implements Go::BlockSolution.

29.538.3.31 virtual void Go::VolSolution::insertKnots (const std::vector< int > & *knot_intervals,* int *pardir*) [virtual]

Implements Go::BlockSolution.

29.538.3.32 virtual void Go::VolSolution::insertKnots (const std::vector< double > & *knots,* int *pardir*) [virtual]

Implements Go::BlockSolution.

29.538.3.33 virtual std::vector<double> Go::VolSolution::knots (int *pardir*) const [virtual]

Implements Go::BlockSolution.

29.538.3.34 virtual void Go::VolSolution::makeMatchingSplineSpace (BlockSolution * *other*) [virtual]

Implements Go::BlockSolution.

29.538.3.35 virtual bool Go::VolSolution::matchingSplineSpace (BlockSolution * *other*) const [virtual]

Implements Go::BlockSolution.

29.538.3.36 virtual int Go::VolSolution::nmbCoefs ( ) const [virtual]

Implements Go::BlockSolution.

29.538.3.37 virtual int Go::VolSolution::nmbCoefs (int *pardir*) const [virtual]

Implements Go::BlockSolution.

29.538.3.38 virtual void Go::VolSolution::performPreEvaluation (std::vector< std::vector< double > > & *Gauss_par*) [virtual]

Implements Go::BlockSolution.

29.538.3.39 void Go::VolSolution::refineToGeometry (int *pardir*)

29.538.3.40 void Go::VolSolution::setMinimumDegree (int *degree*)

29.538.3.41 virtual void Go::VolSolution::setSolutionCoefficients (const std::vector< double > & *coefs*) [virtual]

Implements Go::BlockSolution.

29.538.3.42 virtual void Go::VolSolution::updateConditions ( ) [virtual]

Implements Go::BlockSolution.

29.538.3.43 virtual void Go::VolSolution::valuesInGaussPoint (const std::vector< int > & *index_of_Gauss_point*, std::vector< Point > & *derivs*) const [virtual]

Implements Go::BlockSolution.

The documentation for this class was generated from the following file:

- isogeometric_model/include/GoTools/isogeometric_model/VolSolution.h

29.539 Go::VolumeAdjacency Class Reference

Adjacency analysis of volume models.

`#include <VolumeAdjacency.h>`

Public Member Functions

- VolumeAdjacency (double gap, double neighbour)

  Constructor giving tolerances for adjacency analysis.
- ~VolumeAdjacency ()

  Destructor.
- void setAdjacency (std::vector< shared_ptr< Body > > &solids)

  Perform topology analysis on a set of bodies.
- void setAdjacency (std::vector< shared_ptr< Body > > &solids, int new_solid_pos)

29.539.1 Detailed Description

Adjacency analysis of volume models.

Definition at line 52 of file VolumeAdjacency.h.

29.539.2 Constructor & Destructor Documentation

29.539.2.1 Go::VolumeAdjacency::VolumeAdjacency (double *gap*, double *neighbour*)

Constructor giving tolerances for adjacency analysis.

29.539.2.2 Go::VolumeAdjacency::~VolumeAdjacency ( )

Destructor.

29.539.3 Member Function Documentation

29.539.3.1 void Go::VolumeAdjacency::setAdjacency (std::vector< shared_ptr< Body > > & *solids*)

Perform topology analysis on a set of bodies.

29.539.3.2 void Go::VolumeAdjacency::setAdjacency (std::vector< shared_ptr< Body > > & *solids*, int *new_solid_pos*)

Perform topology analysis on a set of bodies where it is assumed the the topological relationship between the first new_solid_pos bodies are known already

The documentation for this class was generated from the following file:

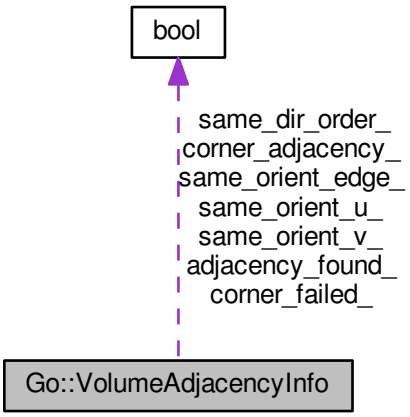
- trivariatemodel/include/GoTools/trivariatemodel/VolumeAdjacency.h

29.540 Go::VolumeAdjacencyInfo Struct Reference

Struct to store information about adjacency relations between two bodies.

`#include <ftVolume.h>`

Collaboration diagram for Go::VolumeAdjacencyInfo:



Public Member Functions

- VolumeAdjacencyInfo ()

  Constructor.

Public Attributes

- bool adjacency_found_

  True if adjacency was found, false if not.
- bool corner_adjacency_

  True if two volumes meet in along an edge.
- int bd_idx_1_

  Boundary index of first volume. Value 0-5 in order umin, umax, vmin, vmax, wmin, wmax.
- int bd_idx_2_

  Boundary index of second volume. Same interpretation as bd_idx_1_.
- int edg_idx_1_

  Set if corner_adjacency_ is true. 0-3 in the order umin, umax, vmin, vmax.
- int edg_idx_2_

  Set if corner_adjacency_ is true. 0-3 in the order umin, umax, vmin, vmax.
- bool same_orient_u_

  True if common boundaries are equally oriented in first parameter direction of first surface.
- bool same_orient_v_

  True if common boundaries are equally oriented in second parameter direction of first surface.
- bool same_orient_edge_

  True if corner_adjacency_ is found and the boundary curves are equally oriented.
- bool same_dir_order_

  True if u-directions concide for both boundary surfaces (regardless of orientation)
- bool corner_failed_

29.540.1 Detailed Description

Struct to store information about adjacency relations between two bodies.

Definition at line 54 of file ftVolume.h.

29.540.2 Constructor & Destructor Documentation

29.540.2.1 Go::VolumeAdjacencyInfo::VolumeAdjacencyInfo ( ) [inline]

Constructor.

Definition at line 83 of file ftVolume.h.

29.540.3 Member Data Documentation

29.540.3.1 bool Go::VolumeAdjacencyInfo::adjacency_found_

True if adjacency was found, false if not.

Definition at line 58 of file ftVolume.h.

29.540.3.2 int Go::VolumeAdjacencyInfo::bd_idx_1_

Boundary index of first volume. Value 0-5 in order umin, umax, vmin, vmax, wmin, wmax.

Definition at line 62 of file ftVolume.h.

29.540.3.3 int Go::VolumeAdjacencyInfo::bd_idx_2_

Boundary index of second volume. Same interpretation as bd_idx_1_.

Definition at line 64 of file ftVolume.h.

29.540.3.4 bool Go::VolumeAdjacencyInfo::corner_adjacency_

True if two volumes meet in along an edge.

Definition at line 60 of file ftVolume.h.

29.540.3.5 bool Go::VolumeAdjacencyInfo::corner_failed_

True if adjacency is found, user wanted to test if the surfaces meet in corner-to-corner configuration, and the test failed. Otherwise false.

Definition at line 80 of file ftVolume.h.

29.540.3.6 int Go::VolumeAdjacencyInfo::edg_idx_1_

Set if corner_adjacency_ is true. 0-3 in the order umin, umax, vmin, vmax.

Definition at line 66 of file ftVolume.h.

29.540.3.7 int Go::VolumeAdjacencyInfo::edg_idx_2_

Set if corner_adjacency_ is true. 0-3 in the order umin, umax, vmin, vmax.

Definition at line 68 of file ftVolume.h.

29.540.3.8 bool Go::VolumeAdjacencyInfo::same_dir_order_

True if u-directions concide for both boundary surfaces (regardless of orientation)

Definition at line 77 of file ftVolume.h.

29.540.3.9 bool Go::VolumeAdjacencyInfo::same_orient_edge_

True if corner_adjacency_ is found and the boundary curves are equally oriented.

Definition at line 75 of file ftVolume.h.

29.540.3.10 bool Go::VolumeAdjacencyInfo::same_orient_u_

True if common boundaries are equally oriented in first parameter direction of first surface.

Definition at line 70 of file ftVolume.h.

29.540.3.11 bool Go::VolumeAdjacencyInfo::same_orient_v_

True if common boundaries are equally oriented in second parameter direction of first surface.

Definition at line 72 of file ftVolume.h.

The documentation for this struct was generated from the following file:

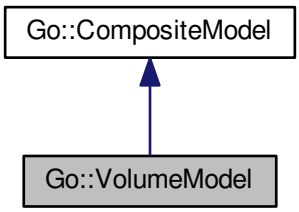
- trivariatemodel/include/GoTools/trivariatemodel/ftVolume.h

29.541 Go::VolumeModel Class Reference

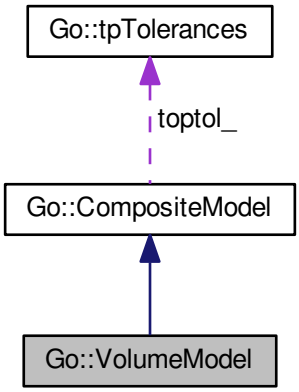
A set of volumes including topology information.

`#include <VolumeModel.h>`

Inheritance diagram for Go::VolumeModel:



Collaboration diagram for Go::VolumeModel:



Public Member Functions

- VolumeModel (std::vector< shared_ptr< ftVolume > > &volumes, double gap, double neighbour, double kink, double bend, bool adjacency_set=false)

  Constructor given a set of volumes and topologic tolerances.
- VolumeModel (std::vector< shared_ptr< ftVolume > > &volumes, double gap, double kink)

  Constructor given a set of volumes and topologic tolerances.
- VolumeModel (double gap, double neighbour, double kink, double bend)

  Constructor topologic tolerances.

- VolumeModel (const VolumeModel &vm)

  Copy constructor.
- virtual ~VolumeModel ()

  Destructor.
- virtual VolumeModel * clone () const

  Make a copy of the current model.
- virtual int nmbEntities () const

  Number of simple entities.
- shared_ptr< ftVolume > getBody (int idx) const

  Return one body.
- shared_ptr< ParamVolume > getVolume (int idx) const

  Return one volume.
- shared_ptr< SplineVolume > getSplineVolume (int idx) const

  Return one volume as SplineVolume if possible.
- int getIndex (shared_ptr< ftVolume > body) const

  Given a body in the volume model, return the index of this face.
- int getIndex (ftVolume *body) const

  Given a body in the volume model, return the index of this face.
- shared_ptr< ftVolume > fetchAsSharedPtr (Body *body) const

  Return a specified body as a shared pointer.
- virtual void evaluate (int idx, double par[], Point &pnt) const

  Evaluate position.
- virtual void evaluate (int idx, double par[], int nder, std::vector< Point > &der) const

  Evaluate position and a number of dervivatives.
- virtual void closestPoint (Point &pnt, Point &clo_pnt, int &idx, double clo_par[], double &dist)

  Compute one closest point, interface heritage, not implemented.
- virtual shared_ptr< IntResultsModel > intersect (const ftLine &line)
- virtual shared_ptr< IntResultsModel > intersect_plane (const ftPlane &plane)

  Intersection with a plane, interface heritage, not implemented.
- virtual void extremalPoint (Point &dir, Point &clo_pnt, int &idx, double ext_par[])
- virtual BoundingBox boundingBox ()

  Bounding box of the entire model.
- virtual BoundingBox boundingBox (int idx) const

  Bounding box corresponding to one entity.
- virtual bool isDegenerate (int idx) const
- virtual double curvature (int idx, double *par) const

  Curvature, interface heritage, not implemente.
- virtual void turn (int idx)

  Interface heritage, not implemented.
- virtual void turn ()

  Interface heritage, not implemented.
- void append (shared_ptr< ftVolume > volume)
- void append (std::vector< shared_ptr< ftVolume > > volumes)
- void append (shared_ptr< VolumeModel > anotherModel)
- void removeSolid (shared_ptr< ftVolume > vol)

  Remove one volume from the model.
- virtual void tesselate (std::vector< shared_ptr< GeneralMesh > > &meshes) const

  Tesselate model, interface heritage, not implemented.
- virtual void tesselate (int resolution[], std::vector< shared_ptr< GeneralMesh > > &meshes) const

  Tesselate model, interface heritage, not implemented.
- virtual void tesselate (double density, std::vector< shared_ptr< GeneralMesh > > &meshes) const

Tesselate model, interface heritage, not implemented.

- virtual void tesselatedCtrPolygon (std::vector< shared_ptr< LineCloud > > &ctr_pol) const

  Tesselate model, interface heritage, not implemented.
- void buildTopology ()
- void buildTopology (shared_ptr< ftVolume > body)
- void setVertexIdentity ()
- void setBoundarySfs ()
- std::vector< shared_ptr< ftSurface > > getBoundaryFaces () const
- std::vector< shared_ptr< ftSurface > > getBoundaryFaces (int boundary_idx) const
- std::vector< shared_ptr< ftSurface > > getUniqueInnerFaces () const
- double getApproximationTol () const
- bool allSplines () const

  Check if all entities are NURBS.
- void getAllVertices (std::vector< shared_ptr< Vertex > > &vertices) const

  Fetch all vertices in the model.
- void getRadialEdges (std::vector< shared_ptr< EdgeVertex > > &rad_edges) const

  Fetch all radial edges in the model.
- void uniqueNonRadialEdges (std::vector< shared_ptr< ftEdge > > &edges) const
- bool isCornerToCorner (double tol=DEFAULT_SPACE_EPSILON) const

  Check if the model has got a corner-to-corner configuaration.
- void makeCornerToCorner (double tol=DEFAULT_SPACE_EPSILON)
- void makeCommonSplineSpaces ()

  Ensure that the blocks in the model has got common spline spaces.
- void averageCorrespondingCoefs ()

  Ensure exact match between corresponding coefficients.
- int nmbBoundaries () const
- shared_ptr< SurfaceModel > getOuterBoundary (int idx) const

  Fetch specfied boundary of this model.
- std::vector< shared_ptr< VolumeModel > > getConnectedModels ()

  Divide this model into connected volume model.
- void regularizeBdShells ()
- void replaceNonRegVolumes (int degree=3, int split_mode=1)

  Replaces volumes that are not regular with sets of regular volumes.
- bool checkModelTopology ()

  Debug.

Additional Inherited Members

29.541.1 Detailed Description

A set of volumes including topology information.

Definition at line 54 of file VolumeModel.h.

29.541.2 Constructor & Destructor Documentation

29.541.2.1 Go::VolumeModel::VolumeModel (std::vector< shared_ptr< ftVolume > > & *volumes*, double *gap*, double *neighbour*, double *kink*, double *bend*, bool *adjacency_set* = false)

Constructor given a set of volumes and topologic tolerances.

29.541.2.2 Go::VolumeModel::VolumeModel (std::vector< shared_ptr< ftVolume > > & *volumes,* double *gap,* double *kink*)

Constructor given a set of volumes and topologic tolerances.

29.541.2.3 Go::VolumeModel::VolumeModel (double *gap,* double *neighbour,* double *kink,* double *bend*)

Constructor topologic tolerances.

29.541.2.4 Go::VolumeModel::VolumeModel (const VolumeModel & *vm*)

Copy constructor.

29.541.2.5 virtual Go::VolumeModel::~VolumeModel ( ) [virtual]

Destructor.

29.541.3 Member Function Documentation

29.541.3.1 bool Go::VolumeModel::allSplines ( ) const

Check if all entities are NURBS.

29.541.3.2 void Go::VolumeModel::append (shared_ptr< ftVolume > *volume*)

Append a new body to the volume model. The body is included in the topological structure

29.541.3.3 void Go::VolumeModel::append (std::vector< shared_ptr< ftVolume > > *volumes*)

Append a vector of bodies to the volume model. The bodies are included in the topological structure

29.541.3.4 void Go::VolumeModel::append (shared_ptr< VolumeModel > *anotherModel*)

Append all bodies from another volume model. The bodies are included in the topological structure

29.541.3.5 void Go::VolumeModel::averageCorrespondingCoefs ( )

Ensure exact match between corresponding coefficients.

29.541.3.6 virtual BoundingBox Go::VolumeModel::boundingBox ( ) [virtual]

Bounding box of the entire model.

Implements Go::CompositeModel.

29.541.3.7 virtual BoundingBox Go::VolumeModel::boundingBox (int *idx*) const [virtual]

Bounding box corresponding to one entity.

Implements Go::CompositeModel.

29.541.3.8 void Go::VolumeModel::buildTopology ( )

Construct the topology information regarding the input geometry Construct the topology information regarding the input geometry for all pairs of volumes

29.541.3.9 void Go::VolumeModel::buildTopology (shared_ptr< ftVolume > *body*)

Construct the topology information regarding the input geometry involving a given volume

29.541.3.10 bool Go::VolumeModel::checkModelTopology ( )

Debug.

29.541.3.11 virtual VolumeModel* Go::VolumeModel::clone ( ) const [inline], [virtual]

Make a copy of the current model.

Reimplemented from Go::CompositeModel.

Definition at line 77 of file VolumeModel.h.

29.541.3.12 virtual void Go::VolumeModel::closestPoint (Point & *pnt,* Point & *clo_pnt,* int & *idx,* double *clo_par[ ],* double & *dist*) [virtual]

Compute one closest point, interface heritage, not implemented.

Implements Go::CompositeModel.

29.541.3.13 virtual double Go::VolumeModel::curvature (int *idx,* double * *par*) const [virtual]

Curvature, interface heritage, not implemente.

Implements Go::CompositeModel.

29.541.3.14 virtual void Go::VolumeModel::evaluate (int *idx*, double *par[]*, Point & *pnt*) const [virtual]

Evaluate position.

Implements Go::CompositeModel.

29.541.3.15 virtual void Go::VolumeModel::evaluate (int *idx*, double *par[]*, int *nder*, std::vector< Point > & *der*) const [virtual]

Evaluate position and a number of dervivatives.

Implements Go::CompositeModel.

29.541.3.16 virtual void Go::VolumeModel::extremalPoint (Point & *dir*, Point & *ext_pnt*, int & *idx*, double *ext_par[]*) [virtual]

Extremal point(s) in a given direction

Parameters

dir	Direction
ext_pnt	Found extremal point
idx	Index of curve or surface where the extremal point is found
ext_par[]	Parameter value of extremal point

Implements Go::CompositeModel.

29.541.3.17 shared_ptr<ftVolume> Go::VolumeModel::fetchAsSharedPtr (Body * *body*) const

Return a specified body as a shared pointer.

29.541.3.18 void Go::VolumeModel::getAllVertices (std::vector< shared_ptr< Vertex > > & *vertices*) const

Fetch all vertices in the model.

29.541.3.19 double Go::VolumeModel::getApproximationTol ( ) const [inline]

Return approximation tolerance.

Returns

Approximation tolerance.

Definition at line 220 of file VolumeModel.h.

29.541.3.20 shared_ptr<ftVolume> Go::VolumeModel::getBody (int *idx*) const

Return one body.

29.541.3.21 std::vector<shared_ptr<ftSurface> > Go::VolumeModel::getBoundaryFaces ( ) const

Fetch all faces at the outer boundary of this model

29.541.3.22 std::vector<shared_ptr<ftSurface> > Go::VolumeModel::getBoundaryFaces (int *boundary_idx*) const

Fetch all faces at one of the boundaries of this model

Parameters

boundary_idx	Index of one boundary

Return values

faces	Vector of pointers to the faces at one boundary.

29.541.3.23 std::vector<shared_ptr<VolumeModel> > Go::VolumeModel::getConnectedModels ( )

Divide this model into connected volume model.

29.541.3.24 int Go::VolumeModel::getIndex (shared_ptr< ftVolume > *body*) const

Given a body in the volume model, return the index of this face.

29.541.3.25 int Go::VolumeModel::getIndex (ftVolume * *body*) const

Given a body in the volume model, return the index of this face.

29.541.3.26 shared_ptr<SurfaceModel> Go::VolumeModel::getOuterBoundary (int *idx*) const

Fetch specfied boundary of this model.

29.541.3.27 void Go::VolumeModel::getRadialEdges (std::vector< shared_ptr< EdgeVertex > > & *rad_edges*) const

Fetch all radial edges in the model.

29.541.3.28 shared_ptr<SplineVolume> Go::VolumeModel::getSplineVolume (int *idx*) const

Return one volume as SplineVolume if possible.

29.541.3.29 std::vector<shared_ptr<ftSurface> > Go::VolumeModel::getUniqueInnerFaces ( ) const

Fetch all interval unique inner faces in this model, i.e. a ftSurface for each boundary face with a twin, only one of the surfaces in the pair is returned

29.541.3.30 shared_ptr<ParamVolume> Go::VolumeModel::getVolume (int *idx*) const

Return one volume.

29.541.3.31 virtual shared_ptr<IntResultsModel> Go::VolumeModel::intersect (const ftLine & *line*) [virtual]

Intersection with a line, interface heritage, not implemented. Expected output is points, probably one point. Curves can occur in special configurations.

Implements Go::CompositeModel.

29.541.3.32 virtual shared_ptr<IntResultsModel> Go::VolumeModel::intersect_plane (const ftPlane & *plane*) [virtual]

Intersection with a plane, interface heritage, not implemented.

Implements Go::CompositeModel.

29.541.3.33 bool Go::VolumeModel::isCornerToCorner (double *tol* = DEFAULT_SPACE_EPSILON) const

Check if the model has got a corner-to-corner configuaration.

29.541.3.34 virtual bool Go::VolumeModel::isDegenerate (int *idx*) const [virtual]

Whether one particular entity is degenerate, interface heritage, not implemented

Implements Go::CompositeModel.

29.541.3.35 void Go::VolumeModel::makeCommonSplineSpaces ( )

Ensure that the blocks in the model has got common spline spaces.

29.541.3.36 void Go::VolumeModel::makeCornerToCorner (double *tol* = DEFAULT_SPACE_EPSILON)

Ensure that the blocks in the model meet in a corner-to-corner configuration

29.541.3.37 int Go::VolumeModel::nmbBoundaries ( ) const

Return the number of boundaries of a volume set (including holes).

29.541.3.38 virtual int Go::VolumeModel::nmbEntities ( ) const [virtual]

Number of simple entities.

Implements Go::CompositeModel.

29.541.3.39 void Go::VolumeModel::regularizeBdShells ( )

Update the model by regularizing all boundary shells, i.e. all faces in all boundary shells of all connected volumes should be 4-sided, and no T-joints are allowed

29.541.3.40 void Go::VolumeModel::removeSolid (shared_ptr< ftVolume > *vol*)

Remove one volume from the model.

29.541.3.41 void Go::VolumeModel::replaceNonRegVolumes (int *degree* = 3, int *split_mode* = 1)

Replaces volumes that are not regular with sets of regular volumes.

29.541.3.42 void Go::VolumeModel::setBoundarySfs ( )

Compute boundary shells

29.541.3.43 void Go::VolumeModel::setVertexIdentity ( )

Add topology information regarding degenerate volumes meeting along an edge

29.541.3.44 virtual void Go::VolumeModel::tesselate (std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate model, interface heritage, not implemented.

Implements Go::CompositeModel.

29.541.3.45 virtual void Go::VolumeModel::tesselate (int *resolution[ ]*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate model, interface heritage, not implemented.

Implements Go::CompositeModel.

29.541.3.46 virtual void Go::VolumeModel::tesselate (double *density*, std::vector< shared_ptr< GeneralMesh > > & *meshes*) const [virtual]

Tesselate model, interface heritage, not implemented.

Implements Go::CompositeModel.

29.541.3.47 virtual void Go::VolumeModel::tesselatedCtrPolygon (std::vector< shared_ptr< LineCloud > > & *ctr_pol*) const [virtual]

Tesselate model, interface heritage, not implemented.

Implements Go::CompositeModel.

29.541.3.48 virtual void Go::VolumeModel::turn (int *idx*) [virtual]

Interface heritage, not implemented.

Implements Go::CompositeModel.

29.541.3.49 virtual void Go::VolumeModel::turn ( ) [virtual]

Interface heritage, not implemented.

Implements Go::CompositeModel.

29.541.3.50 void Go::VolumeModel::uniqueNonRadialEdges (std::vector< shared_ptr< ftEdge > > & *edges*) const

Fetch edges where no radial edge exist, i.e. there is no ajacent volume along any boundary surface meeting in this edge. Only one occurance in an edge, twin-edge pair is returned

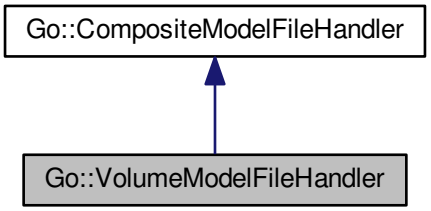
The documentation for this class was generated from the following file:

- trivariatemodel/include/GoTools/trivariatemodel/VolumeModel.h

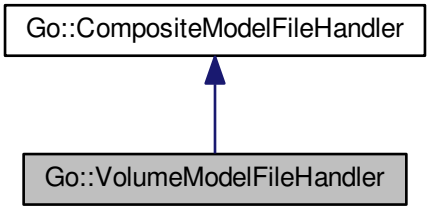
29.542 Go::VolumeModelFileHandler Class Reference

`#include <VolumeModelFileHandler.h>`

Inheritance diagram for Go::VolumeModelFileHandler:



Collaboration diagram for Go::VolumeModelFileHandler:



Public Member Functions

- VolumeModelFileHandler ()
- ~VolumeModelFileHandler ()
- void writeVolume (const shared_ptr< ftVolume > &body, std::ostream &os, int body_id=-1, bool faces=true)
- shared_ptr< ftVolume > readVolume (const char *filein, int id=-1)
- void writeVolumeModel (VolumeModel &vol_model, std::ostream &os)
- shared_ptr< VolumeModel > readVolumeModel (const char *filein)

Additional Inherited Members

29.542.1 Detailed Description

Definition at line 54 of file VolumeModelFileHandler.h.

29.542.2 Constructor & Destructor Documentation

29.542.2.1 Go::VolumeModelFileHandler::VolumeModelFileHandler ( )

29.542.2.2 Go::VolumeModelFileHandler::~VolumeModelFileHandler ( )

29.542.3 Member Function Documentation

29.542.3.1 shared_ptr<ftVolume> Go::VolumeModelFileHandler::readVolume (const char * *filein*, int *id* = -1)

29.542.3.2 shared_ptr<VolumeModel> Go::VolumeModelFileHandler::readVolumeModel (const char * *filein*)

29.542.3.3 void Go::VolumeModelFileHandler::writeVolume (const shared_ptr< ftVolume > & *body*, std::ostream & *os*, int *body_id* = -1, bool *faces* = true)

29.542.3.4 void Go::VolumeModelFileHandler::writeVolumeModel (VolumeModel & *vol_model*, std::ostream & *os*)

The documentation for this class was generated from the following file:

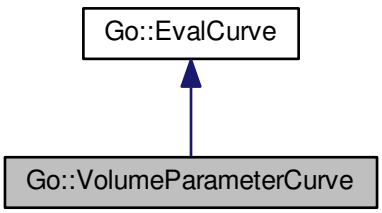
- trivariatemodel/include/GoTools/trivariatemodel/VolumeModelFileHandler.h

29.543 Go::VolumeParameterCurve Class Reference

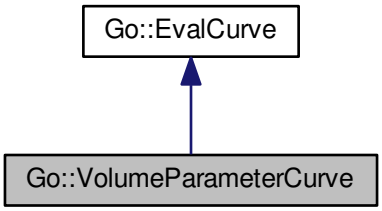
An evaluator based curve representing the parameter domain curve in a given volume which represents the same curve as a given space curve. Project a geometry curve into the parameter domain of a volume.

`#include <VolumeParameterCurve.h>`

Inheritance diagram for Go::VolumeParameterCurve:



Collaboration diagram for Go::VolumeParameterCurve:



Public Member Functions

- VolumeParameterCurve (shared_ptr< ParamVolume > vol, shared_ptr< ParamCurve > crv)
- VolumeParameterCurve (shared_ptr< ParamVolume > vol, shared_ptr< ParamCurve > crv, shared_ptr< Point > par1, shared_ptr< Point > par2)
- virtual ~VolumeParameterCurve ()

  virtual destructor ensures save inheritance
- virtual Point eval (double t) const
- virtual void eval (double t, int n, Point der[ ]) const
- virtual double start () const
- virtual double end () const
- virtual int dim () const
- virtual bool approximationOK (double par, Point approxpos, double tol1, double tol2) const

29.543.1 Detailed Description

An evaluator based curve representing the parameter domain curve in a given volume which represents the same curve as a given space curve. Project a geometry curve into the parameter domain of a volume.

Definition at line 58 of file VolumeParameterCurve.h.

29.543.2 Constructor & Destructor Documentation

29.543.2.1 Go::VolumeParameterCurve::VolumeParameterCurve (shared_ptr< ParamVolume > *vol*, shared_ptr< ParamCurve > *crv*)

Constructor

Parameters

vol	volume in which the curve lies
crv	space curve representing the same curve

29.543.2.2 Go::VolumeParameterCurve::VolumeParameterCurve (shared_ptr< ParamVolume > *vol*, shared_ptr< ParamCurve > *crv*, shared_ptr< Point > *par1*, shared_ptr< Point > *par2*)

Constructor

Parameters

vol	volume in which the curve lies
crv	space curve representing the same curve
par1	startparameter of the final curve par1 >= crv->startparam()
par2	endparameter of the final curve par1 <= crv->endparam()

29.543.2.3 virtual Go::VolumeParameterCurve::~VolumeParameterCurve ( ) [virtual]

virtual destructor ensures save inheritance

29.543.3 Member Function Documentation

29.543.3.1 virtual bool Go::VolumeParameterCurve::approximationOK (double *par*, Point *approxpos*, double *tol1*, double *tol2*) const [virtual]

Check if the curve, evaluated at a given parameter, approximates a given position within a given tolerance.

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	approximation tolerance.
tol2	another approximation tolerance (its use is defined by some of the derived classes.

Returns

'true' if the curve approximates the point at the parameter, 'false' otherwise.

Implements Go::EvalCurve.

29.543.3.2 virtual int Go::VolumeParameterCurve::dim ( ) const [virtual]

Get the dimension of the space in which the curve lies.

Returns

the space dimension of the curve.

Implements Go::EvalCurve.

29.543.3.3 virtual double Go::VolumeParameterCurve::end ( ) const [virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implements Go::EvalCurve.

29.543.3.4 virtual Point Go::VolumeParameterCurve::eval (double *t*) const [virtual]

Evaluate a point on the curve for a given parameter

Parameters

t	the parameter for which to evaluate the curve.

Returns

the evaluated point

Implements Go::EvalCurve.

29.543.3.5 virtual void Go::VolumeParameterCurve::eval (double *t*, int *n*, Point *der[]*) const [virtual]

Evaluate a point and a certain number of derivatives on the curve for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalCurve', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implements Go::EvalCurve.

29.543.3.6 virtual double Go::VolumeParameterCurve::start ( ) const [virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implements Go::EvalCurve.

The documentation for this class was generated from the following file:

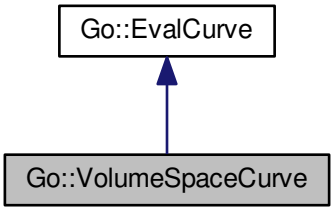
- trivariate/include/GoTools/trivariate/VolumeParameterCurve.h

29.544 Go::VolumeSpaceCurve Class Reference

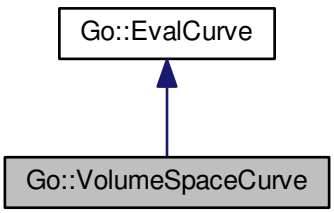
An evaluator based curve representing the space curve corresponding to parameter domain curve in a given volume. Compute the space curve corresponding to a curve in the parameter domain of a volume.

```
#include <VolumeSpaceCurve.h>
```

Inheritance diagram for Go::VolumeSpaceCurve:



Collaboration diagram for Go::VolumeSpaceCurve:



Public Member Functions

- VolumeSpaceCurve (shared_ptr< ParamVolume > vol, shared_ptr< ParamCurve > crv)
- virtual ~VolumeSpaceCurve ()

  virtual destructor ensures save inheritance
- virtual Point eval (double t) const
- virtual void eval (double t, int n, Point der[ ]) const
- virtual double start () const
- virtual double end () const
- virtual int dim () const
- virtual bool approximationOK (double par, Point approxpos, double tol1, double tol2) const

29.544.1 Detailed Description

An evaluator based curve representing the space curve corresponding to parameter domain curve in a given volume. Compute the space curve corresponding to a curve in the parameter domain of a volume.

Definition at line 59 of file VolumeSpaceCurve.h.

29.544.2 Constructor & Destructor Documentation

29.544.2.1 Go::VolumeSpaceCurve::VolumeSpaceCurve (shared_ptr< ParamVolume > *vol*, shared_ptr< ParamCurve > *crv*)

Constructor

Parameters

vol	volume in which the curve lies
crv	curve in the parameter domain of the given volume

29.544.2.2 virtual Go::VolumeSpaceCurve::~VolumeSpaceCurve ( ) [virtual]

virtual destructor ensures save inheritance

29.544.3 Member Function Documentation

29.544.3.1 virtual bool Go::VolumeSpaceCurve::approximationOK (double *par*, Point *approxpos*, double *tol1*, double *tol2*) const [virtual]

Check if the curve, evaluated at a given parameter, approximates a given position within a given tolerance.

Parameters

par	the parameter at which to check the curve
approxpos	the position we want to check whether or not the curve approximates for parameter 'par'.
tol1	approximation tolerance.
tol2	another approximation tolerance (its use is defined by some of the derived classes.

Returns

'true' if the curve approximates the point at the parameter, 'false' otherwise.

Implements Go::EvalCurve.

29.544.3.2 virtual int Go::VolumeSpaceCurve::dim ( ) const [virtual]

Get the dimension of the space in which the curve lies.

Returns

the space dimension of the curve.

Implements Go::EvalCurve.

29.544.3.3 virtual double Go::VolumeSpaceCurve::end ( ) const [virtual]

Get the end parameter of the curve.

Returns

the end parameter of the curve.

Implements Go::EvalCurve.

29.544.3.4 virtual Point Go::VolumeSpaceCurve::eval (double *t*) const [virtual]

Evaluate a point on the curve for a given parameter

Parameters

t	the parameter for which to evaluate the curve.

Returns

the evaluated point

Implements Go::EvalCurve.

29.544.3.5 virtual void Go::VolumeSpaceCurve::eval (double *t*, int *n*, Point *der[ ]*) const [virtual]

Evaluate a point and a certain number of derivatives on the curve for a given parameter.

Parameters

t	the parameter for which to evaluate the curve.
n	the number of derivatives (0 or more)

Return values

der	pointer to an array of Points where the result will be written. The position will be stored first, then the first derivative (tangent), then the second, etc.. **NB:** For most (all) derived classes of 'EvalCurve', the implementation actually only supports the computation of one derivative, i.e. if n $>$ 1, only one derivative will be computed anyway.

Implements Go::EvalCurve.

29.544.3.6 virtual double Go::VolumeSpaceCurve::start ( ) const [virtual]

Get the start parameter of the curve.

Returns

the start parameter of the curve.

Implements Go::EvalCurve.

The documentation for this class was generated from the following file:

- trivariate/include/GoTools/trivariate/VolumeSpaceCurve.h

29.545 Go::Zero_Parameter_Span_Error Class Reference

Error object used internally in IntersectionCurve.

`#include <IntersectionCurve.h>`

29.545.1 Detailed Description

Error object used internally in IntersectionCurve.

Definition at line 60 of file IntersectionCurve.h.

The documentation for this class was generated from the following file:

- intersections/include/GoTools/intersections/IntersectionCurve.h

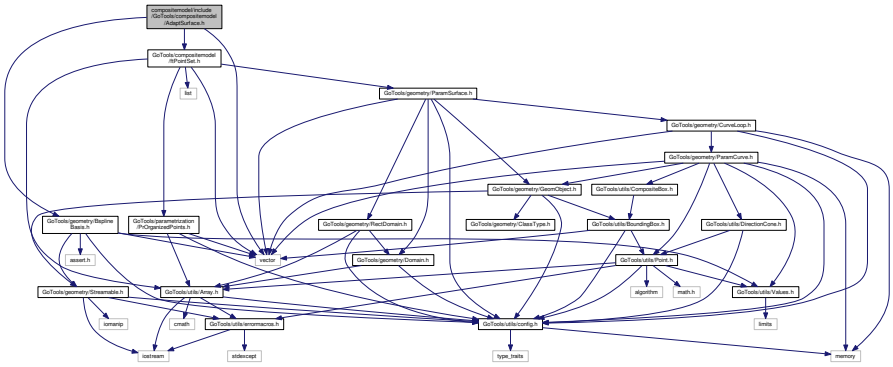
Chapter 30

File Documentation

30.1 compositemodel/include/GoTools/compositemodel/AdaptSurface.h File Reference

```
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/compositemodel/ftPointSet.h"
#include <vector>
```

Include dependency graph for AdaptSurface.h:



Namespaces

- Go
- Go::AdaptSurface

Functions

- shared_ptr< SplineSurface > Go::AdaptSurface::approxInSplineSpace (shared_ptr< ParamSurface > surf, shared_ptr< SplineSurface > surf2, double tol)
- std::vector< shared_ptr< SplineSurface > > Go::AdaptSurface::expressInSameSplineSpace (shared_ptr< ParamSurface > surf1, shared_ptr< ParamSurface > surf2, double tol)
- bool Go::AdaptSurface::getCornerCorrespondance (shared_ptr< ParamSurface > surf1, shared_ptr< ParamSurface > surf2, int &idx, bool &turned)
- std::vector< shared_ptr< SplineCurve > > Go::AdaptSurface::curveApprox (shared_ptr< ParamCurve > cvs[], int nmb_cvs, const BsplineBasis &init_basis, double tol)

- std::vector< shared_ptr< SplineCurve > > Go::AdaptSurface::curveApprox (shared_ptr< ParamCurve > cvs[], int nmb_cvs, double tol, double degree=3)
- shared_ptr< SplineSurface > Go::AdaptSurface::adaptSurface (shared_ptr< ParamSurface > surf, shared_ptr< SplineSurface > init_surf, double tol)
- double Go::AdaptSurface::parameterizePoints (shared_ptr< SplineSurface > init_surf, shared_ptr< ftPointSet > points, std::vector< int > corner)
- double Go::AdaptSurface::projectPoints (shared_ptr< SplineSurface > surf, shared_ptr< ftPointSet > points)

  Parameterize by projection.

- shared_ptr< SplineSurface > Go::AdaptSurface::doApprox (shared_ptr< SplineSurface > init_surf, int max_iter, shared_ptr< ftPointSet > points, double tol, double &max_error, double &mean_error)
- void Go::AdaptSurface::createTriangulation (shared_ptr< ParamSurface > surf, const RectDomain &dom, shared_ptr< ftPointSet > &points, vector< int > &corner, bool consider_joint=true, int nmb=-1)

  Fetch data and create triangulation.

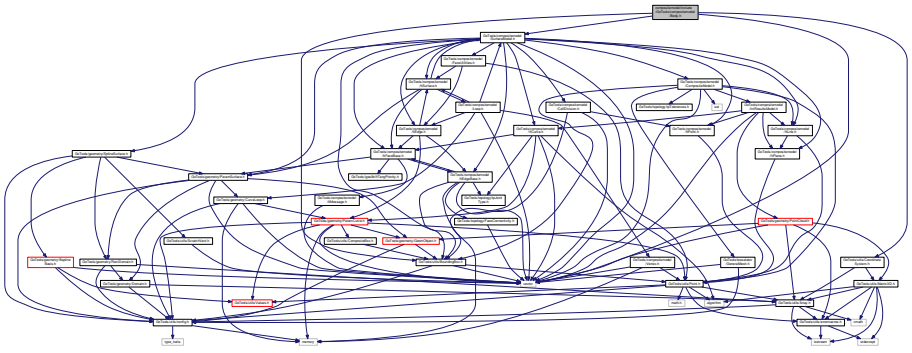
- void Go::AdaptSurface::getBoundaryData (shared_ptr< ParamSurface > surf, const RectDomain &dom, int nmb_sample, shared_ptr< ftPointSet > points, std::vector< int > &corner)
- void Go::AdaptSurface::getInnerData (shared_ptr< ParamSurface > surf, const RectDomain &dom, int nmb_sample, shared_ptr< ftPointSet > points, bool consider_joint=true)
- void Go::AdaptSurface::updatePointTopology (shared_ptr< ParamSurface > surf, ftPointSet &points)

  Compute point set topology.

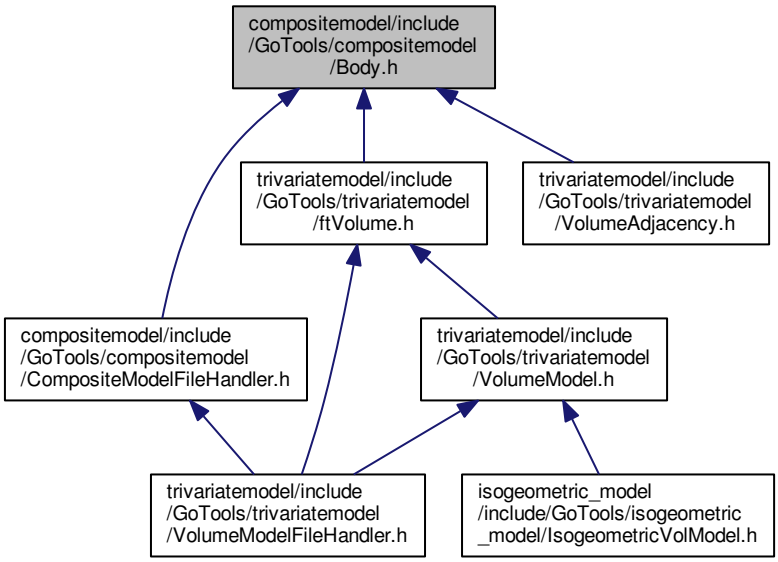
30.2 compositemodel/include/GoTools/compositemodel/Body.h File Reference

```
#include "GoTools/compositemodel/SurfaceModel.h"
#include "GoTools/utils/CoordinateSystem.h"
#include "GoTools/utils/BoundingBox.h"
#include <vector>
```

Include dependency graph for Body.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Body

  A boundary represented solid.

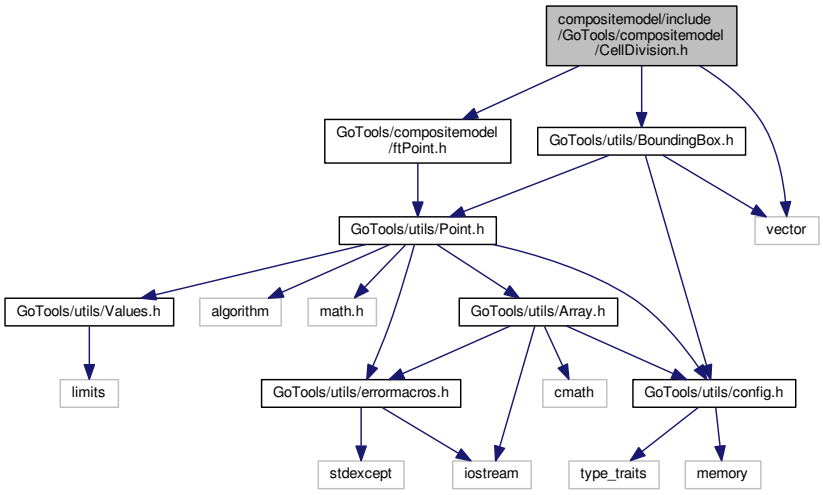
Namespaces

- Go

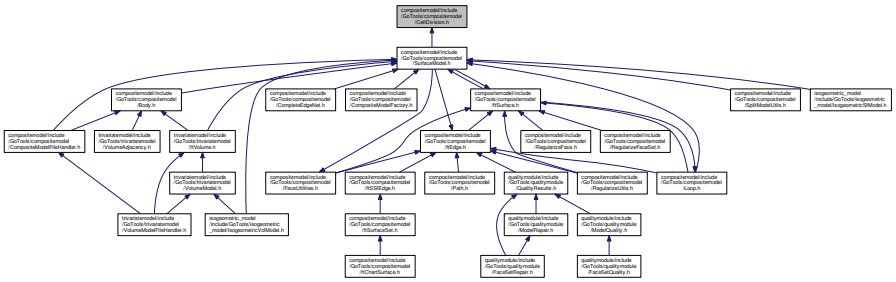
30.3 compositemodel/include/GoTools/compositemodel/CellDivision.h File Reference

```
#include "GoTools/compositemodel/ftPoint.h"
#include "GoTools/utils/BoundingBox.h"
#include <vector>
```

Include dependency graph for CellDivision.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftCell

  Helper class handling one of the cells in class CellDivision.
- class Go::ftCellInfo

  Function object for sorting ftCells.
- class Go::CellDivision

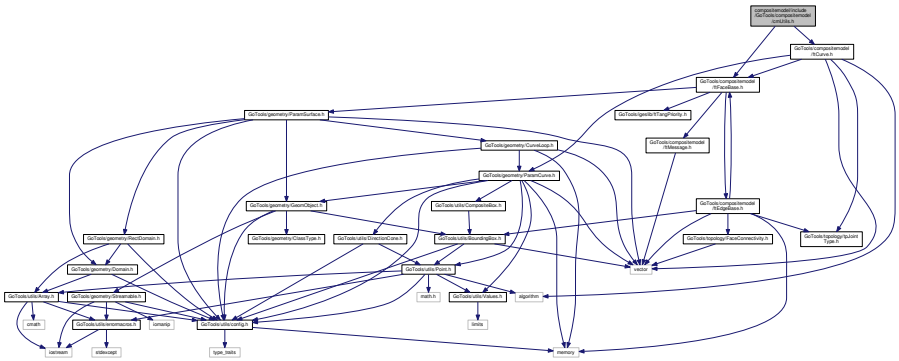
Namespaces

- Go

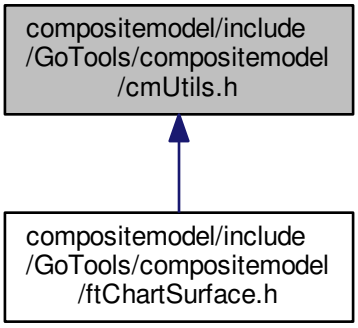
30.4 compositemodel/include/GoTools/compositemodel/cmUtils.h File Reference

```
#include "GoTools/compositemodel/ftFaceBase.h"
#include "GoTools/compositemodel/ftCurve.h"
```

Include dependency graph for cmUtils.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::RotationInfo

Namespaces

- Go
- Go::cmUtils

  Various utility functions for the compositemodel module.

Functions

- double Go::cmUtils::estimatedCurveLength (ftEdgeBase *edge, int nmb_samples=4)

  Estimate the curve length corresponding to an edge.
- RectDomain Go::cmUtils::geometricParamDomain (ParamSurface *sf)

  Domain of surface is rescaled according to surface lengths in geometry space.
- bool Go::cmUtils::abovePlane (Go::Point pt, Go::Point plane_pt, Go::Point normal)

  Return true if pt lies above plane as defined.
- void Go::cmUtils::extendWithDegBd (std::vector< int > &corner, std::vector< shared_ptr< Go::ParamCurve > > &bd_curves, std::vector< shared_ptr< Go::ParamCurve > > &cross_curves, int idxmin)
- void Go::cmUtils::updateWithNewCorners (const std::vector< Go::ftEdgeBase * > &outer_loop, std::vector< int > &corners, const std::vector< Go::Point > &add_corner_pts, double gap)

  Assuming input corner pts lie inside gap of outer_loop, and not in the middle of a segment.
- bool Go::cmUtils::insideBdTrain (const Go::Vector2D &sample_pt, const std::vector< Go::Vector2D > &bd_train)

  bd_train must be a simple loop, direction may be either.
- void Go::cmUtils::reparametrizeBdCvs (const std::vector< shared_ptr< Go::SplineCurve > > &bd_cvs, double appr_tol, std::vector< shared_ptr< Go::SplineCurve > > &new_bd_cvs)
- void Go::cmUtils::reparametrizeBdCvs2 (const std::vector< shared_ptr< Go::SplineCurve > > &bd_cvs, double appr_tol, std::vector< shared_ptr< Go::SplineCurve > > &new_bd_cvs)
- void Go::cmUtils::splitEdgesInCorners (std::vector< shared_ptr< Go::ftEdgeBase > > &edges, const std::vector< Go::Point > &corner_pts, double gap)

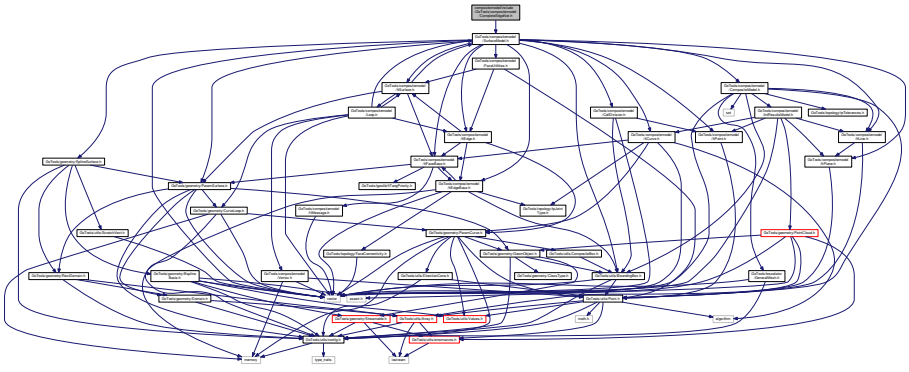
  interior of an edge. To be called prior to connection with twin.
- void Go::cmUtils::cwOrientation (std::vector< Go::ftEdgeBase * > &meeting_edges, std::vector< bool > &start, double angle_tol=1e-05)
- void Go::cmUtils::cwOrientation2 (std::vector< Go::ftEdgeBase * > &meeting_edges, std::vector< bool > &start)
- std::vector< std::pair< shared_ptr< Go::ParamCurve >, Go::ftFaceBase * > > Go::cmUtils::getG1FaceCurves (Go::ftCurve &bd_curve)

  Divide the input curve into G1 segments lying on one surface only (input expected to lie on bd).
- double Go::cmUtils::ccwAngle (Go::Point first_leg, Go::Point second_leg, Go::Point *normal=NULL)
- std::vector< int > Go::cmUtils::removeInnerCorners (const std::vector< Go::ftEdgeBase * > &outer_loop, std::vector< int > &corners)

30.5 compositemodel/include/GoTools/compositemodel/CompleteEdgeNet.h File Reference

```
#include "GoTools/compositemodel/SurfaceModel.h"
```

Include dependency graph for CompleteEdgeNet.h:



Classes

- class Go::CompleteEdgeNet

  Complete the edge net of a SurfaceModel. Fetches the wire frame model corresponding to a surface model, and extends it such that the extended wire frame will become the wire frame model corresponding to a volume model have the given surface model as its outer boundary. The extension to the wireframe is represented as pairs of vertices where these vertices lie at the endpoints of the missing edges. NB! This solution is currently not expected to handle all configurations.

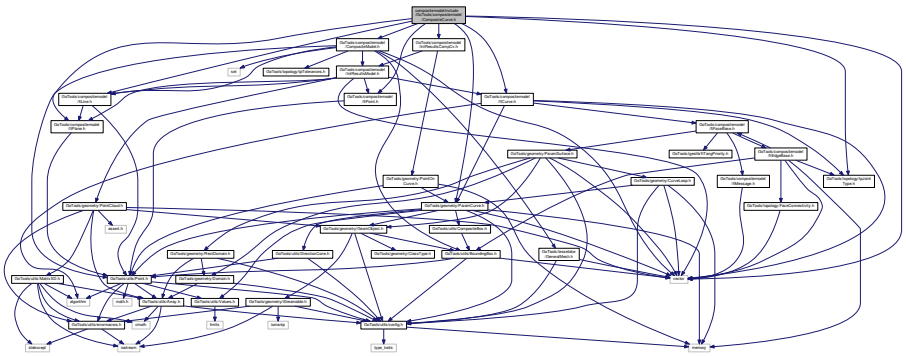
Namespaces

- Go

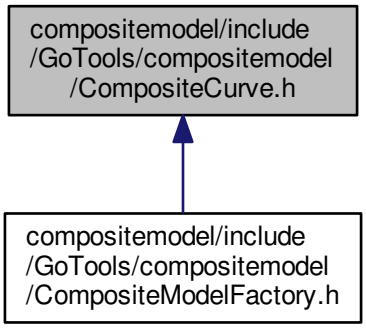
30.6 compositemodel/include/GoTools/compositemodel/CompositeCurve.h File Reference

```
#include "GoTools/topology/tpJointType.h"
#include "GoTools/compositemodel/CompositeModel.h"
#include "GoTools/geometry/ParamCurve.h"
#include "GoTools/compositemodel/ftPoint.h"
#include "GoTools/compositemodel/ftCurve.h"
#include "GoTools/compositemodel/ftPlane.h"
#include "GoTools/compositemodel/ftLine.h"
#include "GoTools/compositemodel/IntResultsCompCv.h"
#include <vector>
```

Include dependency graph for CompositeCurve.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::CompositeCurve

Namespaces

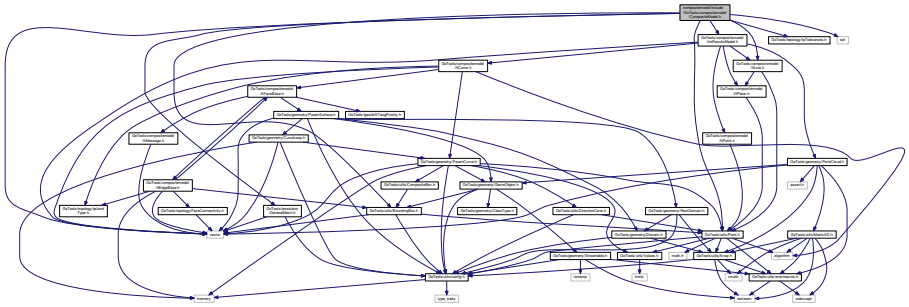
- Go

30.7 compositemodel/include/GoTools/compositemodel/compositemodel-doxymain.h File Reference

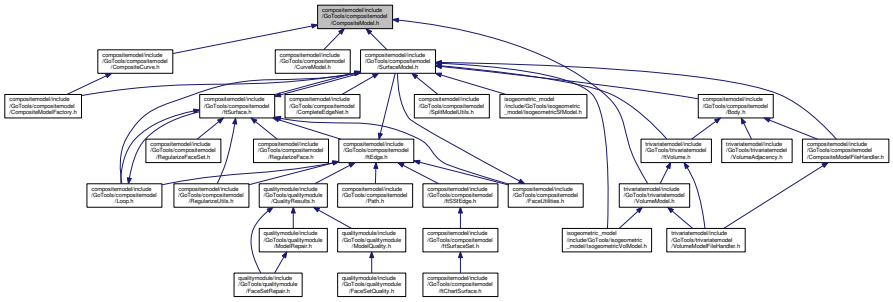
30.8 compositemodel/include/GoTools/compositemodel/CompositeModel.h File Reference

```
#include "GoTools/utils/Point.h"
#include "GoTools/utils/BoundingBox.h"
#include "GoTools/topology/tpTolerances.h"
#include "GoTools/tesselator/GeneralMesh.h"
#include "GoTools/compositemodel/ftLine.h"
#include "GoTools/compositemodel/IntResultsModel.h"
#include <vector>
#include <set>
```

Include dependency graph for CompositeModel.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::CompositeModel

Namespaces

- Go

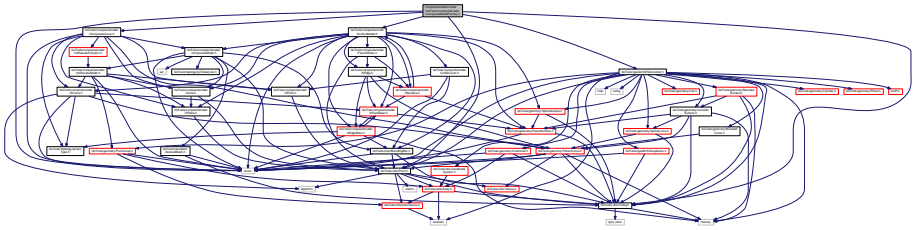
Enumerations

- enum Go::closestPointLevel { Go::LOCAL_SEARCH = 1, Go::SEMI_LOCAL_SEARCH, Go::GLOBAL_SE↩ ARCH }

30.9 compositemodel/include/GoTools/compositemodel/CompositeModelFactory.h File Reference

```
#include "GoTools/utils/config.h"
#include "GoTools/compositemodel/SurfaceModel.h"
#include "GoTools/compositemodel/CompositeCurve.h"
#include "GoTools/igeslib/IGESconverter.h"
#include "GoTools/utils/Point.h"
#include <vector>
```

Include dependency graph for CompositeModelFactory.h:



Classes

- class Go::CompositeModelFactory

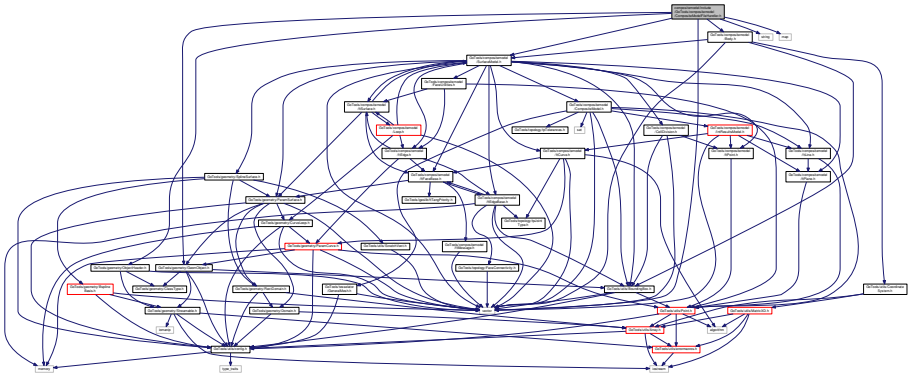
Namespaces

- Go

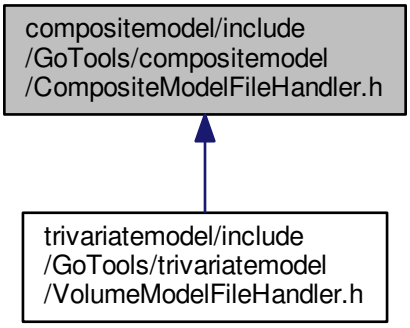
30.10 compositemodel/include/GoTools/compositemodel/CompositeModelFileHandler.h File Reference

```
#include "GoTools/geometry/ObjectHeader.h"
#include "GoTools/geometry/GeomObject.h"
#include "GoTools/compositemodel/SurfaceModel.h"
#include "GoTools/compositemodel/Body.h"
#include <string>
#include <vector>
#include <map>
```

Include dependency graph for CompositeModelFileHandler.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::CompositeModelFileHandler
- struct Go::CompositeModelFileHandler::sfcvinfo

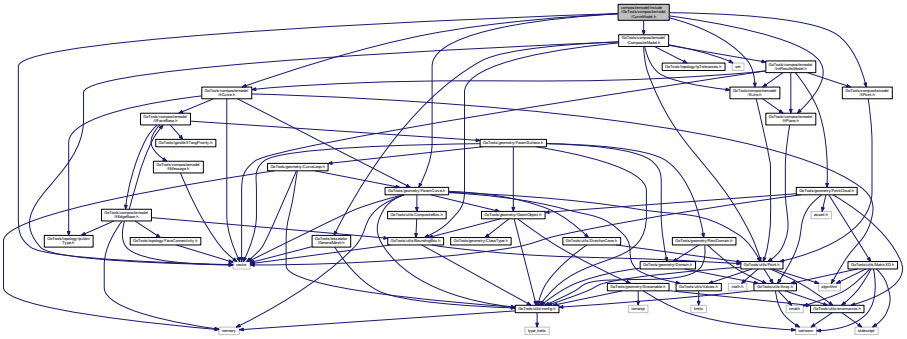
Namespaces

- Go

30.11 compositemodel/include/GoTools/compositemodel/CurveModel.h File Reference

```
#include "GoTools/compositemodel/CompositeModel.h"
#include "GoTools/geometry/ParamCurve.h"
#include "GoTools/compositemodel/ftPoint.h"
#include "GoTools/compositemodel/ftCurve.h"
#include "GoTools/compositemodel/ftPlane.h"
#include "GoTools/compositemodel/ftLine.h"
#include <vector>
```

Include dependency graph for CurveModel.h:



Classes

- class Go::CurveModel

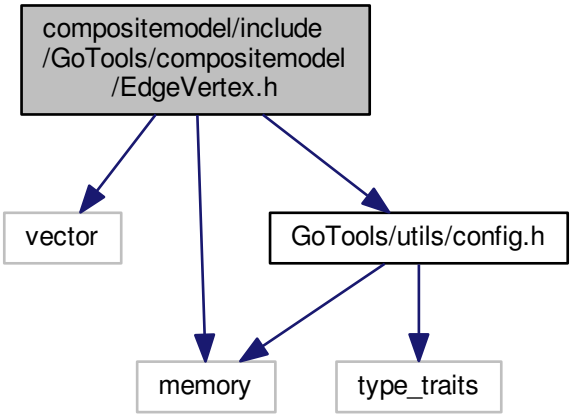
Namespaces

- Go

30.12 compositemodel/include/GoTools/compositemodel/EdgeVertex.h File Reference

```
#include <vector>
#include <memory>
#include "GoTools/utils/config.h"
```

Include dependency graph for EdgeVertex.h:



Classes

- class Go::EdgeVertex

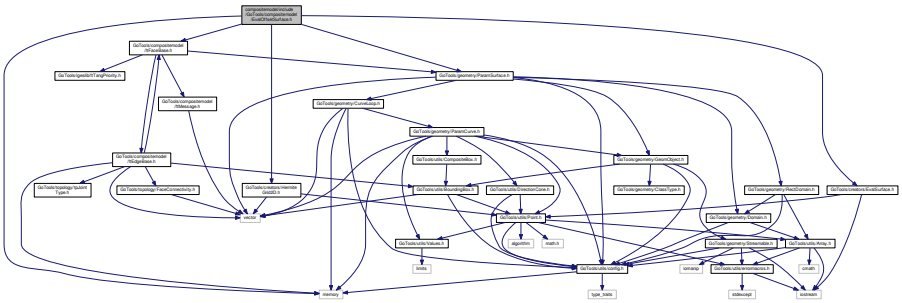
Namespaces

- Go

30.13 compositemodel/include/GoTools/compositemodel/EvalOffsetSurface.h File Reference

```
#include <memory>
#include "GoTools/compositemodel/ftFaceBase.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/creators/EvalSurface.h"
#include "GoTools/creators/HermiteGrid2D.h"
```

Include dependency graph for EvalOffsetSurface.h:



Classes

- class Go::BaseSurface
- class Go::EvalOffsetSurface

Namespaces

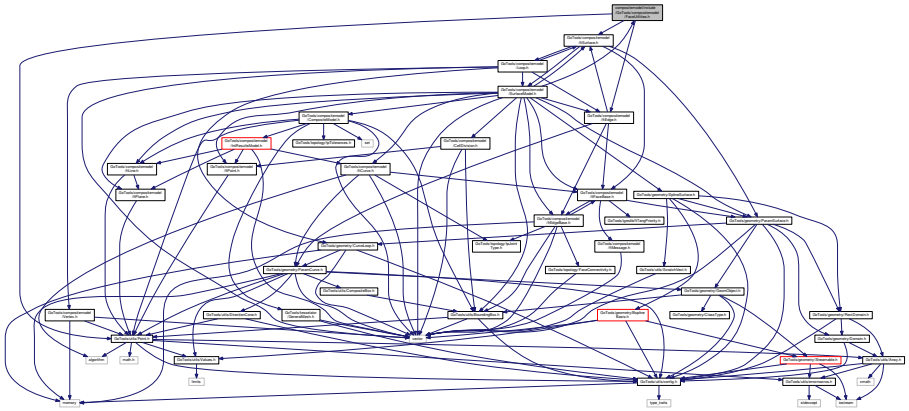
- Go

30.14 compositemodel/include/GoTools/compositemodel/examples_compositemodel_↩ doxygen.h File Reference

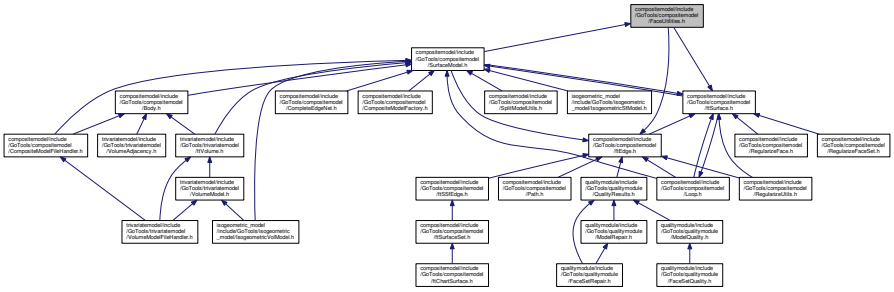
30.15 compositemodel/include/GoTools/compositemodel/FaceUtilities.h File Reference

```
#include "GoTools/utils/Point.h"
#include "GoTools/compositemodel/ftSurface.h"
#include "GoTools/compositemodel/ftEdge.h"
```

Include dependency graph for FaceUtilities.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::SamplePointData

  Sample data related to one face. The struct contains one point in a point set with information about position, associated surface normal and curvature. Points lying on the face boundary know about its assoicated edge. If the surface normal and curvature information regarding boundary points is not unique, the assosiated data is set to be equal to MAX_DOUBLE.

Namespaces

- Go
- Go::FaceUtilities

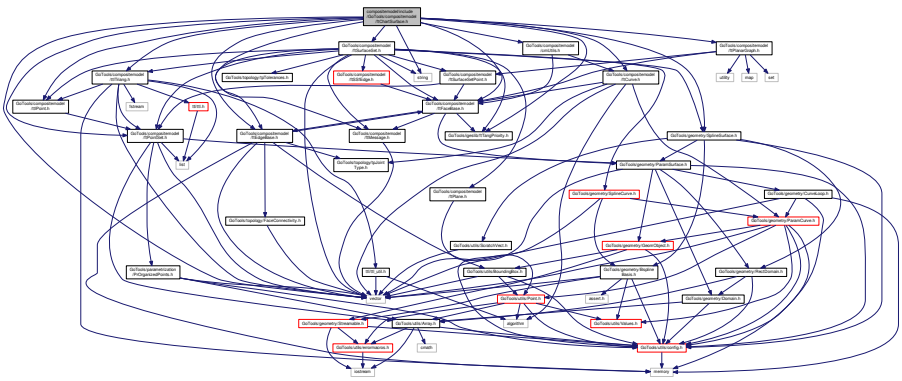
Functions

- void Go::FaceUtilities::getBoundaryData (ftSurface *face, int nmb_sample, std::vector< SamplePointData > &sample_points)
- void Go::FaceUtilities::getInnerData (ftSurface *face, int nmb_sample_u, int nmb_sample_v, std::vector< SamplePointData > &sample_points)
- bool Go::FaceUtilities::enforceCoLinearity (ftSurface *face1, ftEdge *edge1, ftSurface *face2, double tol, double ang_tol)
- bool Go::FaceUtilities::enforceVxCoLinearity (shared_ptr< Vertex > vx, double tol, double ang_tol)

30.16 compositemodel/include/GoTools/compositemodel/ftChartSurface.h File Reference

```
#include <vector>
#include <string>
#include "GoTools/compositemodel/ftMessage.h"
#include "GoTools/igeslib/ftTangPriority.h"
#include "GoTools/compositemodel/ftPointSet.h"
#include "GoTools/compositemodel/ftFaceBase.h"
#include "GoTools/compositemodel/ftEdgeBase.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/compositemodel/ttlPoint.h"
#include "GoTools/compositemodel/ttlTriang.h"
#include "GoTools/compositemodel/ftSurfaceSet.h"
#include "GoTools/compositemodel/ftCurve.h"
#include "GoTools/compositemodel/cmUtils.h"
#include "GoTools/compositemodel/ftPlanarGraph.h"
```

Include dependency graph for ftChartSurface.h:



Classes

- class Go::ftChartSurface

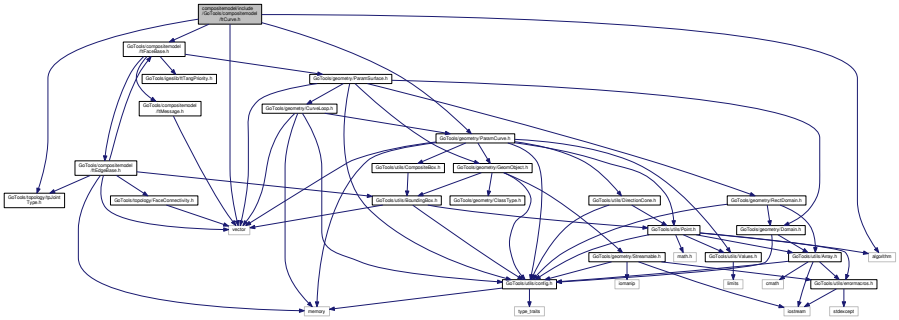
Namespaces

- Go

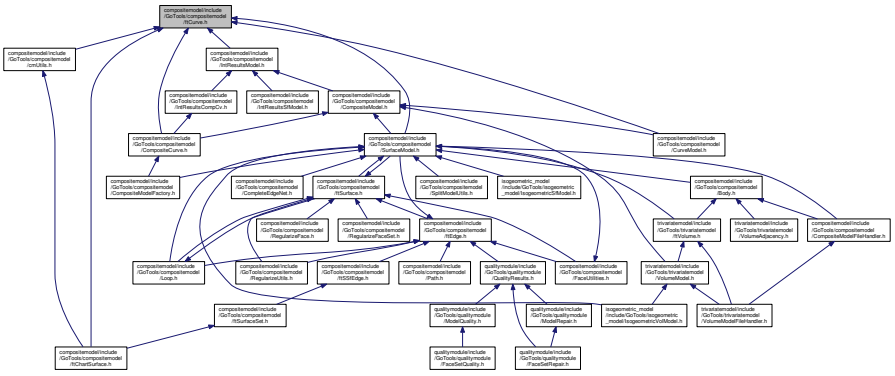
30.17 compositemodel/include/GoTools/compositemodel/ftCurve.h File Reference

```
#include <algorithm>
#include <vector>
#include "GoTools/geometry/ParamCurve.h"
#include "GoTools/topology/tpJointType.h"
#include "GoTools/compositemodel/ftFaceBase.h"
```

Include dependency graph for ftCurve.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftCurveSegment
- class Go::ftCurve

Namespaces

- Go

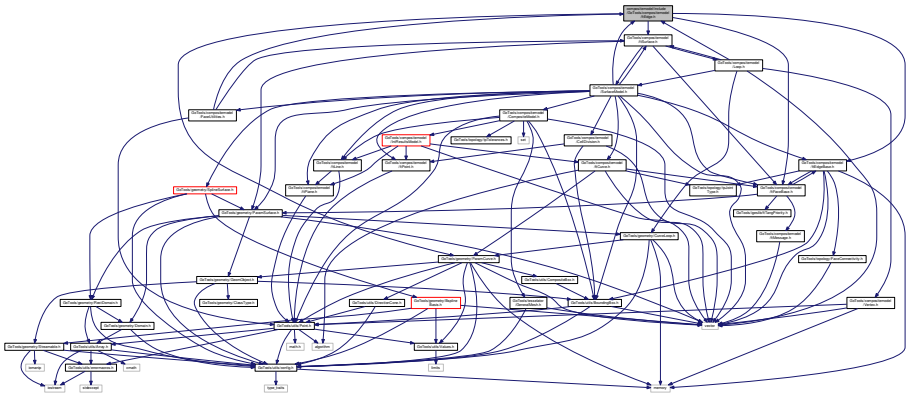
Enumerations

- enum Go::ftCurveType {
  Go::CURVE_NOTYPE = -1, Go::CURVE_INTERSECTION, Go::CURVE_EDGE, Go::CURVE_KINK,
  Go::CURVE_CORNER, Go::CURVE_GAP, Go::CURVE_SINGULAR }

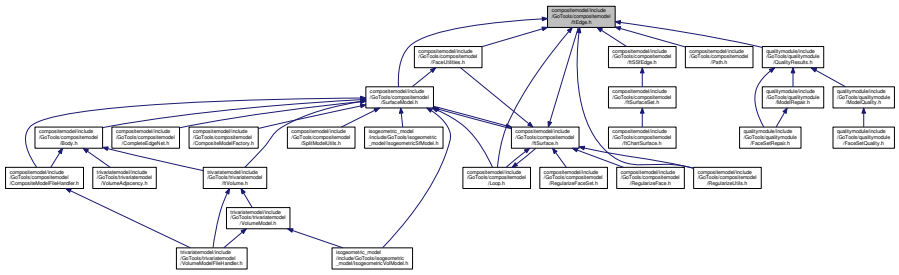
30.18 compositemodel/include/GoTools/compositemodel/ftEdge.h File Reference

```
#include "GoTools/compositemodel/ftEdgeBase.h"
#include "GoTools/geometry/ParamCurve.h"
#include "GoTools/compositemodel/ftSurface.h"
#include "GoTools/compositemodel/ftFaceBase.h"
```

Include dependency graph for ftEdge.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftEdge

  The ftEdge is a half-edge implementation of a topological data structure.

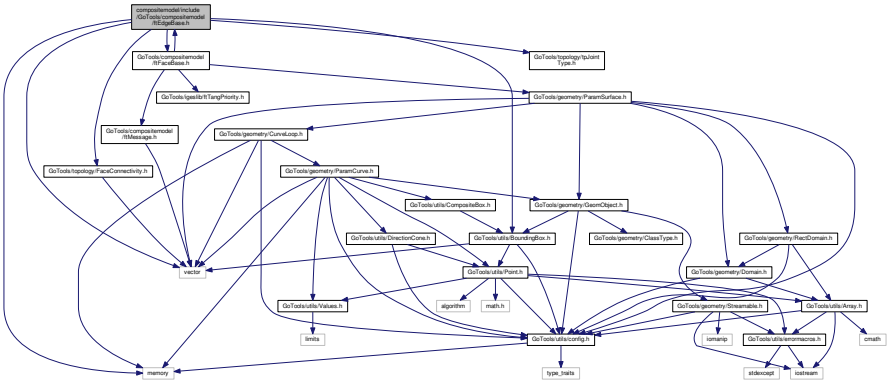
Namespaces

- Go

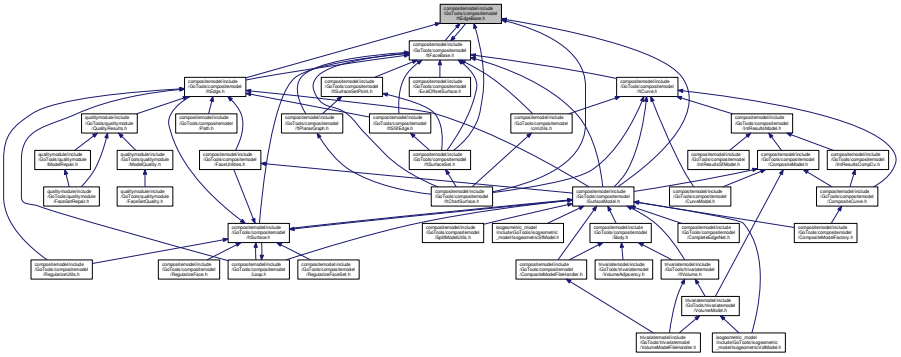
30.19 compositemodel/include/GoTools/compositemodel/ftEdgeBase.h File Reference

```
#include "GoTools/compositemodel/ftFaceBase.h"
#include "GoTools/utils/BoundingBox.h"
#include "GoTools/topology/tpJointType.h"
#include "GoTools/topology/FaceConnectivity.h"
#include <vector>
#include <memory>
```

Include dependency graph for ftEdgeBase.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftEdgeBase

  Base class for edges. Defines the interface used in topology analysis.

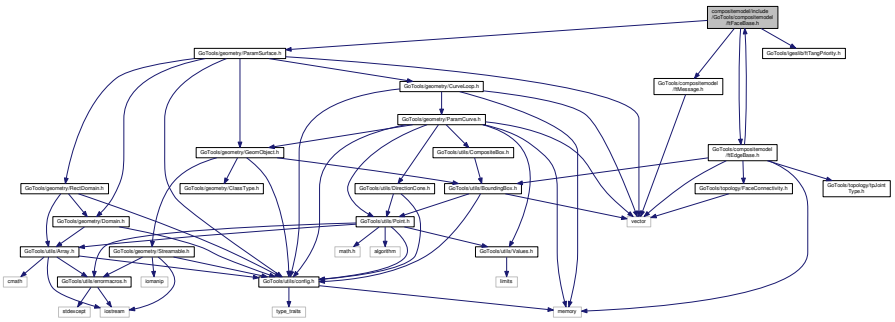
Namespaces

- Go

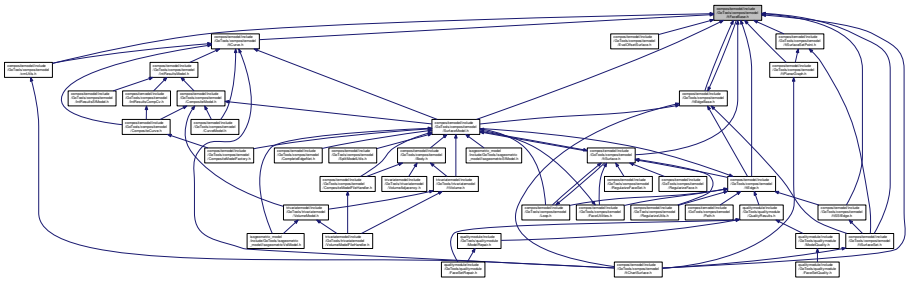
30.20 compositemodel/include/GoTools/compositemodel/ftFaceBase.h File Reference

```
#include "GoTools/compositemodel/ftEdgeBase.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/compositemodel/ftMessage.h"
#include "GoTools/igeslib/ftTangPriority.h"
```

Include dependency graph for ftFaceBase.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftFaceBase

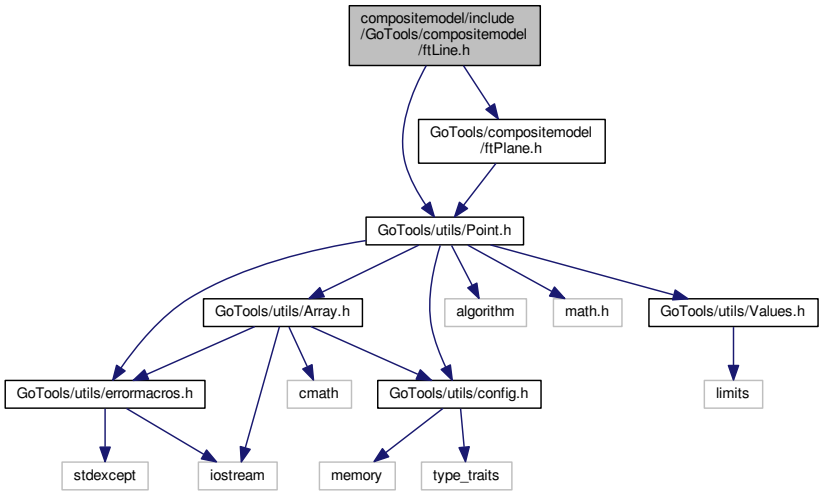
Namespaces

- Go

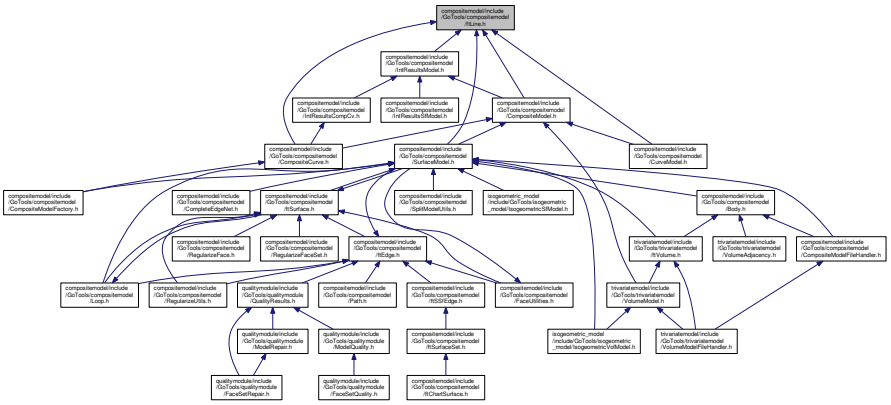
30.21 compositemodel/include/GoTools/compositemodel/ftLine.h File Reference

```
#include "GoTools/utils/Point.h"
#include "GoTools/compositemodel/ftPlane.h"
```

Include dependency graph for ftLine.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftLine

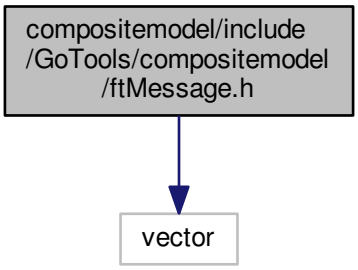
Namespaces

- Go

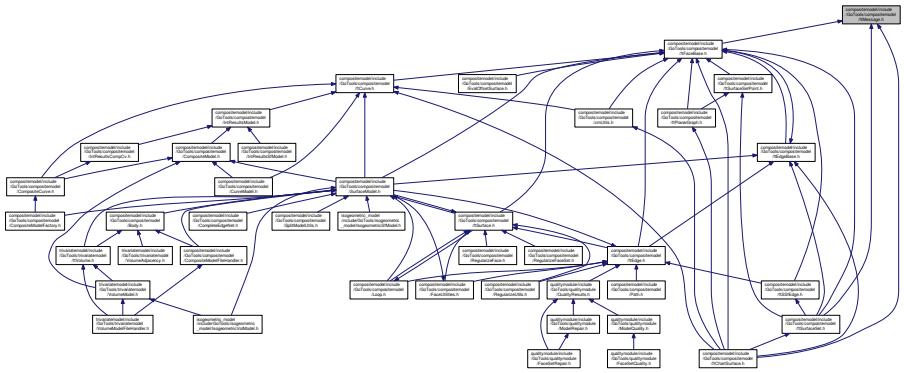
30.22 compositemodel/include/GoTools/compositemodel/ftMessage.h File Reference

```
#include <vector>
```

Include dependency graph for ftMessage.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftMessage

Namespaces

- Go

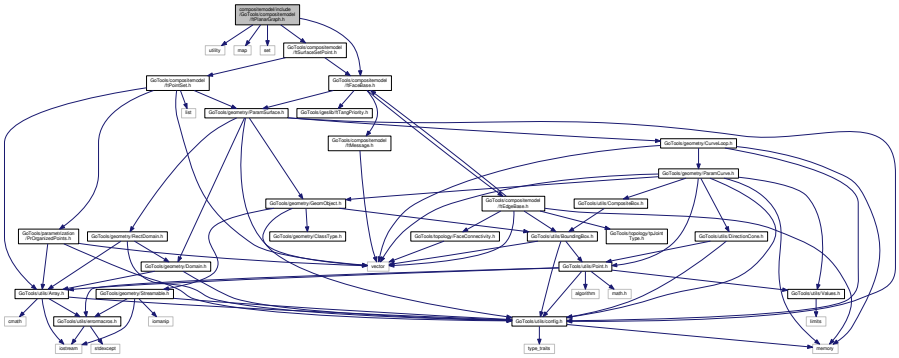
Enumerations

- enum Go::ftmessages {
  Go::FT_NOT_IMPLEMENTED = -99, Go::FT_NO_DATA, Go::FT_BAD_INPUT_FILE, Go::FT_ERROR_IN↩
  _READ_IGES,
  Go::FT_DISCONTINUITY, Go::FT_UNEXPECTED_DATA_TYPE, Go::FT_NON_4_SIDED_SURF, Go::F↩
  T_WRONG_NO_OF_BOUNDARIES,
  Go::FT_INSUFFICIENT_MESH_CURVES, Go::FT_ERROR_IN_TOPOLOGY_ANALYSIS, Go::FT_TOPO↩
  LOGY_PROBLEM, Go::FT_ERROR_IN_SURFACE_CREATION,
  Go::FT_ERROR_IN_PARAMETERIZE, Go::FT_ERROR_IN_SURFACE_TRIMMING, Go::FT_NOT_SUP↩
  PORTED, Go::FT_NOT_SPLINE_SURF,
  Go::FT_ERROR_IN_SURFACE_GRIDDING, Go::FT_NEIGHBOUR_GRID_SIZE_DIFFER, Go::FT_OK = 0,
  Go::FT_APPROX_ERROR_TOO_LARGE,
  Go::FT_COULD_NOT_REFINE_SURFACE, Go::FT_FEATURE_ERROR_TOO_LARGE, Go::FT_DEGEN↩
  ERATE_PATCH_CREATED, Go::FT_SURFACE_ALREADY_CREATED,
  Go::FT_DEGENERATE_SURFACE, Go::FT_UNEXPECTED_INPUT_OBJECT_IGNORED, Go::FT_FAC↩
  ES_OVERLAP, Go::FT_COULD_NOT_SMOOTH_SURFACE,
  Go::FT_COULD_NOT_SMOOTH_SURFACESET, Go::FT_NO_SMOOTHING, Go::FT_FAILED_CREATI↩
  NG_GRAPH, Go::FT_GRID_NOT_CREATED,
  Go::FT_SURFACE_NOT_MODIFIED }

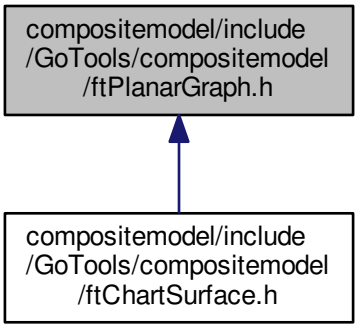
30.23 compositemodel/include/GoTools/compositemodel/ftPlanarGraph.h File Reference

```
#include <utility>
#include <map>
#include <set>
#include "GoTools/compositemodel/ftFaceBase.h"
#include "GoTools/compositemodel/ftSurfaceSetPoint.h"
```

Include dependency graph for ftPlanarGraph.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftGraphEdge
- class Go::ftSearchNode
- class Go::ftPlanarGraph

Namespaces

- Go

Typedefs

- typedef std::vector< ftSearchNode >::iterator Go::GraphIter

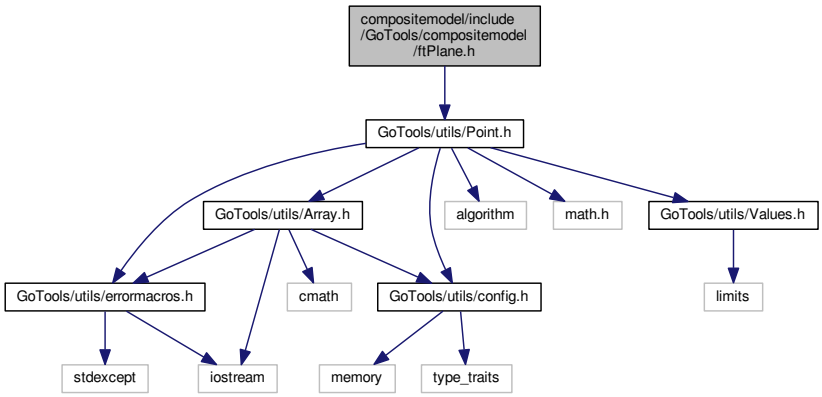
Functions

- double Go::areaTriangle (const Vector2D &corner1, const Vector2D &corner2, const Vector2D &corner3)

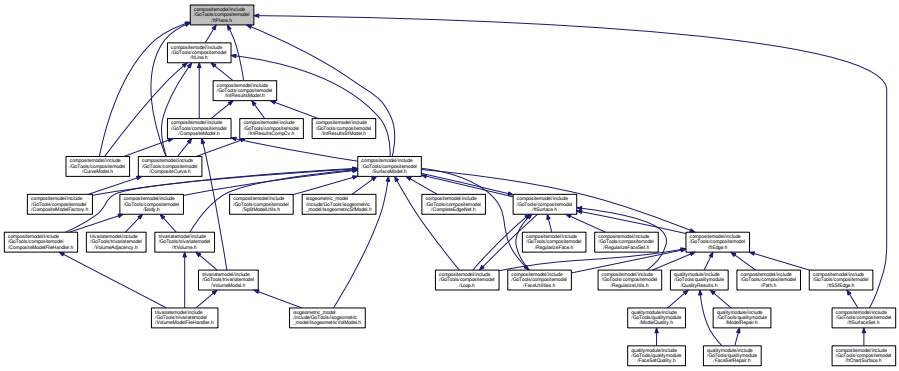
30.24 compositemodel/include/GoTools/compositemodel/ftPlane.h File Reference

```
#include "GoTools/utils/Point.h"
```

Include dependency graph for ftPlane.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftPlane

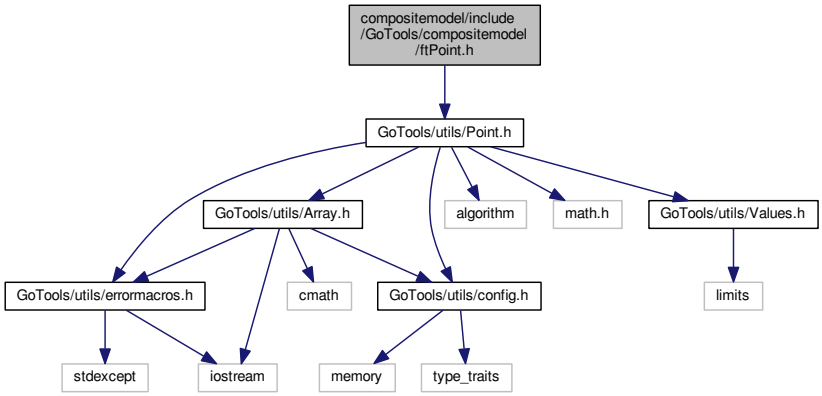
Namespaces

- Go

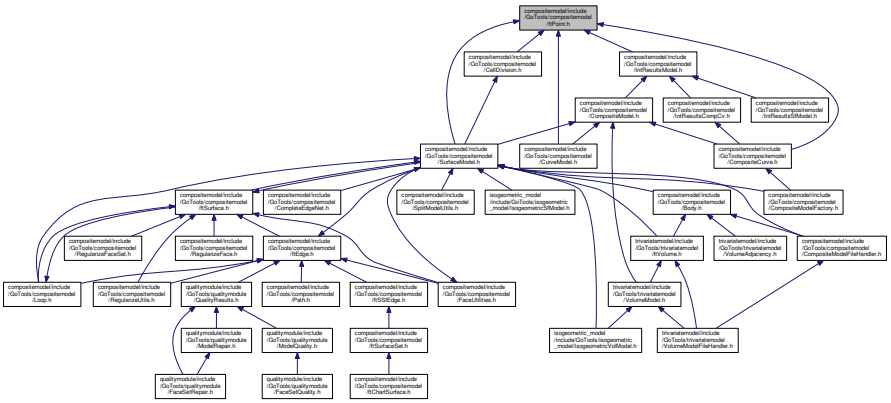
30.25 compositemodel/include/GoTools/compositemodel/ftPoint.h File Reference

```
#include "GoTools/utils/Point.h"
```

Include dependency graph for ftPoint.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftPoint

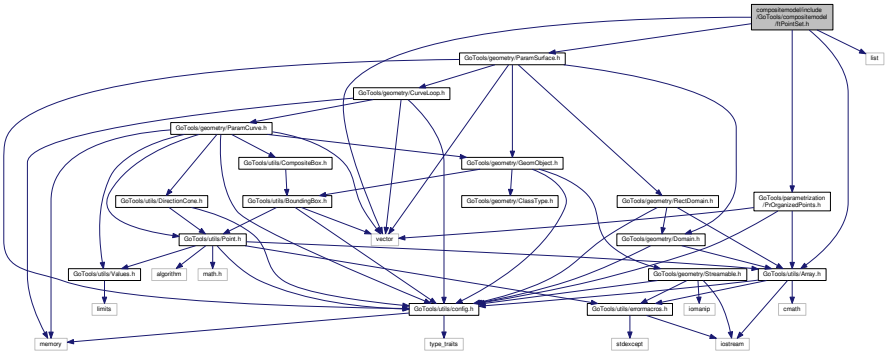
Namespaces

- Go

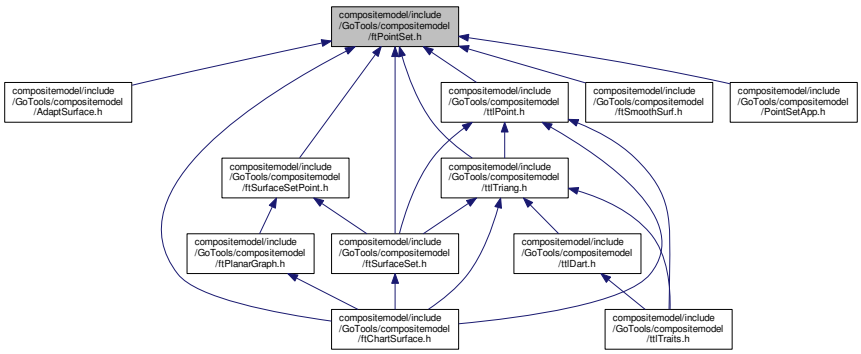
30.26 compositemodel/include/GoTools/compositemodel/ftPointSet.h File Reference

```
#include "GoTools/utils/Array.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/parametrization/PrOrganizedPoints.h"
#include <list>
#include <vector>
```

Include dependency graph for ftPointSet.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftSamplePoint
- class Go::ftPointSet

Namespaces

- Go

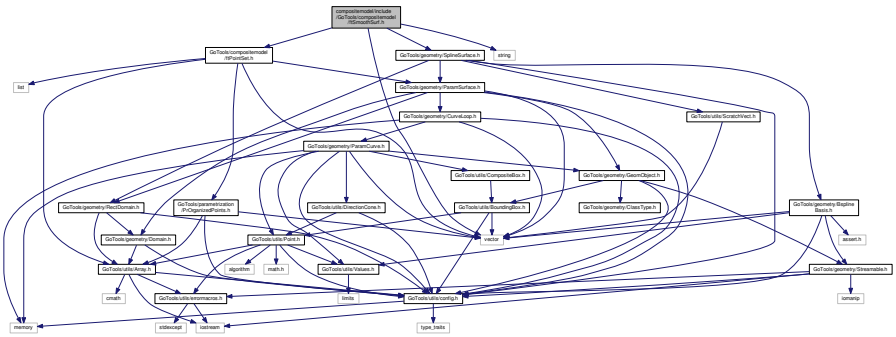
Typedefs

- typedef std::list< shared_ptr< ftSamplePoint > > Go::PointList
- typedef ftSamplePoint * Go::PointIter

30.27 compositemodel/include/GoTools/compositemodel/ftSmoothSurf.h File Reference

```
#include <vector>
#include <string>
#include "GoTools/compositemodel/ftPointSet.h"
#include "GoTools/geometry/SplineSurface.h"
```

Include dependency graph for ftSmoothSurf.h:



Classes

- class Go::ftSmoothSurf

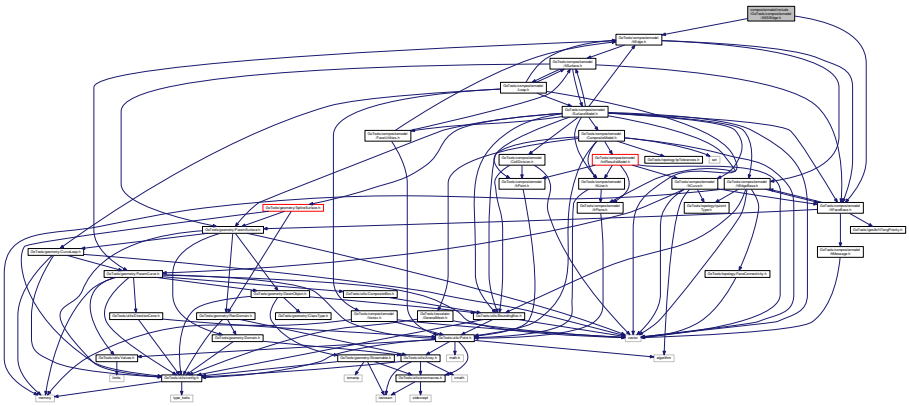
Namespaces

- Go

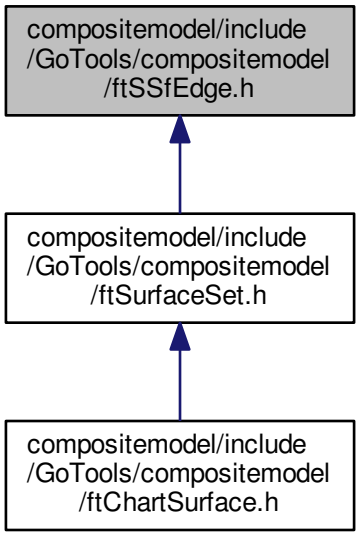
30.28 compositemodel/include/GoTools/compositemodel/ftSSfEdge.h File Reference

```
#include "GoTools/compositemodel/ftEdge.h"
#include "GoTools/compositemodel/ftFaceBase.h"
```

Include dependency graph for ftSSfEdge.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftSSfEdge

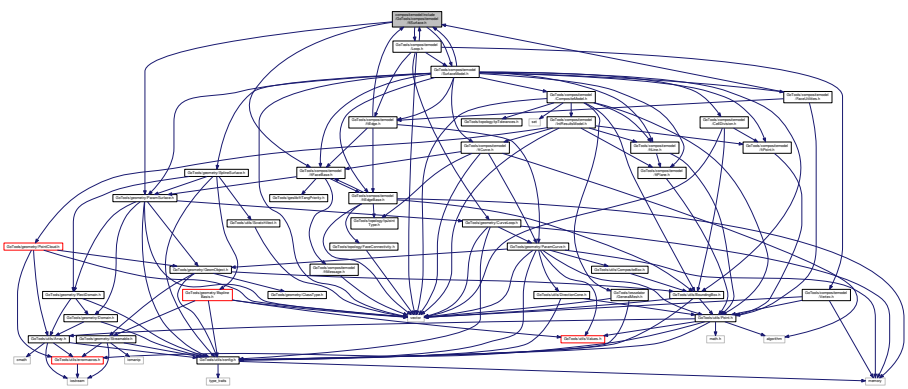
Namespaces

- Go

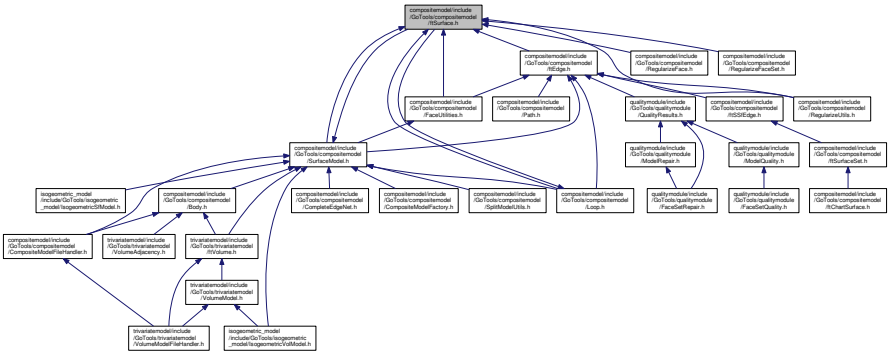
30.29 compositemodel/include/GoTools/compositemodel/ftSurface.h File Reference

```
#include "GoTools/compositemodel/ftFaceBase.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/compositemodel/Loop.h"
#include "GoTools/compositemodel/SurfaceModel.h"
```

Include dependency graph for ftSurface.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::AdjacencyInfo

  Struct to store information about adjacency relations between two faces.

- class Go::ftSurface

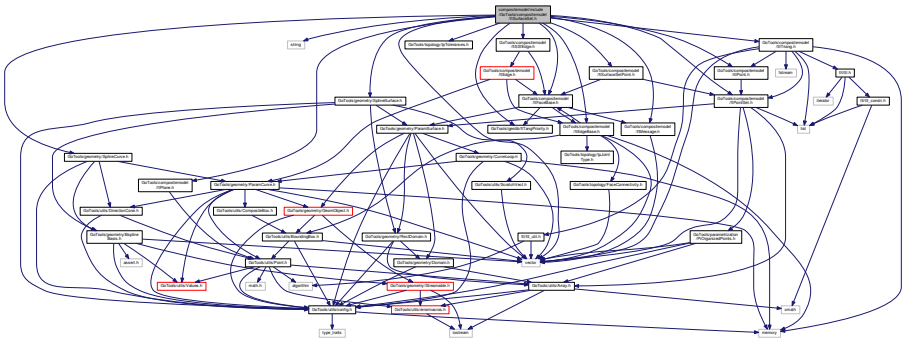
Namespaces

- Go

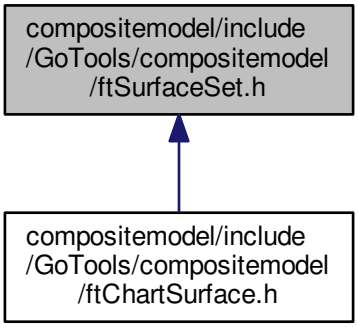
30.30 compositemodel/include/GoTools/compositemodel/ftSurfaceSet.h File Reference

```
#include <vector>
#include <string>
#include "GoTools/compositemodel/ftMessage.h"
#include "GoTools/igeslib/ftTangPriority.h"
#include "GoTools/compositemodel/ftPointSet.h"
#include "GoTools/topology/tpTolerances.h"
#include "GoTools/compositemodel/ftFaceBase.h"
#include "GoTools/compositemodel/ftEdgeBase.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/compositemodel/ttlPoint.h"
#include "GoTools/compositemodel/ttlTriang.h"
#include "GoTools/compositemodel/ftSurfaceSetPoint.h"
#include "GoTools/compositemodel/ftPlane.h"
#include "GoTools/compositemodel/ftSSfEdge.h"
```

Include dependency graph for ftSurfaceSet.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftSurfaceSet

Namespaces

- Go

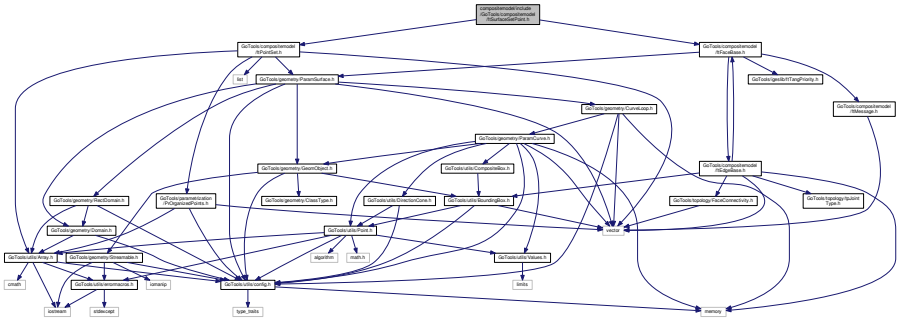
Typedefs

- typedef std::pair< std::pair< double, double >, std::pair< ftFaceBase *, int > > Go::BoundaryPiece

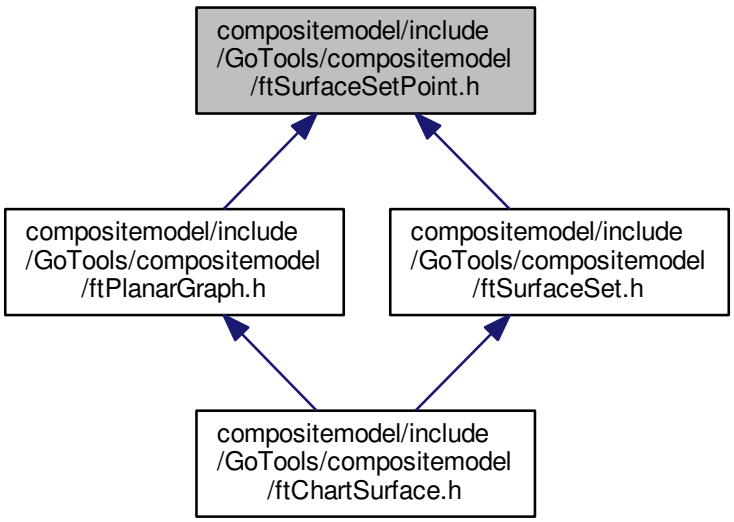
30.31 compositemodel/include/GoTools/compositemodel/ftSurfaceSetPoint.h File Reference

```
#include "GoTools/compositemodel/ftPointSet.h"
#include "GoTools/compositemodel/ftFaceBase.h"
```

Include dependency graph for ftSurfaceSetPoint.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftSurfaceSetPoint

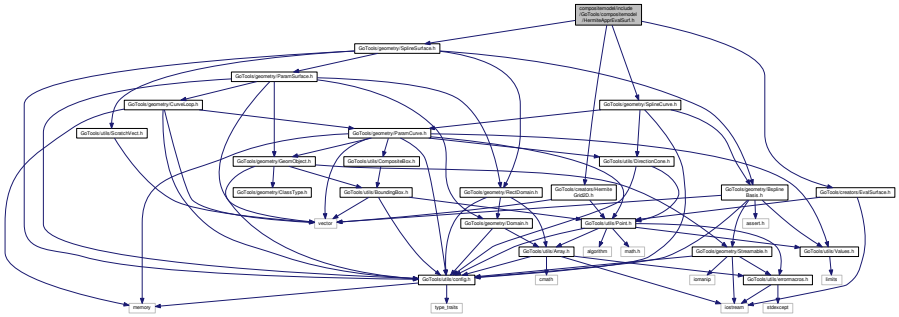
Namespaces

- Go

30.32 compositemodel/include/GoTools/compositemodel/HermiteApprEvalSurf.h File Reference

```
#include "GoTools/creators/EvalSurface.h"
#include "GoTools/creators/HermiteGrid2D.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
```

Include dependency graph for HermiteApprEvalSurf.h:



Classes

- class Go::HermiteApprEvalSurf

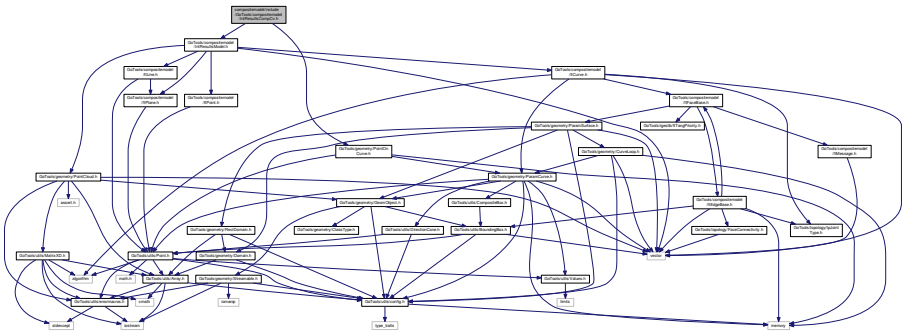
Namespaces

- Go

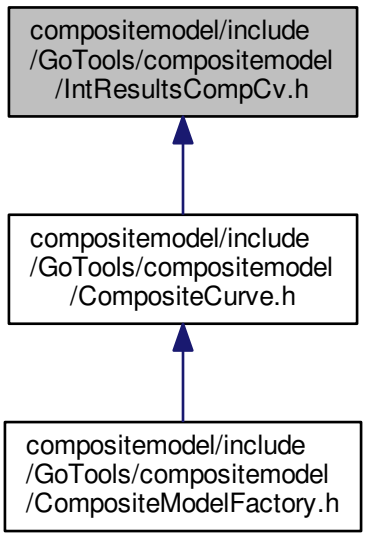
30.33 compositemodel/include/GoTools/compositemodel/IntResultsCompCv.h File Reference

```
#include "GoTools/compositemodel/IntResultsModel.h"
#include "GoTools/geometry/PointOnCurve.h"
```

Include dependency graph for IntResultsCompCv.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IntResultsCompCv

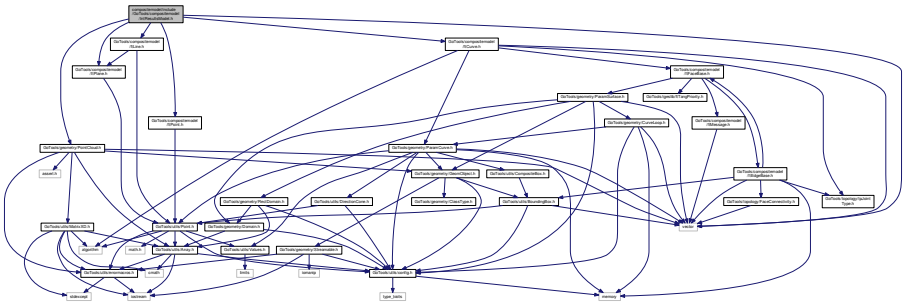
Namespaces

- Go

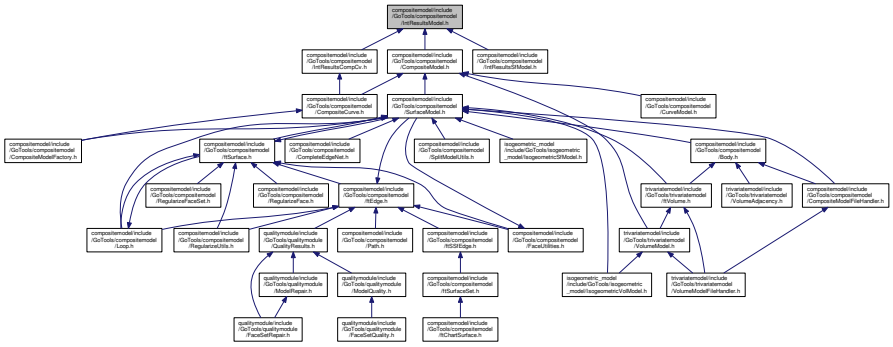
30.34 compositemodel/include/GoTools/compositemodel/IntResultsModel.h File Reference

```
#include "GoTools/compositemodel/ftPoint.h"
#include "GoTools/compositemodel/ftCurve.h"
#include "GoTools/compositemodel/ftPlane.h"
#include "GoTools/compositemodel/ftLine.h"
#include "GoTools/geometry/PointCloud.h"
#include <vector>
```

Include dependency graph for IntResultsModel.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IntResultsModel

Namespaces

- Go

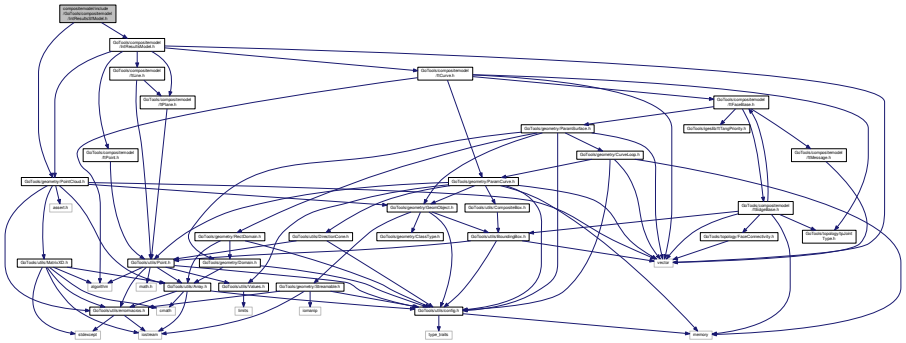
Enumerations

- enum Go::IntersectionType {
  Go::No_Type = 0, Go::SurfaceModel_SurfaceModel, Go::SurfaceModel_Plane, Go::SurfaceModel_Line,
  Go::CompositeCurve_CompositeCurve, Go::CompositeCurve_Plane, Go::CompositeCurve_Line }

30.35 compositemodel/include/GoTools/compositemodel/IntResultsSfModel.h File Reference

```
#include "GoTools/compositemodel/IntResultsModel.h"
#include "GoTools/geometry/PointCloud.h"
```

Include dependency graph for IntResultsSfModel.h:



Classes

- class Go::IntResultsSfModel

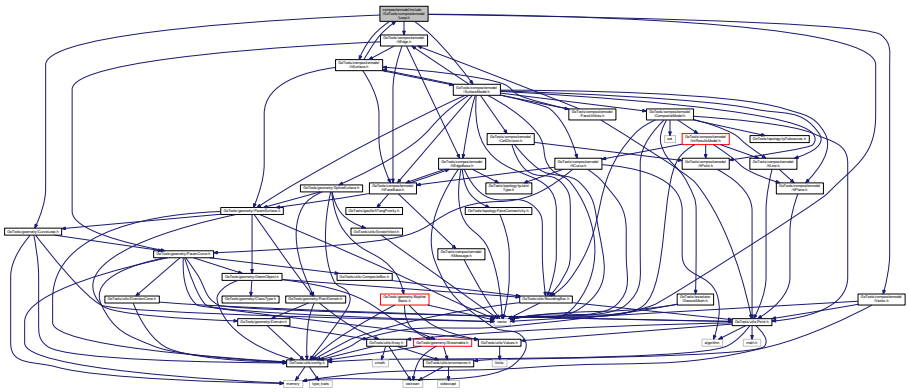
Namespaces

- Go

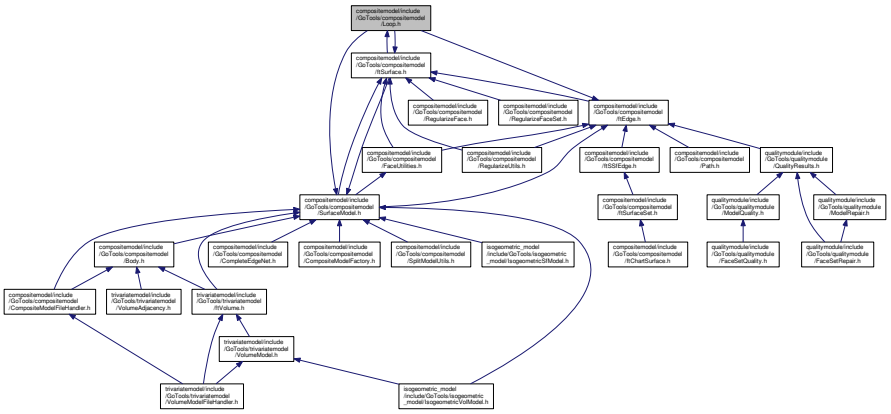
30.36 compositemodel/include/GoTools/compositemodel/Loop.h File Reference

```
#include "GoTools/geometry/CurveLoop.h"
#include "GoTools/compositemodel/Vertex.h"
#include "GoTools/compositemodel/ftEdge.h"
#include "GoTools/compositemodel/ftSurface.h"
#include "GoTools/compositemodel/SurfaceModel.h"
#include <vector>
```

Include dependency graph for Loop.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Loop

  Primarily a loop connected to a face in a boundary represented solid or face set. May also be used to represent a general closed sequence of edges.

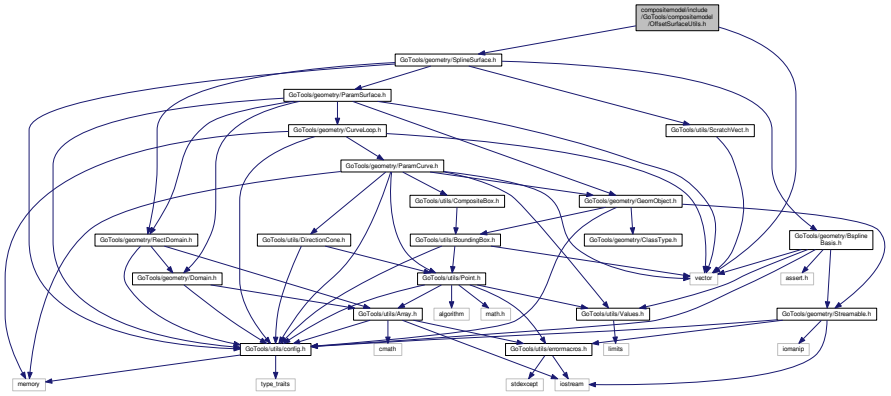
Namespaces

- Go

30.37 compositemodel/include/GoTools/compositemodel/OffsetSurfaceUtils.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include <vector>
```

Include dependency graph for OffsetSurfaceUtils.h:



Namespaces

- Go
- Go::OffsetSurfaceUtils

Enumerations

- enum OffsetSurfaceStatus {
  OFFSET_OK = 0, OFFSET_FAILED = 1, SELF_INTERSECTING_INTERIOR = 2, SELF_INTERSECTIN↩
  G_BOUNDARY = 3,
  TOLERANCE_ERROR = 4, NOT_FOUR_CORNERS = 5, NON_ISO_KINK_CURVE = 6 }

Functions

- OffsetSurfaceStatus Go::OffsetSurfaceUtils::offsetSurfaceSet (const std::vector< shared_ptr< Param↩
  Surface > > &param_sfs, double offset_dist, double epsgeo, shared_ptr< SplineSurface > &offset_sf)

30.37.1 Enumeration Type Documentation

30.37.1.1 enum OffsetSurfaceStatus

Enumerator

OFFSET_OK

OFFSET_FAILED

SELF_INTERSECTING_INTERIOR

SELF_INTERSECTING_BOUNDARY

TOLERANCE_ERROR

NOT_FOUR_CORNERS

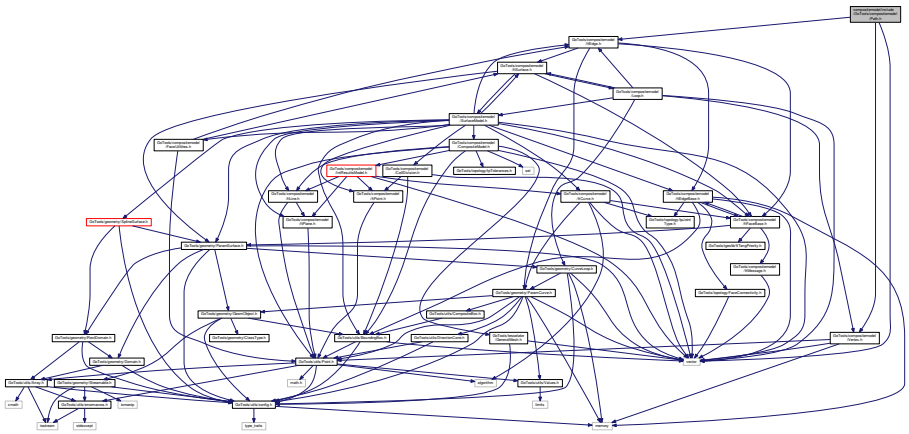
NON_ISO_KINK_CURVE

Definition at line 47 of file OffsetSurfaceUtils.h.

30.38 compositemodel/include/GoTools/compositemodel/Path.h File Reference

```
#include "GoTools/compositemodel/Vertex.h"
#include "GoTools/compositemodel/ftEdge.h"
#include <vector>
```

Include dependency graph for Path.h:



Namespaces

- Go
- Go::Path

  Functions related to sequence of edges.

Functions

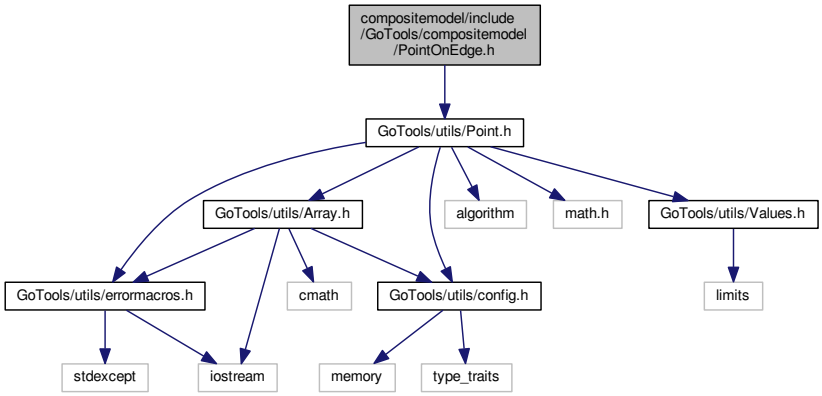
- bool Go::Path::estimateHoleInfo (const std::vector< ftEdge * > &edges, Point &centre, Point &axis, double &radius, double &angle)

  sequence
- void Go::Path::classifyCorners (const std::vector< ftEdge * > &edges, double tol, std::vector< shared_ptr< Vertex > > &corner, std::vector< shared_ptr< Vertex > > &non_corner)
- std::vector< ftEdge * > Go::Path::identifyLoop (std::vector< ftEdge * > edges, shared_ptr< Vertex > vx)
- void Go::Path::closestPoint (std::vector< ftEdge * > edges, const Point &pt, int &clo_ind, double &clo_par, Point &clo_pt, double &clo_dist)
- void Go::Path::getEdgeCurves (std::vector< ftEdge * > &loop, std::vector< shared_ptr< ParamCurve > > &space_cvs, std::vector< Point > &joint_points, double eps, double tol, bool corner_in_Tjoint=true)
- std::vector< ftEdge * > Go::Path::edgeChain (ftEdge *edg, double angtol, shared_ptr< Vertex > &v1, shared_ptr< Vertex > &v2)

30.39 compositemodel/include/GoTools/compositemodel/PointOnEdge.h File Reference

```
#include "GoTools/utils/Point.h"
```

Include dependency graph for PointOnEdge.h:



Classes

- class Go::PointOnEdge

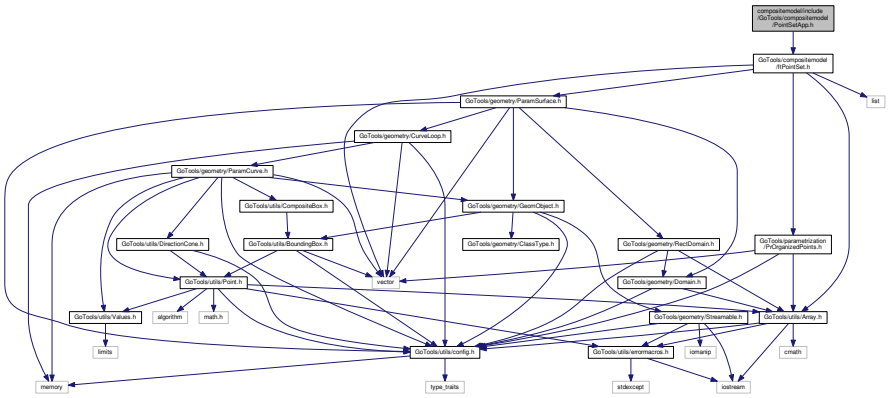
Namespaces

- Go

30.40 compositemodel/include/GoTools/compositemodel/PointSetApp.h File Reference

```
#include "GoTools/compositemodel/ftPointSet.h"
```

Include dependency graph for PointSetApp.h:



Namespaces

- Go
- Go::PointSetApp

  Point set and triangulation applicitions.

Functions

- void Go::PointSetApp::parameterizeTriang (const double *xyz_points, int nmbp, const int *triangles, int nmbt, std::vector< double > &uv_pars)

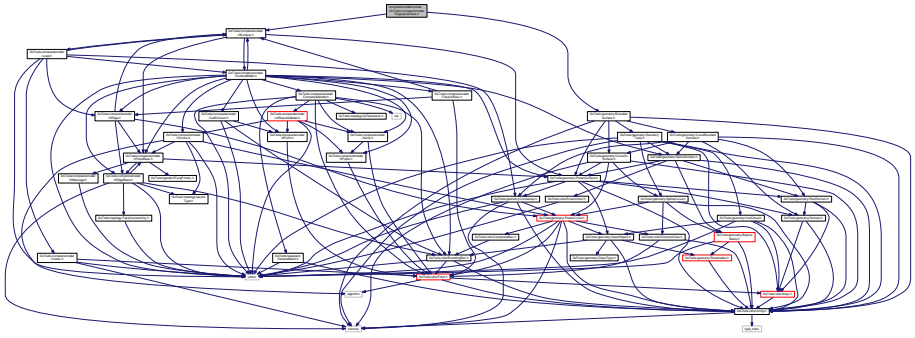
  Parameterize triangulated point set.
- bool Go::PointSetApp::recognizeBoundary (shared_ptr< ftPointSet > &triang, std::vector< int > &corner_ix)

  Service functionality for parameterizeTriang.
- bool Go::PointSetApp::recognizeCornerNodes (const shared_ptr< ftPointSet > &triang, const std::vector< int > &bd_nodes, std::vector< int > &corner_ix)

30.41 compositemodel/include/GoTools/compositemodel/RegularizeFace.h File Reference

```
#include "GoTools/compositemodel/ftSurface.h"
#include "GoTools/geometry/BoundedSurface.h"
```

Include dependency graph for RegularizeFace.h:



Classes

- class Go::RegularizeFace

  Split one face into a number of 4-sided domains without inner trimming. This class is intended for use in block structuring. One face with possible inner and outer trimming is split according to certain rules to result in a face set with 4 sided faces although faces with less than 4 sides can occur. A side is defined as a piece of the face boundary between two corners or between vertices where there are more than one adjacent face. The trimmed surfaces being output from this class can later be approximated by spline surfaces. The splitting procedure is recursive.

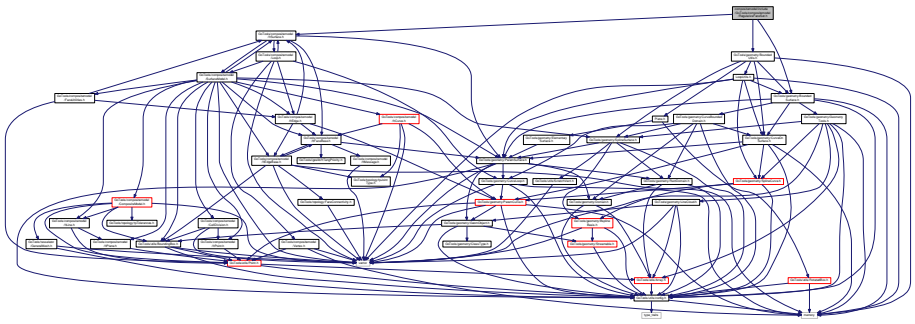
Namespaces

- Go

30.42 compositemodel/include/GoTools/compositemodel/RegularizeFaceSet.h File Reference

```
#include "GoTools/compositemodel/ftSurface.h"
#include "GoTools/geometry/BoundedSurface.h"
#include "GoTools/geometry/BoundedUtils.h"
```

Include dependency graph for RegularizeFaceSet.h:



Classes

- class Go::RegularizeFaceSet

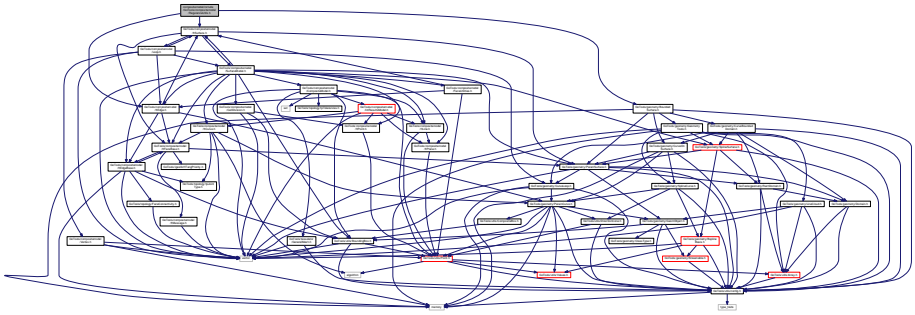
Namespaces

- Go

30.43 compositemodel/include/GoTools/compositemodel/RegularizeUtils.h File Reference

```
#include "GoTools/compositemodel/ftSurface.h"
#include "GoTools/compositemodel/ftEdge.h"
#include "GoTools/geometry/BoundedSurface.h"
```

Include dependency graph for RegularizeUtils.h:



Namespaces

- Go
- Go::RegularizeUtils

  Utility functionality for RegularizeFace and RegularizeFaceSet.

Functions

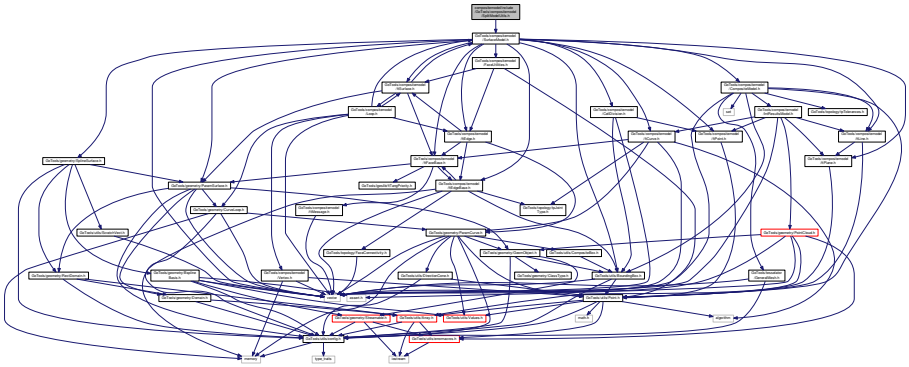
- std::vector< shared_ptr< ftSurface > > Go::RegularizeUtils::divideVertex (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, std::vector< shared_ptr< Vertex > > &cand_vx, ftEdge *cand_edge, std::vector< shared_ptr< Vertex > > &prio_vx, double epsge, double tol2, double angtol, double bend, std::vector< shared_ptr< Vertex > > &non_corner, const Point &centre, const Point &axis, bool strong=false)
- std::vector< shared_ptr< CurveOnSurface > > Go::RegularizeUtils::findVertexSplit (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, std::vector< shared_ptr< Vertex > > &cand_vx, ftEdge *cand_edge, std::vector< shared_ptr< Vertex > > &prio_vx, double epsge, double tol2, double angtol, double bend, std::vector< shared_ptr< Vertex > > &non_corner, const Point &centre, const Point &axis, shared_ptr< BoundedSurface > &bd_sf, bool strong=false)
- std::vector< shared_ptr< ftSurface > > Go::RegularizeUtils::createFaces (std::vector< shared_ptr< BoundedSurface > > &sub_sfs, shared_ptr< ftSurface > face, double epsge, double tol2, double angtol, std::vector< shared_ptr< Vertex > > non_corner)
- void Go::RegularizeUtils::getDivisionPlane (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, double epsge, Point &pnt, Point &normal)
- void Go::RegularizeUtils::getClosestBoundaryPar (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, std::vector< shared_ptr< ParamCurve > > &vx_cvs, const Point &pnt, double epsge, int &close_idx, double &close_dist, Point &close_par, int loop_idx=-1)
- bool Go::RegularizeUtils::cornerInShortestPath (shared_ptr< Vertex > vx1, shared_ptr< Vertex > vx2, shared_ptr< ftSurface > face, double angtol)
- bool Go::RegularizeUtils::getPath (ftEdge *edg, shared_ptr< Vertex > vx, shared_ptr< Vertex > last, shared_ptr< ftSurface > face, std::vector< ftEdge * > &path)
- int Go::RegularizeUtils::noExtension (shared_ptr< Vertex > vx, ftSurface *face, shared_ptr< Vertex > &vx2, std::pair< Point, Point > &co_par1, std::pair< Point, Point > &co_par2, int &dir1, int &dir2, double &val1, double &val2, double angtol, bool check_constant_curve)

- bool Go::RegularizeUtils::mergeSituationContinuation (ftSurface *init_face, shared_ptr< Vertex > vx, ftEdge *edge, double angtol)
- double Go::RegularizeUtils::getMaxParFrac (shared_ptr< ftSurface > face)
- int Go::RegularizeUtils::selectCandVx (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, const Point &in_vec, vector< shared_ptr< Vertex > > cand_vx, RectDomain &dom, double epsge, double angtol, const Point &centre, const Point &normal, std::vector< shared_ptr< ParamCurve > > &vx_cvs, double close_dist, const Point &close_pt, double &cyl_rad, bool strong=false)
- void Go::RegularizeUtils::adjustTrimSeg (std::vector< shared_ptr< CurveOnSurface > > &trim_segments, Point *parval1, Point *parval2, shared_ptr< ftSurface > face, shared_ptr< BoundedSurface > &bd_sf, std::vector< shared_ptr< Vertex > > &non_corner, double tol, double epsge)
- void Go::RegularizeUtils::checkTrimSeg (std::vector< shared_ptr< CurveOnSurface > > &trim_segments, std::vector< shared_ptr< Vertex > > &next_vxs, const Point &vx_point, const Point &other_pt, double epsge)
- void Go::RegularizeUtils::checkTrimSeg2 (std::vector< shared_ptr< CurveOnSurface > > &trim_segments, const Point &vx_par1, const Point &vx_par2, double epsge)
- void Go::RegularizeUtils::checkTrimSeg3 (std::vector< shared_ptr< CurveOnSurface > > &trim_segments, const Point &vx_par1, const Point &vx_par2, double epsge)
- void Go::RegularizeUtils::checkTrimConfig (shared_ptr< ftSurface > face, std::vector< shared_ptr< CurveOnSurface > > &trim_segments, shared_ptr< Vertex > vx, std::vector< shared_ptr< Vertex > > &corners, double epsge)
- ftEdge * Go::RegularizeUtils::getOppositeBoundaryPar (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx, std::vector< shared_ptr< Vertex > > &corners, double epsge, Point &point, double &par, double &dist)
- Point Go::RegularizeUtils::getInVec (shared_ptr< Vertex > vx, shared_ptr< ftSurface > face)
- shared_ptr< ParamCurve > Go::RegularizeUtils::checkStrightParCv (shared_ptr< ftSurface > face, const Point &pos1, const Point &pos2, double epsge)
- shared_ptr< ParamCurve > Go::RegularizeUtils::checkStrightParCv (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx1, shared_ptr< Vertex > vx2, double epsge)
- shared_ptr< ParamCurve > Go::RegularizeUtils::checkStrightParCv (shared_ptr< ftSurface > face, shared_ptr< Vertex > vx1, const Point &mid, double epsge)
- bool Go::RegularizeUtils::checkPath (shared_ptr< Vertex > vx1, shared_ptr< Vertex > vx2, shared_ptr< Vertex > vx, shared_ptr< ftSurface > face, double angtol)
- bool Go::RegularizeUtils::checkRegularity (std::vector< shared_ptr< Vertex > > &cand_vx, shared_ptr< ftSurface > face, bool checkConvex=true)
- std::vector< shared_ptr< Vertex > > Go::RegularizeUtils::endVxInChain (shared_ptr< ftSurface > face, ftSurface *face1, ftSurface *face2, shared_ptr< Vertex > vx, shared_ptr< Vertex > prev, shared_ptr< Vertex > vx0, std::vector< shared_ptr< Vertex > > &met_already)
- int Go::RegularizeUtils::traverseUntilTJoint (std::vector< ftSurface * > vx_faces, shared_ptr< Vertex > vx, shared_ptr< Vertex > &vx2, std::vector< ftSurface * > &vx_faces2)
- void Go::RegularizeUtils::angleInEndpoints (shared_ptr< CurveOnSurface > seg, shared_ptr< Vertex > vx1, shared_ptr< Vertex > vx2, shared_ptr< ftSurface > face, double &min_ang1, double &min_ang2)
- void Go::RegularizeUtils::getSourceCvs (std::vector< shared_ptr< ftEdge > > &all_edg, std::vector< shared_ptr< ParamCurve > > &all_cvs)

30.44 compositemodel/include/GoTools/compositemodel/SplitModelUtils.h File Reference

```
#include "GoTools/compositemodel/SurfaceModel.h"
```

Include dependency graph for SplitModelUtils.h:



Namespaces

- Go
- Go::SplitModelUtils

  Utility functionality for splitting of surface models.

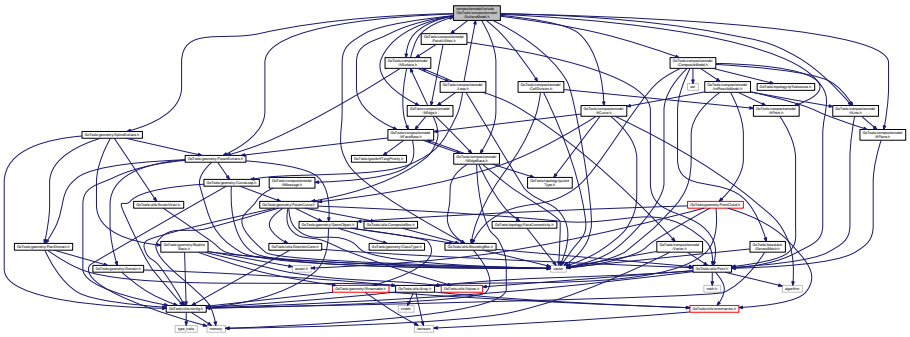
Functions

- void Go::SplitModelUtils::splitInFreeCorners (shared_ptr< SurfaceModel > sfmodel, const Point &pnt, const Point &axis)
- void Go::SplitModelUtils::splitInNonCorners (shared_ptr< SurfaceModel > sfmodel, const Point &pnt, const Point &axis)
- void Go::SplitModelUtils::splitInOuterVertices (shared_ptr< SurfaceModel > sfmodel, shared_ptr< ftSurface > face, const Point &pnt, const Point &axis)

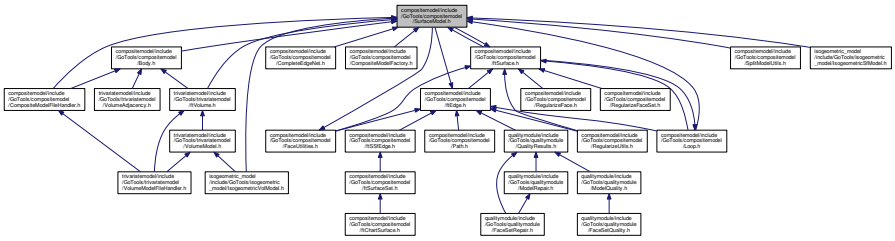
30.45 compositemodel/include/GoTools/compositemodel/SurfaceModel.h File Reference

```
#include "GoTools/compositemodel/CompositeModel.h"
#include "GoTools/compositemodel/ftSurface.h"
#include "GoTools/compositemodel/ftFaceBase.h"
#include "GoTools/compositemodel/CellDivision.h"
#include "GoTools/compositemodel/ftCurve.h"
#include "GoTools/compositemodel/ftPoint.h"
#include "GoTools/utils/BoundingBox.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/compositemodel/ftEdgeBase.h"
#include "GoTools/compositemodel/ftEdge.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/compositemodel/ftPlane.h"
#include "GoTools/compositemodel/ftLine.h"
#include "GoTools/compositemodel/FaceUtilities.h"
#include <vector>
```

Include dependency graph for SurfaceModel.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::SurfaceModel

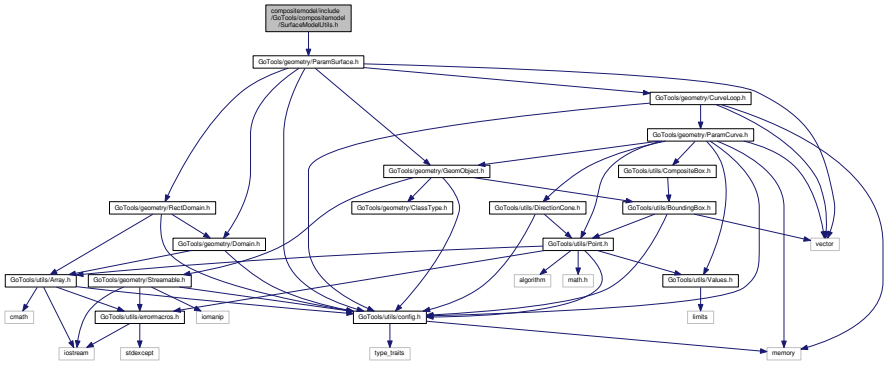
Namespaces

- Go

30.46 compositemodel/include/GoTools/compositemodel/SurfaceModelUtils.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
```

Include dependency graph for SurfaceModelUtils.h:



Namespaces

- Go
- Go::SurfaceModelUtils

  Utility functionality for splitting of surface models.

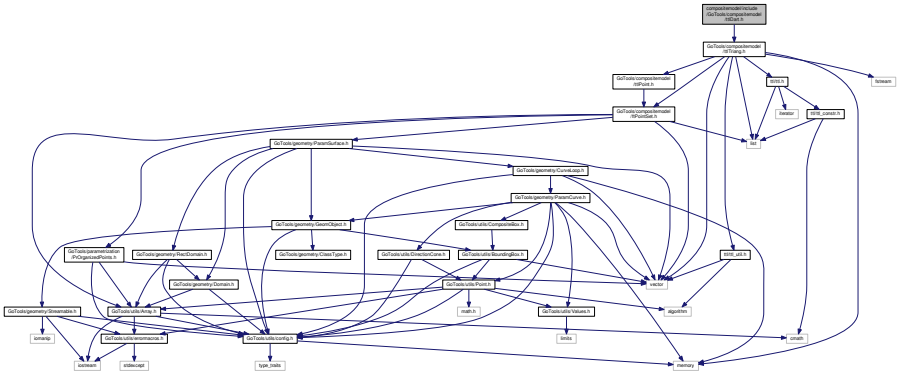
Functions

- std::vector< shared_ptr< ParamSurface > > Go::SurfaceModelUtils::checkClosedFaces (shared_ptr< ParamSurface > surface, double tol)

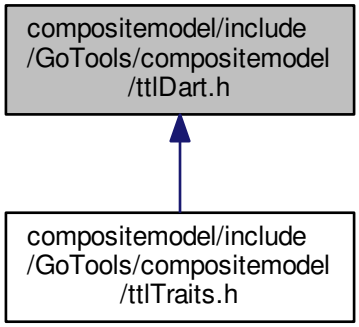
30.47 compositemodel/include/GoTools/compositemodel/ttlDart.h File Reference

```
#include "GoTools/compositemodel/ttlTriang.h"
```

Include dependency graph for ttlDart.h:



This graph shows which files directly or indirectly include this file:



Classes

- class hetriang::Dart

  Dart *class for the half-edge data structure.*

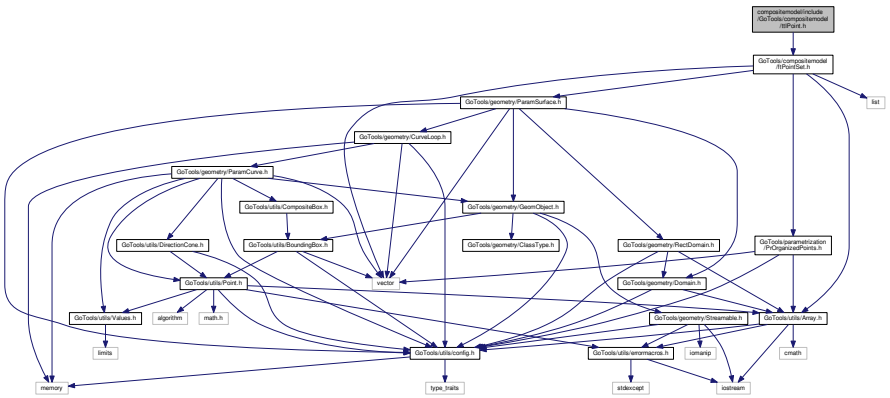
Namespaces

- hetriang

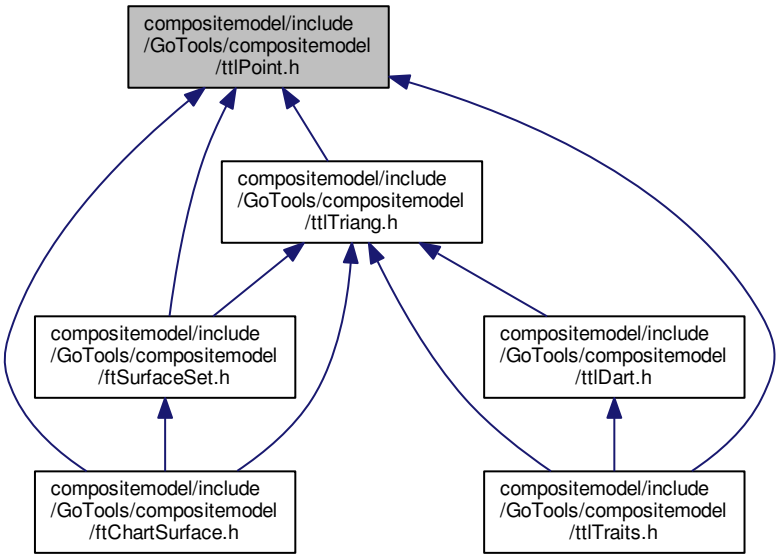
30.48 compositemodel/include/GoTools/compositemodel/ttlPoint.h File Reference

```
#include "GoTools/compositemodel/ftPointSet.h"
```

Include dependency graph for ttlPoint.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ttlPoint

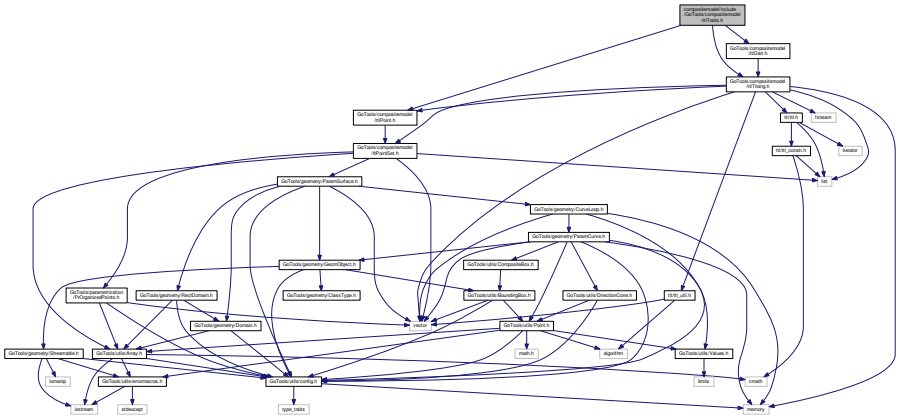
Namespaces

- Go

30.49 compositemodel/include/GoTools/compositemodel/ttlTraits.h File Reference

```
#include "GoTools/compositemodel/ttlTriang.h"
#include "GoTools/compositemodel/ttlDart.h"
#include "GoTools/compositemodel/ttlPoint.h"
```

Include dependency graph for ttlTraits.h:



Classes

- struct hetriang::TTLtraits

  Traits *class (static struct) for the half-edge data structure.*

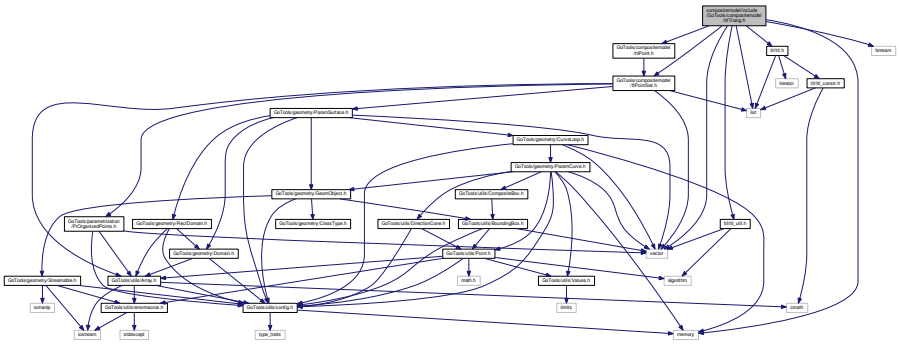
Namespaces

- hetriang

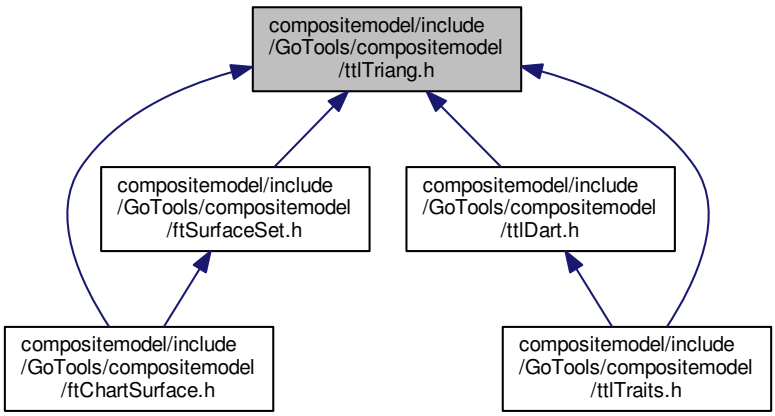
30.50 compositemodel/include/GoTools/compositemodel/ttlTriang.h File Reference

```
#include "GoTools/compositemodel/ttlPoint.h"
#include "ttl/ttl.h"
#include "ttl/ttl_util.h"
#include <memory>
#include "GoTools/compositemodel/ftPointSet.h"
#include <fstream>
#include <list>
#include <vector>
```

Include dependency graph for ttlTriang.h:



This graph shows which files directly or indirectly include this file:



Classes

- class hetriang::Node

  Node *class in the half-edge data structure*
- class hetriang::Edge

  Edge *class in the half-edge data structure*
- class hetriang::Triangulation

  Triangulation *class for the half-edge data structure with adaption to TTL.*

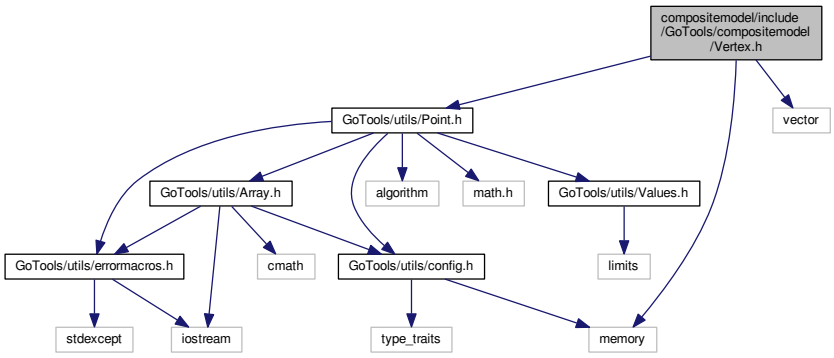
Namespaces

- hetriang

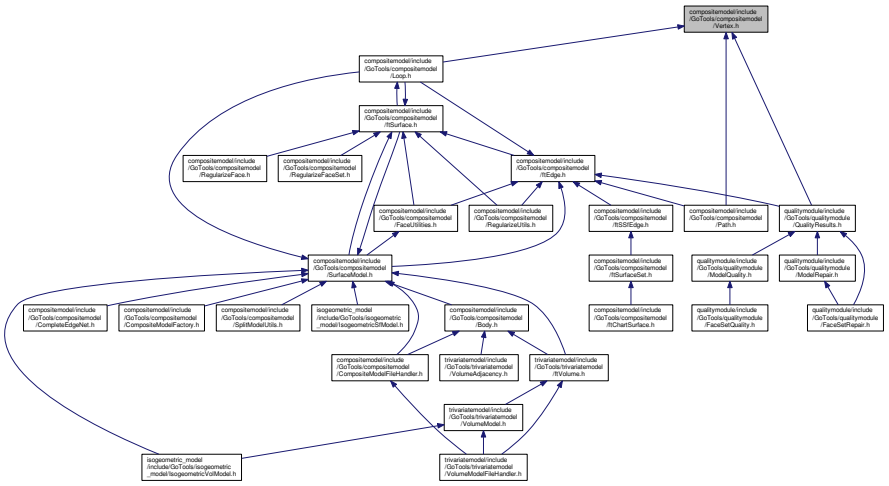
30.51 compositemodel/include/GoTools/compositemodel/Vertex.h File Reference

```
#include "GoTools/utils/Point.h"
#include <vector>
#include <memory>
```

Include dependency graph for Vertex.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Vertex

  The vertex class represents the vertex entity in a boundary represented solid or face set.

Namespaces

- Go

30.52 doc/html/2dpoly__for__s2m_8h.js File Reference

30.53 doc/html/_adapt_surface_8h.js File Reference

Variables

- var _adapt_surface_8h

30.53.1 Variable Documentation

30.53.1.1 var _adapt_surface_8h

Initial value:

```
=
[
    [ "adaptSurface", "_adapt_surface_8h.html#a1194b8ffa451b12a281d211e6910d768", null ],
    [ "approxInSplineSpace", "_adapt_surface_8h.html#a15b06081712dfe9ad4f7d754df64d753", null ],
    [ "createTriangulation", "_adapt_surface_8h.html#a07973f4fcc58c148043c348d2ad9ddc4", null ],
    [ "curveApprox", "_adapt_surface_8h.html#a63fc23e20b1e1b0f82145a1d0283cc3c", null ],
    [ "curveApprox", "_adapt_surface_8h.html#a4797ff542210b4d3ff90953ed305125c", null ],
    [ "doApprox", "_adapt_surface_8h.html#a95451a902921add6b13b4b7e8f6786cd", null ],
    [ "expressInSameSplineSpace", "_adapt_surface_8h.html#ae881321f771124da370e9d03089c7f3f", null ],
    [ "getBoundaryData", "_adapt_surface_8h.html#aadc2781aa90fda2a39b619fc7e976dab", null ],
    [ "getCornerCorrespondance", "_adapt_surface_8h.html#a40427a58f1173e0f10f116e6b53df53f", null ],
    [ "getInnerData", "_adapt_surface_8h.html#a09c6dc39b4a998c11e43e86b4e1abb23", null ],
    [ "parameterizePoints", "_adapt_surface_8h.html#af42c3ae424ec3855831bab07058990e5", null ],
    [ "projectPoints", "_adapt_surface_8h.html#a4b86cf9be37a6421d44f34651dfca151", null ],
    [ "updatePointTopology", "_adapt_surface_8h.html#a738ceb1f612a11517883f525ec39b853", null ]
]
```

Definition at line 1 of file _adapt_surface_8h.js.

30.54 doc/html/_array_8h.js File Reference

Variables

- var _array_8h

30.54.1 Variable Documentation

30.54.1.1 var _array_8h

Initial value:

```
=
[
    [ "Array", "class_go_1_1_array.html", "class_go_1_1_array" ],
    [ "Vector2D", "_array_8h.html#a68a1cf4bb38d0d831736d42eafbd4027", null ],
    [ "Vector3D", "_array_8h.html#aa67ec96c4a16e8e493785fcead12f68f", null ],
    [ "Vector4D", "_array_8h.html#ae69a93ef6927e772507d639d15296506", null ],
    [ "operator*", "_array_8h.html#a77570f74726be3fd2242a14aeeeee0f2", null ],
    [ "operator<<", "_array_8h.html#ad9be98128b71d8f9a4a03cf253a40cb4", null ],
    [ "operator>>", "_array_8h.html#a43041127ef073e892f26e9c1189687bc", null ]
]
```

Definition at line 1 of file _array_8h.js.

30.55 doc/html/_bary_coord_system_8h.js File Reference

Variables

- var _bary_coord_system_8h

30.55.1 Variable Documentation

30.55.1.1 var _bary_coord_system_8h

Initial value:

```
=
[
    [ "BaryCoordSystem", "class_go_1_1_bary_coord_system.html", "class_go_1_1_bary_coord_system" ],
    [ "BaryCoordSystem2D", "_bary_coord_system_8h.html#a12cca84099b202b44209f71f6c9dd20c", null ],
    [ "BaryCoordSystem3D", "_bary_coord_system_8h.html#a4fd447cf6cb7a456837fe15c599f8077", null ],
    [ "operator*", "_bary_coord_system_8h.html#a700a91754d00b7aa70c2b1eaf4042c0a", null ],
    [ "operator<<", "_bary_coord_system_8h.html#abf8183ddde075dcb20899e97cc598ce4", null ],
    [ "operator>>", "_bary_coord_system_8h.html#a8a299fe67cc03dbd5b87a8d3a2654c04", null ]
]
```

Definition at line 1 of file _bary_coord_system_8h.js.

30.56 doc/html/_bd_condition_type_8h.js File Reference

Variables

- var _bd_condition_type_8h

30.56.1 Variable Documentation

30.56.1.1 var _bd_condition_type_8h

Initial value:

```
=
[
    [ "BdConditionType", "_bd_condition_type_8h.html#a2ef4e46477cac9d1ab25de9fbe20fed7", [
      [ "UNKNOWN", "
      _bd_condition_type_8h.html#a2ef4e46477cac9d1ab25de9fbe20fed7a42f3d93048535945ea47f21d2c21dcc9", null ],
      [ "ZERO_DIRICHLET", "
      _bd_condition_type_8h.html#a2ef4e46477cac9d1ab25de9fbe20fed7aec9786d0435848f55a9401da630edbaf", null ],
      [ "CONSTANT_DIRICHLET", "
      _bd_condition_type_8h.html#a2ef4e46477cac9d1ab25de9fbe20fed7aebe0fe5f686259362f9c5a83be92b506", null ],
      [ "DIRICHLET", "
      _bd_condition_type_8h.html#a2ef4e46477cac9d1ab25de9fbe20fed7a5c504f4a19f84fedb7d51aa7db55592e", null ],
      [ "ZERO_NEUMANN", "
      _bd_condition_type_8h.html#a2ef4e46477cac9d1ab25de9fbe20fed7a5a1060dcd56fe6e7058351bcf342e1c5", null ],
      [ "NEUMANN", "
      _bd_condition_type_8h.html#a2ef4e46477cac9d1ab25de9fbe20fed7aed6f828e7a7040280d06e6d5dc58f405", null ],
      [ "SYMMETRY", "
      _bd_condition_type_8h.html#a2ef4e46477cac9d1ab25de9fbe20fed7aa17bd98b807d8cba21c3ac83184ebcc8", null ]
    ] ]
]
```

Definition at line 1 of file _bd_condition_type_8h.js.

30.57 doc/html/_bernstein_multi_8h.js File Reference

Variables

- var _bernstein_multi_8h

30.57.1 Variable Documentation

30.57.1.1 var _bernstein_multi_8h

Initial value:

```
=
[
    [ "BernsteinMulti", "class_go_1_1_bernstein_multi.html", "class_go_1_1_bernstein_multi" ],
    [ "operator*", "_bernstein_multi_8h.html#ac0f9b420a54655ea7980c36b3ae7f353", null ],
    [ "operator*", "_bernstein_multi_8h.html#a9f71cb0740b68956099216ff4c312f21", null ],
    [ "operator*", "_bernstein_multi_8h.html#a14bfe575b4f197508ab34231812f5ea8", null ],
    [ "operator+", "_bernstein_multi_8h.html#ae8d9cb217494b8cff37f175f027d59c2", null ],
    [ "operator+", "_bernstein_multi_8h.html#a0e45c5beac215ac505022b71f0b684c7", null ],
    [ "operator+", "_bernstein_multi_8h.html#a3d0cd82e4ab401500bb3570ba24c8daf", null ],
    [ "operator-", "_bernstein_multi_8h.html#acc8be3d61d13a0e91dd2ae40508d88c8", null ],
    [ "operator-", "_bernstein_multi_8h.html#a5ac33326e97d2a9169a7309946df94bb", null ],
    [ "operator-", "_bernstein_multi_8h.html#a06d2d7a07f377da83f913da084c772a7", null ],
    [ "operator/", "_bernstein_multi_8h.html#a765ac7dff2f0f33a9f0729bb81be373c", null ],
    [ "operator<<", "_bernstein_multi_8h.html#a7d42865a64dda880f50b6f1b1269149a", null ],
    [ "operator>>", "_bernstein_multi_8h.html#aeeba7e48ed668867a1d5b4f8737ee320", null ]
]
```

Definition at line 1 of file _bernstein_multi_8h.js.

30.58 doc/html/_bernstein_poly_8h.js File Reference

Variables

- var _bernstein_poly_8h

30.58.1 Variable Documentation

30.58.1.1 var _bernstein_poly_8h

Initial value:

```
=
[
    [ "BernsteinPoly", "class_go_1_1_bernstein_poly.html", "class_go_1_1_bernstein_poly" ],
    [ "operator*", "_bernstein_poly_8h.html#ab84c1aeaf05397990e367ff6bb3daeee", null ],
    [ "operator*", "_bernstein_poly_8h.html#a534b6eb239dcfcf018979c254bbb1c8c", null ],
    [ "operator*", "_bernstein_poly_8h.html#a3f522b731263ee4398a9b674fedd8fe9", null ],
    [ "operator+", "_bernstein_poly_8h.html#abfbfd20652b030cf66e8bcba814a937f", null ],
    [ "operator+", "_bernstein_poly_8h.html#a12433ab3180672fb9aaa23bbd9d4991b", null ],
    [ "operator+", "_bernstein_poly_8h.html#adf2c5b270def59383fdd88d04d25c031", null ],
    [ "operator-", "_bernstein_poly_8h.html#ae21cec482ad8abcb7c1c31b415135b05", null ],
    [ "operator-", "_bernstein_poly_8h.html#a380e74b8844f2dc85ae5050949c7c531", null ],
    [ "operator-", "_bernstein_poly_8h.html#af0b73d456cbdc62ef108b8363701eec6", null ],
    [ "operator/", "_bernstein_poly_8h.html#a7e243a4bc3bb92b66cba61f6bca49609", null ],
    [ "operator<<", "_bernstein_poly_8h.html#a26f2da4ffc29574a70eb27d25685613a", null ],
    [ "operator>>", "_bernstein_poly_8h.html#affdf8734ba785122985dc1df2a895d5d", null ]
]
```

Definition at line 1 of file _bernstein_poly_8h.js.

30.59 doc/html/_bernstein_tetrahedral_poly_8h.js File Reference

Variables

- var _bernstein_tetrahedral_poly_8h

30.59.1 Variable Documentation

30.59.1.1 var _bernstein_tetrahedral_poly_8h

Initial value:

```
=
[
    [ "BernsteinTetrahedralPoly", "class_go_1_1_bernstein_tetrahedral_poly.html", "
      class_go_1_1_bernstein_tetrahedral_poly" ],
    [ "operator*", "_bernstein_tetrahedral_poly_8h.html#a34364609c743b4fcee9d139fe06bcaba", null ],
    [ "operator*", "_bernstein_tetrahedral_poly_8h.html#a9330192cbed096f7cf60b9bc39e3b30a", null ],
    [ "operator*", "_bernstein_tetrahedral_poly_8h.html#a4d430a1dec1cd20d8645e134a7cf8876", null ],
    [ "operator+", "_bernstein_tetrahedral_poly_8h.html#a49e5fb7c3f78de991afa7bd7794e8c00", null ],
    [ "operator+", "_bernstein_tetrahedral_poly_8h.html#ac75490e2444989c2bed34ed7767cb8d1", null ],
    [ "operator+", "_bernstein_tetrahedral_poly_8h.html#a04a4947cb295e771b77eea322055303e", null ],
    [ "operator-", "_bernstein_tetrahedral_poly_8h.html#a81be2d89e20687a9eecdadc88a3ac1ba", null ],
    [ "operator-", "_bernstein_tetrahedral_poly_8h.html#a3b9904b3f6bf5bbca9aaff94e9d6eb30", null ],
    [ "operator-", "_bernstein_tetrahedral_poly_8h.html#aaf2cf0fc7ac1a3fb7a2e021fd9f5edd5", null ],
    [ "operator/", "_bernstein_tetrahedral_poly_8h.html#aec9c6cca3303cbf364ab26bebbbb17bf", null ],
    [ "operator<<", "_bernstein_tetrahedral_poly_8h.html#a177f619335169e255b7e4eb6c9815833", null ],
    [ "operator>>", "_bernstein_tetrahedral_poly_8h.html#a652c787b70b5bad83b2268ecbe334ecb", null ]
]
```

Definition at line 1 of file _bernstein_tetrahedral_poly_8h.js.

30.60 doc/html/_bernstein_triangular_poly_8h.js File Reference

Variables

- var _bernstein_triangular_poly_8h

30.60.1 Variable Documentation

30.60.1.1 var _bernstein_triangular_poly_8h

Initial value:

```
=
[
    [ "BernsteinTriangularPoly", "class_go_1_1_bernstein_triangular_poly.html", "
      class_go_1_1_bernstein_triangular_poly" ],
    [ "operator*", "_bernstein_triangular_poly_8h.html#ae593da703f098a6bd5fa8c9dbfa838a5", null ],
    [ "operator*", "_bernstein_triangular_poly_8h.html#a509d5c4d7f34b09dacf71a0c67a634f3", null ],
    [ "operator*", "_bernstein_triangular_poly_8h.html#aae2d82c5477642cefa315e60a59a6eec", null ],
    [ "operator+", "_bernstein_triangular_poly_8h.html#acf6016b168fbc78b01314dd06d655aca", null ],
    [ "operator+", "_bernstein_triangular_poly_8h.html#a462d4e25cb00e65fd8fca6c7400837d1", null ],
    [ "operator+", "_bernstein_triangular_poly_8h.html#acf99d1417b42eb82f7990ddb3441fb35", null ],
    [ "operator-", "_bernstein_triangular_poly_8h.html#aea92d93bae625ac0410a2c5020c30806", null ],
    [ "operator-", "_bernstein_triangular_poly_8h.html#a6d318aba24152e98f772f8a98fb1855c", null ],
    [ "operator-", "_bernstein_triangular_poly_8h.html#a0d2fbaac82708424fc51afed89b553b1", null ],
    [ "operator/", "_bernstein_triangular_poly_8h.html#a85d0e20143ab2df2c6f76ac6d3b48b70", null ],
    [ "operator<<", "_bernstein_triangular_poly_8h.html#a38161e9c347c6ecf6c10c5376879c4b4", null ],
    [ "operator>>", "_bernstein_triangular_poly_8h.html#a0dc991998e8beac11b48c8334d17f3ef", null ]
]
```

Definition at line 1 of file _bernstein_triangular_poly_8h.js.

30.61 doc/html/_bernstein_utils_8h.js File Reference

Variables

- var _bernstein_utils_8h

30.61.1 Variable Documentation

30.61.1.1 var _bernstein_utils_8h

Initial value:

```
=
[
    [ "bernsteinToSpline", "_bernstein_utils_8h.html#a0bed81e44e84d11e8556824c25049ead", null ],
    [ "bernsteinToSpline", "_bernstein_utils_8h.html#a1dac32e6ed6c19bf932e4bbade79f344", null ],
    [ "spline_to_bernstein", "_bernstein_utils_8h.html#a098bb6ff4bac316ae10df8d2b653fa56", null ],
    [ "spline_to_bernstein", "_bernstein_utils_8h.html#a7547008e8009792bceb9ac9b7096ea27", null ],
    [ "spline_to_bernstein", "_bernstein_utils_8h.html#ada87974215b573178fd8c13c5f0aacf5", null ],
    [ "spline_to_bernstein", "_bernstein_utils_8h.html#a4a48f88a6bf4b9175e410bec9debba54", null ],
    [ "splineToBernstein", "_bernstein_utils_8h.html#a5482851c26f0ec5c7121245fad4b1a7d", null ],
    [ "splineToBernstein", "_bernstein_utils_8h.html#a1c5ba6de69a967161d8c4b7d84e711c5", null ]
]
```

Definition at line 1 of file _bernstein_utils_8h.js.

30.62 doc/html/_bezier_triangle_8h.js File Reference

Variables

- var _bezier_triangle_8h

30.62.1 Variable Documentation

30.62.1.1 var _bezier_triangle_8h

Initial value:

```
=
[
    [ "BezierTriangle", "class_go_1_1_bezier_triangle.html", "class_go_1_1_bezier_triangle" ],
    [ "__power", "_bezier_triangle_8h.html#a97b81ceb78c6f342eb91ad62ba86260f", null ],
    [ "__power", "_bezier_triangle_8h.html#ac866b28c409b5c4b6b613e17fd3b5c85", null ],
    [ "identity_element", "_bezier_triangle_8h.html#a78e37a8fb419e182957f4be0adac1d03", null ],
    [ "identity_element", "_bezier_triangle_8h.html#a0f2e93c7362c26ce388c62a5abc1be52", null ],
    [ "power", "_bezier_triangle_8h.html#a9f0e2aade1c38e1fcefed969201e3b15", null ],
    [ "power", "_bezier_triangle_8h.html#a3753fc712c0a734234d3a33045379baf", null ]
]
```

Definition at line 1 of file _bezier_triangle_8h.js.

30.63 doc/html/_bounded_utils_8h.js File Reference

Variables

- var _bounded_utils_8h

30.63.1 Variable Documentation

30.63.1.1 var _bounded_utils_8h

Definition at line 1 of file _bounded_utils_8h.js.

30.64 doc/html/_bounding_box_8h.js File Reference

Variables

- var _bounding_box_8h

30.64.1 Variable Documentation

30.64.1.1 var _bounding_box_8h

Initial value:

```
=
[
    [ "BoundingBox", "class_go_1_1_bounding_box.html", "class_go_1_1_bounding_box" ],
    [ "operator<<", "_bounding_box_8h.html#abc8494ee04093d37f0ff0ffeac48fbcf", null ],
    [ "operator>>", "_bounding_box_8h.html#ae5b1a7ef34c842092e5cd985a94fc314", null ]
]
```

Definition at line 1 of file _bounding_box_8h.js.

30.65 doc/html/_bspline_basis_8h.js File Reference

Variables

- var _bspline_basis_8h

30.65.1 Variable Documentation

30.65.1.1 var _bspline_basis_8h

Initial value:

```
=
[
    [ "BsplineBasis", "class_go_1_1_bspline_basis.html", "class_go_1_1_bspline_basis" ],
    [ "CHECK", "_bspline_basis_8h.html#a70246e9ac30d8d3e1fba7ca97cd5f4e8", null ]
]
```

Definition at line 1 of file _bspline_basis_8h.js.

30.66 doc/html/_class_type_8h.js File Reference

Variables

- var _class_type_8h

30.66.1 Variable Documentation

30.66.1.1 var _class_type_8h

Definition at line 1 of file _class_type_8h.js.

30.67 doc/html/_closest_point_8h.js File Reference

Variables

- var _closest_point_8h

30.67.1 Variable Documentation

30.67.1.1 var _closest_point_8h

Initial value:

```
=
[
    [ "AlgorithmChoice", "_closest_point_8h.html#a9ec4373c3aa2905cb547164492f510d1", [
      [ "GEOMETRICAL", "
      _closest_point_8h.html#a9ec4373c3aa2905cb547164492f510d1a4877e954b6cbc33a24efca42fad0cb20", null ],
      [ "FUNCTIONAL", "
      _closest_point_8h.html#a9ec4373c3aa2905cb547164492f510d1a0a0ed87aad2d610531dda3628ea995d8", null ]
    ] ],
    [ "closestPtCurves", "_closest_point_8h.html#ab76861f84a1fd1ae98cc29dc3b596e59", null ],
    [ "closestPtCurves", "_closest_point_8h.html#a1d9b397185e29aa817062a44374f9fd5", null ],
    [ "closestPtCurves2D", "_closest_point_8h.html#a0ab4ffc60e1bca0e0dbb8458d648b9ee", null ],
    [ "closestPtCurveSurf", "_closest_point_8h.html#a62dbb0e73daa2ba25c33d030bfc1d8d6", null ],
    [ "closestPtCurveSurf", "_closest_point_8h.html#afeee87804e5a35525c7017d7fcc95c03", null ],
    [ "closestPtSurfSurfPlane", "_closest_point_8h.html#afe9bbf94f33a5d46b1f7fda8aa0d6bea", null ],
    [ "closestPtSurfSurfPlaneFunctional", "_closest_point_8h.html#a789a3fc2d43b9234327ebf3bbd3e88c3", null
      ],
    [ "closestPtSurfSurfPlaneGeometrical", "_closest_point_8h.html#a6788ce489922788dc484c43db18c94d4", null
       ]
]
```

Definition at line 1 of file _closest_point_8h.js.

30.68 doc/html/_closest_point_utils_8h.js File Reference

Variables

- var _closest_point_utils_8h

30.68.1 Variable Documentation

30.68.1.1 var _closest_point_utils_8h

Initial value:

```
=
[
    [ "SurfaceData", "class_go_1_1box_structuring_1_1_surface_data.html", "
      class_go_1_1box_structuring_1_1_surface_data" ],
    [ "SubSurfaceBoundingBox", "class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box" ],
    [ "BoundingBoxStructure", "class_go_1_1box_structuring_1_1_bounding_box_structure.html", "
      class_go_1_1box_structuring_1_1_bounding_box_structure" ],
    [ "closestDistances", "_closest_point_utils_8h.html#aea642a6b9559e8ff39dd5d06bc69daac", null ],
    [ "closestPointCalculations", "_closest_point_utils_8h.html#a6d2dcf73d3785040a689bacc2516eafd", null ],
    [ "closestPointCalculations", "_closest_point_utils_8h.html#aed2f2b4f85218d4301ea69afc4cc93e2", null ],
    [ "closestPoints", "_closest_point_utils_8h.html#a8744167826e0e05a35f0de72d2db0fc2", null ],
    [ "closestPointSingleCalculation", "_closest_point_utils_8h.html#a40d2980555c13353db074c570229503a",
      null ],
    [ "closestSignedDistances", "_closest_point_utils_8h.html#a8c08c7f6202af07431b1c5a39241e4a2", null ],
    [ "closestVectorsOld", "_closest_point_utils_8h.html#a26d674d4f146b5604e861ca42c7e4a1f", null ],
    [ "preProcessClosestVectors", "_closest_point_utils_8h.html#ad64c20172c59d962caacba9501b70331", null ]
]
```

Definition at line 1 of file _closest_point_utils_8h.js.

30.69 doc/html/_coincidence_8h.js File Reference

Variables

- var _coincidence_8h

30.69.1 Variable Documentation

30.69.1.1 var _coincidence_8h

Initial value:

```
=
[
    [ "checkCoincide", "_coincidence_8h.html#ab80f651343b83068f28ab4ec23776c49", null ],
    [ "checkCoincide", "_coincidence_8h.html#a10dcdf8cba2f6fd35df74a0266d8c880", null ],
    [ "checkCoincide", "_coincidence_8h.html#a3a1af9a2b135c4c6a285f482e809844a", null ],
    [ "checkCoincide", "_coincidence_8h.html#a34ff95b9167b7f556960a27927eef9ff", null ],
    [ "checkCoincide", "_coincidence_8h.html#ae73e9dd57a9d70a61e617ad0df4bcda1", null ],
    [ "determineCoincidenceRegion", "_coincidence_8h.html#ad30a2b7f5dec7fb482802e897c5474f5", null ],
    [ "determineCoincidenceRegion", "_coincidence_8h.html#a8c5497d7799246ea2be86f130063dce8", null ],
    [ "evalDistCurve", "_coincidence_8h.html#a7068ed17a79ef424dcb5f438ecd3762e", null ],
    [ "evalProjectedCurve", "_coincidence_8h.html#a9170e06176ec0daa7fa91ed5f26315f1", null ],
    [ "stepLength", "_coincidence_8h.html#a0a19ab60016163f2cba15983e0752b93", null ],
    [ "stepLength", "_coincidence_8h.html#aa9484c16f49fc09bc9fe0d8a1e1c7a13", null ]
]
```

Definition at line 1 of file _coincidence_8h.js.

30.70 doc/html/_composite_model_8h.js File Reference

Variables

- var _composite_model_8h

30.70.1 Variable Documentation

30.70.1.1 var _composite_model_8h

Initial value:

```
=
[
    [ "CompositeModel", "class_go_1_1_composite_model.html", "class_go_1_1_composite_model" ],
    [ "closestPointLevel", "_composite_model_8h.html#a64e7b23868d471d8f59b8e280437195e", [
      [ "LOCAL_SEARCH", "
      _composite_model_8h.html#a64e7b23868d471d8f59b8e280437195ea67da27ebc2731782484f21d1d9acb8fd", null ],
      [ "SEMI_LOCAL_SEARCH", "
      _composite_model_8h.html#a64e7b23868d471d8f59b8e280437195eabd2e6a95880a37b4ccf6522c7805dc25", null ],
      [ "GLOBAL_SEARCH", "
      _composite_model_8h.html#a64e7b23868d471d8f59b8e280437195ea31db71b7b0faac9b18302d7d0b14a861", null ]
    ] ]
]
```

Definition at line 1 of file _composite_model_8h.js.

30.71 doc/html/_constraint_definitions_8h.js File Reference

Variables

- var _constraint_definitions_8h

30.71.1 Variable Documentation

30.71.1.1 var _constraint_definitions_8h

Initial value:

```
=
[
    [ "sideConstraint", "struct_go_1_1side_constraint.html", "struct_go_1_1side_constraint" ],
    [ "sideConstraintSet", "struct_go_1_1side_constraint_set.html", "struct_go_1_1side_constraint_set" ],
    [ "sideConstraint", "_constraint_definitions_8h.html#ab5e42d330d6c5ac6e51b604a52c0d4d7", null ],
    [ "sideConstraintSet", "_constraint_definitions_8h.html#aff57c06077dc46e0ee165b4f9c38280e", null ]
]
```

Definition at line 1 of file _constraint_definitions_8h.js.

30.72 doc/html/_coons_patch_gen_8h.js File Reference

Variables

- var _coons_patch_gen_8h

30.72.1 Variable Documentation

30.72.1.1 var _coons_patch_gen_8h

Initial value:

```
=
[
    [ "UnKnownError", "class_go_1_1_coons_patch_gen_1_1_un_known_error.html", null ],
    [ "addMissingCrossCurves", "_coons_patch_gen_8h.html#abcd8b6517d8699c3c73b92e7ce9c013e", null ],
    [ "blendcoef", "_coons_patch_gen_8h.html#a426bdc367559559cf17aa3530a88bcba", null ],
    [ "createCoonsPatch", "_coons_patch_gen_8h.html#ad0f0aa95e3833ecc132f1db245905386", null ],
    [ "createCoonsPatch", "_coons_patch_gen_8h.html#ae26c2c1d02c51914a7b7260cd94fb3a1", null ],
    [ "createCoonsPatch", "_coons_patch_gen_8h.html#a11bdc62865ac134427133be8b578fe74", null ],
    [ "createGordonSurface", "_coons_patch_gen_8h.html#afde30acdf5a34b0cd4aced7fb4828e3a", null ],
    [ "createGordonSurface", "_coons_patch_gen_8h.html#a2451696905b72a1619c5de84123114c6", null ],
    [ "doCreateSurface", "_coons_patch_gen_8h.html#a2b5b8f0ea79803cdba7b57c72b3f8586", null ],
    [ "fixCrossEndPts", "_coons_patch_gen_8h.html#a2e83dc35642c7eb4a09ea8a04fd92a0d", null ],
    [ "getCrossTangs", "_coons_patch_gen_8h.html#a047980670e3c2c6125cd0519d7e47773", null ],
    [ "getTangBlends", "_coons_patch_gen_8h.html#ad8b1e16dcd7894194102a93640f2e5c9", null ],
    [ "hermit", "_coons_patch_gen_8h.html#ae25a1d1703dd7b45951b442709729a1b", null ],
    [ "loftSurface", "_coons_patch_gen_8h.html#ab3f83eae4e1e27072374f7a49086b3aa", null ],
    [ "loftSurface", "_coons_patch_gen_8h.html#aa09af1b3d20cb24b6bfbbf0be7004ee0", null ],
    [ "loftSurface", "_coons_patch_gen_8h.html#a2bd9185e55b6b12c43eba27576555083", null ],
    [ "makeLoftParams", "_coons_patch_gen_8h.html#a2c1ad6de3b84a80ae1a257a12b0e7db7", null ],
    [ "reparamBoundaryCurve", "_coons_patch_gen_8h.html#a59c8a7a874409e9ef473635fef96d3e4", null ],
    [ "sortMeshCurves", "_coons_patch_gen_8h.html#abdf9064bb03437bd206503ecd2448f02", null ],
    [ "splitMeshCurves", "_coons_patch_gen_8h.html#ac10aaf26bd04fa1aac5fd7f3aaebc127", null ],
    [ "tpSurface", "_coons_patch_gen_8h.html#a4c8a39b9e4bf8c741ed4cebda9361c19", null ]
]
```

Definition at line 1 of file _coons_patch_gen_8h.js.

30.73 doc/html/_coons_patch_volume_gen_8h.js File Reference

Variables

- var _coons_patch_volume_gen_8h

30.73.1 Variable Documentation

30.73.1.1 var _coons_patch_volume_gen_8h

Initial value:

```
=
[
    [ "createCoonsPatch", "_coons_patch_volume_gen_8h.html#a54726922b1e5f3b36c95b3145c5dde86", null ],
    [ "createCoonsPatchDirectly", "_coons_patch_volume_gen_8h.html#ab367998ce6c2d5aeb2b90ff687e583c8", null
      ],
    [ "edge_curves_equal", "_coons_patch_volume_gen_8h.html#af3266d664434db11a0a73a5ba524e652", null ],
    [ "get_corners", "_coons_patch_volume_gen_8h.html#adec8c92f76747dd5e4f15b2360334cce", null ],
    [ "push_corners", "_coons_patch_volume_gen_8h.html#a16da1675eb8b2d9e6c5dd8884bc7cbf4", null ]
]
```

Definition at line 1 of file _coons_patch_volume_gen_8h.js.

30.74 doc/html/_creators_offset_utils_8h.js File Reference

Variables

- var _creators_offset_utils_8h

30.74.1 Variable Documentation

30.74.1.1 var _creators_offset_utils_8h

Initial value:

```
=
[
    [ "_OFFSETUTILS_H", "_creators_offset_utils_8h.html#ad9fc2da1082c23bb539309710e76122f", null ],
    [ "blend_s1421", "_creators_offset_utils_8h.html#ab2f4932c752729805bde2446a5482514", null ]
]
```

Definition at line 1 of file _creators_offset_utils_8h.js.

30.75 doc/html/_creators_utils_8h.js File Reference

Variables

- var _creators_utils_8h

30.75.1 Variable Documentation

30.75.1.1 var _creators_utils_8h

Initial value:

```
=
[
    [ "createCrossTangent", "_creators_utils_8h.html#a829df5c9ecc1975b683e7529602bbf88", null ],
    [ "createCrossTangent", "_creators_utils_8h.html#a1d6a75a5ced06b87b421c4b910e63a8e", null ],
    [ "fixSeemCurves", "_creators_utils_8h.html#a9848d6bdd8b82ae9c36383395c445923", null ],
    [ "fixTrimCurves", "_creators_utils_8h.html#a4317c830c62ef48865e1f85ca29d1230", null ],
    [ "getParametricCurve", "_creators_utils_8h.html#a5e5bf433f7a17e559ff81dc9f1ef086b", null ],
    [ "projectCurvePoint", "_creators_utils_8h.html#a1aa70202d3e7396d3d092b486bcf7d01", null ],
    [ "projectCurvePoint", "_creators_utils_8h.html#ab40a9a304dc881074d88899b764d2d6e", null ],
    [ "projectPoint", "_creators_utils_8h.html#a73525d8b34b7e17d72599f5a2d0b6857", null ]
]
```

Definition at line 1 of file _creators_utils_8h.js.

30.76 doc/html/_curvature_8h.js File Reference

Variables

- var _curvature_8h

30.76.1 Variable Documentation

30.76.1.1 var _curvature_8h

Initial value:

```
=
[
    [ "curvatureRadiusPoints", "_curvature_8h.html#a55b1e94cb2383c1231b3e031cbf56947", null ],
    [ "minimalCurvatureRadius", "_curvature_8h.html#acd9ba3a40afd2f42b3dafc68b687486b", null ]
]
```

Definition at line 1 of file _curvature_8h.js.

30.77 doc/html/_curvature_analysis_8h.js File Reference

Variables

- var _curvature_analysis_8h

30.77.1 Variable Documentation

30.77.1.1 var _curvature_analysis_8h

Initial value:

```
=
[
    [ "computeFirstFundamentalForm", "_curvature_analysis_8h.html#a8cf34a592d0ad2d00c92fa04a165f4e4", null
      ],
    [ "computeSecondFundamentalForm", "_curvature_analysis_8h.html#a4bb9d690d56c189557a77a653e391d11", null
       ],
    [ "curvatures", "_curvature_analysis_8h.html#a727500a1c59435cfe0369d9a8d1c7d39", null ],
    [ "evaluateMinCurvatureRadius", "_curvature_analysis_8h.html#a6fc6900c4d1f5efb51cba2d0aca99a30", null ]
    ,
    [ "minimalCurvatureRadius", "_curvature_analysis_8h.html#a0cd3083e864936b349b65b62169067e9", null ],
    [ "principalCurvatures", "_curvature_analysis_8h.html#aaf22d9e6cd82c03dd1239c90a0ee6468", null ]
]
```

Definition at line 1 of file _curvature_analysis_8h.js.

30.78 doc/html/_curvature_utils_8h.js File Reference

Variables

- var _curvature_utils_8h

30.78.1 Variable Documentation

30.78.1.1 var _curvature_utils_8h

Initial value:

```
=
[
    [ "curvatureRadius", "_curvature_utils_8h.html#a8074e8bf6506a7cbcf018ab8a8947bc0", null ],
    [ "getHermiteData", "_curvature_utils_8h.html#a9b46ce19f0418597ccc67ee4e6cdef3b", null ],
    [ "stepLenFromRadius", "_curvature_utils_8h.html#a5706ecc2f2b2821adf457094dbbecdef", null ],
    [ "tanLenFromRadius", "_curvature_utils_8h.html#a87059cc6cddba0b64ae502b9c4d52a52", null ]
]
```

Definition at line 1 of file _curvature_utils_8h.js.

30.79 doc/html/_curve_creators_8h.js File Reference

Variables

- var _curve_creators_8h

30.79.1 Variable Documentation

30.79.1.1 var _curve_creators_8h

Initial value:

```
=
[
    [ "approxCurves", "_curve_creators_8h.html#a704191d8280a68d26847b450ba04bf94", null ],
    [ "blend", "_curve_creators_8h.html#a2dafc0b5183e58d1fcf86e891e02a5da", null ],
    [ "createCircle", "_curve_creators_8h.html#a158fcda72251457a1d13f4fa86fcb28c", null ],
    [ "curveApprox", "_curve_creators_8h.html#a8dc25e7453ec9dcab07d0f51a868dea5", null ],
    [ "curveApprox", "_curve_creators_8h.html#a7f3047d4b2671a0942d339addb2d3220", null ],
    [ "insertParamDomain", "_curve_creators_8h.html#aadeeb32226dba4888e5cfcbca2071b86", null ],
    [ "liftParameterCurve", "_curve_creators_8h.html#a3900fe644f843d56923039 08b21676d2", null ],
    [ "multCurveWithFunction", "_curve_creators_8h.html#a7c2c75aa8328743594f5ae6a31ccf332", null ],
    [ "offsetCurve", "_curve_creators_8h.html#a9c415126f128a6bf9fd1f368dc7309ed", null ],
    [ "projectCurve", "_curve_creators_8h.html#a598c8ebac32febb03783a4756746b26b", null ],
    [ "projectSpaceCurve", "_curve_creators_8h.html#aa227f8ea8e1d21bb27d60c8f4cf0a998", null ]
]
```

Definition at line 1 of file _curve_creators_8h.js.

30.80 doc/html/_curve_interpolator_8h.js File Reference

Variables

- var _curve_interpolator_8h

30.80.1 Variable Documentation

30.80.1.1 var _curve_interpolator_8h

Initial value:

```
=
[
    [ "regularInterpolation", "_curve_interpolator_8h.html#a164216ef97184a5250a9c934745e8e42", null ]
]
```

Definition at line 1 of file _curve_interpolator_8h.js.

30.81 doc/html/_curve_loop_8h.js File Reference

Variables

- var _curve_loop_8h

30.81.1 Variable Documentation

30.81.1.1 var _curve_loop_8h

Initial value:

```
=
[
    [ "CurveLoop", "class_go_1_1_curve_loop.html", "class_go_1_1_curve_loop" ],
    [ "computeLoopGap", "_curve_loop_8h.html#a8ec77aba0c49d2e5543a016f2c51cd10", null ]
]
```

Definition at line 1 of file _curve_loop_8h.js.

30.82 doc/html/_direction2_d_8h.js File Reference

Variables

- var _direction2_d_8h

30.82.1 Variable Documentation

30.82.1.1 var _direction2_d_8h

Initial value:

```
=
[
    [ "Direction2D", "_direction2_d_8h.html#a821a750d4a6740898072cf759246eb87", [
      [ "XFIXED", "_direction2_d_8h.html#a821a750d4a6740898072cf759246eb87a1e4145becb15ce54486dd57c554a8716
      ", null ],
      [ "YFIXED", "_direction2_d_8h.html#a821a750d4a6740898072cf759246eb87a344e219d46e24ae18ec2ff7fe11afddd
      ", null ]
    ] ]
]
```

Definition at line 1 of file _direction2_d_8h.js.

30.83 doc/html/_face_utilities_8h.js File Reference

Variables

- var _face_utilities_8h

30.83.1 Variable Documentation

30.83.1.1 var _face_utilities_8h

Initial value:

```
=
[
    [ "SamplePointData", "struct_go_1_1_sample_point_data.html", "struct_go_1_1_sample_point_data" ],
    [ "enforceCoLinearity", "_face_utilities_8h.html#a9885c0102c47f161b0c3bd1b23b30e0f", null ],
    [ "enforceVxCoLinearity", "_face_utilities_8h.html#a2ca0231f2063214726c5b93c20f36ec5", null ],
    [ "getBoundaryData", "_face_utilities_8h.html#a2655415c3d346862dbb5007d42416ad4", null ],
    [ "getInnerData", "_face_utilities_8h.html#ad48da9124efcdee9b255bb48e7fc0c98", null ]
]
```

Definition at line 1 of file _face_utilities_8h.js.

30.84 doc/html/_factory_8h.js File Reference

Variables

- var _factory_8h

30.84.1 Variable Documentation

30.84.1.1 var _factory_8h

Initial value:

```
=
[
    [ "Creator", "class_go_1_1_creator.html", "class_go_1_1_creator" ],
    [ "ConcreteCreator", "class_go_1_1_concrete_creator.html", "class_go_1_1_concrete_creator" ],
    [ "Factory", "class_go_1_1_factory.html", "class_go_1_1_factory" ],
    [ "Registrator", "class_go_1_1_registrator.html", "class_go_1_1_registrator" ],
    [ "Register", "_factory_8h.html#a8ac9e95a1dc83d595e751bea0df8561c", null ]
]
```

Definition at line 1 of file _factory_8h.js.

30.85 doc/html/_gap_removal_8h.js File Reference

Variables

- var _gap_removal_8h

30.85.1 Variable Documentation

30.85.1.1 var _gap_removal_8h

Initial value:

```
=
[
    [ "checkBoundaryDist", "_gap_removal_8h.html#a043aa4c44fc86fbbb6230a156a6b002c", null ],
    [ "getBoundarySamples", "_gap_removal_8h.html#ae5b097a95c42dd286dbcb88743554902", null ],
    [ "getCoefConstraints", "_gap_removal_8h.html#a2460c4084b5a9190b9720d1078933098", null ],
    [ "getSplineAndBd", "_gap_removal_8h.html#a88637576f47e7963ed4adf44298fa568", null ],
    [ "modifyAtVertex", "_gap_removal_8h.html#ac9fd81db44f84ff78587e1ff2eadb215", null ],
    [ "modifySplines", "_gap_removal_8h.html#a56726c7530054fc24c0a8d001e5e4b1e", null ],
    [ "modifySplineSf", "_gap_removal_8h.html#a3407664edbdaf9abdaa458e69347b1a3", null ],
    [ "removeGapSpline", "_gap_removal_8h.html#a8122e2ec705cf19564b4ec418d495cca", null ],
    [ "removeGapSpline2", "_gap_removal_8h.html#a8fa43c39c2e495472d42b225ae6ecc80", null ],
    [ "removeGapSplineTrim", "_gap_removal_8h.html#adc46385088155f36ced81c2df5ca414a", null ],
    [ "removeGapTrim", "_gap_removal_8h.html#a8757b1449a3f2e65b785488d315d5ec9", null ],
    [ "replaceCurvePiece", "_gap_removal_8h.html#ab6bf0bd8f417de8ace6050351f67f480", null ]
]
```

Definition at line 1 of file _gap_removal_8h.js.

30.86 doc/html/_gap_removal_volume_8h.js File Reference

Variables

- var _gap_removal_volume_8h

30.86.1 Variable Documentation

30.86.1.1 var _gap_removal_volume_8h

Initial value:

```
=
[
    [ "removeGapSpline", "_gap_removal_volume_8h.html#a825b245aaed99dbfc9d2de9d743da7f6", null ]
]
```

Definition at line 1 of file _gap_removal_volume_8h.js.

30.87 doc/html/_general_function_minimizer_8h.js File Reference

Variables

- var _general_function_minimizer_8h

30.87.1 Variable Documentation

30.87.1.1 var _general_function_minimizer_8h

Initial value:

```
=
[
    [ "FunctionMinimizer", "class_go_1_1_function_minimizer.html", "class_go_1_1_function_minimizer" ],
    [ "FunctionMinimizer", "class_go_1_1_function_minimizer.html", "class_go_1_1_function_minimizer" ],
    [ "minimise_conjugated_gradient", "
      _general_function_minimizer_8h.html#a96d9737a699a1a929eb4dbaef18cce0e", null ]
]
```

Definition at line 1 of file _general_function_minimizer_8h.js.

30.88 doc/html/_general_function_minimizer__implementation_8h.js File Reference

Variables

- var _general_function_minimizer__implementation_8h

30.88.1 Variable Documentation

30.88.1.1 var _general_function_minimizer__implementation_8h

Initial value:

```
=
[
    [ "minimise_conjugated_gradient", "
      _general_function_minimizer__implementation_8h.html#a96d9737a699a1a929eb4dbaef18cce0e", null ]
]
```

Definition at line 1 of file _general_function_minimizer__implementation_8h.js.

30.89 doc/html/_geom_object_8h.js File Reference

Variables

- var _geom_object_8h

30.89.1 Variable Documentation

30.89.1.1 var _geom_object_8h

Initial value:

```
=
[
    [ "GeomObject", "class_go_1_1_geom_object.html", "class_go_1_1_geom_object" ],
    [ "MAJOR_VERSION", "_geom_object_8h.html#a8c682769e20547696ce06a2d6b3ce871", null ],
    [ "MINOR_VERSION", "_geom_object_8h.html#a4f9cf4f5710b80dd24fb029acdd69637", null ]
]
```

Definition at line 1 of file _geom_object_8h.js.

30.90 doc/html/_geometry_tools_8h.js File Reference

Variables

- var _geometry_tools_8h

30.90.1 Variable Documentation

30.90.1.1 var _geometry_tools_8h

Definition at line 1 of file _geometry_tools_8h.js.

30.91 doc/html/_go_intersections_8h.js File Reference

Variables

- var _go_intersections_8h

30.91.1 Variable Documentation

30.91.1.1 var _go_intersections_8h

Initial value:

```
=
[
    [ "pretop_UNDEF", "
      _go_intersections_8h.html#a0589ebbe872cac278faf8159c61b8292a3ead4181c54e7d4f7e0add68c20ad134", null ],
    [ "pretop_IN", "
      _go_intersections_8h.html#a0589ebbe872cac278faf8159c61b8292a418cdf83cdf220855b9ed6eec2a3f68d", null ],
    [ "pretop_OUT", "
      _go_intersections_8h.html#a0589ebbe872cac278faf8159c61b8292a6656387d8b452630d832f8a6ba20c79d", null ],
    [ "pretop_ON", "
      _go_intersections_8h.html#a0589ebbe872cac278faf8159c61b8292a57715e2bd060af960bad6c7fa862d717", null ],
    [ "pretop_AT", "
      _go_intersections_8h.html#a0589ebbe872cac278faf8159c61b8292ab0740d5b95cb39891d4fbc9e8ae72315", null ],
    [ "closestPtCurves", "_go_intersections_8h.html#ae9f16856595109b8546a03c4ffe7068e", null ],
    [ "intersect2Dcurves", "_go_intersections_8h.html#afc5de86c01d5dccfb0415a124e393277", null ],
    [ "intersectCurvePoint", "_go_intersections_8h.html#af156ae3bfdbf586c1a54f12b76729bff", null ],
    [ "intersectcurves", "_go_intersections_8h.html#a8437da0e9da0f9f2d90d4cba7e7a0423", null ],
    [ "intersectCurveSurf", "_go_intersections_8h.html#a3012f3eebc00a086ef19161f6421169d", null ]
]
```

Definition at line 1 of file _go_intersections_8h.js.

30.92 doc/html/_go_read_write_8cpp.js File Reference

Variables

- var _go_read_write_8cpp

30.92.1 Variable Documentation

30.92.1.1 var _go_read_write_8cpp

Initial value:

```
=
[
    [ "readGoCurve", "_go_read_write_8cpp.html#a8c022a190ba41f0a616981f639c61e3c", null ],
    [ "readGoPoints", "_go_read_write_8cpp.html#ab2870835b9150e3469d9751597e7b5e9", null ],
    [ "readGoSurface", "_go_read_write_8cpp.html#ab0a168989d4c5eb986377c2a619d36a6", null ],
    [ "writeGoCurve", "_go_read_write_8cpp.html#a604ab007ccecbad02c1f7f0e6292843d", null ],
    [ "writeGoPoints", "_go_read_write_8cpp.html#aab52ace77579fb664a483672206f5bd1", null ],
    [ "writeGoSurface", "_go_read_write_8cpp.html#aafcea5555e7f0afdb947bf425ccc594a", null ]
]
```

Definition at line 1 of file _go_read_write_8cpp.js.

30.93 doc/html/_go_read_write_8h.js File Reference

Variables

- var _go_read_write_8h

30.93.1 Variable Documentation

30.93.1.1 var _go_read_write_8h

Initial value:

```
=
[
    [ "readGoCurve", "_go_read_write_8h.html#a4c192b15e3015a57c0e0fed19c063758", null ],
    [ "readGoPoints", "_go_read_write_8h.html#ab2870835b9150e3469d9751597e7b5e9", null ],
    [ "readGoSurface", "_go_read_write_8h.html#a4c3063b821ee6123a7f18062e57f1acb", null ],
    [ "writeGoCurve", "_go_read_write_8h.html#a604ab007ccecbad02c1f7f0e6292843d", null ],
    [ "writeGoPoints", "_go_read_write_8h.html#aab52ace77579fb664a483672206f5bd1", null ],
    [ "writeGoSurface", "_go_read_write_8h.html#a8c958736c880b2f546acccd6a41a49ab", null ]
]
```

Definition at line 1 of file _go_read_write_8h.js.

30.94 doc/html/_go_tools__version_8h.js File Reference

Variables

- var _go_tools__version_8h

30.94.1 Variable Documentation

30.94.1.1 var _go_tools__version_8h

Initial value:

```
=
[
    [ "GO_VERSION_MAJOR", "_go_tools__version_8h.html#acf93ae65e8651c85a2237918a9801eff", null ],
    [ "GO_VERSION_MINOR", "_go_tools__version_8h.html#aa78bb3e4b1fbd25ebc24743214ff1ff9", null ],
    [ "GO_VERSION_PATCH", "_go_tools__version_8h.html#a6ac408a33e44fad62ff96ca978a90045", null ]
]
```

Definition at line 1 of file _go_tools__version_8h.js.

30.95 doc/html/_hahns_surface_gen_8h.js File Reference

Variables

- var _hahns_surface_gen_8h

30.95.1 Variable Documentation

30.95.1.1 var _hahns_surface_gen_8h

Initial value:

```
=
[
    [ "constructHahnsSurface", "_hahns_surface_gen_8h.html#a5178eba7f94853022b2b3fdca849a1bd", null ],
    [ "constructPolygonialSurface", "_hahns_surface_gen_8h.html#a6528cba4d1c2401b1e2dda281e08cbd9", null ]
]
```

Definition at line 1 of file _hahns_surface_gen_8h.js.

30.96 doc/html/_he_triang_8h.js File Reference

Variables

- var _he_triang_8h

30.96.1 Variable Documentation

30.96.1.1 var _he_triang_8h

Initial value:

```
=
[
    [ "Node", "classhed_1_1_node.html", "classhed_1_1_node" ],
    [ "Edge", "classhed_1_1_edge.html", "classhed_1_1_edge" ],
    [ "Triangulation", "classhed_1_1_triangulation.html", "classhed_1_1_triangulation" ],
    [ "TTL_USE_NODE_FLAG", "_he_triang_8h.html#ab98540b0e1ab0f43a73fa85e3bf2a8c3", null ],
    [ "TTL_USE_NODE_ID", "_he_triang_8h.html#a4693e6332f64f266bae5663937fcb284", null ]
]
```

Definition at line 1 of file _he_triang_8h.js.

30.97 doc/html/_i_g_e_sconverter_8h.js File Reference

Variables

- var _i_g_e_sconverter_8h

30.97.1 Variable Documentation

30.97.1.1 var _i_g_e_sconverter_8h

Initial value:

```
=
[
    [ "IGESheader", "struct_go_1_1_i_g_e_sheader.html", "struct_go_1_1_i_g_e_sheader" ],
    [ "EntityList", "struct_go_1_1_entity_list.html", "struct_go_1_1_entity_list" ],
    [ "IGESdirentry", "struct_go_1_1_i_g_e_sdirentry.html", "struct_go_1_1_i_g_e_sdirentry" ],
    [ "IGESconverter", "class_go_1_1_i_g_e_sconverter.html", "class_go_1_1_i_g_e_sconverter" ],
    [ "FileFormat", "_i_g_e_sconverter_8h.html#a1b060f2a0c10fd0bc766c070bf3f86d4", [
      [ "go", "_i_g_e_sconverter_8h.html#a1b060f2a0c10fd0bc766c070bf3f86d4a727b71e7d5e25b99928ed913a31437f0
      ", null ],
      [ "disp", "
      _i_g_e_sconverter_8h.html#a1b060f2a0c10fd0bc766c070bf3f86d4afdb0b616372654f2b42dbf875f740077", null ],
      [ "IGES", "
      _i_g_e_sconverter_8h.html#a1b060f2a0c10fd0bc766c070bf3f86d4ae0747afbdd38bb230962db3f51df27d5", null ]
    ] ],
    [ "IGESSection", "_i_g_e_sconverter_8h.html#a95d383314d9ef7d277424ee672473063", [
      [ "S", "_i_g_e_sconverter_8h.html#a95d383314d9ef7d277424ee672473063a9175c6d2bfb458461de6f564a532dda5"
      , null ],
      [ "G", "_i_g_e_sconverter_8h.html#a95d383314d9ef7d277424ee672473063aa32eca3219a522f885088233d0cf8aa3"
      , null ],
      [ "D", "_i_g_e_sconverter_8h.html#a95d383314d9ef7d277424ee672473063ada8cdab2225fa4f764ba2ff6d553f3d4"
      , null ],
      [ "P", "_i_g_e_sconverter_8h.html#a95d383314d9ef7d277424ee672473063ad1ce8b353acf910f8871322784488407"
      , null ],
      [ "T", "_i_g_e_sconverter_8h.html#a95d383314d9ef7d277424ee672473063ad80deac00a5f9e9bea01b087b3bc6474"
      , null ],
      [ "E", "_i_g_e_sconverter_8h.html#a95d383314d9ef7d277424ee672473063a67661f5f4694b7e01c81e2e32d5841d0"
      , null ]
    ] ]
]
```

Definition at line 1 of file _i_g_e_sconverter_8h.js.

30.98 doc/html/_implicit_utils_8h.js File Reference

Variables

- var _implicit_utils_8h

30.98.1 Variable Documentation

30.98.1.1 var _implicit_utils_8h

Initial value:

```
=
[
    [ "cart_to_bary", "_implicit_utils_8h.html#a2bf45a2d4003691b4f59200a7736c65f", null ],
    [ "cart_to_bary", "_implicit_utils_8h.html#a815f7e0de1d83ead4b066ad1e2284c79", null ],
    [ "cart_to_bary", "_implicit_utils_8h.html#af9b3d94ca3a1dab9168732b5ca4e8bfa", null ],
    [ "cart_to_bary", "_implicit_utils_8h.html#ab88f74a141a96d124d15bc01408e9505", null ],
    [ "create_bary_coord_system2D", "_implicit_utils_8h.html#a7b801275b11d7667cc1f5d45307f48e4", null ],
    [ "create_bary_coord_system3D", "_implicit_utils_8h.html#a70845387423ca16803f43291a2a13639", null ],
    [ "create_bary_coord_system3D", "_implicit_utils_8h.html#a9a44a4097f20e78aadc8ace234f9c62a", null ],
    [ "create_bary_coord_system3D", "_implicit_utils_8h.html#ad432da218425ec5badf70eed364e4ea8", null ],
    [ "create_bary_coord_system3D", "_implicit_utils_8h.html#ab9661f3a938911bb440140c1114dcd8f", null ],
    [ "make_implicit_gauss", "_implicit_utils_8h.html#af861508aa242c5f3b156080f33c84cfc", null ],
    [ "make_implicit_svd", "_implicit_utils_8h.html#a7a3f7dd2036591326e15e39ebbf5bc3c", null ],
    [ "make_matrix", "_implicit_utils_8h.html#ab49c4c7fb3851dc49e43bd8e458a558b", null ],
    [ "make_matrix", "_implicit_utils_8h.html#aca403dc7adf6d81bbd91965d8fc32052", null ],
    [ "make_matrix", "_implicit_utils_8h.html#a2fa490ef57992e3592810cb53e20e73d", null ]
]
```

Definition at line 1 of file _implicit_utils_8h.js.

30.99 doc/html/_int_results_model_8h.js File Reference

Variables

- var _int_results_model_8h

30.99.1 Variable Documentation

30.99.1.1 var _int_results_model_8h

Initial value:

```
=
[
    [ "IntResultsModel", "class_go_1_1_int_results_model.html", "class_go_1_1_int_results_model" ],
    [ "IntersectionType", "_int_results_model_8h.html#a8dbaf65eacdc80d8d1714419e976ed2b", [
      [ "No_Type", "
      _int_results_model_8h.html#a8dbaf65eacdc80d8d1714419e976ed2babcd670721a68d8943fefaf6f071c7ab7", null ],
      [ "SurfaceModel_SurfaceModel", "
      _int_results_model_8h.html#a8dbaf65eacdc80d8d1714419e976ed2baee87611effea029dfe473a4624a95dfa", null ],
      [ "SurfaceModel_Plane", "
      _int_results_model_8h.html#a8dbaf65eacdc80d8d1714419e976ed2baf9621d4293551c45e350597f13946246", null ],
      [ "SurfaceModel_Line", "
      _int_results_model_8h.html#a8dbaf65eacdc80d8d1714419e976ed2ba0dfb696fbe60baec701c53148a04bbe2", null ],
      [ "CompositeCurve_CompositeCurve", "
      _int_results_model_8h.html#a8dbaf65eacdc80d8d1714419e976ed2ba5fba73d495653899d9d0ec04ab7f8b0d", null ],
      [ "CompositeCurve_Plane", "
      _int_results_model_8h.html#a8dbaf65eacdc80d8d1714419e976ed2ba3d2cd6b6e2bfd2faf5d66a14ccc2202e", null ],
      [ "CompositeCurve_Line", "
      _int_results_model_8h.html#a8dbaf65eacdc80d8d1714419e976ed2ba19c967c2cfc4511f6b597999263cafde", null ]
    ] ]
]
```

Definition at line 1 of file _int_results_model_8h.js.

30.100 doc/html/_integrate_8h.js File Reference

Variables

- var _integrate_8h

30.100.1 Variable Documentation

30.100.1.1 var _integrate_8h

Initial value:

```
=
[
    [ "GaussQuadInner", "_integrate_8h.html#a44435785e8233b6bff4b3d2d8c320057", null ],
    [ "GaussQuadInner2", "_integrate_8h.html#a1893f2d3c867396837b2f3954afcdcde", null ],
    [ "GaussQuadInnerFlat", "_integrate_8h.html#a2905af84f191007e0597a1d73c1ffc4d", null ],
    [ "GaussQuadInnerRational", "_integrate_8h.html#aca2dfd3b6d0a8c31bed3dceb1a0b8029", null ],
    [ "GaussQuadValues", "_integrate_8h.html#adcab00389069ae725ccfe0581664ab68", null ]
]
```

Definition at line 1 of file _integrate_8h.js.

30.101 doc/html/_integration_8h.js File Reference

Variables

- var _integration_8h

30.101.1 Variable Documentation

30.101.1.1 var _integration_8h

Initial value:

```
=
[
    [ "gaussian_quadrature", "_integration_8h.html#ab4c730eb8950bb42bc147c581693c86a", null ],
    [ "gaussian_quadrature2D", "_integration_8h.html#af9c631beedbb3ccd175b8029a6fa9983", null ],
    [ "simpsons_rule", "_integration_8h.html#a6b7d95725bdace6e2cbf5dbc10547c63", null ],
    [ "simpsons_rule2D", "_integration_8h.html#ae1b029fed0d7cca1c0902c042a484ca9", null ],
    [ "trapezoidal", "_integration_8h.html#a370d3e95d3757108e4a7cca878010cc4", null ]
]
```

Definition at line 1 of file _integration_8h.js.

30.102 doc/html/_intersection_curve_8h.js File Reference

Variables

- var _intersection_curve_8h

30.102.1 Variable Documentation

30.102.1.1 var _intersection_curve_8h

Initial value:

```
=
[
    [ "Zero_Parameter_Span_Error", "class_go_1_1_zero___parameter___span___error.html", null ],
    [ "IntersectionCurve", "class_go_1_1_intersection_curve.html", "class_go_1_1_intersection_curve" ],
    [ "DegeneratedIntersectionCurve", "class_go_1_1_degenerated_intersection_curve.html", "
      class_go_1_1_degenerated_intersection_curve" ],
    [ "NonEvaluableIntersectionCurve", "class_go_1_1_non_evaluable_intersection_curve.html", "
      class_go_1_1_non_evaluable_intersection_curve" ],
    [ "IsoparametricIntersectionCurve", "class_go_1_1_isoparametric_intersection_curve.html", "
      class_go_1_1_isoparametric_intersection_curve" ],
    [ "InterpolatedIntersectionCurve", "class_go_1_1_interpolated_intersection_curve.html", "
      class_go_1_1_interpolated_intersection_curve" ],
    [ "EstimateDirection", "_intersection_curve_8h.html#a73ae93efa43d949b788530375bae4a09", [
      [ "FORWARDS", "
      _intersection_curve_8h.html#a73ae93efa43d949b788530375bae4a09adafe5a0010991f3c64bf4a3a0fa7e0bf", null ],
      [ "BACKWARDS", "
      _intersection_curve_8h.html#a73ae93efa43d949b788530375bae4a09ab28d938a8509d39f43be6186d739198c", null ]
    ] ],
    [ "EvalKind", "_intersection_curve_8h.html#a11cd92eeab3979030879414ab681ae8f", [
      [ "SPACECURVE", "
      _intersection_curve_8h.html#a11cd92eeab3979030879414ab681ae8fac704b2922cc7fecea52f5239ec619b22", null ],
      [ "PARAMCURVE_1", "
      _intersection_curve_8h.html#a11cd92eeab3979030879414ab681ae8fab087de473bf3a94dfe7e5517ff3fca7e", null ],
      [ "PARAMCURVE_2", "
      _intersection_curve_8h.html#a11cd92eeab3979030879414ab681ae8fa5d0237f746518b9794e553b00c211c3d", null ]
    ] ],
    [ "TangentDomain", "_intersection_curve_8h.html#a683c7cd0653c849d16af423f40a6daf6", [
      [ "GEOM", "
      _intersection_curve_8h.html#a683c7cd0653c849d16af423f40a6daf6a2eab3dfbfcbb69fb143144ec699e952e", null ],
      [ "PARAM1", "
      _intersection_curve_8h.html#a683c7cd0653c849d16af423f40a6daf6a44e72e0b76476af77c20052f24d3b5be", null ],
      [ "PARAM2", "
      _intersection_curve_8h.html#a683c7cd0653c849d16af423f40a6daf6a7c4a6ef82dbc05c929c42e8d776d0afe", null ]
    ] ],
    [ "constructIntersectionCurve", "_intersection_curve_8h.html#a627a2c2616aab16215e86047f7ccf721", null ]
]
```

Definition at line 1 of file _intersection_curve_8h.js.

30.103 doc/html/_intersection_interface_8h.js File Reference

Variables

- var _intersection_interface_8h

30.103.1 Variable Documentation

30.103.1.1 var _intersection_interface_8h

Initial value:

```
=
[
    [ "intersectCurves", "_intersection_interface_8h.html#a053ccbbd7119260227c1c95fdf6f898d", null ]
]
```

Definition at line 1 of file _intersection_interface_8h.js.

30.104 doc/html/_intersection_point_utils_8h.js File Reference

Variables

- var _intersection_point_utils_8h

30.104.1 Variable Documentation

30.104.1.1 var _intersection_point_utils_8h

Initial value:

```
=
[
    [ "CachedInterval", "struct_go_1_1_cached_interval.html", "struct_go_1_1_cached_interval" ],
    [ "IntPtInfo", "struct_go_1_1_int_pt_info.html", "struct_go_1_1_int_pt_info" ],
    [ "IntPtClassification", "_intersection_point_utils_8h.html#a96d472ee6c1174d35dc179b133c76bde", [
      [ "DIR_UNDEF", "
      _intersection_point_utils_8h.html#a96d472ee6c1174d35dc179b133c76bdea820ac70fd33c863aebcf7a3b0bc691c9", null ],
      [ "DIR_IN", "
      _intersection_point_utils_8h.html#a96d472ee6c1174d35dc179b133c76bdea2b229b86fc7c49a888f4c85de0fd0023", null ],
      [ "DIR_OUT", "
      _intersection_point_utils_8h.html#a96d472ee6c1174d35dc179b133c76bdea867efb07d41953d6d8e3b6ee17a45772", null ],
      [ "DIR_PARALLEL", "
      _intersection_point_utils_8h.html#a96d472ee6c1174d35dc179b133c76bdea28b39001ab0ad9baeb5e05efd209f940", null ],
      [ "DIR_PERPENDICULAR", "
      _intersection_point_utils_8h.html#a96d472ee6c1174d35dc179b133c76bdea0f096a32edf421a2627ec6d6e20382e6", null ],
      [ "DIR_HIGHLY_SINGULAR", "
      _intersection_point_utils_8h.html#a96d472ee6c1174d35dc179b133c76bdea9aeed62bfaaeac96e0f966c90ef04f2c", null ],
      [ "DIR_TOUCH", "
      _intersection_point_utils_8h.html#a96d472ee6c1174d35dc179b133c76bdea734d14ac74f992b6632803bd13715769", null ]
    ] ],
    [ "IntPtLocation", "_intersection_point_utils_8h.html#a7d692aaddd79b236fb05b5b4135cd0ad", [
      [ "LOC_OUTSIDE_BOTH", "
      _intersection_point_utils_8h.html#a7d692aaddd79b236fb05b5b4135cd0ada91b8e290e0e2555d6b1e96dfae8e4bae", null ],
      [ "LOC_INSIDE_BOTH", "
      _intersection_point_utils_8h.html#a7d692aaddd79b236fb05b5b4135cd0ada7d4f28281cf301a763ffcfdf526f3ba2", null ],
      [ "LOC_EDGE_ONE", "
      _intersection_point_utils_8h.html#a7d692aaddd79b236fb05b5b4135cd0ada0cc998fe7d568329a67a5af22270fae8", null ],
      [ "LOC_CORNER_ONE", "
      _intersection_point_utils_8h.html#a7d692aaddd79b236fb05b5b4135cd0ada65dc06de763e9db4a605a22c74ab0303", null ],
      [ "LOC_CORNER_BOTH", "
      _intersection_point_utils_8h.html#a7d692aaddd79b236fb05b5b4135cd0adad56be127936a25a10c7b50cfafaf85cc", null ],
      [ "LOC_EDGE_BOTH", "
      _intersection_point_utils_8h.html#a7d692aaddd79b236fb05b5b4135cd0ada3db4d0a9d71b8d50fd87fdc59664a13c", null ]
    ] ]
]
```

Definition at line 1 of file _intersection_point_utils_8h.js.

30.105 doc/html/_intersection_pool_utils_8h.js File Reference

Variables

- var _intersection_pool_utils_8h

30.105.1 Variable Documentation

30.105.1.1 var _intersection_pool_utils_8h

Initial value:

```
=
[
    [ "raw_pointer_comp", "struct_go_1_1raw__pointer__comp.html", "struct_go_1_1raw__pointer__comp" ],
    [ "CrossesValue", "class_go_1_1_crosses_value.html", "class_go_1_1_crosses_value" ],
    [ "TestInDomain", "class_go_1_1_test_in_domain.html", "class_go_1_1_test_in_domain" ],
    [ "ClosestPointCalculator", "class_go_1_1_closest_point_calculator.html", "
      class_go_1_1_closest_point_calculator" ],
    [ "LockedDirDistFunc", "class_go_1_1_locked_dir_dist_func.html", "class_go_1_1_locked_dir_dist_func" ],
    [ "ConnectionFunctor", "class_go_1_1_connection_functor.html", "class_go_1_1_connection_functor" ],
    [ "add_reachables_from", "_intersection_pool_utils_8h.html#a1c2a7b126148ae101e23c71206465583", null ],
    [ "compare_first", "_intersection_pool_utils_8h.html#aed15b783b1b9e9bf85d8deb556769b12", null ],
    [ "debug_write_line", "_intersection_pool_utils_8h.html#a4ee59f17c50de9de31d0c0633edbead0", null ],
    [ "debug_write_point", "_intersection_pool_utils_8h.html#a983ea40b1fe9434be55eae4604fb78fa", null ],
    [ "determine_seed", "_intersection_pool_utils_8h.html#adcf66af32945c78547a7c1ccfe32b30e", null ],
    [ "estimate_seed_by_interpolation", "_intersection_pool_utils_8h.html#a06aa59135575f74e179b54b2858ecce8
      ", null ],
    [ "extract_chains", "_intersection_pool_utils_8h.html#af507107da1913d723fbc4d0644e05bcf", null ],
    [ "find_point_in", "_intersection_pool_utils_8h.html#ab8ca76589d4df7db161ea9b2b35fb9aa", null ],
    [ "flip_intersecting_objects", "_intersection_pool_utils_8h.html#a4ea368ab0db3908730d7f33280e06979",
      null ],
    [ "link_is_iso", "_intersection_pool_utils_8h.html#ab4676c710e9cff8f203774226e04d62c", null ],
    [ "link_is_iso_in", "_intersection_pool_utils_8h.html#a8c71cefdf2478e57738916762cfe04f3", null ],
    [ "link_is_iso_in_other_than", "_intersection_pool_utils_8h.html#afe19a667acd7c32f6db8f89e52383132",
      null ],
    [ "make_curve_on_surface", "_intersection_pool_utils_8h.html#ae90d3ebafba8423b99cfc59cd2a6db8b", null ]
      ,
    [ "no_parent", "_intersection_pool_utils_8h.html#a660520ff0c2a9c2d6a864bddcc33902e", null ]
]
```

Definition at line 1 of file _intersection_pool_utils_8h.js.

30.106 doc/html/_intersection_utils_8h.js File Reference

Variables

- var _intersection_utils_8h

30.106.1 Variable Documentation

30.106.1.1 var _intersection_utils_8h

Initial value:

```
=
[
    [ "create1DSplineCurve", "_intersection_utils_8h.html#a72ee921f021fd4690b379cae8bb7478a", null ],
    [ "create1DSplineSurface", "_intersection_utils_8h.html#a9e358b78add198705d85a29d66d57334", null ],
    [ "distImplRepresentationCompFunction", "_intersection_utils_8h.html#a24ea8ac591f45d41f4f2282b3bf0fcbd"
      , null ],
    [ "insertCvInAlgcv", "_intersection_utils_8h.html#af3f3b40f4a0e288bf1e629c4f1847071", null ],
    [ "insertSfInAlgsf", "_intersection_utils_8h.html#a245382b2c052cd3413fdb7faff70259a", null ],
    [ "insertSfInAlgsf2", "_intersection_utils_8h.html#a7c62b2c4f7331ca7d279d62124704334", null ],
    [ "insertSfInImplObj", "_intersection_utils_8h.html#ad00de047b913ad413503340696b85985", null ],
    [ "splineCurveProduct", "_intersection_utils_8h.html#a6efa5b96b45c2db8fb49c36641323a49", null ],
    [ "splineSurfaceProduct", "_intersection_utils_8h.html#a917c5516673720296cbf9a7e46494983", null ]
]
```

Definition at line 1 of file _intersection_utils_8h.js.

30.107 doc/html/_l_r_approx_app_8h.js File Reference

Variables

- var _l_r_approx_app_8h

30.107.1 Variable Documentation

30.107.1.1 var _l_r_approx_app_8h

Initial value:

```
=
[
    [ "categorizeCloudFromDist", "_l_r_approx_app_8h.html#a3b71548b7d81a481c49c82ca532893c0", null ],
    [ "categorizeCloudFromDist_omp", "_l_r_approx_app_8h.html#ae38f52047f571473587231c3fa039ccc", null ],
    [ "classifyCloudFromDist", "_l_r_approx_app_8h.html#a08d13cf5029d545c3fd3430617fc602a", null ],
    [ "classifyCloudFromDist_omp", "_l_r_approx_app_8h.html#a48badf20be4b88af31bcf8e400350e43", null ],
    [ "computeDistPointSpline", "_l_r_approx_app_8h.html#ab1842cd630d4f77d1495159c9a38ab62", null ],
    [ "computeDistPointSpline_omp", "_l_r_approx_app_8h.html#ad363e9bc8c6ea04d20503d6d488010f7", null ],
    [ "pointCloud2Spline", "_l_r_approx_app_8h.html#ae174c4352de0a200875762dd350b6973", null ]
]
```

Definition at line 1 of file _l_r_approx_app_8h.js.

30.108 doc/html/_l_r_b_spline2_d_8h.js File Reference

Variables

- var _l_r_b_spline2_d_8h

30.108.1 Variable Documentation

30.108.1.1 var _l_r_b_spline2_d_8h

Initial value:

```
=
[
    [ "LRBSpline2D", "class_go_1_1_l_r_b_spline2_d.html", "class_go_1_1_l_r_b_spline2_d" ],
    [ "operator<<", "_l_r_b_spline2_d_8h.html#a6e7d6c2c402da2b60203f8cc4e44758d", null ],
    [ "operator>>", "_l_r_b_spline2_d_8h.html#ade1cc2538c3d77f4806b29b5c8c1d4a5", null ]
]
```

Definition at line 1 of file _l_r_b_spline2_d_8h.js.

30.109 doc/html/_l_r_b_spline2_d_utils_8h.js File Reference

Variables

- var _l_r_b_spline2_d_utils_8h

30.109.1 Variable Documentation

30.109.1.1 var _l_r_b_spline2_d_utils_8h

Initial value:

```
=
[
    [ "derive_knots", "_l_r_b_spline2_d_utils_8h.html#aad3f20e5e947ef8bbf0874462af1d783", null ],
    [ "split_function", "_l_r_b_spline2_d_utils_8h.html#a9743e75fcc6fd16a8b87ae72df567fee", null ],
    [ "split_several", "_l_r_b_spline2_d_utils_8h.html#a4f0db6999c8dd9b90c306a83d081b409", null ],
    [ "try_split_once", "_l_r_b_spline2_d_utils_8h.html#aff31a580cd1acee9f5725b42e1bed14c", null ]
]
```

Definition at line 1 of file _l_r_b_spline2_d_utils_8h.js.

30.110 doc/html/_l_r_benchmark_utils_8h.js File Reference

Variables

- var _l_r_benchmark_utils_8h

30.110.1 Variable Documentation

30.110.1.1 var _l_r_benchmark_utils_8h

Initial value:

```
=
[
    [ "benchmarkSfRefinement", "_l_r_benchmark_utils_8h.html#a4dc3c0bcb0187ac1fab862cb1a2d8bd8", null ]
]
```

Definition at line 1 of file _l_r_benchmark_utils_8h.js.

30.111 doc/html/_l_r_spline_eval_grid_8h.js File Reference

Variables

- var _l_r_spline_eval_grid_8h

30.111.1 Variable Documentation

30.111.1.1 var _l_r_spline_eval_grid_8h

Initial value:

```
=
[
    [ "LRSplineEvalGrid", "class_go_1_1_l_r_spline_eval_grid.html", "class_go_1_1_l_r_spline_eval_grid" ],
    [ "_LRSPLINEEVAVGRID_H", "_l_r_spline_eval_grid_8h.html#a861377e9079b564d42abe23579c6992b", null ],
    [ "simpleElement", "_l_r_spline_eval_grid_8h.html#a046535108edecaad94e9960634734291", null ]
]
```

Definition at line 1 of file _l_r_spline_eval_grid_8h.js.

30.112 doc/html/_l_r_spline_m_b_a_8h.js File Reference

Variables

- var _l_r_spline_m_b_a_8h

30.112.1 Variable Documentation

30.112.1.1 var _l_r_spline_m_b_a_8h

Initial value:

```
=
[
    [ "add_contribution", "_l_r_spline_m_b_a_8h.html#a7746ce5f0e960417c31cbe369951206d", null ],
    [ "add_contribution2", "_l_r_spline_m_b_a_8h.html#a64d38b9b4499f43124da69e5459b51b2", null ],
    [ "MBADistAndUpdate", "_l_r_spline_m_b_a_8h.html#a736bab9513cf83f3b0c1143b8b908ee2", null ],
    [ "MBADistAndUpdate_omp", "_l_r_spline_m_b_a_8h.html#afb4e83788879084765598ed037e3645a", null ],
    [ "MBAUpdate", "_l_r_spline_m_b_a_8h.html#ac8d9dfeb51ced6380e5cda7fa0de4244", null ],
    [ "MBAUpdate", "_l_r_spline_m_b_a_8h.html#a08e09eba8aede0ca573ff517431bae02", null ],
    [ "MBAUpdate_omp", "_l_r_spline_m_b_a_8h.html#af434dc2388f448370a7f5c0b7a7d2032", null ]
]
```

Definition at line 1 of file _l_r_spline_m_b_a_8h.js.

30.113 doc/html/_l_r_spline_plot_utils_8h.js File Reference

Variables

- var _l_r_spline_plot_utils_8h

30.113.1 Variable Documentation

30.113.1.1 var _l_r_spline_plot_utils_8h

Initial value:

```
=
[
    [ "writePostscriptMesh", "_l_r_spline_plot_utils_8h.html#af1c6e27bb10c5d76b4ec155ab8676270", null ]
]
```

Definition at line 1 of file _l_r_spline_plot_utils_8h.js.

30.114 doc/html/_l_r_spline_utils_8h.js File Reference

Variables

- var _l_r_spline_utils_8h

30.114.1 Variable Documentation

30.114.1.1 var _l_r_spline_utils_8h

Initial value:

```
=
[
    [ "support_compare", "struct_go_1_1_l_r_spline_utils_1_1support__compare.html", "
      struct_go_1_1_l_r_spline_utils_1_1support__compare" ],
    [ "all_meshlines_uniform", "_l_r_spline_utils_8h.html#a07152a994fb9e3ae035eccabb9805c7e", null ],
    [ "compute_alpha", "_l_r_spline_utils_8h.html#a228ca5293bc3a0bae51d2b7953a49035", null ],
    [ "compute_greville", "_l_r_spline_utils_8h.html#a8532bcd90e52ae33172b90c3c300c0a4", null ],
    [ "compute_greville", "_l_r_spline_utils_8h.html#a2f34316e93c29d331be4c0183c923d55", null ],
    [ "distributeDataPoints", "_l_r_spline_utils_8h.html#a6229f7ced8a32103f1ec4dbb22bcef81", null ],
    [ "elementLineClouds", "_l_r_spline_utils_8h.html#a6e2646ca71a91443d9c22be20d888fca", null ],
    [ "elementOK", "_l_r_spline_utils_8h.html#a5b786578b3a0884a647accd13f42c8c5", null ],
    [ "fullTensorProductSurface", "_l_r_spline_utils_8h.html#af51b22a5cf3d0d58e94ff7df2ad08a04", null ],
    [ "identify_elements_from_mesh", "_l_r_spline_utils_8h.html#a0df66adf1511debd6e5042d890989278", null ],
    [ "increment_knotvec_indices", "_l_r_spline_utils_8h.html#adcc7711bae33c4f0667d81ae588a0074", null ],
    [ "insert_basis_function", "_l_r_spline_utils_8h.html#ae7dfe0e2e77cf611c53f0a79f17fea8d", null ],
    [ "insert_knots", "_l_r_spline_utils_8h.html#a9d8e64a570cb768edb77aaa84e09f234", null ],
    [ "insertParameterFunctions", "_l_r_spline_utils_8h.html#a61429b0a4d1e40fdc60284308a1dc744", null ],
    [ "iteratively_split", "_l_r_spline_utils_8h.html#a33904736dc5f4c872c7b44395508c556", null ],
    [ "iteratively_split2", "_l_r_spline_utils_8h.html#adb184c6cdc35d1c98f115ab272caa6d9", null ],
    [ "knots_to_insert", "_l_r_spline_utils_8h.html#a4f98f5746feb419caf049335e2b1eda7", null ],
    [ "locate_interval", "_l_r_spline_utils_8h.html#a64d8cc60b5fdafd020a79f9311b1cb80", null ],
    [ "mostComparableBspline", "_l_r_spline_utils_8h.html#a491ae8a5130f39b70f87060471f2e402", null ],
    [ "refine_mesh", "_l_r_spline_utils_8h.html#abcbcc13651a9f0e9994af4d59f1c7f98", null ],
    [ "set_uniform_meshlines", "_l_r_spline_utils_8h.html#af5002165fefef51c705e3e4c3bd02975", null ],
    [ "support_equal", "_l_r_spline_utils_8h.html#aaa14a37f51bb036b0f06f0d0ba85d47f", null ],
    [ "tensor_split", "_l_r_spline_utils_8h.html#a871bce06468326aff1c18d91d0ae5d31", null ],
    [ "update_elements_with_single_bspline", "_l_r_spline_utils_8h.html#a8a31c141bc46e6ca969a556ae80abcdc",
       null ]
]
```

Definition at line 1 of file _l_r_spline_utils_8h.js.

30.115 doc/html/_l_r_surf_smooth_l_s_8h.js File Reference

Variables

- var _l_r_surf_smooth_l_s_8h

30.115.1 Variable Documentation

30.115.1.1 var _l_r_surf_smooth_l_s_8h

Initial value:

```
=
[
    [ "LRSurfSmoothLS", "class_go_1_1_l_r_surf_smooth_l_s.html", "class_go_1_1_l_r_surf_smooth_l_s" ],
    [ "BsplineIndexMap", "_l_r_surf_smooth_l_s_8h.html#a4b15ecc9104dfd8fd5bc9cd2a0e525f1", null ]
]
```

Definition at line 1 of file _l_r_surf_smooth_l_s_8h.js.

30.116 doc/html/_l_r_surf_stitch_8h.js File Reference

Variables

- var _l_r_surf_stitch_8h

30.116.1 Variable Documentation

30.116.1.1 var _l_r_surf_stitch_8h

Initial value:

```
=
[
    [ "averageCorner", "_l_r_surf_stitch_8h.html#afbc9bf8c16995c9cef03b90fbd5999aa", null ],
    [ "averageEdge", "_l_r_surf_stitch_8h.html#afb9fbc8819dfd87d85203a9f458ed43e", null ],
    [ "averageEdge", "_l_r_surf_stitch_8h.html#a4d41fc38a785302cb538150369cd6173", null ],
    [ "defineRefinements", "_l_r_surf_stitch_8h.html#a33e9db4b176dbaf56d9f31830c206a1c", null ],
    [ "extractBoundaryBsplines", "_l_r_surf_stitch_8h.html#a3509ee922d6de21fdd642ce066d4a024", null ],
    [ "extractMissingKnots", "_l_r_surf_stitch_8h.html#a823159db9ecb7a6a0a50ab76bad1fdad", null ],
    [ "fetchEdgeCorners", "_l_r_surf_stitch_8h.html#a448922c6cf420b46b0e5008d85734979", null ]
]
```

Definition at line 1 of file _l_r_surf_stitch_8h.js.

30.117 doc/html/_l_u_decomp_8h.js File Reference

Variables

- var _l_u_decomp_8h

30.117.1 Variable Documentation

30.117.1.1 var _l_u_decomp_8h

Initial value:

```
=
[
    [ "backwardSubstitution", "_l_u_decomp_8h.html#a4ba62414926e61f2b132c414e2379013", null ],
    [ "backwardSubstitution", "_l_u_decomp_8h.html#a93246224796027668dd33bdfaef663c3", null ],
    [ "forwardSubstitution", "_l_u_decomp_8h.html#a5c8cea4b85360943935b959f1ad2a0b2", null ],
    [ "forwardSubstitution", "_l_u_decomp_8h.html#aebc4d929d2c713f7d25009045116bf33", null ],
    [ "LUDecomp", "_l_u_decomp_8h.html#a77c8de2bdc12a47b62ef5c306ac0e46d", null ],
    [ "LUsolveSystem", "_l_u_decomp_8h.html#afd9ea9a56159c9a5841819ebf13280b8", null ]
]
```

Definition at line 1 of file _l_u_decomp_8h.js.

30.118 doc/html/_l_u_decomp__implementation_8h.js File Reference

Variables

- var _l_u_decomp__implementation_8h

30.118.1 Variable Documentation

30.118.1.1 var _l_u_decomp__implementation_8h

Initial value:

```
=
[
    [ "backwardSubstitution", "_l_u_decomp__implementation_8h.html#a4ba62414926e61f2b132c414e2379013", null
      ],
    [ "backwardSubstitution", "_l_u_decomp__implementation_8h.html#a93246224796027668dd33bdfaef663c3", null
      ],
    [ "forwardSubstitution", "_l_u_decomp__implementation_8h.html#a5c8cea4b85360943935b959f1ad2a0b2", null
      ],
    [ "forwardSubstitution", "_l_u_decomp__implementation_8h.html#aebc4d929d2c713f7d25009045116bf33", null
      ],
    [ "LUDecomp", "_l_u_decomp__implementation_8h.html#a77c8de2bdc12a47b62ef5c306ac0e46d", null ],
    [ "LUsolveSystem", "_l_u_decomp__implementation_8h.html#afd9ea9a56159c9a5841819ebf13280b8", null ]
]
```

Definition at line 1 of file _l_u_decomp__implementation_8h.js.

30.119 doc/html/_lin_dep_utils_8h.js File Reference

Variables

- var _lin_dep_utils_8h

30.119.1 Variable Documentation

30.119.1.1 var _lin_dep_utils_8h

Initial value:

```
=
[
    [ "isPeelable", "_lin_dep_utils_8h.html#a9bb1ad93f4a1f5b2bc48d5e1288af238", null ],
    [ "unpeelableBasisFunctions", "_lin_dep_utils_8h.html#ad22f2f47c7074aa2f6471aaf157dbfac", null ]
]
```

Definition at line 1 of file _lin_dep_utils_8h.js.

30.120 doc/html/_link_type_8h.js File Reference

Variables

- var _link_type_8h

30.120.1 Variable Documentation

30.120.1.1 var _link_type_8h

Definition at line 1 of file _link_type_8h.js.

30.121 doc/html/_loft_surface_creator_8h.js File Reference

Variables

- var _loft_surface_creator_8h

30.121.1 Variable Documentation

30.121.1.1 var _loft_surface_creator_8h

Initial value:

```
=
[
    [ "loftNonrationalSurface", "_loft_surface_creator_8h.html#a7e7b440ee8deaae5b11b2454ed8f393c", null ],
    [ "loftRationalSurface", "_loft_surface_creator_8h.html#a218592ed0e749089fe755dfb3e10467a", null ],
    [ "loftSurface", "_loft_surface_creator_8h.html#a93373c803ae43537fda8932169fa7b61", null ],
    [ "loftSurface", "_loft_surface_creator_8h.html#aebcf1dd13d08c8ed0341a21b3c7756a9", null ],
    [ "loftSurface", "_loft_surface_creator_8h.html#a9df745ae35b798c2bb5d7a22d4af9bd9", null ],
    [ "loftSurfaceFromUnifiedCurves", "_loft_surface_creator_8h.html#a2c955837128d789b492833df74848a98",
      null ],
    [ "makeLoftParams", "_loft_surface_creator_8h.html#a5631ec03801ac3e5a52be64db868656f", null ],
    [ "unifiedCurvesCopy", "_loft_surface_creator_8h.html#a303f3544a76e2144b0d0987685b69b44", null ]
]
```

Definition at line 1 of file _loft_surface_creator_8h.js.

30.122 doc/html/_loft_volume_creator_8h.js File Reference

Variables

- var _loft_volume_creator_8h

30.122.1 Variable Documentation

30.122.1.1 var _loft_volume_creator_8h

Initial value:

```
=
[
    [ "loftNonrationalVolume", "_loft_volume_creator_8h.html#a34f3b27a135302c551ec19c45a3901f0", null ],
    [ "loftRationalVolume", "_loft_volume_creator_8h.html#a3ee08ba99531b1ae4728705e095fff4d", null ],
    [ "loftVolume", "_loft_volume_creator_8h.html#aa9817ce767b96df73b86878cafe9932b", null ],
    [ "loftVolume", "_loft_volume_creator_8h.html#adde5d396516a8767313e5bf62e550bde", null ],
    [ "loftVolumeFromUnifiedSurfaces", "_loft_volume_creator_8h.html#acd616a5bc92b035d68e779b7ea75e77f",
      null ],
    [ "makeLoftParams", "_loft_volume_creator_8h.html#a03918bf5487c862b3da02fe4bac3fe65", null ],
    [ "unifiedSurfacesCopy", "_loft_volume_creator_8h.html#ad7376df24386f9bb6190d0c6e45e395b", null ]
]
```

Definition at line 1 of file _loft_volume_creator_8h.js.

30.123 doc/html/_loop_utils_8h.js File Reference

Variables

- var _loop_utils_8h

30.123.1 Variable Documentation

30.123.1.1 var _loop_utils_8h

Initial value:

```
=
[
    [ "firstLoopInsideSecond", "_loop_utils_8h.html#a73a5c859c00aab6b90a93157513e85ff", null ],
    [ "loopIsCCW", "_loop_utils_8h.html#aafeccd2cd443da8bdc169c2ff9c6ea1b", null ],
    [ "loopIsCCW", "_loop_utils_8h.html#aac158dbe7059be8ad43ba7c24cc1bb1b", null ],
    [ "makeLoopCCW", "_loop_utils_8h.html#a5f1d7e6ed80391391cf4a36af089c7c5", null ],
    [ "paramIsCCW", "_loop_utils_8h.html#a969af355fbf48c6d254a34f3cc6f7f3e", null ],
    [ "representAsSurfaceCurves", "_loop_utils_8h.html#a366b3c54d773b4f9daf1ab9a8b17e5b6", null ]
]
```

Definition at line 1 of file _loop_utils_8h.js.

30.124 doc/html/_matrix_x_d_8h.js File Reference

Variables

- var _matrix_x_d_8h

30.124.1 Variable Documentation

30.124.1.1 var _matrix_x_d_8h

Initial value:

```
=
[
    [ "MatrixXD", "class_go_1_1_matrix_x_d.html", "class_go_1_1_matrix_x_d" ],
    [ "operator<<", "_matrix_x_d_8h.html#a25d3656c853c19fe5fce21df614e373e", null ]
]
```

Definition at line 1 of file _matrix_x_d_8h.js.

30.125 doc/html/_mesh2_d_8h.js File Reference

Variables

- var _mesh2_d_8h

30.125.1 Variable Documentation

30.125.1.1 var _mesh2_d_8h

Initial value:

```
=
[
    [ "GPos", "struct_go_1_1_g_pos.html", "struct_go_1_1_g_pos" ],
    [ "Mesh2D", "class_go_1_1_mesh2_d.html", "class_go_1_1_mesh2_d" ],
    [ "flip", "_mesh2_d_8h.html#abe2f7726ba7cf956959bc53d26ee25e6", null ],
    [ "operator<<", "_mesh2_d_8h.html#a9e098e4d619a15a57b7c68d10b03b649", null ],
    [ "operator<<", "_mesh2_d_8h.html#a631596c966521e4f4598e51fd68fbb0d", null ],
    [ "operator>>", "_mesh2_d_8h.html#a40434f0c0180c0391fb6d93a157b3630", null ],
    [ "operator>>", "_mesh2_d_8h.html#a1a6ab68e4a1a08677d6759e93b7af7a1", null ]
]
```

Definition at line 1 of file _mesh2_d_8h.js.

30.126 doc/html/_mesh2_d_utils_8h.js File Reference

Variables

- var _mesh2_d_utils_8h

30.126.1 Variable Documentation

30.126.1.1 var _mesh2_d_utils_8h

Initial value:

```
=
[
    [ "first_larger_knotvalue_ix", "_mesh2_d_utils_8h.html#a1461b9e821e4e653a1863fbb11ff8183", null ],
    [ "identify_patch_lower_left", "_mesh2_d_utils_8h.html#a70ff355fcf2aa04dabab17c8387ce6d3", null ],
    [ "identify_patch_upper_right", "_mesh2_d_utils_8h.html#a118220e0b56c3f07a13dc8ba42a393cb", null ],
    [ "last_nonlarger_knotvalue_ix", "_mesh2_d_utils_8h.html#a8a567523d54d76c3a532ce9a9749f58e", null ],
    [ "search_downwards_for_nonzero_multiplicity", "
      _mesh2_d_utils_8h.html#a568514426907f3a343f44a6c4e71909b", null ],
    [ "search_downwards_for_nonzero_multiplicity", "
      _mesh2_d_utils_8h.html#a7493fce8d41b25d29e13a60a1a76b4c8", null ],
    [ "search_upwards_for_nonzero_multiplicity", "_mesh2_d_utils_8h.html#ae42a4542f261f229730e4748a381acab"
      , null ],
    [ "search_upwards_for_nonzero_multiplicity", "_mesh2_d_utils_8h.html#addf7d8865462ca277c8952be864aac73"
      , null ]
]
```

Definition at line 1 of file _mesh2_d_utils_8h.js.

30.127 doc/html/_modify_surf_8h.js File Reference

Variables

- var _modify_surf_8h

30.127.1 Variable Documentation

30.127.1.1 var _modify_surf_8h

Initial value:

```
=
[
    [ "enforceCoefCoLinearity", "_modify_surf_8h.html#a137bcf3d2c27c7d2b389f6e64a5d69de", null ],
    [ "enforceVxCoefCoLinearity", "_modify_surf_8h.html#a3913d84da475ce0939ad502c7a6ae95a", null ],
    [ "replaceBoundary", "_modify_surf_8h.html#aeacca79de366536b18da66a6029feac6", null ]
]
```

Definition at line 1 of file _modify_surf_8h.js.

30.128 doc/html/_offset_surface_utils_8h.js File Reference

Variables

- var _offset_surface_utils_8h

30.128.1 Variable Documentation

30.128.1.1 var _offset_surface_utils_8h

Initial value:

```
=
[
    [ "OffsetSurfaceStatus", "_offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589", [
      [ "OFFSET_OK", "
      _offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589addc758c86d9a578e0dcb248819d592af", null ],
      [ "OFFSET_FAILED", "
      _offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589adc3d327e65f0c46656bfc9e175fcc151", null ],
      [ "SELF_INTERSECTING_INTERIOR", "
      _offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589a26493d54b0525be972c6a1b180e4c674", null ],
      [ "SELF_INTERSECTING_BOUNDARY", "
      _offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589a2b8e889d4d696085c18036c41a5feee8", null ],
      [ "TOLERANCE_ERROR", "
      _offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589a89c7beb3296ffda86f726e61362f7c9c", null ],
      [ "NOT_FOUR_CORNERS", "
      _offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589a1db463f259d94e558afdf3af00a006af", null ],
      [ "NON_ISO_KINK_CURVE", "
      _offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589a8f44525c3493edeef93a3948eabe7bee", null ]
    ] ],
    [ "offsetSurfaceSet", "_offset_surface_utils_8h.html#a3558e89477dcc6ad2d2df5bc15722492", null ]
]
```

Definition at line 1 of file _offset_surface_utils_8h.js.

30.129 doc/html/_param_surface_8h.js File Reference

Variables

- var _param_surface_8h

30.129.1 Variable Documentation

30.129.1.1 var _param_surface_8h

Initial value:

```
=
[
    [ "ParamSurface", "class_go_1_1_param_surface.html", "class_go_1_1_param_surface" ],
    [ "degenerate_info", "struct_go_1_1_param_surface_1_1degenerate__info.html", "
      struct_go_1_1_param_surface_1_1degenerate__info" ],
    [ "IteratorType", "_param_surface_8h.html#a241482b98287c4f940c75ef70671e05c", [
      [ "Iterator_parametric", "
      _param_surface_8h.html#a241482b98287c4f940c75ef70671e05cac62977f430391a4f0a8643ae07a5daf4", null ],
      [ "Iterator_geometric", "
      _param_surface_8h.html#a241482b98287c4f940c75ef70671e05cacd4a1ab60b6688a79afb6336b99c936e", null ]
    ] ]
]
```

Definition at line 1 of file _param_surface_8h.js.

30.130 doc/html/_path_8h.js File Reference

Variables

- var _path_8h

30.130.1 Variable Documentation

30.130.1.1 var _path_8h

Initial value:

```
=
[
    [ "classifyCorners", "_path_8h.html#a31a5b4b8ed77447803c7c0c1bb32f9ed", null ],
    [ "closestPoint", "_path_8h.html#a15c625456455d04a4fabe5d1181712ac", null ],
    [ "edgeChain", "_path_8h.html#aa64387b9b36ec80612d05a560428a4ec", null ],
    [ "estimateHoleInfo", "_path_8h.html#af1ad3c3df0c9672c5686b3547ad95f7c", null ],
    [ "getEdgeCurves", "_path_8h.html#a8458aec1ab5d8362a7137e2ea2280f54", null ],
    [ "identifyLoop", "_path_8h.html#a12301ef59c50bee8128a06243290bdfb", null ]
]
```

Definition at line 1 of file _path_8h.js.

30.131 doc/html/_point_8h.js File Reference

Variables

- var _point_8h

30.131.1 Variable Documentation

30.131.1.1 var _point_8h

Initial value:

```
=
[
    [ "Point", "class_go_1_1_point.html", "class_go_1_1_point" ],
    [ "operator*", "_point_8h.html#a641dacf21690f2dd5a46a496b9dc0f8c", null ],
    [ "operator<", "_point_8h.html#a66d59df4e32729691185f369f0b5a393", null ],
    [ "operator<<", "_point_8h.html#af96ef1e897f0ac52ed4773621c805862", null ],
    [ "operator==", "_point_8h.html#ae1a0e7dde1c83f7b616816d78ac11f3a", null ],
    [ "operator>>", "_point_8h.html#ad51bfc00ff13f4956bb91947e21ace00", null ]
]
```

Definition at line 1 of file _point_8h.js.

30.132 doc/html/_point_cloud_8h.js File Reference

Variables

- var _point_cloud_8h

30.132.1 Variable Documentation

30.132.1.1 var _point_cloud_8h

Initial value:

```
=
[
    [ "PointCloud", "class_go_1_1_point_cloud.html", "class_go_1_1_point_cloud" ],
    [ "PointCloud3D", "_point_cloud_8h.html#aca0adb8106a4ffc358eeffeeb11ef851", null ],
    [ "PointCloud4D", "_point_cloud_8h.html#ac0a110c4920004f774150b3e9ccbfe64", null ]
]
```

Definition at line 1 of file _point_cloud_8h.js.

30.133 doc/html/_point_sequence_8h.js File Reference

Variables

- var _point_sequence_8h

30.133.1 Variable Documentation

30.133.1.1 var _point_sequence_8h

Initial value:

```
=
[
    [ "PointSequence", "class_go_1_1_point_sequence.html", "class_go_1_1_point_sequence" ],
    [ "PointSequenceType", "_point_sequence_8h.html#a8fd32afd3a4d4892e4020b0580de70e1", [
      [ "PSTPoint", "
      _point_sequence_8h.html#a8fd32afd3a4d4892e4020b0580de70e1a4eea7b565319ed23e1e46c7b519bcfe2", null ],
      [ "PSTPointTangent", "
      _point_sequence_8h.html#a8fd32afd3a4d4892e4020b0580de70e1a44f2da44ddde83fedb06c67050ddc6e4", null ],
      [ "PSTScattered", "
      _point_sequence_8h.html#a8fd32afd3a4d4892e4020b0580de70e1ae7ab6c2a6415887b29d8152b39a92f92", null ]
    ] ]
]
```

Definition at line 1 of file _point_sequence_8h.js.

30.134 doc/html/_point_set_app_8h.js File Reference

Variables

- var _point_set_app_8h

30.134.1 Variable Documentation

30.134.1.1 var _point_set_app_8h

Initial value:

```
=
[
    [ "parameterizeTriang", "_point_set_app_8h.html#a6f49e135ca05e5513ab3eba8657ef11c", null ],
    [ "recognizeBoundary", "_point_set_app_8h.html#ae0fbe70c8f26bce38c4c89331df6b42b", null ],
    [ "recognizeCornerNodes", "_point_set_app_8h.html#a90a3b8a6f1f566bfa0cd02a5d0c6b669", null ]
]
```

Definition at line 1 of file _point_set_app_8h.js.

30.135 doc/html/_pr_dijkstra_8h.js File Reference

Variables

- var _pr_dijkstra_8h

30.135.1 Variable Documentation

30.135.1.1 var _pr_dijkstra_8h

Initial value:

```
=
[
    [ "HeapNode", "class_heap_node.html", "class_heap_node" ],
    [ "Dijkstra", "class_dijkstra.html", "class_dijkstra" ],
    [ "GraphType", "_pr_dijkstra_8h.html#a206245534b423169d06a05a296e3a169", null ],
    [ "HeapType", "_pr_dijkstra_8h.html#afb8a42e8b8299d2995279be8fdaa601d", null ]
]
```

Definition at line 1 of file _pr_dijkstra_8h.js.

30.136 doc/html/_pr_geodesics_8h.js File Reference

Variables

- var _pr_geodesics_8h

30.136.1 Variable Documentation

30.136.1.1 var _pr_geodesics_8h

Initial value:

```
=
[
    [ "EPS", "_pr_geodesics_8h.html#a6ebf6899d6c1c8b7b9d09be872c05aae", null ],
    [ "decreasing_length", "_pr_geodesics_8h.html#ad90da015119c685931562203c8200235", null ],
    [ "DijkstraPT", "_pr_geodesics_8h.html#a9de5f006c7cd1bbfd2ea6311ea4661b0", null ],
    [ "dist2D", "_pr_geodesics_8h.html#ac7a9fdb0b3584a5707d06f653b651ab2", null ],
    [ "dist3D", "_pr_geodesics_8h.html#a502010751565dfcadf85ed74bd03519f", null ],
    [ "GeodesicPT", "_pr_geodesics_8h.html#a6433488647d99aa6adb0b4bc31a47d9e", null ],
    [ "length_polygonal_path", "_pr_geodesics_8h.html#ab184bcc756b99d5c32bf480c0aea576d", null ],
    [ "next_pivot", "_pr_geodesics_8h.html#a6ede54ba38a09b1d4b49a554e67dc011", null ],
    [ "pivot_in_new_list", "_pr_geodesics_8h.html#a9812474203048862705 92d3d91486f99", null ],
    [ "pivot_in_new_list", "_pr_geodesics_8h.html#a23201cc2fec144cd1354936bdad5c66a", null ],
    [ "point3D_from_indice", "_pr_geodesics_8h.html#ae1b7addad1f7db7745aea8aa2aa9c90b", null ],
    [ "sqr", "_pr_geodesics_8h.html#a22f4e97ed7ca9e188dc4e074a1b2e5a7", null ],
    [ "tr_crossed_by_path_vertices", "_pr_geodesics_8h.html#a7e37f49d81d4457bf2d7a377a632cbe7", null ],
    [ "tr_sequence_around_vertex", "_pr_geodesics_8h.html#ab2fecc2891044c9570fdeacc7a90857a", null ],
    [ "tr_sequence_around_vertex", "_pr_geodesics_8h.html#a75863d5fc529fb0973bcb4038d4bb313", null ],
    [ "update_triangle_sequence_around_pivot", "_pr_geodesics_8h.html#adb6c85b9ff49747043f7aa470c39abbc",
      null ]
]
```

Definition at line 1 of file _pr_geodesics_8h.js.

30.137 doc/html/_pr_interface_8h.js File Reference

Variables

- var _pr_interface_8h

30.137.1 Variable Documentation

30.137.1.1 var _pr_interface_8h

Initial value:

```
=
[
    [ "print", "_pr_interface_8h.html#a702a39c3e329cb93bb7a836a3eaf7067", null ],
    [ "print", "_pr_interface_8h.html#a9a7a38c0f5e4dfe4319360a310a86586", null ],
    [ "print", "_pr_interface_8h.html#ab0c8b3ddf235719dfb256c12066f013d", null ],
    [ "print", "_pr_interface_8h.html#a8484caf5c67beb9ab23948df6a1449a9", null ],
    [ "print", "_pr_interface_8h.html#a85c471224a04b8237c9d5f3a84f886df", null ],
    [ "print_edges_lengths", "_pr_interface_8h.html#ac98a994b8e67dc020d74321deb989a7c", null ],
    [ "print_lengths", "_pr_interface_8h.html#aa6bdc7b0e7b969e7d7b931a69991b156", null ],
    [ "printGeomviewPath", "_pr_interface_8h.html#acd00bb4ad8271eeb58b22911102c06e3", null ],
    [ "printGeomviewPath", "_pr_interface_8h.html#af4f60a12113a1e3abe4f406f4aa5eeab", null ],
    [ "printGeomviewTriangleSequence", "_pr_interface_8h.html#a53ab7ace7d913995e2b712bb5024ba5e", null ],
    [ "printGeomviewTriangleSequence", "_pr_interface_8h.html#a1f3a70ddb35f5d312f04be4732de18b2", null ],
    [ "printGeomviewTriangulation", "_pr_interface_8h.html#a46dc65442ecbad8914bb88ae6c21fb78", null ],
    [ "printGeomviewTriangulation", "_pr_interface_8h.html#a78613b67dc369c1f1c5b8bd2f41bf817", null ]
]
```

Definition at line 1 of file _pr_interface_8h.js.

30.138 doc/html/_pr_multi_dijkstra_8h.js File Reference

Variables

- var _pr_multi_dijkstra_8h

30.138.1 Variable Documentation

30.138.1.1 var _pr_multi_dijkstra_8h

Initial value:

```
=
[
    [ "HeapNode2", "class_heap_node2.html", "class_heap_node2" ],
    [ "MultiDijkstra", "class_multi_dijkstra.html", "class_multi_dijkstra" ],
    [ "GraphType", "_pr_multi_dijkstra_8h.html#a206245534b423169d06a05a296e3a169", null ],
    [ "Point", "_pr_multi_dijkstra_8h.html#a264185c815a47814791f68e7c6da85ad", null ],
    [ "HeapType2", "_pr_multi_dijkstra_8h.html#a07dcabcf75f750257e24dd71571ec318", null ]
]
```

Definition at line 1 of file _pr_multi_dijkstra_8h.js.

30.139 doc/html/_pr_param_util_8h.js File Reference

Variables

- var _pr_param_util_8h

30.139.1 Variable Documentation

30.139.1.1 var _pr_param_util_8h

Initial value:

```
=
[
    [ "area", "_pr_param_util_8h.html#a88d3831b85d9d3912354527e5fe6d73c", null ],
    [ "area", "_pr_param_util_8h.html#a64c674e467409817ea2a3f3d259ff21f", null ],
    [ "baryCoords", "_pr_param_util_8h.html#a2723a4fb8d9d4e9806b85d24be903113", null ],
    [ "baryCoords0", "_pr_param_util_8h.html#a031f05ae9429c7ef17f461c7b12b4cbf", null ],
    [ "cotangent", "_pr_param_util_8h.html#a1494b41fd0552963267eebd1178f96f5", null ],
    [ "det", "_pr_param_util_8h.html#a67274299dba3338b5ca9a1dc2fe43ea5", null ],
    [ "polarCoords", "_pr_param_util_8h.html#ae4fbcb9e0feac9dd18f35463c670a19a", null ],
    [ "polarCoords", "_pr_param_util_8h.html#a38cf5694f3655997dc7b8f64787a5e55", null ],
    [ "tanThetaOverTwo", "_pr_param_util_8h.html#acf689ef17a246312b527f1c2b8fa1266", null ]
]
```

Definition at line 1 of file _pr_param_util_8h.js.

30.140 doc/html/_pr_parametrize_bdy_8h.js File Reference

Variables

- var _pr_parametrize_bdy_8h

30.140.1 Variable Documentation

30.140.1.1 var _pr_parametrize_bdy_8h

Initial value:

```
=
[
    [ "PrParametrizeBdy", "class_pr_parametrize_bdy.html", "class_pr_parametrize_bdy" ],
    [ "PrBdyParamKind", "_pr_parametrize_bdy_8h.html#ac4f0ea96d827517d164d141b76822905", [
      [ "PrCHORDLENGTHBDY", "
      _pr_parametrize_bdy_8h.html#ac4f0ea96d827517d164d141b76822905a01024afd7e94cb195b4956f794df5ea3", null ],
      [ "PrCENTRIPETAL", "
      _pr_parametrize_bdy_8h.html#ac4f0ea96d827517d164d141b76822905a9d8ef4f0fb695440e1e12f49b448ee1c", null ],
      [ "PrUNIFBDY", "
      _pr_parametrize_bdy_8h.html#ac4f0ea96d827517d164d141b76822905ac0af8acf5a5382cb8d17efec95c6f194", null ]
    ] ]
]
```

Definition at line 1 of file _pr_parametrize_bdy_8h.js.

30.141 doc/html/_pr_parametrize_int_8h.js File Reference

Variables

- var _pr_parametrize_int_8h

30.141.1 Variable Documentation

30.141.1.1 var _pr_parametrize_int_8h

Initial value:

```
=
[
    [ "PrParametrizeInt", "class_pr_parametrize_int.html", "class_pr_parametrize_int" ],
    [ "PrParamStartVector", "_pr_parametrize_int_8h.html#ab93ec75afebf4127286a826175e2184e", [
      [ "PrBARYCENTRE", "
      _pr_parametrize_int_8h.html#ab93ec75afebf4127286a826175e2184eac1e230601ee7949ef1e75f1a4439f4e7", null ],
      [ "PrFROMUV", "
      _pr_parametrize_int_8h.html#ab93ec75afebf4127286a826175e2184ea2740fa09d2d03e4c2d55733fd8ec3e36", null ]
    ] ]
]
```

Definition at line 1 of file _pr_parametrize_int_8h.js.

30.142 doc/html/_pr_path_triangle_seq_8h.js File Reference

Variables

- var _pr_path_triangle_seq_8h

30.142.1 Variable Documentation

30.142.1.1 var _pr_path_triangle_seq_8h

Definition at line 1 of file _pr_path_triangle_seq_8h.js.

30.143 doc/html/_pr_texture_8h.js File Reference

Variables

- var _pr_texture_8h

30.143.1 Variable Documentation

30.143.1.1 var _pr_texture_8h

Initial value:

```
=
[
    [ "printTexture", "_pr_texture_8h.html#a05539445948b94bfbceeafb09ca79355", null ]
]
```

Definition at line 1 of file _pr_texture_8h.js.

30.144 doc/html/_pr_wavelet_util_8h.js File Reference

Variables

- var _pr_wavelet_util_8h

30.144.1 Variable Documentation

30.144.1.1 var _pr_wavelet_util_8h

Initial value:

```
=
[
    [ "theta", "_pr_wavelet_util_8h.html#a15e73be8d8f9ce9ea4cbd71ee2b9c980", null ]
]
```

Definition at line 1 of file _pr_wavelet_util_8h.js.

30.145 doc/html/_quality_utils_8h.js File Reference

Variables

- var _quality_utils_8h

30.145.1 Variable Documentation

30.145.1.1 var _quality_utils_8h

Initial value:

```
=
[
    [ "estimateArea", "_quality_utils_8h.html#a46ec6241e74820a157e314d4b163e1c2", null ],
    [ "estimateLoopArea", "_quality_utils_8h.html#a0fd632c6b50602b49201e247ebaf6b45", null ],
    [ "hasIndistinctKnots", "_quality_utils_8h.html#a9b42768776ea5a799f5d58baedf493ac", null ],
    [ "isSliverFace", "_quality_utils_8h.html#aed4c9016d1223c82a3b20dae423dddab", null ],
    [ "isSliverFace", "_quality_utils_8h.html#a104103b9742a9dddbe928b7703d93273", null ],
    [ "isSliverFace", "_quality_utils_8h.html#a75c27d806accb47bcd5808bb0b131e1b", null ],
    [ "isSliverFace2", "_quality_utils_8h.html#ad0b8815d663271c1ea92a74d0a6250cf", null ]
]
```

Definition at line 1 of file _quality_utils_8h.js.

30.146 doc/html/_rational_8h.js File Reference

Variables

- var _rational_8h

30.146.1 Variable Documentation

30.146.1.1 var _rational_8h

Initial value:

```
=
[
    [ "Rational", "class_go_1_1_rational.html", "class_go_1_1_rational" ],
    [ "operator*", "_rational_8h.html#acd00661011348959429ac61eba54450b", null ],
    [ "operator+", "_rational_8h.html#af4bb35b00be1c5d14445424567d40924", null ],
    [ "operator-", "_rational_8h.html#a2288c9a51f97c6dcfb70326c4966295f", null ],
    [ "operator/", "_rational_8h.html#acf19e1992bd9553c19f5c1592f12017d", null ],
    [ "operator<<", "_rational_8h.html#a73534fc637d495b35fcf6a638c44ff9f", null ]
]
```

Definition at line 1 of file _rational_8h.js.

30.147 doc/html/_registration_utils_8h.js File Reference

Variables

- var _registration_utils_8h

30.147.1 Variable Documentation

30.147.1.1 var _registration_utils_8h

Initial value:

```
=
[
    [ "RegistrationInput", "struct_go_1_1_registration_input.html", "struct_go_1_1_registration_input" ],
    [ "RegistrationResult", "struct_go_1_1_registration_result.html", "struct_go_1_1_registration_result" ]
      ,
    [ "RegistrationReturnType", "_registration_utils_8h.html#a4d9923f0997091e744526f5654084584", [
      [ "RegistrationOK", "
      _registration_utils_8h.html#a4d9923f0997091e744526f5654084584ad83c7e38a4aeb95705671d8fe4e7a0d6", null ],
      [ "TooFewPoints", "
      _registration_utils_8h.html#a4d9923f0997091e744526f5654084584a409700864df743fb5ed29a95821ab1ad", null ],
      [ "PointSetSizeDiff", "
      _registration_utils_8h.html#a4d9923f0997091e744526f5654084584abcdec83ae9dd6bb083acac7e3b218dc3", null ],
      [ "AreaTooSmall", "
      _registration_utils_8h.html#a4d9923f0997091e744526f5654084584a8c50f932f2a5486c74f9faf803baf700", null ],
      [ "SolveFailed", "
      _registration_utils_8h.html#a4d9923f0997091e744526f5654084584ac56050e3b34602e91f4081c84c3afb45", null ]
    ] ],
    [ "addToLinearSystem", "_registration_utils_8h.html#a4a7c74a330ce13c1ce246a2d334db386", null ],
    [ "fineRegistration", "_registration_utils_8h.html#a32bf7c4fa290cdb0dea3a82d785a2f70", null ],
    [ "rawRegistration", "_registration_utils_8h.html#aac556b609d575079c24b6f3d3b768298", null ],
    [ "registration", "_registration_utils_8h.html#a4831812139dcffc44f486feded3f0600", null ]
]
```

Definition at line 1 of file _registration_utils_8h.js.

30.148 doc/html/_regularize_utils_8h.js File Reference

Variables

- var _regularize_utils_8h

30.148.1 Variable Documentation

30.148.1.1 var _regularize_utils_8h

Initial value:

```
=
[
    [ "adjustTrimSeg", "_regularize_utils_8h.html#ab03a9de2d4a3e76a7247e01bec34ff46", null ],
    [ "angleInEndpoints", "_regularize_utils_8h.html#a3e9e023534852388e4323b7a30e5807a", null ],
    [ "checkPath", "_regularize_utils_8h.html#ab8cd502e3d254c59f19410df90a80891", null ],
    [ "checkRegularity", "_regularize_utils_8h.html#a1e063d06793ab7a215005e3d3bad9f09", null ],
    [ "checkStrightParCv", "_regularize_utils_8h.html#af1a9f23d6f619e174b85019c24be683d", null ],
    [ "checkStrightParCv", "_regularize_utils_8h.html#ac80e95c7deb858902ea893bd3ac7a7ba", null ],
    [ "checkStrightParCv", "_regularize_utils_8h.html#a5cda5168b0b2ad44605f837c6a1b15aa", null ],
    [ "checkTrimConfig", "_regularize_utils_8h.html#a54800724845f163385fc11ac8d1e0cc7", null ],
    [ "checkTrimSeg", "_regularize_utils_8h.html#a51bfd8a074e30aed6c7712bcbe3b6372", null ],
    [ "checkTrimSeg2", "_regularize_utils_8h.html#a92514dd3409f3fa07f0f2ab0afb1e0d1", null ],
    [ "checkTrimSeg3", "_regularize_utils_8h.html#acd73683d4b80f51509b69ef8b76b7e02", null ],
    [ "cornerInShortestPath", "_regularize_utils_8h.html#a2ac2fec0ce7a594a0e83ffa0ea9b5197", null ],
    [ "createFaces", "_regularize_utils_8h.html#aefc7214e2be4a3f087be18f363157bec", null ],
    [ "divideVertex", "_regularize_utils_8h.html#aea0fd3969995ee455abcc04a86cadcf3", null ],
    [ "endVxInChain", "_regularize_utils_8h.html#af82e4906c7be047230b5879bc4ed455e", null ],
    [ "findVertexSplit", "_regularize_utils_8h.html#a63e13e3c414de2c43a43df75f223a55c", null ],
    [ "getClosestBoundaryPar", "_regularize_utils_8h.html#ae1e743485ecfb9b61a6ae15e4caa8664", null ],
    [ "getDivisionPlane", "_regularize_utils_8h.html#a6752635dc2d95db3b61325b9a2d1a7d6", null ],
    [ "getInVec", "_regularize_utils_8h.html#a63d9dccdbcf8f8accec97747220e6eca", null ],
    [ "getMaxParFrac", "_regularize_utils_8h.html#ad0da2d6a5b73baccc05d93ef2ca29976", null ],
    [ "getOppositeBoundaryPar", "_regularize_utils_8h.html#ac4e103ee529c635f3199b7b403b570fb", null ],
    [ "getPath", "_regularize_utils_8h.html#a811b72efa742fd4bc2c8efe21c5e394e", null ],
    [ "getSourceCvs", "_regularize_utils_8h.html#ae7142e1d8173437374fa4fa19fd2fee9", null ],
    [ "mergeSituationContinuation", "_regularize_utils_8h.html#a844ac90341d1013832c0da880bf35565", null ],
    [ "noExtension", "_regularize_utils_8h.html#a1acc4dafb5c79c9a62212fbac4cd9cd5", null ],
    [ "selectCandVx", "_regularize_utils_8h.html#a53772d53ee11874fd34f994cfb14a679", null ],
    [ "traverseUntilTJoint", "_regularize_utils_8h.html#a7030be3138658e7497c5de416f2a6986", null ]
]
```

Definition at line 1 of file _regularize_utils_8h.js.

30.149 doc/html/_s_i_s_lconversion_8h.js File Reference

Variables

- var _s_i_s_lconversion_8h

30.149.1 Variable Documentation

30.149.1.1 var _s_i_s_lconversion_8h

Initial value:

```
=
[
    [ "Curve2SISL", "_s_i_s_lconversion_8h.html#a2491f37cd3da574fc4bd84462f353008", null ],
    [ "Curve2SISL_rat", "_s_i_s_lconversion_8h.html#a4e36ec92b881249512da1f32d48b0c8b", null ],
    [ "GoSurf2SISL", "_s_i_s_lconversion_8h.html#a3d92b383daa4ed962792b8df5796e7a2", null ],
    [ "SISLCurve2Go", "_s_i_s_lconversion_8h.html#a014388c3978c2cb31649a1f7e1b17bbb", null ],
    [ "SISLSurf2Go", "_s_i_s_lconversion_8h.html#af854c9d2a4faa28d3a0e053710a1fbb8", null ]
]
```

Definition at line 1 of file _s_i_s_lconversion_8h.js.

30.150 doc/html/_singular_8h.js File Reference

Variables

- var _singular_8h

30.150.1 Variable Documentation

30.150.1.1 var _singular_8h

Initial value:

```
=
[
    [ "vanishingNormal", "_singular_8h.html#a26f9cae0b0a16fb49ea296f92bb38d88", null ],
    [ "vanishingTangent", "_singular_8h.html#af3cf03b5484e64f91845595487db1843", null ]
]
```

Definition at line 1 of file _singular_8h.js.

30.151 doc/html/_singularity_classification_8h.js File Reference

Variables

- var _singularity_classification_8h

30.151.1 Variable Documentation

30.151.1.1 var _singularity_classification_8h

Initial value:

```
=
[
    [ "SingularityClassification", "_singularity_classification_8h.html#a2d40b57e4fc6eed03a9fbeebe181e7c5",
       [
      [ "NO_SING", "
      _singularity_classification_8h.html#a2d40b57e4fc6eed03a9fbeebe181e7c5ab1559d7dcf7654af2bcec501f5312732", null ],
      [ "INIT_SING", "
      _singularity_classification_8h.html#a2d40b57e4fc6eed03a9fbeebe181e7c5a490091ee185383778d6cd7293288d611", null ],
      [ "DIVIDED_SING", "
      _singularity_classification_8h.html#a2d40b57e4fc6eed03a9fbeebe181e7c5a98b637c26d37d470fcfbb5260774f8f9", null ],
      [ "KEEP_SING", "
      _singularity_classification_8h.html#a2d40b57e4fc6eed03a9fbeebe181e7c5a5950a0471c4dedf23ebab3d521693e9e", null ]
    ] ]
]
```

Definition at line 1 of file _singularity_classification_8h.js.

30.152 doc/html/_singularity_type_8h.js File Reference

Variables

- var _singularity_type_8h

30.152.1 Variable Documentation

30.152.1.1 var _singularity_type_8h

Initial value:

```
=
[
    [ "SingularityType", "_singularity_type_8h.html#a3f21d9ac1d33fe9bf8364573e0126af2", [
      [ "ORDINARY_POINT", "
      _singularity_type_8h.html#a3f21d9ac1d33fe9bf8364573e0126af2a1fdcba6fec487885e75718a98dd830b0", null ],
      [ "TANGENTIAL_POINT", "
      _singularity_type_8h.html#a3f21d9ac1d33fe9bf8364573e0126af2a7a751867640d143dba6d355e3ad044ce", null ],
      [ "ISOLATED_POINT", "
      _singularity_type_8h.html#a3f21d9ac1d33fe9bf8364573e0126af2a1b8fe22dbe7702bdc99dd252ffc2ebc4", null ],
      [ "BRANCH_POINT", "
      _singularity_type_8h.html#a3f21d9ac1d33fe9bf8364573e0126af2a268fe557333f706f171980d85a3c8897", null ],
      [ "HIGHER_ORDER_POINT", "
      _singularity_type_8h.html#a3f21d9ac1d33fe9bf8364573e0126af2a22f487388b26506dd36247ceb5747b41", null ]
    ] ]
]
```

Definition at line 1 of file _singularity_type_8h.js.

30.153 doc/html/_smooth_volume_8h.js File Reference

Variables

- var _smooth_volume_8h

30.153.1 Variable Documentation

30.153.1.1 var _smooth_volume_8h

Initial value:

```
=
[
    [ "SmoothVolume", "class_go_1_1_smooth_volume.html", "class_go_1_1_smooth_volume" ],
    [ "CoefStatus", "_smooth_volume_8h.html#a24654e7a71d69eef31552a072adeecc4", [
      [ "CoefFree", "
      _smooth_volume_8h.html#a24654e7a71d69eef31552a072adeecc4acc3d70575051b1013dd5c4c2c320b903", null ],
      [ "CoefKnown", "
      _smooth_volume_8h.html#a24654e7a71d69eef31552a072adeecc4a29f03e2de4b5d85782b35c411364c8b9", null ],
      [ "CoefAvoid", "
      _smooth_volume_8h.html#a24654e7a71d69eef31552a072adeecc4ad3f55b5236e42142ec74305c3c1835eb", null ],
      [ "CoefOther", "
      _smooth_volume_8h.html#a24654e7a71d69eef31552a072adeecc4a0a7f75ddd8adc10ac2f890df80d7bc96", null ]
    ] ]
]
```

Definition at line 1 of file _smooth_volume_8h.js.

30.154 doc/html/_spline_debug_utils_8h.js File Reference

Variables

- var _spline_debug_utils_8h

30.154.1 Variable Documentation

30.154.1.1 var _spline_debug_utils_8h

Initial value:

```
=
[
    [ "objsToFile", "_spline_debug_utils_8h.html#a9ab9fe829e55d0a4c64537b7197c90fc", null ],
    [ "objToFile", "_spline_debug_utils_8h.html#a025275ced8cb3a4d858e5e688459f7fb", null ],
    [ "writeCvsOnSf", "_spline_debug_utils_8h.html#aff508623d7e8af4d9e60b981c4c1b5ab", null ],
    [ "writeCvsOnSf", "_spline_debug_utils_8h.html#afa475fdcb4fb8cae575667557bb70f5f", null ],
    [ "writeOuterBoundaryLoop", "_spline_debug_utils_8h.html#adf3b1ea9fdee5b49ee982b196835f1b1", null ],
    [ "writeSISLFormat", "_spline_debug_utils_8h.html#a471ce0dcc864ec1469d15bee77abda47", null ],
    [ "writeSpaceParamCurve", "_spline_debug_utils_8h.html#ae7ea73070ed893f7422c24ae0d119cb6", null ],
    [ "writeSpaceParamCurve", "_spline_debug_utils_8h.html#a2a3d10df7cbb2f020a44b51a545c6a86", null ],
    [ "writeTrimmedInfo", "_spline_debug_utils_8h.html#aa182fa5ddd1962ded096b5752708aaf8", null ]
]
```

Definition at line 1 of file _spline_debug_utils_8h.js.

30.155 doc/html/_spline_utils_8h.js File Reference

Variables

- var _spline_utils_8h

30.155.1 Variable Documentation

30.155.1.1 var _spline_utils_8h

Initial value:

```
=
[
    [ "closest_in_array", "_spline_utils_8h.html#ad0b75a04db51bcb78fa2bb19bcb4aa33", null ],
    [ "closest_on_line_segment", "_spline_utils_8h.html#a456841bb1f236d2a425fc1f9a1c1e99d", null ],
    [ "closest_on_rectgrid", "_spline_utils_8h.html#a4c07e5d5c7c1d6a0079a44ba2d68b5a1", null ],
    [ "closest_on_rectgrid", "_spline_utils_8h.html#af4911fb18e062dc33cb1603708e21e1f", null ],
    [ "closest_on_triangle", "_spline_utils_8h.html#a9ad707052b437c98fd4a59138e492bf6", null ],
    [ "curve_ratder", "_spline_utils_8h.html#ad82474684fdffefb163a98b99b593db9", null ],
    [ "extractBezierCoefs", "_spline_utils_8h.html#aad065b5050899dec56c43aa786357e06", null ],
    [ "insertKnots", "_spline_utils_8h.html#a1fe5eaadddb2004e581998d5029ab59c", null ],
    [ "make_coef_array_from_rational_coefs", "_spline_utils_8h.html#a3deb0f86f557d5c4f297605ff0f31c63",
      null ],
    [ "osloalg", "_spline_utils_8h.html#aa1539751b135c0ae6707325744eab7ff", null ],
    [ "refinedBezierCoefsCubic", "_spline_utils_8h.html#a98130202c020c0d6aa19511a69875bb3", null ],
    [ "refineToBezier", "_spline_utils_8h.html#a707a5dd4e9d2b3a25a0daf3df4ddfad7", null ],
    [ "refmatrix", "_spline_utils_8h.html#a19d359dc0c04f2c2e3f4a517129c1526", null ],
    [ "splineToBezierTransfMat", "_spline_utils_8h.html#a4cb10616760a1995e3ec2fa8f1814111", null ],
    [ "surface_ratder", "_spline_utils_8h.html#a1a2e159f4d5ff53835263180aa4f0202", null ],
    [ "transpose_array", "_spline_utils_8h.html#aa8a0841b35a489065578a166a2e03a39", null ]
]
```

Definition at line 1 of file _spline_utils_8h.js.

30.156 doc/html/_spline_volume_8h.js File Reference

Variables

- var _spline_volume_8h

30.156.1 Variable Documentation

30.156.1.1 var _spline_volume_8h

Initial value:

```
=
[
    [ "BasisPts", "struct_go_1_1_basis_pts.html", "struct_go_1_1_basis_pts" ],
    [ "BasisDerivs", "struct_go_1_1_basis_derivs.html", "struct_go_1_1_basis_derivs" ],
    [ "BasisDerivs2", "struct_go_1_1_basis_derivs2.html", "struct_go_1_1_basis_derivs2" ],
    [ "SplineVolume", "class_go_1_1_spline_volume.html", "class_go_1_1_spline_volume" ],
    [ "SPLINE_VOLUME_BD_SFS_SIZE", "_spline_volume_8h.html#a78ac980199fce248a693bcac021a6099", null ],
    [ "SPLINE_VOLUME_DEGEN_SIZE", "_spline_volume_8h.html#a530569cc4a9966aade6a64be07ccebe7", null ],
    [ "SPLINE_VOLUME_PERIOD_INFO_SIZE", "_spline_volume_8h.html#a91a9dbdfe8d48f1fdcc34d596dee702b", null ]
]
```

Definition at line 1 of file _spline_volume_8h.js.

30.157 doc/html/_split_model_utils_8h.js File Reference

Variables

- var _split_model_utils_8h

30.157.1 Variable Documentation

30.157.1.1 var _split_model_utils_8h

Initial value:

```
=
[
    [ "splitInFreeCorners", "_split_model_utils_8h.html#a731cf99590470ea5781efcc8cc0897f7", null ],
    [ "splitInNonCorners", "_split_model_utils_8h.html#a5fb661cefef94184cefa2bec1e650ed9", null ],
    [ "splitInOuterVertices", "_split_model_utils_8h.html#a749ca80f7d32a01b5743998073e878b8", null ]
]
```

Definition at line 1 of file _split_model_utils_8h.js.

30.158 doc/html/_stream_utils_8h.js File Reference

Variables

- var _stream_utils_8h

30.158.1 Variable Documentation

30.158.1.1 var _stream_utils_8h

Initial value:

```
=
[
    [ "object_from_stream", "_stream_utils_8h.html#a4894fce509ab613c659adfb8c6e4f3a4", null ],
    [ "object_from_stream", "_stream_utils_8h.html#aa32125ce457acfe089493557cb692bb5", null ],
    [ "object_from_stream", "_stream_utils_8h.html#a096e67b6673d7d6479006279ce415576", null ],
    [ "object_from_stream", "_stream_utils_8h.html#a17a755168f4d23a504d416a2dd99f2bd", null ],
    [ "object_to_stream", "_stream_utils_8h.html#aa01c0a039e65b4114a243eddb38ed4b3", null ],
    [ "object_to_stream", "_stream_utils_8h.html#ab156ea451457461fae5f88814546be88", null ],
    [ "object_to_stream", "_stream_utils_8h.html#af6f93dc84b2f7d738c9860431bdb56dd", null ],
    [ "object_to_stream", "_stream_utils_8h.html#a6f0c13c5750e8dd6c8fe94e05cda5e99", null ]
]
```

Definition at line 1 of file _stream_utils_8h.js.

30.159 doc/html/_streamable_8h.js File Reference

Variables

- var _streamable_8h

30.159.1 Variable Documentation

30.159.1.1 var _streamable_8h

Initial value:

```
=
[
    [ "Streamable", "class_go_1_1_streamable.html", "class_go_1_1_streamable" ],
    [ "EofException", "class_go_1_1_streamable_1_1_eof_exception.html", null ],
    [ "operator<<", "_streamable_8h.html#aa5c798f53d1918fbc856ed61004fd34c", null ],
    [ "operator>>", "_streamable_8h.html#aab82a782826598596c233196f3b2a89c", null ]
]
```

Definition at line 1 of file _streamable_8h.js.

30.160 doc/html/_subdivision_classification_8h.js File Reference

Variables

- var _subdivision_classification_8h

30.160.1 Variable Documentation

30.160.1.1 var _subdivision_classification_8h

Initial value:

```
=
[
    [ "SubdivisionClassification", "_subdivision_classification_8h.html#a20f9976341cc350b6e0d38e92eca1583",
      [
      [ "CANNOT_SUBDIVIDE", "
      _subdivision_classification_8h.html#a20f9976341cc350b6e0d38e92eca1583af713558562644ccbc38448cc0ccd431f", null ],
      [ "DIVIDE_DEG", "
      _subdivision_classification_8h.html#a20f9976341cc350b6e0d38e92eca1583a7024a78dfc8b657dfcd157ef0e0b1886", null ],
      [ "DIVIDE_CRITICAL", "
      _subdivision_classification_8h.html#a20f9976341cc350b6e0d38e92eca1583a5a94412a23dc475840ac49836f9acacc", null ],
      [ "DIVIDE_HIGH_SING", "
      _subdivision_classification_8h.html#a20f9976341cc350b6e0d38e92eca1583a8c4ad2ea3ed668d02477f0b10b55d6ad", null ],
      [ "DIVIDE_SING", "
      _subdivision_classification_8h.html#a20f9976341cc350b6e0d38e92eca1583aff8eb5e454216f614a6f2debdde17b98", null ],
      [ "DIVIDE_KNOT", "
      _subdivision_classification_8h.html#a20f9976341cc350b6e0d38e92eca1583a261b563ba14323519361642ffd4fb8e6", null ],
      [ "DIVIDE_INT", "
      _subdivision_classification_8h.html#a20f9976341cc350b6e0d38e92eca1583afc505e9630be475c3842fb7b43f30d94", null ],
      [ "DIVIDE_PAR", "
      _subdivision_classification_8h.html#a20f9976341cc350b6e0d38e92eca1583a4ad3fd9c982e0d60e139cf3d8fc16ea8", null ]
    ] ]
]
```

Definition at line 1 of file _subdivision_classification_8h.js.

30.161 doc/html/_surface_creators_8h.js File Reference

Variables

- var _surface_creators_8h

30.161.1 Variable Documentation

30.161.1.1 var _surface_creators_8h

Initial value:

```
=
[
    [ "createSmoothTransition", "_surface_creators_8h.html#a858bb397e81281be0bb543508e3c56b9", null ],
    [ "insertParamDomain", "_surface_creators_8h.html#a0f06ceb8b7da47dfd27594a3cdbf95f2", null ],
    [ "mergeRationalParts", "_surface_creators_8h.html#a81f9af572c3f6d8bdcbdd20d832c1fc9", null ],
    [ "mult1DBezierPatches", "_surface_creators_8h.html#a443311afde0b95d1e72801ca0fa91881", null ],
    [ "mult1DSurfaces", "_surface_creators_8h.html#ae95a71e47c11aa9f423046405e5c3750", null ],
    [ "separateRationalParts", "_surface_creators_8h.html#a9e2f8f7e84cb01abe72ae79427cc86cb", null ]
]
```

Definition at line 1 of file _surface_creators_8h.js.

30.162 doc/html/_surface_interpolator_8h.js File Reference

Variables

- var _surface_interpolator_8h

30.162.1 Variable Documentation

30.162.1.1 var _surface_interpolator_8h

Initial value:

```
=
[
    [ "regularInterpolation", "_surface_interpolator_8h.html#afd90b4917533a9d8939d5838d712c229", null ]
]
```

Definition at line 1 of file _surface_interpolator_8h.js.

30.163 doc/html/_surface_model_utils_8h.js File Reference

Variables

- var _surface_model_utils_8h

30.163.1 Variable Documentation

30.163.1.1 var _surface_model_utils_8h

Initial value:

```
=
[
    [ "checkClosedFaces", "_surface_model_utils_8h.html#a679b4c93fe452dc5bf2f31994c818ed5", null ]
]
```

Definition at line 1 of file _surface_model_utils_8h.js.

30.164 doc/html/_surface_on_volume_tools_8h.js File Reference

Variables

- var _surface_on_volume_tools_8h

30.164.1 Variable Documentation

30.164.1.1 var _surface_on_volume_tools_8h

Initial value:

```
=
[
    [ "getOuterBoundaryLoop", "_surface_on_volume_tools_8h.html#aa585ddfed4894e8954b4bc33c814af11", null ]
]
```

Definition at line 1 of file _surface_on_volume_tools_8h.js.

30.165 doc/html/_surface_tools_8h.js File Reference

Variables

- var _surface_tools_8h

30.165.1 Variable Documentation

30.165.1.1 var _surface_tools_8h

Initial value:

```
=
[
    [ "absolutelyAllBoundarySfLoops", "_surface_tools_8h.html#af4323213d23da8bc5ef4f5fcab4cdac0", null ],
    [ "allBoundarySfLoops", "_surface_tools_8h.html#a38c1b35dedce6b995bdab79c0a099b62", null ],
    [ "checkCoefCoLinearity", "_surface_tools_8h.html#af45aae277730c2f7765ff4b23fe60b7e", null ],
    [ "checkSurfaceClosed", "_surface_tools_8h.html#a97544e15edd15cd8313c96485074e73a", null ],
    [ "cornerToCornerSfs", "_surface_tools_8h.html#ac57f6942894cf2f49d6a91c885f53de4", null ],
    [ "estimateTangentLength", "_surface_tools_8h.html#ab6a68a15d4d30497549a58d65e6c15d3", null ],
    [ "getCoefEnumeration", "_surface_tools_8h.html#a448a3866411fde253b4482c8ea938061", null ],
    [ "getCoefEnumeration", "_surface_tools_8h.html#aa86f25d2c74cbb60ef6188c5074089b1", null ],
    [ "getCornerCoefEnum", "_surface_tools_8h.html#a0b1837d7023cbd191257b94fc88b203f", null ],
    [ "getCorrCoefEnum", "_surface_tools_8h.html#a0b280b6e8aefe8519547fbbf4ecc516f", null ],
    [ "getParEpsilon", "_surface_tools_8h.html#aa550ccbd55b0427b0e0e603389387568", null ],
    [ "getSfAdjacencyInfo", "_surface_tools_8h.html#a69d645f167d5c3e0a151413329d77fc4", null ],
    [ "iterateCornerPos", "_surface_tools_8h.html#a862c0c530045ad4b59fbf91051719ad6", null ],
    [ "outerBoundarySfLoop", "_surface_tools_8h.html#a0b4b094f6b39fe9d2496b2a04d9c76df", null ],
    [ "parameterizeByBaseSurf", "_surface_tools_8h.html#ad9e5bc87e70ff17ed3bb6bf877b9facf", null ],
    [ "surface_seedfind", "_surface_tools_8h.html#aac26a6206c258b5b821dd45b536a8b59", null ],
    [ "surfaceClosed", "_surface_tools_8h.html#a4d9d51de1000cacc1dd29b7a96636176", null ]
]
```

Definition at line 1 of file _surface_tools_8h.js.

30.166 doc/html/_tesselator_utils_8h.js File Reference

Variables

- var _tesselator_utils_8h

30.166.1 Variable Documentation

30.166.1.1 var _tesselator_utils_8h

Initial value:

```
=
[
    [ "getCtrPol", "_tesselator_utils_8h.html#a686ee084c6285418ea0f03c7eee6e331", null ],
    [ "getResolution", "_tesselator_utils_8h.html#a07334c0026ebfb7a56738e4bf1957c29", null ]
]
```

Definition at line 1 of file _tesselator_utils_8h.js.

30.167 doc/html/_utils_8h.js File Reference

Variables

- var _utils_8h

30.167.1 Variable Documentation

30.167.1.1 var _utils_8h

Initial value:

```
=
[
    [ "go_iterator_traits", "struct_go_1_1go__iterator__traits.html", "struct_go_1_1go__iterator__traits" ]
      ,
    [ "go_iterator_traits< T * >", "struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4.html", "
      struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4" ],
    [ "go_iterator_traits< const T * >", "struct_go_1_1go__iterator__traits_3_01const_01_t_01_5_01_4.html",
       "struct_go_1_1go__iterator__traits_3_01const_01_t_01_5_01_4" ],
    [ "distance_squared", "_utils_8h.html#ad522e8e98b924e9e0226f4f4111144f1", null ],
    [ "eatwhite", "_utils_8h.html#a43780996b9bc44a2d902858e953f8050", null ],
    [ "inner", "_utils_8h.html#a277ca01c9889efb36be1d32af5545484", null ],
    [ "normalize", "_utils_8h.html#accf22745624858161d45d2d05f5a3511", null ],
    [ "sum", "_utils_8h.html#ad9e8c423a1d270b6b015f3a09a3c30c9", null ],
    [ "sum_squared", "_utils_8h.html#a48fa5a9b5a428653667b7cf046ab6920", null ]
]
```

Definition at line 1 of file _utils_8h.js.

30.168 doc/html/_values_8h.js File Reference

Variables

- var _values_8h

30.168.1 Variable Documentation

30.168.1.1 var _values_8h

Initial value:

```
=
[
    [ "DEFAULT_PARAMETER_EPSILON", "_values_8h.html#ad93873aa87d054e3af416fee52eeaa8b", null ],
    [ "DEFAULT_SPACE_EPSILON", "_values_8h.html#a946cce20e8506c27fd9f46c09b39319e", null ],
    [ "M_PI", "_values_8h.html#ad5fc6b96e5441dd61200dd09dd9e363c", null ],
    [ "MAXDOUBLE", "_values_8h.html#a29ffe35f4b863b738f5bb836908b5ce0", null ],
    [ "MAXINT", "_values_8h.html#a85349090d85e7f334d4b3fd1f14a05c5", null ]
]
```

Definition at line 1 of file _values_8h.js.

30.169 doc/html/_volume_interpolator_8h.js File Reference

Variables

- var _volume_interpolator_8h

30.169.1 Variable Documentation

30.169.1.1 var _volume_interpolator_8h

Initial value:

```
=
[
    [ "regularInterpolation", "_volume_interpolator_8h.html#ac000136504b5a8b84959ac84b929ae0d", null ]
]
```

Definition at line 1 of file _volume_interpolator_8h.js.

30.170 doc/html/_volume_model_creator_8h.js File Reference

Variables

- var _volume_model_creator_8h

30.170.1 Variable Documentation

30.170.1.1 var _volume_model_creator_8h

Initial value:

```
=
[
    [ "createRotationalModel", "_volume_model_creator_8h.html#a854a55f713caabe38fd56ffc32264e5a", null ],
    [ "linearSweptModel", "_volume_model_creator_8h.html#a81121da55c79b1600b933a236f4e641b", null ]
]
```

Definition at line 1 of file _volume_model_creator_8h.js.

30.171 doc/html/_volume_model_file_handler_8h.js File Reference

Variables

- var _volume_model_file_handler_8h

30.171.1 Variable Documentation

30.171.1.1 var _volume_model_file_handler_8h

Initial value:

```
=
[
    [ "VolumeModelFileHandler", "class_go_1_1_volume_model_file_handler.html", "
      class_go_1_1_volume_model_file_handler" ],
    [ "_VOLUMEFILEHANDLER_H", "_volume_model_file_handler_8h.html#a1d5505728388942e4ea90d4be08daaea", null
      ]
]
```

Definition at line 1 of file _volume_model_file_handler_8h.js.

30.172 doc/html/_volume_tools_8h.js File Reference

Variables

- var _volume_tools_8h

30.172.1 Variable Documentation

30.172.1.1 var _volume_tools_8h

Initial value:

```
=
[
    [ "analyzePeriodicity", "_volume_tools_8h.html#ad73a8f4284b1f2a672a0fa6c9885400d", null ],
    [ "approxVolParamCurve", "_volume_tools_8h.html#aa500ad08b2e111caedb2c15ba3c6999f", null ],
    [ "cornerToCornerVols", "_volume_tools_8h.html#adfdf5b99d592845dbbaa634c59b84d69", null ],
    [ "getBoundarySurface", "_volume_tools_8h.html#a6bc0b6c84bdabced076fa1cb0abb7bc3", null ],
    [ "getBoundarySurfaces", "_volume_tools_8h.html#a873af9dd9666e4292bedf42a52fc5839", null ],
    [ "getCorrCoefVolEnum", "_volume_tools_8h.html#a064a74ed96b0c805c7a6645500042ce4", null ],
    [ "getOrientedBoundarySurface", "_volume_tools_8h.html#a58b40a61c979ea4daf9ebb65da13a062", null ],
    [ "getOrientedBoundarySurfaces", "_volume_tools_8h.html#a128d7e1806cb12df2b8083e063f66dfb", null ],
    [ "getVolAdjacencyInfo", "_volume_tools_8h.html#ad2f7e61bc55d47793d03770659881c06", null ],
    [ "getVolBdCoefEnumeration", "_volume_tools_8h.html#ab5f6e24e913f17d375c1cbcffda61869", null ],
    [ "getVolCoefEnumeration", "_volume_tools_8h.html#a46225b6df1dd3860f5f351d7a0212984", null ],
    [ "getVolCoefEnumeration", "_volume_tools_8h.html#aff10f42549713cd1da90b201b41ea056", null ],
    [ "liftVolParamCurve", "_volume_tools_8h.html#a31ab8609766412bdd39243eaafd1f530", null ],
    [ "projectVolParamCurve", "_volume_tools_8h.html#a2567b57a3c7c6e2240e86cab87dc7392", null ],
    [ "representCurveAsVolume", "_volume_tools_8h.html#a28dd9bc785e8364b1a681187208edd6e", null ],
    [ "representSurfaceAsVolume", "_volume_tools_8h.html#ad17cd9703b11abe9bfb2a20f211d5ab8", null ],
    [ "representVolumeAsCurve", "_volume_tools_8h.html#acb3006dd8acc2a77965132805c6654f7", null ],
    [ "representVolumeAsSurface", "_volume_tools_8h.html#a8d05413d8a1e3c4a965e18494ffbe092", null ],
    [ "volCommonSplineSpace", "_volume_tools_8h.html#a044797df4ccc3301dc4543b9224f1e50", null ]
]
```

Definition at line 1 of file _volume_tools_8h.js.

30.173 doc/html/_volumes_8h.js File Reference

Variables

- var _volumes_8h

30.173.1 Variable Documentation

30.173.1.1 var _volumes_8h

Initial value:

```
=
[
    [ "area", "_volumes_8h.html#a8cc8f744af2fc5541e493ffdd3d2e1f5", null ],
    [ "area", "_volumes_8h.html#a04f0f159a17bcc67285bb7349debd945", null ],
    [ "determinantOf", "_volumes_8h.html#a19c9bd461ffdf353431464a6fe0c80b5", null ],
    [ "determinantOf", "_volumes_8h.html#aa003b2f42cc209edef837b35294badfc", null ],
    [ "signed_area", "_volumes_8h.html#a99bb3e0367f54a9f8a328e22c4e6d2b2", null ],
    [ "simplex_volume", "_volumes_8h.html#a6d1e64227d0bbaea95363f58701082e5", null ],
    [ "volume", "_volumes_8h.html#ad8c173fcf99167307d4691d039ba47b7", null ]
]
```

Definition at line 1 of file _volumes_8h.js.

30.174 doc/html/annotated_dup.js File Reference

Variables

- var annotated_dup

30.174.1 Variable Documentation

30.174.1.1 var annotated_dup

Definition at line 1 of file annotated_dup.js.

30.175 doc/html/aux2_8cpp.js File Reference

Variables

- var aux2_8cpp

30.175.1 Variable Documentation

30.175.1.1 var aux2_8cpp

Initial value:

```
=
[
    [ "tic", "aux2_8cpp.html#ace51fd7d8435f88c8b2b3bcf64367673", null ],
    [ "toc", "aux2_8cpp.html#aec20b9a2b3b99a34f91fc9b8e1d83225", null ],
    [ "jon_timer", "aux2_8cpp.html#ab6b3a0f92f7304c85e25c9422c4c959c", null ]
]
```

Definition at line 1 of file aux2_8cpp.js.

30.176 doc/html/aux2_8h.js File Reference

Variables

- var aux2_8h

30.176.1 Variable Documentation

30.176.1.1 var aux2_8h

Definition at line 1 of file aux2_8h.js.

30.177 doc/html/bandmat_8cpp.js File Reference

Variables

- var bandmat_8cpp

30.177.1 Variable Documentation

30.177.1.1 var bandmat_8cpp

Initial value:

```
=
[
    [ "REPORT", "bandmat_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "bandmat_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "square", "bandmat_8cpp.html#ae0c42a7620957500708a95cbb31e4260", null ]
]
```

Definition at line 1 of file bandmat_8cpp.js.

30.178 doc/html/binom_8h.js File Reference

Variables

- var binom_8h

30.178.1 Variable Documentation

30.178.1.1 var binom_8h

Initial value:

```
=
[
    [ "binom", "binom_8h.html#a5b80ecab78ea5ff1030dacc17d799161", null ],
    [ "factorial", "binom_8h.html#af2da1e127f042c70cdb76c5b48158f8d", null ],
    [ "quadrinomial", "binom_8h.html#a28ad91e9ccb0d4796b3c226c7a9f847c", null ],
    [ "trinomial", "binom_8h.html#ac36f51acb739431294b2f88a8e6f65fb", null ]
]
```

Definition at line 1 of file binom_8h.js.

30.179 doc/html/boolean_8h.js File Reference

Variables

- var boolean_8h

30.179.1 Variable Documentation

30.179.1.1 var boolean_8h

Initial value:

```
=
[
    [ "bool", "classbool.html", "classbool" ],
    [ "bool_LIB", "boolean_8h.html#ae034ee292f37bf7f1a5488c0afe12cfd", null ],
    [ "false", "boolean_8h.html#aa9a4c04243afddc8f2274245a5d39635", null ],
    [ "true", "boolean_8h.html#aad3977b1b821fa4804b65c37a188066a", null ]
]
```

Definition at line 1 of file boolean_8h.js.

30.180 doc/html/brent__minimize_8h.js File Reference

Variables

- var brent__minimize_8h

30.180.1 Variable Documentation

30.180.1.1 var brent__minimize_8h

Initial value:

```
=
[
    [ "Fun2Fun", "class_go_1_1_fun2_fun.html", "class_go_1_1_fun2_fun" ],
    [ "brent_minimize", "brent__minimize_8h.html#a1bee23d40e575050d659ee12bc9d0f55", null ]
]
```

Definition at line 1 of file brent__minimize_8h.js.

30.181 doc/html/checks_8h.js File Reference

Variables

- var checks_8h

30.181.1 Variable Documentation

30.181.1.1 var checks_8h

Initial value:

```
=
[
    [ "compare_seq", "checks_8h.html#a53dfe6870adf2a25c6f827e7947c11f7", null ],
    [ "interval_overlap", "checks_8h.html#a55d10f76746c762b77ed74ed73ad8eec", null ],
    [ "nondecreasing", "checks_8h.html#a55281b6a4d49b457d96336b75076cbdd", null ],
    [ "nonincreasing", "checks_8h.html#acd8f6d5e30019f5e7d039dd550311a52", null ],
    [ "strictly_decreasing", "checks_8h.html#a6504eff7b2aa3dd41986e71dca7db979", null ],
    [ "strictly_decreasing", "checks_8h.html#a6b95d20d57a8288cffd972814ab7cf16", null ],
    [ "strictly_decreasing", "checks_8h.html#ae83af5c77cc2f4fe843bc34c7dd188cc", null ],
    [ "strictly_increasing", "checks_8h.html#a1582e823b204b085607da45b8c738509", null ],
    [ "strictly_increasing", "checks_8h.html#adf7e6a25193e1108491056e90951a030", null ],
    [ "strictly_increasing", "checks_8h.html#a00795366e02c59c0fc5a4982a47a7108", null ],
    [ "weakly_decreasing", "checks_8h.html#a9ef55b273f5d603669d73063e84a435c", null ],
    [ "weakly_decreasing", "checks_8h.html#af88f2fc0b462e4d9bf12c1361cd362ec", null ],
    [ "weakly_increasing", "checks_8h.html#af16aaec72dabb981744e338aef8c9748", null ],
    [ "weakly_increasing", "checks_8h.html#ad520388adbe4b3719116f02ba3be0145", null ]
]
```

Definition at line 1 of file checks_8h.js.

30.182 doc/html/cholesky_8cpp.js File Reference

Variables

- var cholesky_8cpp

30.182.1 Variable Documentation

30.182.1.1 var cholesky_8cpp

Initial value:

```
=
[
    [ "REPORT", "cholesky_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "cholesky_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "Cholesky", "cholesky_8cpp.html#a284464751aa76302c87bb61ea3f6d1f9", null ],
    [ "Cholesky", "cholesky_8cpp.html#a76f68d776790ec4ed5faf7bc242bb800", null ],
    [ "square", "cholesky_8cpp.html#ae0c42a7620957500708a95cbb31e4260", null ]
]
```

Definition at line 1 of file cholesky_8cpp.js.

30.183 doc/html/class_control_word.js File Reference

Variables

- var class_control_word

30.183.1 Variable Documentation

30.183.1.1 var class_control_word

Initial value:

```
=
[
    [ "ControlWord", "class_control_word.html#aacdbb089f6862671da1e99bda70f4af4", null ],
    [ "ControlWord", "class_control_word.html#a9e2737a4f4b24d73930088439c6551fc", null ],
    [ "operator!", "class_control_word.html#aef9676db08c7fae1934eb3c46a403a39", null ],
    [ "operator*", "class_control_word.html#af8a40c7f8a1555bd2cf75ec8fe9c8647", null ],
    [ "operator*=", "class_control_word.html#acc7993ad57360c97fae79feb144d55c9", null ],
    [ "operator+", "class_control_word.html#a75ce7d9b159be3b28f8084efc8b4f4dc", null ],
    [ "operator+", "class_control_word.html#a2b1a94955cdd3236371e43cf6fc11372", null ],
    [ "operator+=", "class_control_word.html#afa53f00d494d9ae34d06e03d40432803", null ],
    [ "operator-", "class_control_word.html#aca3251cbe0c602130e64a1e841e30a4e", null ],
    [ "operator-=", "class_control_word.html#aaebb50638e89c4b82a786e3da19d990b", null ],
    [ "operator<=", "class_control_word.html#a550195e839781f72c34aa8db6e12392f", null ],
    [ "operator>=", "class_control_word.html#ad88a1cee8890c8def3bcb1735fffcaf9", null ],
    [ "operator^", "class_control_word.html#ae889d5901a335f0c1a8c19b376648a6f", null ],
    [ "operator~", "class_control_word.html#a8ffd2ba79b2cf045c5a32bb3b3b0bf9a", null ],
    [ "cw", "class_control_word.html#ae696e3b3c704de2e65c82330c856ff79", null ]
]
```

Definition at line 1 of file class_control_word.js.

30.184 doc/html/class_curve_resolution_sheet.js File Reference

Variables

- var class_curve_resolution_sheet

30.184.1 Variable Documentation

30.184.1.1 var class_curve_resolution_sheet

Initial value:

```
=
[
    [ "CurveResolutionSheet", "class_curve_resolution_sheet.html#abc796a029f0fb49851c335326ad945eb", null ]
      ,
    [ "createSheet", "class_curve_resolution_sheet.html#ab222c39ceaeda7a79613e172e4f5e6d6", null ],
    [ "ok", "class_curve_resolution_sheet.html#af01e3f06bc03483b45a9dea07e61ee71", null ],
    [ "return_value", "class_curve_resolution_sheet.html#aa6b04a87fd9b92e3ecda823eea6ebbf1", null ]
]
```

Definition at line 1 of file class_curve_resolution_sheet.js.

30.185 doc/html/class_data_handler.js File Reference

Variables

- var class_data_handler

30.185.1 Variable Documentation

30.185.1.1 var class_data_handler

Initial value:

```
=
[
    [ "DataHandler", "class_data_handler.html#a51d845c1d9bbeef44607ec7592ba3c1d", null ],
    [ "~DataHandler", "class_data_handler.html#aa20ea75200d9436241929 76b21f657a3", null ],
    [ "clear", "class_data_handler.html#a7b19e680cbb9de9fd0089324a021c5f5", null ],
    [ "create", "class_data_handler.html#ae8ee9c581e71b7e5f9a13a2ecaf6f234", null ],
    [ "paintable", "class_data_handler.html#ac5537697c71dab750535e2f9f9f62935", null ],
    [ "propertySheet", "class_data_handler.html#a70d03706137156029dabfa7142dc11c6", null ],
    [ "tesselator", "class_data_handler.html#ab7caedcbf1e13f7456ce14b84c3b6789", null ],
    [ "paintable_", "class_data_handler.html#aa1afe2dc6943ccfda36c3bdd26f6d15f", null ],
    [ "property_sheet_", "class_data_handler.html#a82a24f3c15c88170263d4a64faaf307d", null ],
    [ "tesselator_", "class_data_handler.html#ac6931f251770a4e9b125d18bb2711092", null ]
]
```

Definition at line 1 of file class_data_handler.js.

30.186 doc/html/class_data_handler_vol_and_l_r.js File Reference

Variables

- var class_data_handler_vol_and_l_r

30.186.1 Variable Documentation

30.186.1.1 var class_data_handler_vol_and_l_r

Initial value:

```
=
[
    [ "DataHandlerVolAndLR", "class_data_handler_vol_and_l_r.html#aa9165829b2bcbfd4bbb5c2afbb4ea6c0", null
      ],
    [ "~DataHandlerVolAndLR", "class_data_handler_vol_and_l_r.html#ae9d6524526c45e5e5a779b6567e5b4ea", null
       ],
    [ "create", "class_data_handler_vol_and_l_r.html#a48c986b0f55f2d0c5cc0eb4ce8e2c7a4", null ]
]
```

Definition at line 1 of file class_data_handler_vol_and_l_r.js.

30.187 doc/html/class_default_data_handler.js File Reference

Variables

- var class_default_data_handler

30.187.1 Variable Documentation

30.187.1.1 var class_default_data_handler

Initial value:

```
=
[
    [ "DefaultDataHandler", "class_default_data_handler.html#a2cc2d1471f7aa6023300736250faf6b4", null ],
    [ "~DefaultDataHandler", "class_default_data_handler.html#a800919c97fc56c2d08eaa42336a93c54", null ],
    [ "create", "class_default_data_handler.html#a5af315f8342bbb09ecc0450356737839", null ]
]
```

Definition at line 1 of file class_default_data_handler.js.

30.188 doc/html/class_dijkstra.js File Reference

Variables

- var class_dijkstra

30.188.1 Variable Documentation

30.188.1.1 var class_dijkstra

Initial value:

```
=
[
    [ "Dijkstra", "class_dijkstra.html#ad7c7bb035ef96e4dbd652fe2bd11a2be", null ],
    [ "~Dijkstra", "class_dijkstra.html#a5f4a99a63b92805a304dea947ac69db5", null ],
    [ "closestNeighbour", "class_dijkstra.html#a55ebd94cf963d8f693f884b93f3da76f", null ],
    [ "getDistance", "class_dijkstra.html#ac444cf56e4db2c0cdb8599b1065be584", null ],
    [ "getDistance", "class_dijkstra.html#afbeafc367fe8e25041c794d807b27575", null ],
    [ "initialize", "class_dijkstra.html#a0f7f7f26abbe38dc975d1b73da1fd352", null ],
    [ "insertInCandidates", "class_dijkstra.html#a80ace1c298b9754b60468d99392cff64", null ],
    [ "isFinished", "class_dijkstra.html#a563d8a91c7448efa23f093bce2e937b1", null ],
    [ "run", "class_dijkstra.html#adb2c14d1e9bd1acf6837d556e93124f8", null ],
    [ "run", "class_dijkstra.html#ad81d8645d987ca5957e32b39f280b372", null ],
    [ "run", "class_dijkstra.html#a70daee9f05ba724087abadf7f7ad0e42", null ],
    [ "setFinished", "class_dijkstra.html#a96173796d7ede8affcdf44a0be23aae3", null ],
    [ "setGraph", "class_dijkstra.html#a225cd16b0dbe3634e83208fa5b9dbee8", null ],
    [ "setSource", "class_dijkstra.html#ada95f1751e12ca5084ccd1670d32394d", null ],
    [ "back_trace_", "class_dijkstra.html#ab9f8f09dfc6b20674b646803a637c258", null ],
    [ "distances_", "class_dijkstra.html#ab14b9563e6c73cdfd117f7097a19619d", null ],
    [ "flags_", "class_dijkstra.html#a21e1b614db2ae36d5af65313b0780334", null ],
    [ "graph_", "class_dijkstra.html#a35ec62ac1573a9a6a74b4b53fdf70dad", null ],
    [ "large_distance_", "class_dijkstra.html#af7d4f8f644cdf1330bca5ce819fa58a2", null ],
    [ "queue_", "class_dijkstra.html#af2a9d922323cb2849a2256b53f3df903", null ]
]
```

Definition at line 1 of file class_dijkstra.js.

30.189 doc/html/class_edge_type.js File Reference

Variables

- var class_edge_type

30.189.1 Variable Documentation

30.189.1.1 var class_edge_type

Initial value:

```
=
[
    [ "initEdgeType", "class_edge_type.html#a641b2e8b3a9c3f37cc6069f369fe694b", null ],
    [ "isVertex", "class_edge_type.html#a9350916f6ca2ba32ab52c284ae619ec2", null ],
    [ "vertex_", "class_edge_type.html#a90544457b28ef5bc656953195dd129f0", null ]
]
```

Definition at line 1 of file class_edge_type.js.

30.190 doc/html/class_g_a_r_c_h11___l_l.js File Reference

Variables

- var class_g_a_r_c_h11___l_l

30.190.1 Variable Documentation

30.190.1.1 var class_g_a_r_c_h11___l_l

Initial value:

```
=
[
    [ "GARCH11_LL", "class_g_a_r_c_h11___l_l.html#aad5b3bde84a4e545d8b3ac3729dc67ad", null ],
    [ "Derivatives", "class_g_a_r_c_h11___l_l.html#a494bfca46885a5d7f8bee8bade920e59", null ],
    [ "FI", "class_g_a_r_c_h11___l_l.html#a990b9201af32feeb2677beb0dc3c92a1", null ],
    [ "IsValid", "class_g_a_r_c_h11___l_l.html#a107b06b171c186cf48584f6a67b90cb3", null ],
    [ "LogLikelihood", "class_g_a_r_c_h11___l_l.html#a52af6343a9631dce4fe625e80e9b5088", null ],
    [ "Set", "class_g_a_r_c_h11___l_l.html#aebbd2dd6f57f05ca1403c2a3d238db6d", null ]
]
```

Definition at line 1 of file class_g_a_r_c_h11___l_l.js.

30.191 doc/html/class_go_1_1_adapt_curve.js File Reference

Variables

- var class_go_1_1_adapt_curve

30.191.1 Variable Documentation

30.191.1.1 var class_go_1_1_adapt_curve

Initial value:

```
=
[
    [ "AdaptCurve", "class_go_1_1_adapt_curve.html#a59f26c3f1fcead642efceb138bb79f1e", null ],
    [ "AdaptCurve", "class_go_1_1_adapt_curve.html#a53e5c367a32d9f393204573ce696f0a2", null ],
    [ "AdaptCurve", "class_go_1_1_adapt_curve.html#af2cba296962b451ad5176ca9b4c646c5", null ],
    [ "AdaptCurve", "class_go_1_1_adapt_curve.html#ae4f4202df2fa04ce461e79b819731b84", null ],
    [ "~AdaptCurve", "class_go_1_1_adapt_curve.html#ab27acbe4726d28c4e383860279fb26a3", null ],
    [ "AdaptCurve", "class_go_1_1_adapt_curve.html#a055a6c06eee5010316f910a26763bd46", null ],
    [ "approximate", "class_go_1_1_adapt_curve.html#a93d4c3bbfd8bb8d07ac3e1a6ac9d21bf", null ],
    [ "getAdaptCurve", "class_go_1_1_adapt_curve.html#a682e70cfb120abb0e1dff82ca6bf68f3", null ],
    [ "setEndPoints", "class_go_1_1_adapt_curve.html#a344d40537704fbb8528d383ff4ea2bcd", null ],
    [ "setSmooth", "class_go_1_1_adapt_curve.html#afac2da0e1525cc473326c7a19d68b4ef", null ],
    [ "unsetSmooth", "class_go_1_1_adapt_curve.html#add23ddbcb56e3ffdeef14f592d8c5f1f", null ]
]
```

Definition at line 1 of file class_go_1_1_adapt_curve.js.

30.192 doc/html/class_go_1_1_alg_obj2_d_int.js File Reference

Variables

- var class_go_1_1_alg_obj2_d_int

30.192.1 Variable Documentation

30.192.1.1 var class_go_1_1_alg_obj2_d_int

Initial value:

```
=
[
    [ "AlgObj2DInt", "class_go_1_1_alg_obj2_d_int.html#a41ecad45de4ec9467544468c573a7dd6", null ],
    [ "AlgObj2DInt", "class_go_1_1_alg_obj2_d_int.html#a6a3f8e74476c271fa65cb8fedea0062f", null ],
    [ "~AlgObj2DInt", "class_go_1_1_alg_obj2_d_int.html#a65c4d9d9a3aea6323c25d3691a2425ff", null ],
    [ "numTerms", "class_go_1_1_alg_obj2_d_int.html#a788af448ddf9ab74661aa74917f05e19", null ],
    [ "term", "class_go_1_1_alg_obj2_d_int.html#aaaafb3b4c074628a2e5e638e73c45b0c", null ],
    [ "degree_", "class_go_1_1_alg_obj2_d_int.html#a01db2490cf1855c6303f76b0e6bea11e", null ],
    [ "power_basis_", "class_go_1_1_alg_obj2_d_int.html#a9d0a4185e3ecbfc723d4b8292d2dd52a", null ],
    [ "terms_", "class_go_1_1_alg_obj2_d_int.html#a1e1990768fc14046b0100f702f0fc269", null ]
]
```

Definition at line 1 of file class_go_1_1_alg_obj2_d_int.js.

30.193 doc/html/class_go_1_1_alg_obj3_d_int.js File Reference

Variables

- var class_go_1_1_alg_obj3_d_int

30.193.1 Variable Documentation

30.193.1.1 var class_go_1_1_alg_obj3_d_int

Initial value:

```
=
[
    [ "AlgObj3DInt", "class_go_1_1_alg_obj3_d_int.html#a411328d76c197f6d3e1144271b143abe", null ],
    [ "AlgObj3DInt", "class_go_1_1_alg_obj3_d_int.html#adc15e68c0462a596823e28c84d89a1ae", null ],
    [ "AlgObj3DInt", "class_go_1_1_alg_obj3_d_int.html#ab8b8b1b212e40fd26042d755f53fb1ab", null ],
    [ "~AlgObj3DInt", "class_go_1_1_alg_obj3_d_int.html#a19a00c74ba29d3f588290ae19c77c1ba", null ],
    [ "degree", "class_go_1_1_alg_obj3_d_int.html#a98eb423e117d224879f6eb5d5c019dbe", null ],
    [ "getImplicit", "class_go_1_1_alg_obj3_d_int.html#ac1d386416f530957080df2da48e2423e", null ],
    [ "numTerms", "class_go_1_1_alg_obj3_d_int.html#ab4c002603683639c2ee441b09283b599", null ],
    [ "term", "class_go_1_1_alg_obj3_d_int.html#a36f9991313fdef5a2b777805cff541cf", null ],
    [ "usingPowerBasis", "class_go_1_1_alg_obj3_d_int.html#ae7e10dc5b80f754207c3044417261c60", null ],
    [ "bc_", "class_go_1_1_alg_obj3_d_int.html#a4fc32e98d86d35dc5cc4d935871f39e3", null ],
    [ "degree_", "class_go_1_1_alg_obj3_d_int.html#a0dd25a44d1732d39481bcd80bd9e15b2", null ],
    [ "implicit_", "class_go_1_1_alg_obj3_d_int.html#a8516851fe71f87e841cfe5fc3cb9ed79", null ],
    [ "power_basis_", "class_go_1_1_alg_obj3_d_int.html#ac2d65fef799a3b818efa91890b1bcc84", null ],
    [ "terms_", "class_go_1_1_alg_obj3_d_int.html#ad56baaf737039d1760a78cc87d3232a6", null ]
]
```

Definition at line 1 of file class_go_1_1_alg_obj3_d_int.js.

30.194 doc/html/class_go_1_1_alg_object_int.js File Reference

Variables

- var class_go_1_1_alg_object_int

30.194.1 Variable Documentation

30.194.1.1 var class_go_1_1_alg_object_int

Initial value:

```
=
[
    [ "AlgObjectInt", "class_go_1_1_alg_object_int.html#a4b7e787ad9622ac22a3d508a20dce580", null ],
    [ "~AlgObjectInt", "class_go_1_1_alg_object_int.html#ae8d2a0ce2d22c39264206bc379c3817a", null ]
]
```

Definition at line 1 of file class_go_1_1_alg_object_int.js.

30.195 doc/html/class_go_1_1_approx_crv_to_seqs.js File Reference

Variables

- var class_go_1_1_approx_crv_to_seqs

30.195.1 Variable Documentation

30.195.1.1 var class_go_1_1_approx_crv_to_seqs

Initial value:

```
=
[
    [ "ApproxCrvToSeqs", "class_go_1_1_approx_crv_to_seqs.html#a94b1145dff622caf5ba6f07ab70f5f9d", null ],
    [ "ApproxCrvToSeqs", "class_go_1_1_approx_crv_to_seqs.html#a37269ed15b04c386cd52b81ec84fe13e", null ],
    [ "ApproxCrvToSeqs", "class_go_1_1_approx_crv_to_seqs.html#ac4fe7840d83833c351e46deae60c9abe", null ],
    [ "~ApproxCrvToSeqs", "class_go_1_1_approx_crv_to_seqs.html#a85f320a7d0ba92ebe2ff89f9713d66ef", null ],
    [ "ApproxCrvToSeqs", "class_go_1_1_approx_crv_to_seqs.html#a424ab0ed21332aa0364527f510c9aeb5", null ],
    [ "getApproxCurves", "class_go_1_1_approx_crv_to_seqs.html#ac38511c7c533bffead46abfb64808349", null ],
    [ "setC1Approx", "class_go_1_1_approx_crv_to_seqs.html#a688379ea435e20811eb12428b56ac58d", null ],
    [ "setEndPoints", "class_go_1_1_approx_crv_to_seqs.html#a39a779ab46160626fadc94a7a5aeeb51", null ],
    [ "setSmooth", "class_go_1_1_approx_crv_to_seqs.html#a35bec85833f19cb50a34263ee05b4b65", null ],
    [ "unsetSmooth", "class_go_1_1_approx_crv_to_seqs.html#a54049a70064fe762aa22b740b9aa113b", null ]
]
```

Definition at line 1 of file class_go_1_1_approx_crv_to_seqs.js.

30.196 doc/html/class_go_1_1_approx_curve.js File Reference

Variables

- var class_go_1_1_approx_curve

30.196.1 Variable Documentation

30.196.1.1 var class_go_1_1_approx_curve

Initial value:

```
=
[
    [ "ApproxCurve", "class_go_1_1_approx_curve.html#a2b97121a74308760375ebad7de6d33ad", null ],
    [ "ApproxCurve", "class_go_1_1_approx_curve.html#a6135eed0dac2fde79afd208a67e044c6", null ],
    [ "ApproxCurve", "class_go_1_1_approx_curve.html#a4353fa67b89c38420f1fe8daef62cb46", null ],
    [ "~ApproxCurve", "class_go_1_1_approx_curve.html#ad55f51d891e243b0e4b9823a1da088ce", null ],
    [ "ApproxCurve", "class_go_1_1_approx_curve.html#a863ad42d169ffd5c4b5a87916be24a8b", null ],
    [ "getApproxCurve", "class_go_1_1_approx_curve.html#a5dd813e5bcde851a74b76b6b72c85e3f", null ],
    [ "setC1Approx", "class_go_1_1_approx_curve.html#ad36f56f04bfe61a2e90b709fe840741b", null ],
    [ "setEndPoints", "class_go_1_1_approx_curve.html#aecf82eb78c617e7fcab8159ecc21e0ee", null ],
    [ "setSmooth", "class_go_1_1_approx_curve.html#a8e587c29a96f02baf130f78fabfdb6e0", null ],
    [ "unsetSmooth", "class_go_1_1_approx_curve.html#aca033c663a6ab7a527e4168b0fc416d3", null ]
]
```

Definition at line 1 of file class_go_1_1_approx_curve.js.

30.197 doc/html/class_go_1_1_approx_surf.js File Reference

Variables

- var class_go_1_1_approx_surf

30.197.1 Variable Documentation

30.197.1.1 var class_go_1_1_approx_surf

Initial value:

```
=
[
    [ "ApproxSurf", "class_go_1_1_approx_surf.html#a41a1c2453303fbab79b8bef53c1576a6", null ],
    [ "ApproxSurf", "class_go_1_1_approx_surf.html#ae046f4d99fff00a02c1707e92b5053dd", null ],
    [ "~ApproxSurf", "class_go_1_1_approx_surf.html#a5dd3d905523895bf63aa9f9ade89769f", null ],
    [ "ApproxSurf", "class_go_1_1_approx_surf.html#a7781c1001f19a97499b193907d693b15", null ],
    [ "edgeFix", "class_go_1_1_approx_surf.html#ab4b9c87258b369bfc3f2be5a5f62f09b", null ],
    [ "getApproxSurf", "class_go_1_1_approx_surf.html#ae31ab7d1acd7b5aded2c53f996bb528a", null ],
    [ "getDoRefine", "class_go_1_1_approx_surf.html#a9e272b8f26ba790d9e6ce902fc1eec1e", null ],
    [ "reParam", "class_go_1_1_approx_surf.html#a2410776c1c4f29145e5ba1ae38acd9eb", null ],
    [ "setC1Approx", "class_go_1_1_approx_surf.html#a70d75984a119b781ddf03ed62891017d", null ],
    [ "setDoRefine", "class_go_1_1_approx_surf.html#a250605b3b40a5d8308349ece57ea5797", null ],
    [ "setFixBoundary", "class_go_1_1_approx_surf.html#a4891ec1c6ca76a33792bb5bc5398160a", null ],
    [ "setNormalConditions", "class_go_1_1_approx_surf.html#acc2a7fc44113521b40a7778a59cd52f1", null ],
    [ "setSmoothingWeight", "class_go_1_1_approx_surf.html#abbd16f25c48e3586e532e6ba3cb1b271", null ]
]
```

Definition at line 1 of file class_go_1_1_approx_surf.js.

30.198 doc/html/class_go_1_1_array.js File Reference

Variables

- var class_go_1_1_array

30.198.1 Variable Documentation

30.198.1.1 var class_go_1_1_array

Definition at line 1 of file class_go_1_1_array.js.

30.199 doc/html/class_go_1_1_bary_coord_system.js File Reference

Variables

- var class_go_1_1_bary_coord_system

30.199.1 Variable Documentation

30.199.1.1 var class_go_1_1_bary_coord_system

Initial value:

```
=
[
    [ "BaryCoordSystem", "class_go_1_1_bary_coord_system.html#ad212dfe2c4ae74d37206c179121985e7", null ],
    [ "BaryCoordSystem", "class_go_1_1_bary_coord_system.html#ae167ae1df54c769dc9a3617eb9a40c53", null ],
    [ "baryToCart", "class_go_1_1_bary_coord_system.html#a4ba4d3d3261342c9e6fad85b26e98fe0", null ],
    [ "cartToBary", "class_go_1_1_bary_coord_system.html#a4178d4a4b631a598d285a941f2ce67fa", null ],
    [ "corner", "class_go_1_1_bary_coord_system.html#a64a075601f1119b8d10fd1f9d76d14d0", null ],
    [ "read", "class_go_1_1_bary_coord_system.html#a91eb73692e0ae0c157e5aa749a3352bd", null ],
    [ "setCorners", "class_go_1_1_bary_coord_system.html#af328a8fe051c0d943038e87a808cf9e1", null ],
    [ "write", "class_go_1_1_bary_coord_system.html#a1cab0342adaec3d4a49009166490663b", null ]
]
```

Definition at line 1 of file class_go_1_1_bary_coord_system.js.

30.200 doc/html/class_go_1_1_bary_coord_system_triangle3_d.js File Reference

Variables

- var class_go_1_1_bary_coord_system_triangle3_d

30.200.1 Variable Documentation

30.200.1.1 var class_go_1_1_bary_coord_system_triangle3_d

Initial value:

```
=
[
    [ "BaryCoordSystemTriangle3D", "
      class_go_1_1_bary_coord_system_triangle3_d.html#abfb291cb267df0ad9b8412b3da407859", null ],
    [ "BaryCoordSystemTriangle3D", "
      class_go_1_1_bary_coord_system_triangle3_d.html#a88a0f1be74cf6febb5d8badfa771f644", null ],
    [ "baryToCart", "class_go_1_1_bary_coord_system_triangle3_d.html#a4ab5bfdbd40d2ab7dd2271547cfc7fd1",
      null ],
    [ "cartToBary", "class_go_1_1_bary_coord_system_triangle3_d.html#af18e2f746e4f4df28a0070ba480949f7",
      null ]
]
```

Definition at line 1 of file class_go_1_1_bary_coord_system_triangle3_d.js.

30.201 doc/html/class_go_1_1_bd_cond_functor.js File Reference

Variables

- var class_go_1_1_bd_cond_functor

30.201.1 Variable Documentation

30.201.1.1 var class_go_1_1_bd_cond_functor

Initial value:

```
=
[
    [ "BdCondFunctor", "class_go_1_1_bd_cond_functor.html#a6643591bd7a19f2bb09efc03979c51cc", null ],
    [ "~BdCondFunctor", "class_go_1_1_bd_cond_functor.html#a9db56302f598b168bb593fb3f37935db", null ],
    [ "evaluate", "class_go_1_1_bd_cond_functor.html#a3f8723e288cdc98e1f458dcdc3d37ee5", null ]
]
```

Definition at line 1 of file class_go_1_1_bd_cond_functor.js.

30.202 doc/html/class_go_1_1_bernstein_multi.js File Reference

Variables

- var class_go_1_1_bernstein_multi

30.202.1 Variable Documentation

30.202.1.1 var class_go_1_1_bernstein_multi

Definition at line 1 of file class_go_1_1_bernstein_multi.js.

30.203 doc/html/class_go_1_1_bernstein_poly.js File Reference

Variables

- var class_go_1_1_bernstein_poly

30.203.1 Variable Documentation

30.203.1.1 var class_go_1_1_bernstein_poly

Definition at line 1 of file class_go_1_1_bernstein_poly.js.

30.204 doc/html/class_go_1_1_bernstein_tetrahedral_poly.js File Reference

Variables

- var class_go_1_1_bernstein_tetrahedral_poly

30.204.1 Variable Documentation

30.204.1.1 var class_go_1_1_bernstein_tetrahedral_poly

Initial value:

```
=
[
    [ "BernsteinTetrahedralPoly", "
      class_go_1_1_bernstein_tetrahedral_poly.html#ab005bc2833b578aaa471c07bc172dc36", null ],
    [ "BernsteinTetrahedralPoly", "
      class_go_1_1_bernstein_tetrahedral_poly.html#ad247772287ecddbd047faa036dfef030", null ],
    [ "BernsteinTetrahedralPoly", "
      class_go_1_1_bernstein_tetrahedral_poly.html#a2b12af1efa01954f1f6df3dbc238c986", null ],
    [ "BernsteinTetrahedralPoly", "
      class_go_1_1_bernstein_tetrahedral_poly.html#ad9149fc219fe173125c96bb3e5781caa", null ],
    [ "blossom", "class_go_1_1_bernstein_tetrahedral_poly.html#a8306205db716601e4efafedb858edb39", null ],
    [ "degree", "class_go_1_1_bernstein_tetrahedral_poly.html#a4d1c9ae0578d7859d1e2a6bd50b17744", null ],
    [ "deriv", "class_go_1_1_bernstein_tetrahedral_poly.html#a4d17fb5166380cdd7535a1733844f99a", null ],
    [ "norm", "class_go_1_1_bernstein_tetrahedral_poly.html#adc109314566e1d364d63b81f3ac6161e", null ],
    [ "normalize", "class_go_1_1_bernstein_tetrahedral_poly.html#a9e2baed277141f5a913276a8ff10da15", null ]
    ,
    [ "operator()", "class_go_1_1_bernstein_tetrahedral_poly.html#a0365e653db7aa14dc30b1aca8cecd5fa", null
      ],
    [ "operator*=", "class_go_1_1_bernstein_tetrahedral_poly.html#a453903158b1725f0c6f365994267d688", null
      ],
    [ "operator*=", "class_go_1_1_bernstein_tetrahedral_poly.html#aaf9d57b373b5f0fcb7786f452cf4b04a", null
      ],
    [ "operator+=", "class_go_1_1_bernstein_tetrahedral_poly.html#abe004a30018c83b578fe09b245eea66b", null
      ],
    [ "operator+=", "class_go_1_1_bernstein_tetrahedral_poly.html#aaa23a6f059b35dec8055c5864013550d", null
      ],
    [ "operator-=", "class_go_1_1_bernstein_tetrahedral_poly.html#a96958fd0e0a6b07bf12eee07c3b16553", null
      ],
    [ "operator-=", "class_go_1_1_bernstein_tetrahedral_poly.html#a28a009b2651a08ff707ac03b014788fb", null
      ],
    [ "operator/=", "class_go_1_1_bernstein_tetrahedral_poly.html#a5d00173b0e92f56ce27af378713b2ea1", null
      ],
    [ "operator[]", "class_go_1_1_bernstein_tetrahedral_poly.html#ab76213ccf45a4c34352c98512b9b8f94", null
      ],
    [ "operator[]", "class_go_1_1_bernstein_tetrahedral_poly.html#a6f4efce3153a33ed22eda0574a25d658", null
      ],
    [ "pickLine", "class_go_1_1_bernstein_tetrahedral_poly.html#ae27bf0913be08acb7d4a461fdf41392f", null ],
    [ "read", "class_go_1_1_bernstein_tetrahedral_poly.html#af758b9a9c83aff8bd5c5f98906ddfb66", null ],
    [ "write", "class_go_1_1_bernstein_tetrahedral_poly.html#ada7cd55f1820d75b14415a7f269e8acb", null ]
]
```

Definition at line 1 of file class_go_1_1_bernstein_tetrahedral_poly.js.

30.205 doc/html/class_go_1_1_bernstein_triangular_poly.js File Reference

Variables

- var class_go_1_1_bernstein_triangular_poly

30.205.1 Variable Documentation

30.205.1.1 var class_go_1_1_bernstein_triangular_poly

Initial value:

```
=
[
    [ "BernsteinTriangularPoly", "
      class_go_1_1_bernstein_triangular_poly.html#a39388bc6bb9f60590dc12a32870dde34", null ],
    [ "BernsteinTriangularPoly", "
      class_go_1_1_bernstein_triangular_poly.html#a6331bda3ca424f1cc871d419107167a7", null ],
    [ "BernsteinTriangularPoly", "
      class_go_1_1_bernstein_triangular_poly.html#af7b6eac59ee0a433ed51475b45d4d828", null ],
    [ "BernsteinTriangularPoly", "
      class_go_1_1_bernstein_triangular_poly.html#a24146637cc3887c6f6044af04344611d", null ],
    [ "blossom", "class_go_1_1_bernstein_triangular_poly.html#a6fa732f8939598fda5d8d2e648550689", null ],
    [ "degree", "class_go_1_1_bernstein_triangular_poly.html#a9e55a7537ff94e2537073f4ebeff5601", null ],
    [ "deriv", "class_go_1_1_bernstein_triangular_poly.html#a7dbba3ad404bdb2de6bd3161491e009e", null ],
    [ "norm", "class_go_1_1_bernstein_triangular_poly.html#a8353dfcb9eefea481660cf2740aeb940", null ],
    [ "normalize", "class_go_1_1_bernstein_triangular_poly.html#a2e2d4609cff2f4fc3d31d16442b5ded4", null ],
    [ "operator()", "class_go_1_1_bernstein_triangular_poly.html#abf8789b1af8d3ca96c169c54d40a2c51", null ]
      ,
    [ "operator*=", "class_go_1_1_bernstein_triangular_poly.html#a9791d2594a0f484bd0c54776acc6f239", null ]
      ,
    [ "operator*=", "class_go_1_1_bernstein_triangular_poly.html#a9f772e707567c42315cda96609140849", null ]
      ,
    [ "operator+=", "class_go_1_1_bernstein_triangular_poly.html#a75f3d6ecde6b2202b50fd9dd6d78f33a", null ]
      ,
    [ "operator+=", "class_go_1_1_bernstein_triangular_poly.html#a493d810fb68717241b47f31bf8aefef7", null ]
      ,
    [ "operator-=", "class_go_1_1_bernstein_triangular_poly.html#a429abe1e12cb8a126ab47140f8459820", null ]
      ,
    [ "operator-=", "class_go_1_1_bernstein_triangular_poly.html#ae9983ce3d05363b8091d770b85644e49", null ]
      ,
    [ "operator/=", "class_go_1_1_bernstein_triangular_poly.html#aad9bd5d5849408ec0ef88843d7a2ffec", null ]
      ,
    [ "operator[]", "class_go_1_1_bernstein_triangular_poly.html#a2403c00c44c9afcd0a2d3e95bbe9900a", null ]
      ,
    [ "operator[]", "class_go_1_1_bernstein_triangular_poly.html#ab3220b27fe1c5c585efd6839a2469ab7", null ]
      ,
    [ "read", "class_go_1_1_bernstein_triangular_poly.html#addef2d12c934d32868035bbbe005c948", null ],
    [ "write", "class_go_1_1_bernstein_triangular_poly.html#ae9150fb59d5da6a36c8ab6510e8afa79", null ]
]
```

Definition at line 1 of file class_go_1_1_bernstein_triangular_poly.js.

30.206 doc/html/class_go_1_1_bezier_triangle.js File Reference

Variables

- var class_go_1_1_bezier_triangle

30.206.1 Variable Documentation

30.206.1.1 var class_go_1_1_bezier_triangle

Initial value:

```
=
[
    [ "BezierTriangle", "class_go_1_1_bezier_triangle.html#ad2750d4bffde460fa881754f001ca916", null ],
    [ "BezierTriangle", "class_go_1_1_bezier_triangle.html#ac91dbba3fdd4bc13d24fea26abf4e690", null ],
    [ "eval", "class_go_1_1_bezier_triangle.html#a04e7a7850a4292cd300aac604e17efec", null ],
    [ "evalderiv", "class_go_1_1_bezier_triangle.html#a476cd8cc51ec39552379566d756d63ed", null ],
    [ "interpolate", "class_go_1_1_bezier_triangle.html#af40c612f7285415e5c26560374c83d4a", null ]
]
```

Definition at line 1 of file class_go_1_1_bezier_triangle.js.

30.207 doc/html/class_go_1_1_binomial.js File Reference

Variables

- var class_go_1_1_binomial

30.207.1 Variable Documentation

30.207.1.1 var class_go_1_1_binomial

Initial value:

```
=
[
    [ "iter", "class_go_1_1_binomial.html#a3fd34a7ed39ffc597f0745a797bc5ee1", null ],
    [ "Binomial", "class_go_1_1_binomial.html#a43dc66955a04d1f4f0c2ee77a104f75b", null ],
    [ "Binomial", "class_go_1_1_binomial.html#a57c4eecadc37db79950dcc7d371ac9eb", null ],
    [ "operator()", "class_go_1_1_binomial.html#ad8bf97eb681e1192050bba8f2d75221c", null ],
    [ "operator[]", "class_go_1_1_binomial.html#a83a01d6a20068f458723ca748b0388fc", null ],
    [ "quadrinomial", "class_go_1_1_binomial.html#a06ca56cf6a69e4f16038a06f4f7277d8", null ],
    [ "trinomial", "class_go_1_1_binomial.html#a02971d15eecd7270349ce7e912a5cf15", null ]
]
```

Definition at line 1 of file class_go_1_1_binomial.js.

30.208 doc/html/class_go_1_1_block_boundary_condition.js File Reference

Variables

- var class_go_1_1_block_boundary_condition

30.208.1 Variable Documentation

30.208.1.1 var class_go_1_1_block_boundary_condition

Initial value:

```
=
[
    [ "BlockBoundaryCondition", "
      class_go_1_1_block_boundary_condition.html#afa9deff68d34dbc161df024553660d1c", null ],
    [ "~BlockBoundaryCondition", "
      class_go_1_1_block_boundary_condition.html#ace81f621b075a8f4f84f7b004e3bb985", null ],
    [ "getBdCoefficients", "class_go_1_1_block_boundary_condition.html#a559abfe01924826eb466d7fb0b733caa",
      null ],
    [ "getBdCoefficients", "class_go_1_1_block_boundary_condition.html#a4cb0d2ca598baae38ca409005fc157a0",
      null ],
    [ "getBdConditionType", "class_go_1_1_block_boundary_condition.html#a0c48e2a8f011cd1160195daa64ad0602",
       null ],
    [ "getCoefficientsEnumeration", "
      class_go_1_1_block_boundary_condition.html#a83586b5ee85dd8b50b17c6e63db6e037", null ],
    [ "getCoefficientsEnumeration", "
      class_go_1_1_block_boundary_condition.html#a13b4c1766c3e4157fa8b76b17779a0c7", null ],
    [ "getSolutionSpaceIdx", "class_go_1_1_block_boundary_condition.html#a5a7dc67deb9972b7db2530fc4e256ff4"
      , null ],
    [ "getTolerances", "class_go_1_1_block_boundary_condition.html#af1ed9c0ac379c75d6ee9c6b91bb59c68", null
       ],
    [ "isDirichlet", "class_go_1_1_block_boundary_condition.html#adb8413ec72c0e979c21d7ac0dd9ac20e", null ]
      ,
    [ "update", "class_go_1_1_block_boundary_condition.html#a40d988f2e964f750dc64a8c0c70a3cc9", null ],
    [ "updateBoundaryValue", "class_go_1_1_block_boundary_condition.html#a99eef723b4ec028d9c86c8bb028b6d56"
      , null ],
    [ "type_", "class_go_1_1_block_boundary_condition.html#a18931590bb9d12eee532f580fcca284c", null ]
]
```

Definition at line 1 of file class_go_1_1_block_boundary_condition.js.

30.209 doc/html/class_go_1_1_block_point_bd_cond.js File Reference

Variables

- var class_go_1_1_block_point_bd_cond

30.209.1 Variable Documentation

30.209.1.1 var class_go_1_1_block_point_bd_cond

Initial value:

```
=
[
    [ "BlockPointBdCond", "class_go_1_1_block_point_bd_cond.html#a60a47e210e4dffac71d1b55cf25c6d79", null ]
    ,
    [ "~BlockPointBdCond", "class_go_1_1_block_point_bd_cond.html#a1f30225e04abccf12151a2fb6f44416d", null
      ],
    [ "getCoefficientsEnumeration", "
      class_go_1_1_block_point_bd_cond.html#a387cc859d422b66cae4e8d6466a7a881", null ],
    [ "getConditionValue", "class_go_1_1_block_point_bd_cond.html#a299c70b29f8fc6d53e39a393c667a913", null
      ],
    [ "getInterpolationFactors", "class_go_1_1_block_point_bd_cond.html#a44c58e7b4c6aa2543e17060085eb88a0",
       null ],
    [ "getSolutionSpaceIdx", "class_go_1_1_block_point_bd_cond.html#a9b6c144b21088a2905e0c75d220728d4",
      null ]
]
```

Definition at line 1 of file class_go_1_1_block_point_bd_cond.js.

30.210 doc/html/class_go_1_1_block_solution.js File Reference

Variables

- var class_go_1_1_block_solution

30.210.1 Variable Documentation

30.210.1.1 var class_go_1_1_block_solution

Initial value:

```
=
[
    [ "~BlockSolution", "class_go_1_1_block_solution.html#abccda459fc0b334357c04627f4e719bc", null ],
    [ "asSfSolution", "class_go_1_1_block_solution.html#a8309d187eee54cdb60e437f9b067a6f4", null ],
    [ "asVolSolution", "class_go_1_1_block_solution.html#aef9e16803912f3c54082d22386cbf03f", null ],
    [ "basis", "class_go_1_1_block_solution.html#a7e86fd7aa6a2ba59111ca310251f6aff", null ],
    [ "degree", "class_go_1_1_block_solution.html#a8e601494d515e57129bde0762042b5d7", null ],
    [ "dimension", "class_go_1_1_block_solution.html#af0d01c6a57dd4280f7c7b50cbad9cf58", null ],
    [ "distinctKnots", "class_go_1_1_block_solution.html#a01474d8f8abcd6f412d1594e7146062f", null ],
    [ "erasePreEvaluatedBasisFunctions", "
      class_go_1_1_block_solution.html#ac61c3598051cdc35f318b5771341de32", null ],
    [ "getBoundaryCoefficients", "class_go_1_1_block_solution.html#a0f5518b769f1667203c86fc14e91bf57", null
       ],
    [ "getBoundaryCoefficients", "class_go_1_1_block_solution.html#ae642cd601e842f80fe1cf73c18c363f2", null
       ],
    [ "getJacobian", "class_go_1_1_block_solution.html#a0d853137bfae9fb9c37f4bdbe44fe6da", null ],
```

```
    [ "getMatchingCoefficients", "class_go_1_1_block_solution.html#aa0d2f9019212f644bbcd69e2530662fd", null
      ],
    [ "getNmbOfPointBdConditions", "class_go_1_1_block_solution.html#a4eb11c397226646b78c73f389d1ac185",
      null ],
    [ "getTolerances", "class_go_1_1_block_solution.html#a648fe2ece018086ce837fd956f64f00c", null ],
    [ "increaseDegree", "class_go_1_1_block_solution.html#a53f9eb6610d78056d953548779c286eb", null ],
    [ "insertKnots", "class_go_1_1_block_solution.html#a3d9e252ba38c2f9c858345cc7cf016a7", null ],
    [ "insertKnots", "class_go_1_1_block_solution.html#ac6bf8f9fa8d490a9a5b5689e0137fdca", null ],
    [ "knots", "class_go_1_1_block_solution.html#af0bdaab56a91706e89bcafe49ad2ae8f", null ],
    [ "makeMatchingSplineSpace", "class_go_1_1_block_solution.html#a9fcc41a509b1d30294a6e61beb80099f", null
      ],
    [ "matchingSplineSpace", "class_go_1_1_block_solution.html#ad8b7f6875ee5e07a35c57664cedd2df5", null ],
    [ "nmbCoefs", "class_go_1_1_block_solution.html#a82872c9f524b1283be5e955bd9c65a82", null ],
    [ "nmbCoefs", "class_go_1_1_block_solution.html#a20ccfda0ce32e93b2e59e48a09eef181", null ],
    [ "performPreEvaluation", "class_go_1_1_block_solution.html#a1d906d9d0c14128d2b1f7bb69ad29b5c", null ],
    [ "setSolutionCoefficients", "class_go_1_1_block_solution.html#ae7805d78ddc035169b04bed038d34054", null
      ],
    [ "updateConditions", "class_go_1_1_block_solution.html#a5ccc5fefa1e1de158a301b28e828f773", null ],
    [ "valuesInGaussPoint", "class_go_1_1_block_solution.html#aa73182487f313b59db56cc407d1bc1c5", null ]
]
```

Definition at line 1 of file class_go_1_1_block_solution.js.

30.211 doc/html/class_go_1_1_body.js File Reference

Variables

- var class_go_1_1_body

30.211.1 Variable Documentation

30.211.1.1 var class_go_1_1_body

Initial value:

```
=
[
    [ "Body", "class_go_1_1_body.html#af98b5efdc28c9ca6ef92cf5aa4e4ce7b", null ],
    [ "Body", "class_go_1_1_body.html#a4c42b398cbf3acd7f60aa5a9c7ba4294", null ],
    [ "Body", "class_go_1_1_body.html#a9dfa0a780ba2693bee36ac704ca72450", null ],
    [ "~Body", "class_go_1_1_body.html#a9be6043b4f7399802d2847162f4f2cab", null ],
    [ "addBodyPointers", "class_go_1_1_body.html#a2fff22de2dbe4a85153e7c6f4be06406", null ],
    [ "addshell", "class_go_1_1_body.html#a46133113ce2c6e98963d7ede3d03f9e0", null ],
    [ "areNeighbours", "class_go_1_1_body.html#a922224cd79d97088407e697945a0ccf9", null ],
    [ "boundingBox", "class_go_1_1_body.html#a5b884c2792a068ba527d6c9c0f4395b0", null ],
    [ "eraseBodyAdjacency", "class_go_1_1_body.html#a36f30526618c66e6a0abe03724a635db", null ],
    [ "getAdjacentBodies", "class_go_1_1_body.html#ad33e3e17e2c7c7093795357f9b988705", null ],
    [ "getAllShells", "class_go_1_1_body.html#a7412d17026e98794442fb767bb35c7a9", null ],
    [ "getMaterial", "class_go_1_1_body.html#a90ea918550cfe458e80b35051577ed3e", null ],
    [ "getOuterShell", "class_go_1_1_body.html#af9d6709445ed276eb2f943c28f5d22bc", null ],
    [ "getShell", "class_go_1_1_body.html#a88e5994f472e2723e9d837297074632f", null ],
    [ "getShell", "class_go_1_1_body.html#abafc8090bda7f804e50a0c0236fa6ade", null ],
    [ "getTolerances", "class_go_1_1_body.html#a982a64e31c403613a4425999a7b4085e", null ],
    [ "hasMaterialInfo", "class_go_1_1_body.html#ae3b6afc6244e7d1fbd2675b3aa1bda91", null ],
    [ "isInside", "class_go_1_1_body.html#a3eec909156712b57b8ffeccc76b8ee3a", null ],
    [ "nmbOfFaces", "class_go_1_1_body.html#aa9509060c4878ce1fbc1d2375ef21e9c", null ],
    [ "nmbOfShells", "class_go_1_1_body.html#ae9863f6474b189bbac7eaae1f35b85a0", null ],
    [ "setMaterial", "class_go_1_1_body.html#abcac826e4337372f4da084f657ade8f2", null ],
    [ "vertices", "class_go_1_1_body.html#ab510c765325c26a341abae6e94cddf19", null ],
    [ "material_id_", "class_go_1_1_body.html#a428472bd85631ad2afeb270f55967566", null ],
    [ "shells_", "class_go_1_1_body.html#a5818332246cccf5d8e7453afb75584fa", null ],
    [ "toptol_", "class_go_1_1_body.html#acdad160dfffc6b24a7a8382cbeleelaf", null ]
]
```

Definition at line 1 of file class_go_1_1_body.js.

30.212 doc/html/class_go_1_1_bounded_curve.js File Reference

Variables

- var class_go_1_1_bounded_curve

30.212.1 Variable Documentation

30.212.1.1 var class_go_1_1_bounded_curve

Definition at line 1 of file class_go_1_1_bounded_curve.js.

30.213 doc/html/class_go_1_1_bounded_surface.js File Reference

Variables

- var class_go_1_1_bounded_surface

30.213.1 Variable Documentation

30.213.1.1 var class_go_1_1_bounded_surface

Definition at line 1 of file class_go_1_1_bounded_surface.js.

30.214 doc/html/class_go_1_1_bounding_box.js File Reference

Variables

- var class_go_1_1_bounding_box

30.214.1 Variable Documentation

30.214.1.1 var class_go_1_1_bounding_box

Initial value:

```
=
[
    [ "BoundingBox", "class_go_1_1_bounding_box.html#ae0734e28e9d45e8b273d793d186b8f03", null ],
    [ "BoundingBox", "class_go_1_1_bounding_box.html#acc9317dd90c8ade7d6f335df02283acb", null ],
    [ "BoundingBox", "class_go_1_1_bounding_box.html#a0d21780c44c4e1e6b2b16839fd38af98", null ],
    [ "~BoundingBox", "class_go_1_1_bounding_box.html#aad668154c46aa29195472e95a1e2f9bb", null ],
    [ "addUnionWith", "class_go_1_1_bounding_box.html#a5c9caf80330aa3c6b114e25d7212d510", null ],
    [ "addUnionWith", "class_go_1_1_bounding_box.html#a5fc4a3a8769227d3362210dfb3bdb92f", null ],
    [ "check", "class_go_1_1_bounding_box.html#af9b87cafc77356ef4e7525d27cdfa200", null ],
    [ "containsBox", "class_go_1_1_bounding_box.html#a8171125fcb4696fc3cca24864c45e914", null ],
    [ "containsPoint", "class_go_1_1_bounding_box.html#a45052b81883d0f8ec821164866e1dd2b", null ],
    [ "dimension", "class_go_1_1_bounding_box.html#a623b0b0fb4624d37c3fdddd2392e16d0", null ],
    [ "getOverlap", "class_go_1_1_bounding_box.html#a83615344c6e97b47d79a79fb1b64beca", null ],
    [ "high", "class_go_1_1_bounding_box.html#a9ae5809ed615ef58b246e49e93eed4c1", null ],
    [ "lineIntersect", "class_go_1_1_bounding_box.html#a24f53e3fc42ff8cb66ab9501e4dbf9f0", null ],
    [ "low", "class_go_1_1_bounding_box.html#a6416bb152b0865a3c993ca3ee21865b7", null ],
    [ "overlaps", "class_go_1_1_bounding_box.html#a09571a1e82af4a4cc19773fe0d490eff", null ],
    [ "read", "class_go_1_1_bounding_box.html#a357abf9122958f6d747d55883cf74277", null ],
    [ "setFromArray", "class_go_1_1_bounding_box.html#a0805a08f0cb2c73debb1f2a893404873", null ],
    [ "setFromArray", "class_go_1_1_bounding_box.html#a16038b47ca05306e946f083481e6e4cb", null ],
    [ "setFromPoints", "class_go_1_1_bounding_box.html#a78e1e9b6e49429e96ed14401110d30fb", null ],
    [ "setFromPoints", "class_go_1_1_bounding_box.html#ae0a8864eaabb6a738f9e7b1c9960ba88", null ],
    [ "unset", "class_go_1_1_bounding_box.html#acd09101bbf176c80826164092096bdc4", null ],
    [ "valid", "class_go_1_1_bounding_box.html#a3082546a7b34a3dd3e51b7ae822f74c6", null ],
    [ "write", "class_go_1_1_bounding_box.html#ac290179e1101df372c184567a2136735", null ]
]
```

Definition at line 1 of file class_go_1_1_bounding_box.js.

30.215 doc/html/class_go_1_1_bspline_basis.js File Reference

Variables

- var class_go_1_1_bspline_basis

30.215.1 Variable Documentation

30.215.1.1 var class_go_1_1_bspline_basis

Definition at line 1 of file class_go_1_1_bspline_basis.js.

30.216 doc/html/class_go_1_1_c_p_uclock.js File Reference

Variables

- var class_go_1_1_c_p_uclock

30.216.1 Variable Documentation

30.216.1.1 var class_go_1_1_c_p_uclock

Initial value:

```
=
[
    [ "CPUclock", "class_go_1_1_c_p_uclock.html#a1703ea4f729c6386e2621f01c480db32", null ],
    [ "getInterval", "class_go_1_1_c_p_uclock.html#a16394976d443ede0280d8a0e239f2b45", null ],
    [ "getTime", "class_go_1_1_c_p_uclock.html#a7de0b3d30890b87605630f907ec9fb92", null ],
    [ "initTime", "class_go_1_1_c_p_uclock.html#a2e84ee8cdd5acbf8e3de8b60d13e6629", null ]
]
```

Definition at line 1 of file class_go_1_1_c_p_uclock.js.

30.217 doc/html/class_go_1_1_cell_division.js File Reference

Variables

- var class_go_1_1_cell_division

30.217.1 Variable Documentation

30.217.1.1 var class_go_1_1_cell_division

Initial value:

```
=
[
    [ "CellDivision", "class_go_1_1_cell_division.html#ae3984c674493bac740e0fe531b0faa68", null ],
    [ "CellDivision", "class_go_1_1_cell_division.html#a34224cf7f5aa7ebb9b506fd0d6cda294", null ],
    [ "CellDivision", "class_go_1_1_cell_division.html#a3c01ac003b88f67f5ade7361026f5610", null ],
    [ "CellDivision", "class_go_1_1_cell_division.html#ac4630091ffc59ce65295bfa28eb1d48e", null ],
    [ "~CellDivision", "class_go_1_1_cell_division.html#a29f003971ccd31f66f21b39bf7181b10", null ],
    [ "addFace", "class_go_1_1_cell_division.html#aa444ae96eca39c0b288549cf74db581f", null ],
    [ "big_box", "class_go_1_1_cell_division.html#afc8375bbf68f75b48831ab1be63a0b88", null ],
    [ "constructCells", "class_go_1_1_cell_division.html#aea6273310eba94d5652e3cea81827552", null ],
    [ "constructCells", "class_go_1_1_cell_division.html#a08ba1a93fe1f94213404ee327eb662b4", null ],
    [ "constructCells", "class_go_1_1_cell_division.html#a3801432599c72318c4938a6003085eb3", null ],
    [ "constructCells", "class_go_1_1_cell_division.html#a00f69f62a089fd3c3d2940b025e0d736", null ],
    [ "getCell", "class_go_1_1_cell_division.html#aad1d2c24f0b48e37c5a1ba58d943c5b6", null ],
    [ "numCells", "class_go_1_1_cell_division.html#a80530b1674b3bcadba93246b6ff6579c", null ],
    [ "removeFace", "class_go_1_1_cell_division.html#a614e7dc461f55e9274dd77207206face", null ]
]
```

Definition at line 1 of file class_go_1_1_cell_division.js.

30.218 doc/html/class_go_1_1_circle.js File Reference

Variables

- var class_go_1_1_circle

30.218.1 Variable Documentation

30.218.1.1 var class_go_1_1_circle

Definition at line 1 of file class_go_1_1_circle.js.

30.219 doc/html/class_go_1_1_closest_point_calculator.js File Reference

Variables

- var class_go_1_1_closest_point_calculator

30.219.1 Variable Documentation

30.219.1.1 var class_go_1_1_closest_point_calculator

Initial value:

```
=
[
    [ "ClosestPointCalculator", "
      class_go_1_1_closest_point_calculator.html#a1a470db9c6214f1489ba25f45e1722ce", null ],
    [ "compute", "class_go_1_1_closest_point_calculator.html#a0b11536a5c061dd88c31e34589bd736c", null ]
]
```

Definition at line 1 of file class_go_1_1_closest_point_calculator.js.

30.220 doc/html/class_go_1_1_complete_edge_net.js File Reference

Variables

- var class_go_1_1_complete_edge_net

30.220.1 Variable Documentation

30.220.1.1 var class_go_1_1_complete_edge_net

Initial value:

```
=
[
    [ "CompleteEdgeNet", "class_go_1_1_complete_edge_net.html#a031ce3f9ef73a370c6dfbeda23b96988", null ],
    [ "~CompleteEdgeNet", "class_go_1_1_complete_edge_net.html#ac492be28fcb5b757eb2d715142050f21", null ],
    [ "getMissingEdges", "class_go_1_1_complete_edge_net.html#af3b890805715f009dacac99a488bf8c1", null ],
    [ "getRegularizedModel", "class_go_1_1_complete_edge_net.html#a5e15f93efe60619ed65507d0931065bb", null
      ],
    [ "perform", "class_go_1_1_complete_edge_net.html#abf05b138fa7ad41cdd7bcc3674e2e9b5", null ]
]
```

Definition at line 1 of file class_go_1_1_complete_edge_net.js.

30.221 doc/html/class_go_1_1_complexity_info.js File Reference

Variables

- var class_go_1_1_complexity_info

30.221.1 Variable Documentation

30.221.1.1 var class_go_1_1_complexity_info

Initial value:

```
=
[
    [ "ComplexityInfo", "class_go_1_1_complexity_info.html#a546896f009ccc6587579780d0ea46d11", null ],
    [ "~ComplexityInfo", "class_go_1_1_complexity_info.html#afc5aaea70d3053416053db0c11cc1e5e", null ],
    [ "getBoxOverlap", "class_go_1_1_complexity_info.html#a92c1d24d585a6eb1f8d75ffcf13af649", null ],
    [ "getConeOverlap", "class_go_1_1_complexity_info.html#aaff36c97e537bb0fd2781e926af5650e", null ],
    [ "getNmbIntpts", "class_go_1_1_complexity_info.html#ac2f8f08e99a6bbd33b1e75f5aa79dbb7", null ],
    [ "getNmbSingpts", "class_go_1_1_complexity_info.html#a56460cacfaa2561db720fc694f853886", null ],
    [ "isComplex", "class_go_1_1_complexity_info.html#a935f961c24d415a48870ab9092bfb72c", null ],
    [ "setBoxOverlap", "class_go_1_1_complexity_info.html#ab6e28172185f56d7ada4ec5144b7b197", null ],
    [ "setComplex", "class_go_1_1_complexity_info.html#a276b17d59bf7fa23fd7e1cb1eaf6e72b", null ],
    [ "setConeOverlap", "class_go_1_1_complexity_info.html#aa9669a1e41f8d620972bba723447abd3", null ],
    [ "setNmbIntpts", "class_go_1_1_complexity_info.html#a398d5a6de6d0feecb6e5449892cbe02f", null ],
    [ "setNmbSingpts", "class_go_1_1_complexity_info.html#acdeba737674463ea94305240baeafb9a", null ]
]
```

Definition at line 1 of file class_go_1_1_complexity_info.js.

30.222 doc/html/class_go_1_1_composite_box.js File Reference

Variables

- var class_go_1_1_composite_box

30.222.1 Variable Documentation

30.222.1.1 var class_go_1_1_composite_box

Initial value:

```
=
[
    [ "CompositeBox", "class_go_1_1_composite_box.html#a0cf0d75e19e0799e72078877ee6e784d", null ],
    [ "CompositeBox", "class_go_1_1_composite_box.html#a9c3fc6c4edd357ed588e137e24bd0b45", null ],
    [ "~CompositeBox", "class_go_1_1_composite_box.html#a48d89324cb37b487064726809444b68a", null ],
    [ "containsBox", "class_go_1_1_composite_box.html#a901e56f7cfd24d904ef56eb56bdda424", null ],
    [ "containsPoint", "class_go_1_1_composite_box.html#ab4ee797c2c699406b1cb618cd6098786", null ],
    [ "dimension", "class_go_1_1_composite_box.html#ac3986a965027673dcbdc60fe0d390284", null ],
    [ "edge", "class_go_1_1_composite_box.html#a5f582420b4561b6bdb20f3c5d64d474e", null ],
    [ "getOverlap", "class_go_1_1_composite_box.html#a77456613f0380fce3be1e9e7ec8928e2", null ],
    [ "high", "class_go_1_1_composite_box.html#a148af87030c6be9e045dbfe797ebda57", null ],
    [ "inner", "class_go_1_1_composite_box.html#a7c1c3449658cbc9d5a8e0ad2007f64fa", null ],
    [ "low", "class_go_1_1_composite_box.html#a5299b662ecfadf138a1a64c6e0d682b4", null ],
    [ "overlaps", "class_go_1_1_composite_box.html#aba53e7a48998934006c5951635ec4cc5", null ],
    [ "read", "class_go_1_1_composite_box.html#a963b13d6cb9266e8c9c0c05117869b85", null ],
    [ "setFromArray", "class_go_1_1_composite_box.html#af23318fa8aff97abd02827a31ca32c0e", null ],
    [ "setFromPoints", "class_go_1_1_composite_box.html#abf974489a4339bc1c5bf9e7bb0e4283e", null ],
    [ "write", "class_go_1_1_composite_box.html#abc9e743afa6168a129d765dc1b44014e", null ]
]
```

Definition at line 1 of file class_go_1_1_composite_box.js.

30.223 doc/html/class_go_1_1_composite_curve.js File Reference

Variables

- var class_go_1_1_composite_curve

30.223.1 Variable Documentation

30.223.1.1 var class_go_1_1_composite_curve

Definition at line 1 of file class_go_1_1_composite_curve.js.

30.224 doc/html/class_go_1_1_composite_model.js File Reference

Variables

- var class_go_1_1_composite_model

30.224.1 Variable Documentation

30.224.1.1 var class_go_1_1_composite_model

Initial value:

```
=
[
    [ "CompositeModel", "class_go_1_1_composite_model.html#af17f66cfd0a5a4db92099ad589e02968", null ],
    [ "~CompositeModel", "class_go_1_1_composite_model.html#abaced49ad71c6a333c166b18f31bd2f6", null ],
    [ "asSurfaceModel", "class_go_1_1_composite_model.html#acabe5816a92cc859d1ac2fb803124b6c", null ],
    [ "boundingBox", "class_go_1_1_composite_model.html#a0242bdd0f68b860c74dcb239633d9593", null ],
    [ "boundingBox", "class_go_1_1_composite_model.html#ae62928c0e2e4d2022c928c4997f4ce9b", null ],
    [ "boxExtreme", "class_go_1_1_composite_model.html#a1f02915e238a12b98c9ac5238c728143", null ],
    [ "boxVecDist", "class_go_1_1_composite_model.html#ad53038595bd166d9f84b22482da71162", null ],
    [ "clone", "class_go_1_1_composite_model.html#a41e07072a1e553d32fe1b369bfbebff8", null ],
    [ "closestPoint", "class_go_1_1_composite_model.html#ac0ac71ab6cce360976f9a63a65bb4347", null ],
    [ "curvature", "class_go_1_1_composite_model.html#a4378e0cf48822b06e319632abb0d02a9", null ],
    [ "evaluate", "class_go_1_1_composite_model.html#aedb3e9516dbc21a1f5e801bf96f2d695", null ],
    [ "evaluate", "class_go_1_1_composite_model.html#a3d6b55740dc61a6591a0d15bafd56e1a", null ],
    [ "extremalPoint", "class_go_1_1_composite_model.html#a303f8f928e97078ff106bf57f07342f9", null ],
    [ "getTolerances", "class_go_1_1_composite_model.html#ae513d50c28ccf26d380b23097958e7e8", null ],
    [ "intersect", "class_go_1_1_composite_model.html#ad223057621d05e93be29a1543e726968", null ],
    [ "intersect_plane", "class_go_1_1_composite_model.html#a4985f0641d4a69a36df2c7537f4982c2", null ],
    [ "isDegenerate", "class_go_1_1_composite_model.html#aed3744a2505c6203380447e312e21bb9", null ],
    [ "nmbEntities", "class_go_1_1_composite_model.html#a700263c1ca355d07c92fb01b174f1d55", null ],
    [ "setTolerances", "class_go_1_1_composite_model.html#ad6db5bbd1ea0bce203fa19f4d927b6c2", null ],
    [ "tesselate", "class_go_1_1_composite_model.html#a55d5534b47d5a0cbabfa530c201adb26", null ],
    [ "tesselate", "class_go_1_1_composite_model.html#ad5f1cfa14f408e97667346ae312da36e", null ],
    [ "tesselate", "class_go_1_1_composite_model.html#a1546764e88cba9c13fa2bea819e9fe2c", null ],
    [ "tesselatedCtrPolygon", "class_go_1_1_composite_model.html#a60e568eb9b8531f2bc5de60acb9d8fd7", null ]
    ,
    [ "turn", "class_go_1_1_composite_model.html#a70199a40a9086025bc26b62a3fc25930", null ],
    [ "turn", "class_go_1_1_composite_model.html#a27bdfc47e9f619b8e3d3279e0ff96f7e", null ],
    [ "closest_idx_", "class_go_1_1_composite_model.html#aedc91ac680300548a1b8bfbea8d3a293", null ],
    [ "toptol_", "class_go_1_1_composite_model.html#a0df2b1e6f0db9214268ee15edafb0968", null ]
]
```

Definition at line 1 of file class_go_1_1_composite_model.js.

30.225 doc/html/class_go_1_1_composite_model_factory.js File Reference

Variables

- var class_go_1_1_composite_model_factory

30.225.1 Variable Documentation

30.225.1.1 var class_go_1_1_composite_model_factory

Initial value:

```
=
[
    [ "CompositeModelFactory", "class_go_1_1_composite_model_factory.html#a3aaa017ed6307c7254588da6af016a88
      ", null ],
    [ "~CompositeModelFactory", "
      class_go_1_1_composite_model_factory.html#a879a68b4de429af5a9c2ecf31b661cd0", null ],
    [ "createCircularArc", "class_go_1_1_composite_model_factory.html#a9b0fe75e31b39562ff27464f60aa4ed6",
      null ],
    [ "createEllipticArc", "class_go_1_1_composite_model_factory.html#a545a8424f9ffa04c71c0614bc486f29f",
      null ],
    [ "createEmpty", "class_go_1_1_composite_model_factory.html#a9f249bc8fe3290631d3331e5ac9278ff", null ],
    [ "createFromBox", "class_go_1_1_composite_model_factory.html#a189f25674a6cbe2c9f9ee24136060dec", null
```

```
      ],
    [ "createFromCylinder", "class_go_1_1_composite_model_factory.html#a6cffd625f5fec340d9c294ff9277efa1",
      null ],
    [ "createFromG2", "class_go_1_1_composite_model_factory.html#a64ded85681130a7de835f7bf04a1a0e4", null ]
      ,
    [ "createFromIges", "class_go_1_1_composite_model_factory.html#a1dd4377c13f7feb5432de29f9ad87762", null
       ],
    [ "createFromSisl", "class_go_1_1_composite_model_factory.html#a4fef1e2bed6e94b17fd6a45244874ec9", null
       ],
    [ "createFromSisl", "class_go_1_1_composite_model_factory.html#a5af40ba529889e3b41cef1e1dd9ab0e6", null
       ],
    [ "createFromSphere", "class_go_1_1_composite_model_factory.html#a4c0fe1f1562cadb2502313b36813c631",
      null ],
    [ "createFromSphere", "class_go_1_1_composite_model_factory.html#a2b704d2b72f52b9e8cdb04ad1b4c3343",
      null ],
    [ "createLineSegment", "class_go_1_1_composite_model_factory.html#a8fa82d8594aba36e654f3eb7ffe788b6",
      null ],
    [ "getModelsFromG2", "class_go_1_1_composite_model_factory.html#a6819151231d96ffb37a53af37b5e1eef",
      null ],
    [ "getModelsFromIges", "class_go_1_1_composite_model_factory.html#a79de7347a9355c68ba1dab4a73fff155",
      null ],
    [ "interpolateCurves", "class_go_1_1_composite_model_factory.html#a593b4d502d5617e8c8468c3b0503ce59",
      null ],
    [ "interpolateCurves", "class_go_1_1_composite_model_factory.html#a882512419a42ebdfb6aa7d2ebef6c8a1",
      null ],
    [ "interpolateCurves2", "class_go_1_1_composite_model_factory.html#abba6990c54cb62638e7b2df854e4bfce",
      null ],
    [ "interpolateCurves2", "class_go_1_1_composite_model_factory.html#ac0426ece72f633af3290417677e20587",
      null ]
]
```

Definition at line 1 of file class_go_1_1_composite_model_factory.js.

30.226 doc/html/class_go_1_1_composite_model_file_handler.js File Reference

Variables

- var class_go_1_1_composite_model_file_handler

30.226.1 Variable Documentation

30.226.1.1 var class_go_1_1_composite_model_file_handler

Definition at line 1 of file class_go_1_1_composite_model_file_handler.js.

30.227 doc/html/class_go_1_1_composite_surface.js File Reference

Variables

- var class_go_1_1_composite_surface

30.227.1 Variable Documentation

30.227.1.1 var class_go_1_1_composite_surface

Definition at line 1 of file class_go_1_1_composite_surface.js.

30.228 doc/html/class_go_1_1_concrete_creator.js File Reference

Variables

- var class_go_1_1_concrete_creator

30.228.1 Variable Documentation

30.228.1.1 var class_go_1_1_concrete_creator

Initial value:

```
=
[
    [ "ConcreteCreator", "class_go_1_1_concrete_creator.html#a936e9ad83889890e7221222b94dde424", null ],
    [ "create", "class_go_1_1_concrete_creator.html#aac31f03c76a12c9f467bc8f1b59426f3", null ]
]
```

Definition at line 1 of file class_go_1_1_concrete_creator.js.

30.229 doc/html/class_go_1_1_cone.js File Reference

Variables

- var class_go_1_1_cone

30.229.1 Variable Documentation

30.229.1.1 var class_go_1_1_cone

Definition at line 1 of file class_go_1_1_cone.js.

30.230 doc/html/class_go_1_1_cone_volume.js File Reference

Variables

- var class_go_1_1_cone_volume

30.230.1 Variable Documentation

30.230.1.1 var class_go_1_1_cone_volume

Initial value:

```
=
[
    [ "ConeVolume", "class_go_1_1_cone_volume.html#a2b5954de4f3f2d9176bd38655b5c366b", null ],
    [ "ConeVolume", "class_go_1_1_cone_volume.html#aad5901e2b8208a751cc99400f9683e9c", null ],
    [ "~ConeVolume", "class_go_1_1_cone_volume.html#a7521e6873042f301b8c289b7134d3e39", null ],
    [ "boundingBox", "class_go_1_1_cone_volume.html#a5820226622a18e35721d4345bb3b783a", null ],
    [ "clone", "class_go_1_1_cone_volume.html#a42b1059bcbd0c8a99196f7fda61474d0", null ],
    [ "closestPoint", "class_go_1_1_cone_volume.html#ab62398029d1c839b1651cf67d5b2a217", null ],
    [ "dimension", "class_go_1_1_cone_volume.html#ac0e0bd2cb65b7cc24c84ccfa82e85bc1", null ],
    [ "geometryVolume", "class_go_1_1_cone_volume.html#a44979ecb4ff07ae47f8cab0fa900ae97", null ],
    [ "getAllBoundarySurfaces", "class_go_1_1_cone_volume.html#ac490d5d0a5e39f716131f09ebc7916a0", null ],
    [ "instanceType", "class_go_1_1_cone_volume.html#a856d622b8c69c226b45c3811729d5491", null ],
    [ "nextSegmentVal", "class_go_1_1_cone_volume.html#acb6e3281f5c693cec31dc9fd22d21e2c", null ],
    [ "parameterSpan", "class_go_1_1_cone_volume.html#a634c93b4e3d7488ab93e1e2d4b7a5453", null ],
    [ "point", "class_go_1_1_cone_volume.html#ae491fe3f143fadb2b2f2e4a4868034bc", null ],
    [ "point", "class_go_1_1_cone_volume.html#ace9dd15a4afd8be6bd1637ac3d9484b8", null ],
    [ "read", "class_go_1_1_cone_volume.html#aace95efa8527024bd752680e37e92a9c", null ],
    [ "reverseParameterDirection", "class_go_1_1_cone_volume.html#a62f4032a05b45bbde40ec78a2c03db84", null
      ],
    [ "setParameters", "class_go_1_1_cone_volume.html#a3a9076f2baae429c335f1ed05e1d31d1", null ],
    [ "swapParameterDirection", "class_go_1_1_cone_volume.html#a53ae64faa028f9b5db77388cf0e3cc28", null ],
    [ "tangentCone", "class_go_1_1_cone_volume.html#a1f7d1a81eae6e98a3422a2320aa932bd", null ],
    [ "translate", "class_go_1_1_cone_volume.html#a4a8584b5213744c022f37c8602d98711", null ],
    [ "useCentreDegen", "class_go_1_1_cone_volume.html#a2991ac809f94ab9b98b446f9b208a724", null ],
    [ "useCornerDegen", "class_go_1_1_cone_volume.html#a49bcd6f881e1afa5153c8d8aa7910a2f", null ],
    [ "write", "class_go_1_1_cone_volume.html#ad8a963e0086079894fcb89e6d6eb86c7", null ]
]
```

Definition at line 1 of file class_go_1_1_cone_volume.js.

30.231 doc/html/class_go_1_1_connection_functor.js File Reference

Variables

- var class_go_1_1_connection_functor

30.231.1 Variable Documentation

30.231.1.1 var class_go_1_1_connection_functor

Initial value:

```
=
[
    [ "ConnectionFunctor", "class_go_1_1_connection_functor.html#a5e17a025c24007f1a1cb1edcc8c7a307", null ]
      ,
    [ "operator()", "class_go_1_1_connection_functor.html#ad3b69e5941c88219636efaacbf619352", null ]
]
```

Definition at line 1 of file class_go_1_1_connection_functor.js.

30.232 doc/html/class_go_1_1_coordinate_system.js File Reference

Variables

- var class_go_1_1_coordinate_system

30.232.1 Variable Documentation

30.232.1.1 var class_go_1_1_coordinate_system

Initial value:

```
=
[
    [ "Matrix", "class_go_1_1_coordinate_system.html#a01318b17e30343e7b38c6dd129c5ae57", null ],
    [ "Vector", "class_go_1_1_coordinate_system.html#a80aab6cc63681fb2713cfb772826025a", null ],
    [ "CoordinateSystem", "class_go_1_1_coordinate_system.html#ae699f4caf33cb766c550f9818eb8a752", null ],
    [ "CoordinateSystem", "class_go_1_1_coordinate_system.html#a18bae9c10686eb10a81d512c213a8e43", null ],
    [ "operator*", "class_go_1_1_coordinate_system.html#a6d2df13a3895240ba29d9fd640c00aea", null ],
    [ "operator*", "class_go_1_1_coordinate_system.html#ae424bdc31dfc95a8be41120feefc4ee1", null ],
    [ "rot", "class_go_1_1_coordinate_system.html#a3b0db4d8c6c0a54c0062be5e0290d3d9", null ],
    [ "rot", "class_go_1_1_coordinate_system.html#ab87a405f0bcbeea108245be504a9089d", null ],
    [ "tr", "class_go_1_1_coordinate_system.html#a3ed7c4908621c839632a4445b108694e", null ],
    [ "tr", "class_go_1_1_coordinate_system.html#a96fc5127abeec65820380667fa3ebf55", null ]
]
```

Definition at line 1 of file class_go_1_1_coordinate_system.js.

30.233 doc/html/class_go_1_1_creator.js File Reference

Variables

- var class_go_1_1_creator

30.233.1 Variable Documentation

30.233.1.1 var class_go_1_1_creator

Initial value:

```
=
[
    [ "~Creator", "class_go_1_1_creator.html#a8de48cc9ffdab283b7ec4298353599ee", null ],
    [ "create", "class_go_1_1_creator.html#aff22f6695f55c6ef0f002fe9aa781f8c", null ]
]
```

Definition at line 1 of file class_go_1_1_creator.js.

30.234 doc/html/class_go_1_1_cross_tan_off_dist.js File Reference

Variables

- var class_go_1_1_cross_tan_off_dist

30.234.1 Variable Documentation

30.234.1.1 var class_go_1_1_cross_tan_off_dist

Initial value:

```
=
[
    [ "CrossTanOffDist", "class_go_1_1_cross_tan_off_dist.html#a97eae000ee5999c76763b9a92da85d2e", null ],
    [ "~CrossTanOffDist", "class_go_1_1_cross_tan_off_dist.html#ac71814d2ee4a5e743f3e0ac2715d17ad", null ],
    [ "approximationOK", "class_go_1_1_cross_tan_off_dist.html#a4a446ce876c6d3917b362ab28e87c5ec", null ],
    [ "dim", "class_go_1_1_cross_tan_off_dist.html#aaecb62e918fafc868c512fbcd1a63624", null ],
    [ "end", "class_go_1_1_cross_tan_off_dist.html#ad797f65a0e94e6fb2dc328a2795ff712", null ],
    [ "eval", "class_go_1_1_cross_tan_off_dist.html#a093f223454d1e0bcae4631d52dca7afe", null ],
    [ "eval", "class_go_1_1_cross_tan_off_dist.html#a69a4b1d5cca9da187739f607ee4ac765", null ],
    [ "start", "class_go_1_1_cross_tan_off_dist.html#a89f50dadc9bf0f0456c68929e47b32d4", null ]
]
```

Definition at line 1 of file class_go_1_1_cross_tan_off_dist.js.

30.235 doc/html/class_go_1_1_cross_tangent_offset.js File Reference

Variables

- var class_go_1_1_cross_tangent_offset

30.235.1 Variable Documentation

30.235.1.1 var class_go_1_1_cross_tangent_offset

Initial value:

```
=
[
    [ "CrossTangentOffset", "class_go_1_1_cross_tangent_offset.html#accaf9197651c21dc5a2514846da2ce92",
      null ],
    [ "~CrossTangentOffset", "class_go_1_1_cross_tangent_offset.html#a644a48ebbe193658e2efba294e7b5079",
      null ],
    [ "approximationOK", "class_go_1_1_cross_tangent_offset.html#a16ea910d7c4cceb1fa9115d7a4d39659", null ]
    ,
    [ "dim", "class_go_1_1_cross_tangent_offset.html#a96f44ae924935fa5aebcbce207f84f66", null ],
    [ "end", "class_go_1_1_cross_tangent_offset.html#a804d51d488fdc1db2f7878c127e2297a", null ],
    [ "eval", "class_go_1_1_cross_tangent_offset.html#abd8823abd7a5dddfb98dda7830f57da5", null ],
    [ "eval", "class_go_1_1_cross_tangent_offset.html#a3ab9c438427bbee76e368b85988d4145", null ],
    [ "start", "class_go_1_1_cross_tangent_offset.html#a318c68ba55b0bd3c632076aa9031133d", null ]
]
```

Definition at line 1 of file class_go_1_1_cross_tangent_offset.js.

30.236 doc/html/class_go_1_1_crosses_value.js File Reference

Variables

- var class_go_1_1_crosses_value

30.236.1 Variable Documentation

30.236.1.1 var class_go_1_1_crosses_value

Initial value:

```
=
[
    [ "argument_type", "class_go_1_1_crosses_value.html#aae9be45a2093dec324dea50127163874", null ],
    [ "result_type", "class_go_1_1_crosses_value.html#ab2043aeaba5d6bb69f9264dd2facae3b", null ],
    [ "CrossesValue", "class_go_1_1_crosses_value.html#ad6353deae4d6f6d7dfff11d278b9cd7a", null ],
    [ "operator()", "class_go_1_1_crosses_value.html#aa84ae9ea9111d2e037ef5ded78f0677d", null ]
]
```

Definition at line 1 of file class_go_1_1_crosses_value.js.

30.237 doc/html/class_go_1_1_curve_bounded_domain.js File Reference

Variables

- var class_go_1_1_curve_bounded_domain

30.237.1 Variable Documentation

30.237.1.1 var class_go_1_1_curve_bounded_domain

Initial value:

```
=
[
    [ "CurveBoundedDomain", "class_go_1_1_curve_bounded_domain.html#a18a47f463be561c4b9159f9a48b75810",
      null ],
    [ "CurveBoundedDomain", "class_go_1_1_curve_bounded_domain.html#a64b7a200c859eed5197f0690322577f7",
      null ],
    [ "CurveBoundedDomain", "class_go_1_1_curve_bounded_domain.html#af9d5bb9de6ebc645029186e7d60e8639",
      null ],
    [ "~CurveBoundedDomain", "class_go_1_1_curve_bounded_domain.html#a8fb6e3de5f72613521288c9156ebed6e",
      null ],
    [ "clipWithDomain", "class_go_1_1_curve_bounded_domain.html#a9ebcd31c5c62e1dd7486e49e11ab6df6", null ],
    [ "closestInDomain", "class_go_1_1_curve_bounded_domain.html#ad7f4566f999a8df8066dc341aded5ddf", null ]
      ,
    [ "closestOnBoundary", "class_go_1_1_curve_bounded_domain.html#a8e5c2a8127ccd5bd9c336e1738c73eaf", null
       ],
    [ "containingDomain", "class_go_1_1_curve_bounded_domain.html#ab953d88367589393699deb49b8edbc07", null
      ],
    [ "findPcurveInsideSegments", "class_go_1_1_curve_bounded_domain.html#ab756191c1eaab9f8c85e19f9754b7122
      ", null ],
    [ "findPcurveInsideSegments", "class_go_1_1_curve_bounded_domain.html#a80d23bc9ec923c71f1e66c4300bf798b
      ", null ],
    [ "getInsideIntervals", "class_go_1_1_curve_bounded_domain.html#a5f7b7785fb897dc16ad33aef7212160c",
      null ],
    [ "getInternalPoint", "class_go_1_1_curve_bounded_domain.html#a48bbddab7fed9a716981fd99c02e8e53", null
      ],
    [ "isInDomain", "class_go_1_1_curve_bounded_domain.html#aa850241d4083c6dd9e0f25f44e801478", null ],
    [ "isInDomain2", "class_go_1_1_curve_bounded_domain.html#ad0b5791ca4f4efb2f4ba278a816ac8ed", null ],
    [ "isOnBoundary", "class_go_1_1_curve_bounded_domain.html#aaa7f183d4288ba4e3681479b3c628bd8", null ],
    [ "isOnCorner", "class_go_1_1_curve_bounded_domain.html#a6a47ab4ba91107a95bab17d00b2d7685", null ],
    [ "positionPointInDomain", "class_go_1_1_curve_bounded_domain.html#ac8e0131368dd437a9ea82ee5a704ef16",
      null ]
]
```

Definition at line 1 of file class_go_1_1_curve_bounded_domain.js.

30.238 doc/html/class_go_1_1_curve_loop.js File Reference

Variables

- var class_go_1_1_curve_loop

30.238.1 Variable Documentation

30.238.1.1 var class_go_1_1_curve_loop

Initial value:

```
=
[
    [ "CurveLoop", "class_go_1_1_curve_loop.html#a1e1cb95e731e6406e2e85ef158474f74", null ],
    [ "CurveLoop", "class_go_1_1_curve_loop.html#ade5272d85ed158bc981182df67c4aef4", null ],
    [ "~CurveLoop", "class_go_1_1_curve_loop.html#a9b6988be13ec186c892a8bed14588a1d", null ],
    [ "begin", "class_go_1_1_curve_loop.html#a0b5be6e67a8d5ee06d3cd7aad64d1ede", null ],
    [ "begin", "class_go_1_1_curve_loop.html#a27dcb63156cda7fce37fc181e40a9cf4", null ],
    [ "closestParPoint", "class_go_1_1_curve_loop.html#ab31598dc9197a8b92b87474df3158290", null ],
    [ "closestPoint", "class_go_1_1_curve_loop.html#a14cb0571736ec8c1740a426c0e53dc23", null ],
    [ "end", "class_go_1_1_curve_loop.html#a9245355ff03ceed08ead4dfd6484e429", null ],
    [ "end", "class_go_1_1_curve_loop.html#a6300b8a52488d0dbc9b1d31e7d34ab1e", null ],
    [ "fixInvalidLoop", "class_go_1_1_curve_loop.html#a4f1db82c3d9aeaac3654d7359a99b0d2", null ],
    [ "getCorners", "class_go_1_1_curve_loop.html#aba21e7b1abe68382aa7a4365b0a46d65", null ],
    [ "getCurves", "class_go_1_1_curve_loop.html#a7959761401bcefe5f8b13b03f55d2e82", null ],
    [ "getMaxCurveDist", "class_go_1_1_curve_loop.html#ae798f4d28424200761a4580538fb24fe", null ],
    [ "getSmoothCurves", "class_go_1_1_curve_loop.html#aa6c04d6c0a64612db860e66cf457b555", null ],
    [ "getSpaceEpsilon", "class_go_1_1_curve_loop.html#a5b36e02e53f3d3966331c379aafc0744", null ],
    [ "isValid", "class_go_1_1_curve_loop.html#ada94a24a980ee03b6c648b63f4454fee", null ],
    [ "operator[]", "class_go_1_1_curve_loop.html#af6d96f046a265b3ade9b2248ab9d2616", null ],
    [ "setCurves", "class_go_1_1_curve_loop.html#a41bd1856152a1c9ae270a8aeb5c6e8d3", null ],
    [ "setSpaceEpsilon", "class_go_1_1_curve_loop.html#a5971f2d0ed852cd5771fb1c35eb5eab2", null ],
    [ "simplify", "class_go_1_1_curve_loop.html#a5ae1f25efd34a9772c7ea1ed01f34790", null ],
    [ "size", "class_go_1_1_curve_loop.html#a29cc84f53283aaee037f169b19f967d9", null ],
    [ "swap", "class_go_1_1_curve_loop.html#a6e671156a7602ac1cd569251ac74f379", null ],
    [ "turnOrientation", "class_go_1_1_curve_loop.html#a3595b52d2aebfce9feb2339ac77f6fbb", null ]
]
```

Definition at line 1 of file class_go_1_1_curve_loop.js.

30.239 doc/html/class_go_1_1_curve_model.js File Reference

Variables

- var class_go_1_1_curve_model

30.239.1 Variable Documentation

30.239.1.1 var class_go_1_1_curve_model

Initial value:

```
=
[
    [ "CurveModel", "class_go_1_1_curve_model.html#a28e80476530ffdfee76de33d447d385f", null ],
    [ "~CurveModel", "class_go_1_1_curve_model.html#a06f1cb0cf8090dafc4cf7dc1caf7192a", null ],
    [ "boundingBox", "class_go_1_1_curve_model.html#a631d5ab539bede1e7db628a82f24b867", null ],
    [ "boundingBox", "class_go_1_1_curve_model.html#a6291f57225814717ff7ba2a027d77340", null ],
    [ "clone", "class_go_1_1_curve_model.html#a09a81d7d65beb3ad5c6e4c5b3c4da2d7", null ],
    [ "closestPoint", "class_go_1_1_curve_model.html#ac66d95156cddfb8bd83bc3ac0329977e", null ],
    [ "curvature", "class_go_1_1_curve_model.html#a93c57aac70712434cc9b9853795b7320", null ],
    [ "evaluate", "class_go_1_1_curve_model.html#aec0d0ac671d2e1ad3a3f178c125e8611", null ],
    [ "evaluate", "class_go_1_1_curve_model.html#ac71fc300c8b0038fe27441bd16c07ffa", null ],
    [ "extremalPoint", "class_go_1_1_curve_model.html#af4843e0bf615f48d48aba163507a0903", null ],
    [ "fetchCompositeCurves", "class_go_1_1_curve_model.html#a1f227f8d4d720f672925567f90eea029", null ],
    [ "getCurve", "class_go_1_1_curve_model.html#a777dfac8daf0721a5ad5aaf465480a6d", null ],
    [ "getIndex", "class_go_1_1_curve_model.html#a675ff02222ccd405023bf2350dea0dae", null ],
    [ "intersect", "class_go_1_1_curve_model.html#afa0bc4b7953eb911abc9335dfae22a2e", null ],
    [ "intersect_plane", "class_go_1_1_curve_model.html#a94c6b368e929c11e40dcde6eab238d0a", null ],
    [ "isDegenerate", "class_go_1_1_curve_model.html#a4a973653562bc03e0e6e2c13cd875082", null ],
    [ "nmbEntities", "class_go_1_1_curve_model.html#afb2d4709b0f339aad55d603bef6eaa0e", null ],
    [ "tesselate", "class_go_1_1_curve_model.html#a5aa6f99880fd5126485b39a59932a30f", null ],
    [ "tesselate", "class_go_1_1_curve_model.html#a2cc71ae48a6d1024c8779c1fde08eb80", null ],
    [ "tesselate", "class_go_1_1_curve_model.html#a13361c5bf5d010aa4da56ae5569070e0", null ],
    [ "tesselatedCtrPolygon", "class_go_1_1_curve_model.html#a0bc9f19a78ec7aaac8b655ea7e25bc7b", null ],
    [ "turn", "class_go_1_1_curve_model.html#a2487ffc22e3608c85084d013f7268f47", null ],
    [ "turn", "class_go_1_1_curve_model.html#a3d9c2dfa01cde59f734767c05bc736e0", null ]
]
```

Definition at line 1 of file class_go_1_1_curve_model.js.

30.240 doc/html/class_go_1_1_curve_on_surface.js File Reference

Variables

- var class_go_1_1_curve_on_surface

30.240.1 Variable Documentation

30.240.1.1 var class_go_1_1_curve_on_surface

Definition at line 1 of file class_go_1_1_curve_on_surface.js.

30.241 doc/html/class_go_1_1_curve_on_volume.js File Reference

Variables

- var class_go_1_1_curve_on_volume

30.241.1 Variable Documentation

30.241.1.1 var class_go_1_1_curve_on_volume

Definition at line 1 of file class_go_1_1_curve_on_volume.js.

30.242 doc/html/class_go_1_1_curve_tesselator.js File Reference

Variables

- var class_go_1_1_curve_tesselator

30.242.1 Variable Documentation

30.242.1.1 var class_go_1_1_curve_tesselator

Initial value:

```
=
[
    [ "CurveTesselator", "class_go_1_1_curve_tesselator.html#aefe53d0a6b1795aefd01855793a80ffb", null ],
    [ "~CurveTesselator", "class_go_1_1_curve_tesselator.html#a56a3991ff2a75c1c88ddad4faac8ec5d", null ],
    [ "changeRes", "class_go_1_1_curve_tesselator.html#a5311aeaeea8d1c30a583c6b2b53a8624", null ],
    [ "getMesh", "class_go_1_1_curve_tesselator.html#a4754381346d940ccce5d1dbd1d80fdb8", null ],
    [ "getRes", "class_go_1_1_curve_tesselator.html#a1bd2bb29c3dbb95c0cbf1f82281eed2a", null ],
    [ "tesselate", "class_go_1_1_curve_tesselator.html#a2903e0b478f9c9bc52de4b78a2e58554", null ]
]
```

Definition at line 1 of file class_go_1_1_curve_tesselator.js.

30.243 doc/html/class_go_1_1_cv_cv_intersector.js File Reference

Variables

- var class_go_1_1_cv_cv_intersector

30.243.1 Variable Documentation

30.243.1.1 var class_go_1_1_cv_cv_intersector

Initial value:

```
=
[
    [ "CvCvIntersector", "class_go_1_1_cv_cv_intersector.html#a537c5e9bc036e51d6cd9ef73868d1866", null ],
    [ "CvCvIntersector", "class_go_1_1_cv_cv_intersector.html#ae8389b331a736a88309a72d3d17ac79e", null ],
    [ "~CvCvIntersector", "class_go_1_1_cv_cv_intersector.html#a9b87b3471e95027f9160919f73ffff52", null ],
    [ "checkCoincidence", "class_go_1_1_cv_cv_intersector.html#ac9aae4b2f7d15af6ead9ba20277e00ce", null ],
    [ "doSubdivide", "class_go_1_1_cv_cv_intersector.html#adc99533793481a044c9741c7e9eb3169", null ],
    [ "foundIntersectionNearBoundary", "
      class_go_1_1_cv_cv_intersector.html#a1ee50a74da971d77a3544c1e9225abc8", null ],
    [ "linearCase", "class_go_1_1_cv_cv_intersector.html#af985fe190a31248f68f04db1fecd0663", null ],
    [ "lowerOrderIntersector", "class_go_1_1_cv_cv_intersector.html#aa7afb0eb132176cf912444c1c6f4fa87",
      null ],
    [ "microCase", "class_go_1_1_cv_cv_intersector.html#af3417373b5669763a1f9c8ec9bb01a0d", null ],
    [ "numParams", "class_go_1_1_cv_cv_intersector.html#afb42604cac3999a8fb03f93a93b06405", null ],
    [ "performRotatedBoxTest", "class_go_1_1_cv_cv_intersector.html#a608d160b6dd891589dfdc64dc9bc9059",
      null ],
    [ "repairIntersections", "class_go_1_1_cv_cv_intersector.html#a8a9f48935289182621b7b8d68451bf92", null
      ],
    [ "simpleCase2", "class_go_1_1_cv_cv_intersector.html#aab2bbed701c08c25d6a5b66f795ee803", null ],
    [ "updateIntersections", "class_go_1_1_cv_cv_intersector.html#a48103c3ad37f68052730b66d9c5ca7d4", null
      ],
    [ "writeOut", "class_go_1_1_cv_cv_intersector.html#a4100e3e3e0b6dc0de319965182234bcd", null ]
]
```

Definition at line 1 of file class_go_1_1_cv_cv_intersector.js.

30.244 doc/html/class_go_1_1_cv_pt_intersector.js File Reference

Variables

- var class_go_1_1_cv_pt_intersector

30.244.1 Variable Documentation

30.244.1.1 var class_go_1_1_cv_pt_intersector

Initial value:

```
=
[
    [ "CvPtIntersector", "class_go_1_1_cv_pt_intersector.html#afeedc2980f108a85ccaee64927e647a8", null ],
    [ "CvPtIntersector", "class_go_1_1_cv_pt_intersector.html#a2c2d2af25116cb8064076dc17a797c19", null ],
    [ "~CvPtIntersector", "class_go_1_1_cv_pt_intersector.html#aef366d280b059044a6eae987957f4c3c", null ],
    [ "checkCoincidence", "class_go_1_1_cv_pt_intersector.html#acc052cc4ca301d2d32c995c3df6fa7cf", null ],
    [ "doSubdivide", "class_go_1_1_cv_pt_intersector.html#a7513f37903ddcf8cdce38d442340b70e", null ],
    [ "linearCase", "class_go_1_1_cv_pt_intersector.html#afb4468ca7e9c7a779afdf08670fd6ae4", null ],
    [ "lowerOrderIntersector", "class_go_1_1_cv_pt_intersector.html#a430ee1375f35b0fb3f7affd0267e87bd",
      null ],
    [ "microCase", "class_go_1_1_cv_pt_intersector.html#a14aa72005ed4f9500c4006a646d2c958", null ],
    [ "numParams", "class_go_1_1_cv_pt_intersector.html#aa370d43e0769f4364cdce0522ac42710", null ],
    [ "repairIntersections", "class_go_1_1_cv_pt_intersector.html#a5edd96a2492f5b3753a35021bdaf1db6", null
      ],
    [ "updateIntersections", "class_go_1_1_cv_pt_intersector.html#a877f4b46c1493d3cb63a4234fa86390c", null
      ]
]
```

Definition at line 1 of file class_go_1_1_cv_pt_intersector.js.

30.245 doc/html/class_go_1_1_cylinder.js File Reference

Variables

- var class_go_1_1_cylinder

30.245.1 Variable Documentation

30.245.1.1 var class_go_1_1_cylinder

Definition at line 1 of file class_go_1_1_cylinder.js.

30.246 doc/html/class_go_1_1_cylinder_int.js File Reference

Variables

- var class_go_1_1_cylinder_int

30.246.1 Variable Documentation

30.246.1.1 var class_go_1_1_cylinder_int

Initial value:

```
=
[
    [ "CylinderInt", "class_go_1_1_cylinder_int.html#a2578453e0bbb9b5981ed8520be74eef4", null ],
    [ "CylinderInt", "class_go_1_1_cylinder_int.html#a9067b1a615e16beb0781fd491f2393f0", null ],
    [ "~CylinderInt", "class_go_1_1_cylinder_int.html#abd97bcc1dbc2d672df0938af7bc80f9b", null ],
    [ "ax_dir", "class_go_1_1_cylinder_int.html#ab5b9d1555a5cd5ff0fb313dc1318a20e", null ],
    [ "ax_pt", "class_go_1_1_cylinder_int.html#ae4baecc0dcf30c7a05f330363e59d0e5", null ],
    [ "radius", "class_go_1_1_cylinder_int.html#a4493b91edd175e4166b7ab07a9b35c2c", null ],
    [ "read", "class_go_1_1_cylinder_int.html#ab9916e69cd910d06ad5f05b9f780c8fe", null ],
    [ "surface", "class_go_1_1_cylinder_int.html#abe689862760d5baabdd7b0af13165e90", null ]
]
```

Definition at line 1 of file class_go_1_1_cylinder_int.js.

30.247 doc/html/class_go_1_1_cylinder_volume.js File Reference

Variables

- var class_go_1_1_cylinder_volume

30.247.1 Variable Documentation

30.247.1.1 var class_go_1_1_cylinder_volume

Initial value:

```
=
[
    [ "CylinderVolume", "class_go_1_1_cylinder_volume.html#a33ba420957082fdb531a2fff19a610d6", null ],
    [ "CylinderVolume", "class_go_1_1_cylinder_volume.html#a067ee9204338584 75d5d9f144be8564b", null ],
    [ "~CylinderVolume", "class_go_1_1_cylinder_volume.html#a9943701c31b3abe8e66c06e379be6074", null ],
    [ "boundingBox", "class_go_1_1_cylinder_volume.html#a4dd92d7237465874199b360c3b3b4542", null ],
    [ "clone", "class_go_1_1_cylinder_volume.html#a9a95da3d1968325a413adb492dc7c451", null ],
    [ "closestPoint", "class_go_1_1_cylinder_volume.html#a53a9894772b555d76e84e903735f40d4", null ],
    [ "dimension", "class_go_1_1_cylinder_volume.html#a1ff46706ca7cbd86498bab4fca4d7fac", null ],
    [ "geometryVolume", "class_go_1_1_cylinder_volume.html#aa0056b200b910e3f3d3ffde922c99c5f", null ],
    [ "getAllBoundarySurfaces", "class_go_1_1_cylinder_volume.html#ae1659ebfb6a33d06b9ad472a6eb13d6f", null
      ],
    [ "instanceType", "class_go_1_1_cylinder_volume.html#a4932b362009cb7e47701268da3b2afa2", null ],
    [ "nextSegmentVal", "class_go_1_1_cylinder_volume.html#a0c272d275e627cfc00a631069af5808d", null ],
    [ "parameterSpan", "class_go_1_1_cylinder_volume.html#ab424d00c5300c4fd5e058a9406a4ff18", null ],
    [ "point", "class_go_1_1_cylinder_volume.html#a5354dee5ba81a64f6c2dbfa3478e60c8", null ],
    [ "point", "class_go_1_1_cylinder_volume.html#a5d4d6c291f3ee93eb3a51a77a054f4ed", null ],
    [ "read", "class_go_1_1_cylinder_volume.html#a065b3bab47de82c643de7ec5cb0f9f23", null ],
    [ "reverseParameterDirection", "class_go_1_1_cylinder_volume.html#aa7f2f6000ad778b67288ebb5c045cf0e",
      null ],
    [ "setParameters", "class_go_1_1_cylinder_volume.html#ad5b19fba2fe405f52eb17b5b69ac6fda", null ],
    [ "swapParameterDirection", "class_go_1_1_cylinder_volume.html#ab225baab08fd5da7c676ed5fa00c0d36", null
      ],
    [ "tangentCone", "class_go_1_1_cylinder_volume.html#a4d5146512b6324e7616b54c3c7fb3a51", null ],
    [ "translate", "class_go_1_1_cylinder_volume.html#a95f2bf0d0c0951293774486e4878d596", null ],
    [ "useCentreDegen", "class_go_1_1_cylinder_volume.html#af7b3a1c185cbec1e07127341c236207c", null ],
    [ "useCornerDegen", "class_go_1_1_cylinder_volume.html#a1cbc47a1c07e0a0dcf6290c4d01b4f6d", null ],
    [ "write", "class_go_1_1_cylinder_volume.html#a44d169907ccb3ff1a30daadd7bdc61bf", null ]
]
```

Definition at line 1 of file class_go_1_1_cylinder_volume.js.

30.248 doc/html/class_go_1_1_degenerated_intersection_curve.js File Reference

Variables

- var class_go_1_1_degenerated_intersection_curve

30.248.1 Variable Documentation

30.248.1.1 var class_go_1_1_degenerated_intersection_curve

Initial value:

```
=
[
    [ "~DegeneratedIntersectionCurve", "
      class_go_1_1_degenerated_intersection_curve.html#a6c3f612a168385ed8de3211b1c67ccf4", null ],
    [ "evaluateAt", "class_go_1_1_degenerated_intersection_curve.html#a85b03ada4cb505fc3ae343a022e43573",
      null ],
    [ "getCurve", "class_go_1_1_degenerated_intersection_curve.html#a1e17134aeb92ef825f51baf5c460c8dd",
      null ],
    [ "getParamCurve", "class_go_1_1_degenerated_intersection_curve.html#ac69c51f4f48de3c148a9f5e18cd038f9"
      , null ],
    [ "getParamSpan", "class_go_1_1_degenerated_intersection_curve.html#a545c99900936cb26034eaa6e17c9c19e",
       null ],
    [ "isDegenerated", "class_go_1_1_degenerated_intersection_curve.html#a65df4f9997b7f8a90b7539af3f7e204e"
      , null ],
    [ "isIsocurve", "class_go_1_1_degenerated_intersection_curve.html#a55bd0adb170110339946500b1272a64b",
      null ],
    [ "refine", "class_go_1_1_degenerated_intersection_curve.html#ace1dcc6493ec18d1a85e0be2e8bbd619", null
      ],
    [ "constructIntersectionCurve", "
      class_go_1_1_degenerated_intersection_curve.html#a6ab34095fc2901f18aff0d440f5f9ea5", null ]
]
```

Definition at line 1 of file class_go_1_1_degenerated_intersection_curve.js.

30.249 doc/html/class_go_1_1_direction_cone.js File Reference

Variables

- var class_go_1_1_direction_cone

30.249.1 Variable Documentation

30.249.1.1 var class_go_1_1_direction_cone

Initial value:

```
=
[
    [ "DirectionCone", "class_go_1_1_direction_cone.html#a610b024d1fe8db299d840c78697988ed", null ],
    [ "DirectionCone", "class_go_1_1_direction_cone.html#af7fa23ab65c4febb3f5d9796f8c6fbdc", null ],
    [ "DirectionCone", "class_go_1_1_direction_cone.html#a0da440ae62eb38b9a8c2a6b656f8ae32", null ],
    [ "~DirectionCone", "class_go_1_1_direction_cone.html#af0862e064737f5a30a88465d436e812c", null ],
    [ "addUnionWith", "class_go_1_1_direction_cone.html#a7ff8462326b11e73e10401677ec2f48b", null ],
    [ "addUnionWith", "class_go_1_1_direction_cone.html#a4c66b5915142fb2b49fdf5f26cea9f8b", null ],
    [ "angle", "class_go_1_1_direction_cone.html#af8706494f1e2f20e92d8ee953f043c94", null ],
    [ "centre", "class_go_1_1_direction_cone.html#a5dfa1ee0bb2cf83fed1e9a3a79bade30", null ],
    [ "containsDirection", "class_go_1_1_direction_cone.html#a10e1875d1032c9adf51fca48ea239d46", null ],
    [ "dimension", "class_go_1_1_direction_cone.html#a88869693ca6f3a7767ffe00939809bfe", null ],
    [ "greaterThanPi", "class_go_1_1_direction_cone.html#a3cfd7cfd74b9fe7aebec24f6d7caf640", null ],
    [ "overlaps", "class_go_1_1_direction_cone.html#a5011100ad94dc603a30164e8babf73ed", null ],
    [ "perpendicularOverlaps", "class_go_1_1_direction_cone.html#ad28cb1673e8f7e6ed38e6a5090e01e37", null ]
      ,
    [ "read", "class_go_1_1_direction_cone.html#a41d9c682879fec0ab8efae60c8b999e7", null ],
    [ "setFromArray", "class_go_1_1_direction_cone.html#a0acae3ce71fe94aadfeb7a9b7ee24e9b", null ],
    [ "write", "class_go_1_1_direction_cone.html#aa60780e28b9bec47b945b0bf5b1e8764", null ]
]
```

Definition at line 1 of file class_go_1_1_direction_cone.js.

30.250 doc/html/class_go_1_1_disc.js File Reference

Variables

- var class_go_1_1_disc

30.250.1 Variable Documentation

30.250.1.1 var class_go_1_1_disc

Definition at line 1 of file class_go_1_1_disc.js.

30.251 doc/html/class_go_1_1_domain.js File Reference

Variables

- var class_go_1_1_domain

30.251.1 Variable Documentation

30.251.1.1 var class_go_1_1_domain

Initial value:

```
=
[
    [ "~Domain", "class_go_1_1_domain.html#a8e725b87dcbbc5c3bcd8bf147546a2c4", null ],
    [ "closestInDomain", "class_go_1_1_domain.html#a96484652ffda6725dc28d26754757f46", null ],
    [ "closestOnBoundary", "class_go_1_1_domain.html#a5df4d48b552ead2c20d954ec76f5000f", null ],
    [ "isInDomain", "class_go_1_1_domain.html#ab1ab1e5716b47d764695791c6eadc318", null ],
    [ "isInDomain2", "class_go_1_1_domain.html#a8d5e1e76d48da07550d51425e4c5d7d4", null ],
    [ "isOnBoundary", "class_go_1_1_domain.html#a6591a84eae85b0a7d6b4b57260cb9c06", null ]
]
```

Definition at line 1 of file class_go_1_1_domain.js.

30.252 doc/html/class_go_1_1_edge_vertex.js File Reference

Variables

- var class_go_1_1_edge_vertex

30.252.1 Variable Documentation

30.252.1.1 var class_go_1_1_edge_vertex

Initial value:

```
=
[
    [ "EdgeVertex", "class_go_1_1_edge_vertex.html#a12c9ba460662887ecd93ae0a8a60b2d9", null ],
    [ "EdgeVertex", "class_go_1_1_edge_vertex.html#a742a60072c0d2338bd8bd7b9d169a577", null ],
    [ "~EdgeVertex", "class_go_1_1_edge_vertex.html#a50b46f7d36e192c95cf471d0f549752c", null ],
    [ "addEdge", "class_go_1_1_edge_vertex.html#a148b9ff26d95cc718caefb77fa78037d", null ],
    [ "addEdgeVertex", "class_go_1_1_edge_vertex.html#aea7c9b67efb2a7cccb2714bdc268041f", null ],
    [ "allEdges", "class_go_1_1_edge_vertex.html#acd05c9fe40639b5829ff35687da8fdac", null ],
    [ "allEdges", "class_go_1_1_edge_vertex.html#a778cdeb70763a00ac3b30f5fd769803d", null ],
    [ "averageSplineEdges", "class_go_1_1_edge_vertex.html#a2d6a90905aab47cd126a75ae5096b1cb", null ],
    [ "checkRadialEdgeTopology", "class_go_1_1_edge_vertex.html#adc277eff97b07706cb1212cdf2d66f5f", null ],
    [ "disconnectTwin", "class_go_1_1_edge_vertex.html#a793cf21c09317c9da8f4f9eb4805544f", null ],
    [ "getAdjacentBodies", "class_go_1_1_edge_vertex.html#a8ae041883b11b40a5ddfa1130a976286", null ],
    [ "getAdjacentFaces", "class_go_1_1_edge_vertex.html#a76e3a610619272724db3485d4dc180e1", null ],
    [ "getAdjacentFaces", "class_go_1_1_edge_vertex.html#a014ce2f236b5a245431f7bb547b2c225", null ],
    [ "getEdge", "class_go_1_1_edge_vertex.html#ac364b5174e462487bd2cbec27d4342d3", null ],
    [ "hasEdge", "class_go_1_1_edge_vertex.html#ab67e7ccd3f8b03b9265a424e7ee05561", null ],
    [ "hasEdgeSingle", "class_go_1_1_edge_vertex.html#a6b6633146bc41d7701d35a9ec889b985", null ],
    [ "nmbUniqueEdges", "class_go_1_1_edge_vertex.html#aab9a1fcb19bd978a92baf20f534e4935", null ],
    [ "nmbUniqueEdges", "class_go_1_1_edge_vertex.html#a4880f8730b184e40dd0ea1497bd71b71", null ],
    [ "organizeTwins", "class_go_1_1_edge_vertex.html#a620f8ad91fb83627c90a5ebd964045b8", null ],
    [ "removeEdge", "class_go_1_1_edge_vertex.html#a0f3b6dcded230c892b134abc40995ba1", null ],
    [ "reOrganize", "class_go_1_1_edge_vertex.html#ab8de2fc21bf706398617009b1b0b7585", null ],
    [ "splitAtVertex", "class_go_1_1_edge_vertex.html#aab28625c4d539800b84bbbdb9a89cf9f", null ],
    [ "uniqueEdges", "class_go_1_1_edge_vertex.html#a07c73b1706f3636174d8f830aa50668d", null ],
    [ "uniqueEdges", "class_go_1_1_edge_vertex.html#a3e2f850162d60e61d0bedbb65e55503a", null ]
]
```

Definition at line 1 of file class_go_1_1_edge_vertex.js.

30.253 doc/html/class_go_1_1_element2_d.js File Reference

Variables

- var class_go_1_1_element2_d

30.253.1 Variable Documentation

30.253.1.1 var class_go_1_1_element2_d

Definition at line 1 of file class_go_1_1_element2_d.js.

30.254 doc/html/class_go_1_1_elementary_curve.js File Reference

Variables

- var class_go_1_1_elementary_curve

30.254.1 Variable Documentation

30.254.1.1 var class_go_1_1_elementary_curve

Initial value:

```
=
[
    [ "ElementaryCurve", "class_go_1_1_elementary_curve.html#a6c9c6c1e099007d2ef132a36ec255f63", null ],
    [ "~ElementaryCurve", "class_go_1_1_elementary_curve.html#a1d398c75da253b0c7cd7946e4511a14b", null ],
    [ "clone", "class_go_1_1_elementary_curve.html#ae5f7a018119b2c65b50331c62f5eaff1", null ],
    [ "createSplineCurve", "class_go_1_1_elementary_curve.html#a2ec7658b6ee1ebfce72563fdf348bc0a", null ],
    [ "getReversedParameter", "class_go_1_1_elementary_curve.html#a8cc3324b114ae56a769fbd92e5271a29", null
      ],
    [ "isReversed", "class_go_1_1_elementary_curve.html#a64be203c5c90fdefb79c055ea2bb616f", null ],
    [ "reverseParameterDirection", "class_go_1_1_elementary_curve.html#a36a6e21faf644b7567279e8a7d7b1299",
      null ],
    [ "setParamBounds", "class_go_1_1_elementary_curve.html#afc982c46ae92e088302b2cb0a0fb0ed4", null ],
    [ "subCurve", "class_go_1_1_elementary_curve.html#a8c71872f62c5427499ed1ed9aaf4b643", null ],
    [ "swapParameters2D", "class_go_1_1_elementary_curve.html#a0e09e54b118b23e9ee176fc7aef59c6a", null ],
    [ "translateCurve", "class_go_1_1_elementary_curve.html#aac91b68dc5a447a1124a914cea30e2b4", null ],
    [ "isReversed_", "class_go_1_1_elementary_curve.html#a4c5b3bf2b92fc76dc7b2752079a064c5", null ]
]
```

Definition at line 1 of file class_go_1_1_elementary_curve.js.

30.255 doc/html/class_go_1_1_elementary_surface.js File Reference

Variables

- var class_go_1_1_elementary_surface

30.255.1 Variable Documentation

30.255.1.1 var class_go_1_1_elementary_surface

Initial value:

```
=
[
    [ "ElementarySurface", "class_go_1_1_elementary_surface.html#a71a1228cd825f443855f5895d45ac4ff", null ]
      ,
    [ "~ElementarySurface", "class_go_1_1_elementary_surface.html#a58a9ae8c3839a441e59f05ecda95d30e", null
      ],
    [ "area", "class_go_1_1_elementary_surface.html#ab20ceab1a6924addf76e0d04850de566", null ],
    [ "asSplineSurface", "class_go_1_1_elementary_surface.html#a9e75a55c8d72e608fbd6296c0b9cd774", null ],
    [ "clone", "class_go_1_1_elementary_surface.html#a6db0440ad98003fb958ed880a8fca0cf", null ],
    [ "closestInDomain", "class_go_1_1_elementary_surface.html#a634760ecaeb71c9887d54f8200776833", null ],
    [ "containingDomain", "class_go_1_1_elementary_surface.html#a4ca4805ddddd25393e8bb5eda817b3d8", null ],
    [ "createSplineSurface", "class_go_1_1_elementary_surface.html#aa73a66ee60fc2c33c6dc5217f8d6f207", null
      ],
    [ "geometrySurface", "class_go_1_1_elementary_surface.html#a6504be7f468129a6dda4c055a5973aff", null ],
    [ "getCornerPoints", "class_go_1_1_elementary_surface.html#a0bdb7c1e01378de25162da6e65c86adc", null ],
    [ "getElementaryParamCurve", "class_go_1_1_elementary_surface.html#ad7236175c38cc23115f4f8fe62ccd824",
      null ],
    [ "getOrientedParameters", "class_go_1_1_elementary_surface.html#ac0aa83e480d77aa16e51cd0fd5dfc287",
      null ],
    [ "inDomain", "class_go_1_1_elementary_surface.html#ab7a1df7c8f47b20c86338fd5a03a4942", null ],
    [ "inDomain2", "class_go_1_1_elementary_surface.html#afdaa731dfaf4019e1df8597b5cc4b4ea", null ],
    [ "isBounded", "class_go_1_1_elementary_surface.html#a36db1675585d324c61e9697aac76a0e4", null ],
    [ "isClosed", "class_go_1_1_elementary_surface.html#a432f5674498353c1cc4dd591a2d14ee2", null ],
    [ "isSwapped", "class_go_1_1_elementary_surface.html#aaa6168898c2ae401885d572593036b1a", null ],
    [ "onBoundary", "class_go_1_1_elementary_surface.html#a5361d1b1a53647579c1a8ede335045d8", null ],
    [ "outerBoundaryLoop", "class_go_1_1_elementary_surface.html#af29090b6cbf2c2b5b2455e9ed65a3b13", null ]
```

```
    ,
    [ "reverseParameterDirection", "class_go_1_1_elementary_surface.html#a580b9242c586c5c8f6a99dc5237a57b2"
    , null ],
    [ "setParameterBounds", "class_go_1_1_elementary_surface.html#a5addf83a86dc0264784997f6a1c148e9", null
    ],
    [ "swapParameterDirection", "class_go_1_1_elementary_surface.html#a24fd226efa1a448c4375555ec3c9c937",
    null ],
    [ "turnOrientation", "class_go_1_1_elementary_surface.html#ab7a7d157d35de73437a1cc3e0a51e9bc", null ],
    [ "isSwapped_", "class_go_1_1_elementary_surface.html#a5567042280cff31567eb5868910eb883", null ]
]
```

Definition at line 1 of file class_go_1_1_elementary_surface.js.

30.256 doc/html/class_go_1_1_elementary_volume.js File Reference

Variables

- var class_go_1_1_elementary_volume

30.256.1 Variable Documentation

30.256.1.1 var class_go_1_1_elementary_volume

Initial value:

```
=
[
    [ "~ElementaryVolume", "class_go_1_1_elementary_volume.html#aace856a29a9e915070e648d142c8f3b4", null ],
    [ "clone", "class_go_1_1_elementary_volume.html#a5242e3de8b56bf6ca52fa0e3908b4d2d", null ],
    [ "geometryVolume", "class_go_1_1_elementary_volume.html#ab5dda4f80a667b9414d3477a10911da0", null ]
]
```

Definition at line 1 of file class_go_1_1_elementary_volume.js.

30.257 doc/html/class_go_1_1_ellipse.js File Reference

Variables

- var class_go_1_1_ellipse

30.257.1 Variable Documentation

30.257.1.1 var class_go_1_1_ellipse

Definition at line 1 of file class_go_1_1_ellipse.js.

30.258 doc/html/class_go_1_1_eval_curve.js File Reference

Variables

- var class_go_1_1_eval_curve

30.258.1 Variable Documentation

30.258.1.1 var class_go_1_1_eval_curve

Initial value:

```
=
[
    [ "~EvalCurve", "class_go_1_1_eval_curve.html#aeba525b92071e851085947debd51aaa3", null ],
    [ "approximationOK", "class_go_1_1_eval_curve.html#a762cfdc5c5a07f6a98ddcb72319e2cef", null ],
    [ "dim", "class_go_1_1_eval_curve.html#a31a0268f4843c33a21cf88b18e0fb97e", null ],
    [ "end", "class_go_1_1_eval_curve.html#a537c4baaf5cf5b54ce682d1c21f7e3d6", null ],
    [ "eval", "class_go_1_1_eval_curve.html#a005dde8b68603c09495f227c816db32e", null ],
    [ "eval", "class_go_1_1_eval_curve.html#aee94d28a2a2be53264fed1694208648a", null ],
    [ "start", "class_go_1_1_eval_curve.html#a9af98ce2c8de8dc7364d727daf974236", null ],
    [ "write", "class_go_1_1_eval_curve.html#a4ff86322f9dc39ffc4620ee477a2ce1e", null ]
]
```

Definition at line 1 of file class_go_1_1_eval_curve.js.

30.259 doc/html/class_go_1_1_eval_curve_set.js File Reference

Variables

- var class_go_1_1_eval_curve_set

30.259.1 Variable Documentation

30.259.1.1 var class_go_1_1_eval_curve_set

Initial value:

```
=
[
    [ "~EvalCurveSet", "class_go_1_1_eval_curve_set.html#aae1ed637c545c93a5be946bc166e51e2", null ],
    [ "approximationOK", "class_go_1_1_eval_curve_set.html#af4968a577be7184ba447ce777206b97a", null ],
    [ "dim", "class_go_1_1_eval_curve_set.html#a80c4eae4de2d67081f89f10a8cdeb4f0", null ],
    [ "end", "class_go_1_1_eval_curve_set.html#ab898fdd26d67c986bdb4f1d5b2e753e3", null ],
    [ "eval", "class_go_1_1_eval_curve_set.html#a6cad51d0922a7dedac3a31b2026ab0a4", null ],
    [ "eval", "class_go_1_1_eval_curve_set.html#af94dfe476d9a31a9283263e1c7eb8bb3", null ],
    [ "nmbCvs", "class_go_1_1_eval_curve_set.html#aaf41679ad78e081e33c346ca15c3e3dc", null ],
    [ "resetErr", "class_go_1_1_eval_curve_set.html#ad980bd9d596a83f4946e570088207019", null ],
    [ "start", "class_go_1_1_eval_curve_set.html#add92cc9caecf70771a9851c3e6efee07", null ]
]
```

Definition at line 1 of file class_go_1_1_eval_curve_set.js.

30.260 doc/html/class_go_1_1_eval_functor_curve.js File Reference

Variables

- var class_go_1_1_eval_functor_curve

30.260.1 Variable Documentation

30.260.1.1 var class_go_1_1_eval_functor_curve

Initial value:

```
=
[
    [ "EvalFunctorCurve", "class_go_1_1_eval_functor_curve.html#ab63841530bb9fe53f152f9b7ef0f4a30", null ],
    [ "~EvalFunctorCurve", "class_go_1_1_eval_functor_curve.html#a3b184f0c9b44be70f7f258e2f9b4f3bc", null ]
      ,
    [ "approximationOK", "class_go_1_1_eval_functor_curve.html#ac34c98eecb84f37f1bd0e6226356ef6a", null ],
    [ "dim", "class_go_1_1_eval_functor_curve.html#a912b89fbc70a53f66322b50937106b66", null ],
    [ "end", "class_go_1_1_eval_functor_curve.html#aba56f588c2338c61ce35c079047911cf", null ],
    [ "eval", "class_go_1_1_eval_functor_curve.html#adc7d79d2ad002096776641323d421fc0", null ],
    [ "eval", "class_go_1_1_eval_functor_curve.html#ad765b1fdca8d47430a90b05d08358c42", null ],
    [ "start", "class_go_1_1_eval_functor_curve.html#aba121fb3ed8a35d0ad9d5f3aae10c1cf", null ]
]
```

Definition at line 1 of file class_go_1_1_eval_functor_curve.js.

30.261 doc/html/class_go_1_1_eval_functor_surface.js File Reference

Variables

- var class_go_1_1_eval_functor_surface

30.261.1 Variable Documentation

30.261.1.1 var class_go_1_1_eval_functor_surface

Initial value:

```
=
[
    [ "EvalFunctorSurface", "class_go_1_1_eval_functor_surface.html#acc474678964ce779ea9b608d32b1a6b2",
      null ],
    [ "~EvalFunctorSurface", "class_go_1_1_eval_functor_surface.html#a49102c1eb44d51ec302cc4856fc7efc3",
      null ],
    [ "approximationOK", "class_go_1_1_eval_functor_surface.html#a3f1f67e6402acc424125d7b9e0acd3e4", null ]
      ,
    [ "dim", "class_go_1_1_eval_functor_surface.html#aa3fd1667b9a884d89ca4da4ff67f1734", null ],
    [ "end_u", "class_go_1_1_eval_functor_surface.html#a92b4a3dae1a78e53951b3a652de3c062", null ],
    [ "end_v", "class_go_1_1_eval_functor_surface.html#ac50aeec2db8861e7396f7c19323eb366", null ],
    [ "eval", "class_go_1_1_eval_functor_surface.html#a4bba1fd389a8a21408c76279077d8c98", null ],
    [ "eval", "class_go_1_1_eval_functor_surface.html#a52a9888c724819231d867b5f8ecc9edb", null ],
    [ "start_u", "class_go_1_1_eval_functor_surface.html#ae9becd7292db4913e793eb111be918c2", null ],
    [ "start_v", "class_go_1_1_eval_functor_surface.html#a4c98990f6b8aac5fd8cac7187c30d076", null ]
]
```

Definition at line 1 of file class_go_1_1_eval_functor_surface.js.

30.262 doc/html/class_go_1_1_eval_offset_surface.js File Reference

Variables

- var class_go_1_1_eval_offset_surface

30.262.1 Variable Documentation

30.262.1.1 var class_go_1_1_eval_offset_surface

Initial value:

```
=
[
    [ "EvalOffsetSurface", "class_go_1_1_eval_offset_surface.html#afe1b3f4bf307f0614888f73ef8a6eb5c", null
      ],
    [ "~EvalOffsetSurface", "class_go_1_1_eval_offset_surface.html#a9d6f5e55968022cc86d7b9811e9b0198", null
       ],
    [ "approximationOK", "class_go_1_1_eval_offset_surface.html#af0570735361d62cb20e915d11a30d05f", null ],
    [ "dim", "class_go_1_1_eval_offset_surface.html#a35881f83eb4f2e557e694aa2a174c5cc", null ],
    [ "end_u", "class_go_1_1_eval_offset_surface.html#a0d4549a358b573313f7c8354b457a5ec", null ],
    [ "end_v", "class_go_1_1_eval_offset_surface.html#a798642a259a4d33b0cd73fb8479ab262", null ],
    [ "eval", "class_go_1_1_eval_offset_surface.html#a1f13de4389d651e8293d209931ac84d5", null ],
    [ "eval", "class_go_1_1_eval_offset_surface.html#af5b3364c29d6874afa06ed665788c448", null ],
    [ "getProjKinkCurves", "class_go_1_1_eval_offset_surface.html#afc7bddd486c0ad22e5cedcf03a6dc877", null
      ],
    [ "gridKinks", "class_go_1_1_eval_offset_surface.html#a765e5a3801de2111f1cafb8c5c9f310e", null ],
    [ "gridSelfIntersections", "class_go_1_1_eval_offset_surface.html#aae3c5f3f06e4a75eaf2fbbcec6fbe6c5",
      null ],
    [ "start_u", "class_go_1_1_eval_offset_surface.html#aa2d8866fab10e8936ec210fc2ca91759", null ],
    [ "start_v", "class_go_1_1_eval_offset_surface.html#aa1e6ab3ed0b12f1f1318b97eb82ffbee", null ]
]
```

Definition at line 1 of file class_go_1_1_eval_offset_surface.js.

30.263 doc/html/class_go_1_1_eval_param_curve.js File Reference

Variables

- var class_go_1_1_eval_param_curve

30.263.1 Variable Documentation

30.263.1.1 var class_go_1_1_eval_param_curve

Initial value:

```
=
[
    [ "EvalParamCurve", "class_go_1_1_eval_param_curve.html#a40e626ea4d004d43579185cb55ae6cc0", null ],
    [ "~EvalParamCurve", "class_go_1_1_eval_param_curve.html#a66eb2f1e5afb01ae14b0155fa2bf8621", null ],
    [ "approximationOK", "class_go_1_1_eval_param_curve.html#a7addd6299daa6277d3797ad9e0381687", null ],
    [ "dim", "class_go_1_1_eval_param_curve.html#a0cd1e0a0e2fa20e34e2afb73f78256f7", null ],
    [ "end", "class_go_1_1_eval_param_curve.html#a4c302f47bb29a2b73b9559a4ffe684cc", null ],
    [ "eval", "class_go_1_1_eval_param_curve.html#a765082ce27f3a3ac77f9dbda11001cf1", null ],
    [ "eval", "class_go_1_1_eval_param_curve.html#ae053eebea18f9dbe4a3289a7aeb2563d", null ],
    [ "start", "class_go_1_1_eval_param_curve.html#aa3d62769a1980cb3524a2359e83c66ab", null ],
    [ "write", "class_go_1_1_eval_param_curve.html#a1e4877d32b0ce7cac403583c1710511c", null ]
]
```

Definition at line 1 of file class_go_1_1_eval_param_curve.js.

30.264 doc/html/class_go_1_1_eval_surface.js File Reference

Variables

- var class_go_1_1_eval_surface

30.264.1 Variable Documentation

30.264.1.1 var class_go_1_1_eval_surface

Initial value:

```
=
[
    [ "~EvalSurface", "class_go_1_1_eval_surface.html#aaf6a7b7a118319c4835eaf188f26f012", null ],
    [ "approximationOK", "class_go_1_1_eval_surface.html#a4cee285c65f02c95138c61649366196f", null ],
    [ "dim", "class_go_1_1_eval_surface.html#a348640a6de454d8ba92c934601831b3d", null ],
    [ "end_u", "class_go_1_1_eval_surface.html#af5e34529731512a96116ebc9b7dee51f", null ],
    [ "end_v", "class_go_1_1_eval_surface.html#a50cbf234743c7e59484ac72f92966a3e", null ],
    [ "eval", "class_go_1_1_eval_surface.html#a2048831767bc076026fb999eb2f1036c", null ],
    [ "eval", "class_go_1_1_eval_surface.html#ac30c4ea3682ad3433ed510bebf64c968", null ],
    [ "start_u", "class_go_1_1_eval_surface.html#a05cabd37b0bb19aba04aafee43364e74", null ],
    [ "start_v", "class_go_1_1_eval_surface.html#a700225bd935f675e29e18f34d7ff3fd4", null ],
    [ "write", "class_go_1_1_eval_surface.html#a04f0ae2e984ad26c9fea650a5f0f54f5", null ]
]
```

Definition at line 1 of file class_go_1_1_eval_surface.js.

30.265 doc/html/class_go_1_1_face_adjacency.js File Reference

Variables

- var class_go_1_1_face_adjacency

30.265.1 Variable Documentation

30.265.1.1 var class_go_1_1_face_adjacency

Initial value:

```
=
[
    [ "FaceAdjacency", "class_go_1_1_face_adjacency.html#a3301eab6895130fcaa1924fff513361e", null ],
    [ "FaceAdjacency", "class_go_1_1_face_adjacency.html#a586af6c2a4877a6fccadc369b1807d37", null ],
    [ "~FaceAdjacency", "class_go_1_1_face_adjacency.html#a42506d48ad19e20f7a2eedc8a4564169", null ],
    [ "computeAdjacency", "class_go_1_1_face_adjacency.html#a5cc8e257771caa53d08c8f4b041d8373", null ],
    [ "computeAdjacency", "class_go_1_1_face_adjacency.html#aa85085bf8fc96f491ebf4160ce10a72f", null ],
    [ "computeFaceAdjacency", "class_go_1_1_face_adjacency.html#ad70260b669fa2935e9651420cf08ee55", null ],
    [ "computeFaceAdjacency", "class_go_1_1_face_adjacency.html#aed61a81bf5156b00b245e9ed45ef4f6f", null ],
    [ "computeFaceAdjacency", "class_go_1_1_face_adjacency.html#ab274fcf2ec5007ef799285d6bf78363b", null ],
    [ "computeFaceAdjacency", "class_go_1_1_face_adjacency.html#ad207ee1aa2fd98af726de34604e341c2", null ],
    [ "connectTwins", "class_go_1_1_face_adjacency.html#a1bb423a1be8c29ce621a163f35273b38", null ],
    [ "getTolerances", "class_go_1_1_face_adjacency.html#a9c319c64873d68c4dac0742c2027d52b", null ],
    [ "releaseFaceAdjacency", "class_go_1_1_face_adjacency.html#a51273eb10f58cd29aa2ae323a8abdd0a", null ],
    [ "setConnectivity", "class_go_1_1_face_adjacency.html#a1681edc44704cbb9e8d3544c5b08ccda", null ],
    [ "setConnectivity", "class_go_1_1_face_adjacency.html#acf4bc974120a1aecec2e71a20ccb9e58", null ],
    [ "setTolerances", "class_go_1_1_face_adjacency.html#a6a20573f260f2c40023c9a2e48813bd7", null ],
    [ "updateConnectivity", "class_go_1_1_face_adjacency.html#a077c01c491735a39ebc0ee0edff04e31", null ],
    [ "new_edges_", "class_go_1_1_face_adjacency.html#a47a4a49406d103caaf027dbb5fd3a0e9", null ],
    [ "tol_", "class_go_1_1_face_adjacency.html#a9af2ef45a2ee40db27c4f2078d07ad69", null ]
]
```

Definition at line 1 of file class_go_1_1_face_adjacency.js.

30.266 doc/html/class_go_1_1_face_connectivity_utils.js File Reference

Variables

- var class_go_1_1_face_connectivity_utils

30.266.1 Variable Documentation

30.266.1.1 var class_go_1_1_face_connectivity_utils

Initial value:

```
=
[
    [ "BoundaryLoops", "class_go_1_1_face_connectivity_utils.html#a6fc13b0597434c4e46b8d94d7f4fe506", null
      ],
    [ "BoundaryLoops", "class_go_1_1_face_connectivity_utils.html#aa84040cbf1fc0e2e6456d6dc70ccb490", null
      ],
    [ "cornersAndKinks", "class_go_1_1_face_connectivity_utils.html#af2d3bef904caac42c6ea7c43242c334a",
      null ],
    [ "disjointObjects", "class_go_1_1_face_connectivity_utils.html#ad8f359dfd963dd282a616afa46298173",
      null ],
    [ "edgesBoundingFace", "class_go_1_1_face_connectivity_utils.html#ad76e67d53a3aa54f6072500ac182a1f4",
      null ],
    [ "smoothEdges", "class_go_1_1_face_connectivity_utils.html#ab02ab238985992fe96cdc155808e1279", null ]
]
```

Definition at line 1 of file class_go_1_1_face_connectivity_utils.js.

30.267 doc/html/class_go_1_1_face_set_quality.js File Reference

Variables

- var class_go_1_1_face_set_quality

30.267.1 Variable Documentation

30.267.1.1 var class_go_1_1_face_set_quality

Definition at line 1 of file class_go_1_1_face_set_quality.js.

30.268 doc/html/class_go_1_1_face_set_repair.js File Reference

Variables

- var class_go_1_1_face_set_repair

30.268.1 Variable Documentation

30.268.1.1 var class_go_1_1_face_set_repair

Initial value:

```
=
[
    [ "FaceSetRepair", "class_go_1_1_face_set_repair.html#a4ab24096dd61caa312afdd87dbad917c", null ],
    [ "FaceSetRepair", "class_go_1_1_face_set_repair.html#af9a1e4cdc65ea8fd3b6189f38bbca57c", null ],
    [ "~FaceSetRepair", "class_go_1_1_face_set_repair.html#ac439daafe811750cd54658ec73ecceb2", null ],
    [ "consistentFaceNormal", "class_go_1_1_face_set_repair.html#a1c80999e1664e237219be4ec79483370", null ]
      ,
    [ "getAssociatedSfModel", "class_go_1_1_face_set_repair.html#a66e6740743c2b29466c632927e01ffdc", null ]
      ,
    [ "identicalAndEmbeddedFaces", "class_go_1_1_face_set_repair.html#ab30952f5cfc5281414f1c90af73de25e",
      null ],
    [ "identicalVertices", "class_go_1_1_face_set_repair.html#a06b2af4b37d3fe6dd6c26fca17d150e3", null ],
    [ "mendEdgeDistance", "class_go_1_1_face_set_repair.html#a523caabe3b52dd462e86d683cf60229b", null ],
    [ "mendGaps", "class_go_1_1_face_set_repair.html#a44d229273c3088685a73148080fab442", null ],
    [ "optimizeVertexPosition", "class_go_1_1_face_set_repair.html#aaa6f724b25062d2e404b45186f9a672b", null
       ]
]
```

Definition at line 1 of file class_go_1_1_face_set_repair.js.

30.269 doc/html/class_go_1_1_factory.js File Reference

Variables

- var class_go_1_1_factory

30.269.1 Variable Documentation

30.269.1.1 var class_go_1_1_factory

Initial value:

```
=
[
    [ "~Factory", "class_go_1_1_factory.html#a248ab10834992ea327357bd218617bd3", null ],
    [ "registerClass", "class_go_1_1_factory.html#a53348d9768f5fc831ab399667f57a75a", null ]
]
```

Definition at line 1 of file class_go_1_1_factory.js.

30.270 doc/html/class_go_1_1_fun2_fun.js File Reference

Variables

- var class_go_1_1_fun2_fun

30.270.1 Variable Documentation

30.270.1.1 var class_go_1_1_fun2_fun

Initial value:

```
=
[
    [ "Fun2Fun", "class_go_1_1_fun2_fun.html#a9a72fe3655b2819d0ef0cde391a57bd7", null ],
    [ "maxPar", "class_go_1_1_fun2_fun.html#ab229b3fe6ea09e812ac03bdcdb3e9373", null ],
    [ "minPar", "class_go_1_1_fun2_fun.html#a8f83e8c2be2c112b0f360717ceb60994", null ],
    [ "operator()", "class_go_1_1_fun2_fun.html#a45600cb0eada16c9ef7d2e05a9e05ebd", null ]
]
```

Definition at line 1 of file class_go_1_1_fun2_fun.js.

30.271 doc/html/class_go_1_1_function_minimizer.js File Reference

Variables

- var class_go_1_1_function_minimizer

30.271.1 Variable Documentation

30.271.1.1 var class_go_1_1_function_minimizer

Initial value:

```
=
[
    [ "FunctionMinimizer", "class_go_1_1_function_minimizer.html#af01b5848d83482b770ffe42f3de5251a", null ]
      ,
    [ "~FunctionMinimizer", "class_go_1_1_function_minimizer.html#a27572672ed10f56598cabaee915d2a2a", null
      ],
    [ "atMax", "class_go_1_1_function_minimizer.html#a47cf89619002eed0b9ae0f32069c7275", null ],
    [ "atMin", "class_go_1_1_function_minimizer.html#a2d287703fcbb4dfbff1fcc6ac2a0536e", null ],
    [ "fval", "class_go_1_1_function_minimizer.html#af7fd5958d66da72008d8a37497b25073", null ],
    [ "fval", "class_go_1_1_function_minimizer.html#a0f69b49805f71c1cd9e9d901b3006fc3", null ],
    [ "getPar", "class_go_1_1_function_minimizer.html#a6199eb10189b03c08469ea6b68b8d65f", null ],
    [ "getPar", "class_go_1_1_function_minimizer.html#a884069b2aecb10ff0c478ab84f7db26e", null ],
    [ "grad", "class_go_1_1_function_minimizer.html#a17ec134a193d56dbe43f56403481dbeb", null ],
    [ "grad", "class_go_1_1_function_minimizer.html#a58b443fe5a9bb188aa6f72243a765111", null ],
    [ "linminBrent", "class_go_1_1_function_minimizer.html#a171d9cbef54a0ee0dfb8587f1f6ff03c", null ],
    [ "minimize", "class_go_1_1_function_minimizer.html#a2bfa66cb87c1e1b7095ebaea699003a4", null ],
    [ "moveUV", "class_go_1_1_function_minimizer.html#a15bd0257636d3d0429547be0fed98387", null ],
    [ "numPars", "class_go_1_1_function_minimizer.html#a85887c9e0d47259574b25076b4213fa9", null ]
]
```

Definition at line 1 of file class_go_1_1_function_minimizer.js.

30.272 doc/html/class_go_1_1_general_mesh.js File Reference

Variables

- var class_go_1_1_general_mesh

30.272.1 Variable Documentation

30.272.1.1 var class_go_1_1_general_mesh

Initial value:

```
=
[
    [ "GeneralMesh", "class_go_1_1_general_mesh.html#a09725cc3c16ce78026e542ce4fcd0d79", null ],
    [ "~GeneralMesh", "class_go_1_1_general_mesh.html#a5c1f1add8aa787766728dce46b6f8ada", null ],
    [ "asGenericTriMesh", "class_go_1_1_general_mesh.html#a57d8da1f7adf72646ffe95677b3fa533", null ],
    [ "asLineStrip", "class_go_1_1_general_mesh.html#a6b130a6a905fc74ccc7f8f27f504e6dd", null ],
    [ "asRegularMesh", "class_go_1_1_general_mesh.html#a36ee20c757b6b61368fe3aa557c4bb86", null ],
    [ "atBoundary", "class_go_1_1_general_mesh.html#a548ca69e695da9a39f4734b078d8db0a", null ],
    [ "numTriangles", "class_go_1_1_general_mesh.html#a6033cece0be278ca8f70a96226fe80b9", null ],
    [ "numVertices", "class_go_1_1_general_mesh.html#a55f396aefbe644cb958eaa0e25883d58", null ],
    [ "paramArray", "class_go_1_1_general_mesh.html#af0436cd3df3c3575c61887daf9b5df0c", null ],
    [ "translate", "class_go_1_1_general_mesh.html#ae531ce5bb0c394c963f68f7ce7a337b5", null ],
    [ "triangleIndexArray", "class_go_1_1_general_mesh.html#a7a0c390d462c3b227ca824b5fa2cc3a7", null ],
    [ "vertexArray", "class_go_1_1_general_mesh.html#ae6a2f8a755ce92ced7301dcebf57e4a8", null ],
    [ "vert_translation_", "class_go_1_1_general_mesh.html#a1acf92dd244f23728a0a59d9e8517ed8", null ]
]
```

Definition at line 1 of file class_go_1_1_general_mesh.js.

30.273 doc/html/class_go_1_1_generic_tri_mesh.js File Reference

Variables

- var class_go_1_1_generic_tri_mesh

30.273.1 Variable Documentation

30.273.1.1 var class_go_1_1_generic_tri_mesh

Initial value:

```
=
[
    [ "GenericTriMesh", "class_go_1_1_generic_tri_mesh.html#aa16f22a46fe984eac8b8ae82d54d5bc7", null ],
    [ "~GenericTriMesh", "class_go_1_1_generic_tri_mesh.html#aa6982bb365a9b5cca1f1d2a32c640554", null ],
    [ "asGenericTriMesh", "class_go_1_1_generic_tri_mesh.html#a9f92374a31266813e906fa882fd1f4cc", null ],
    [ "atBoundary", "class_go_1_1_generic_tri_mesh.html#a687e79c84bdbb334e8f8c90cf59b430c", null ],
    [ "boundaryArray", "class_go_1_1_generic_tri_mesh.html#a137746e4f59c4c239cb3995fc9ae8289", null ],
    [ "normalArray", "class_go_1_1_generic_tri_mesh.html#ae916f28083e9041c9bdd9179298fbec4", null ],
    [ "numTriangles", "class_go_1_1_generic_tri_mesh.html#ab3155db37ee55273675d4a58efe28c91", null ],
    [ "numVertices", "class_go_1_1_generic_tri_mesh.html#aceaf753237940bcd388266f34f6c7290", null ],
    [ "paramArray", "class_go_1_1_generic_tri_mesh.html#ac01004f7b44d8cad36cb19bdb4e6f0a7", null ],
    [ "resize", "class_go_1_1_generic_tri_mesh.html#a1baa4d46c0ab288f094f02b5356a2e18", null ],
    [ "texcoordArray", "class_go_1_1_generic_tri_mesh.html#ad92c094ce3e6c0def5bb36a7ff5d215e", null ],
    [ "triangleIndexArray", "class_go_1_1_generic_tri_mesh.html#afdc4359022e38272b171b34f8d1185bc", null ],
    [ "useNormals", "class_go_1_1_generic_tri_mesh.html#a3de2c07766a4122114170a33b62c3fb3", null ],
    [ "useTexCoords", "class_go_1_1_generic_tri_mesh.html#ac9d07cc916b40d1c5893a42500cc0fc5", null ],
    [ "vertexArray", "class_go_1_1_generic_tri_mesh.html#a84039be881913d8e0248be14fd32dbdd", null ]
]
```

Definition at line 1 of file class_go_1_1_generic_tri_mesh.js.

30.274 doc/html/class_go_1_1_geo_tol.js File Reference

Variables

- var class_go_1_1_geo_tol

30.274.1 Variable Documentation

30.274.1.1 var class_go_1_1_geo_tol

Initial value:

```
=
[
    [ "GeoTol", "class_go_1_1_geo_tol.html#a41f90517a5761fac882359aa9714a785", null ],
    [ "GeoTol", "class_go_1_1_geo_tol.html#a58a54012ff9cd1d7b2cbd6cccb8f5d62", null ],
    [ "~GeoTol", "class_go_1_1_geo_tol.html#add1cee7409c22a23865c7cad4ce0775f", null ],
    [ "getAngleTol", "class_go_1_1_geo_tol.html#a324a71f9156baf7cb20c2c7aa6c77deb", null ],
    [ "getEpsBracket", "class_go_1_1_geo_tol.html#a5c471b28a9d28557e204ef0ee9069a93", null ],
    [ "getEpsge", "class_go_1_1_geo_tol.html#a8b7bc072822915300a661c40f9e5f52e", null ],
    [ "getMaxEpsge", "class_go_1_1_geo_tol.html#a749f343f73a1a3efc6c8d6f71611543d", null ],
    [ "getMinEpsge", "class_go_1_1_geo_tol.html#a02c05193604c1a9cae7d9b3b54fc93fe", null ],
    [ "getNumericalTol", "class_go_1_1_geo_tol.html#a2471d316627662ddda16aa5ec6ad1273", null ],
    [ "getRefAng", "class_go_1_1_geo_tol.html#ab6748beb1d2e6f74521fe664537dccb1", null ],
    [ "getRelParRes", "class_go_1_1_geo_tol.html#a83d8f119ecb58d913ceb1f58a293f7bd", null ],
    [ "read", "class_go_1_1_geo_tol.html#a9273319186522ead8f717dae87ae9b1f", null ],
    [ "write", "class_go_1_1_geo_tol.html#a4442a98b53da78dc97f9d82c27e8fce1", null ]
]
```

Definition at line 1 of file class_go_1_1_geo_tol.js.

30.275 doc/html/class_go_1_1_geom_object.js File Reference

Variables

- var class_go_1_1_geom_object

30.275.1 Variable Documentation

30.275.1.1 var class_go_1_1_geom_object

Initial value:

```
=
[
    [ "~GeomObject", "class_go_1_1_geom_object.html#a2e0a76f903c4b3958b548730902d1646", null ],
    [ "boundingBox", "class_go_1_1_geom_object.html#a067f1ee296da03387b3675d89977d2ce", null ],
    [ "clone", "class_go_1_1_geom_object.html#a30ae24ea6a80ee95ad7ea028d02d27a0", null ],
    [ "dimension", "class_go_1_1_geom_object.html#a00210cfb960925b27a272c6b24e71c06", null ],
    [ "instanceType", "class_go_1_1_geom_object.html#a76a0b2f3b42d1ee4273240e1295b72b5", null ],
    [ "writeStandardHeader", "class_go_1_1_geom_object.html#a4859ea7a2cc668eb91d7d8f26c214ba5", null ]
]
```

Definition at line 1 of file class_go_1_1_geom_object.js.

30.276 doc/html/class_go_1_1_geom_object_int.js File Reference

Variables

- var class_go_1_1_geom_object_int

30.276.1 Variable Documentation

30.276.1.1 var class_go_1_1_geom_object_int

Initial value:

```
=
[
    [ "~GeomObjectInt", "class_go_1_1_geom_object_int.html#a5980a9a4fba51bac14701fbfb5a9e34b", null ]
]
```

Definition at line 1 of file class_go_1_1_geom_object_int.js.

30.277 doc/html/class_go_1_1_go_tools.js File Reference

Variables

- var class_go_1_1_go_tools

30.277.1 Variable Documentation

30.277.1.1 var class_go_1_1_go_tools

Initial value:

```
=
[
    [ "GoTools", "class_go_1_1_go_tools.html#ae87697caa683027a61775292e25dab50", null ],
    [ "~GoTools", "class_go_1_1_go_tools.html#af2b31efe6166a1059d637b87490d408c", null ]
]
```

Definition at line 1 of file class_go_1_1_go_tools.js.

30.278 doc/html/class_go_1_1_gpu_matrix.js File Reference

Variables

- var class_go_1_1_gpu_matrix

30.278.1 Variable Documentation

30.278.1.1 var class_go_1_1_gpu_matrix

Initial value:

```
=
[
    [ "GpuMatrix", "class_go_1_1_gpu_matrix.html#a45b14719d2e445da324b8bbd95620114", null ],
    [ "GpuMatrix", "class_go_1_1_gpu_matrix.html#a6725ea84822469b2243ec8a3a739ae8c", null ],
    [ "GpuMatrix", "class_go_1_1_gpu_matrix.html#a2f56334696195b5c6db0dfb26d0c03d4", null ],
    [ "~GpuMatrix", "class_go_1_1_gpu_matrix.html#adc2729c001118fae54ef0a40d2395c33", null ],
    [ "download", "class_go_1_1_gpu_matrix.html#a79a89591dbe8955ba9f8ca33ab937665", null ],
    [ "getCols", "class_go_1_1_gpu_matrix.html#a89254656639c7c57d40c954b53093ab2", null ],
    [ "getRows", "class_go_1_1_gpu_matrix.html#ae4f2528cedcb24aee0536967888debde", null ],
    [ "upload", "class_go_1_1_gpu_matrix.html#aafe7bfbc9f3e83a5a77203ac66cddfca", null ],
    [ "operator<<", "class_go_1_1_gpu_matrix.html#a2b093b490ce041a8c938a54a461f75a5", null ]
]
```

Definition at line 1 of file class_go_1_1_gpu_matrix.js.

30.279 doc/html/class_go_1_1_hermite_app_c.js File Reference

Variables

- var class_go_1_1_hermite_app_c

30.279.1 Variable Documentation

30.279.1.1 var class_go_1_1_hermite_app_c

Initial value:

```
=
[
    [ "HermiteAppC", "class_go_1_1_hermite_app_c.html#a0943f80d1aa006f7a6e714878f4e77d4", null ],
    [ "HermiteAppC", "class_go_1_1_hermite_app_c.html#a49691528c5f2540d6354336548d65338", null ],
    [ "~HermiteAppC", "class_go_1_1_hermite_app_c.html#aa8228556786e4929fe1771f565e2709f", null ],
    [ "getCurve", "class_go_1_1_hermite_app_c.html#aaef51b0f3e322a3020410a2802d8072f", null ],
    [ "refineApproximation", "class_go_1_1_hermite_app_c.html#af84bc9bd237fc875db9d2c0a57fd350e", null ]
]
```

Definition at line 1 of file class_go_1_1_hermite_app_c.js.

30.280 doc/html/class_go_1_1_hermite_app_s.js File Reference

Variables

- var class_go_1_1_hermite_app_s

30.280.1 Variable Documentation

30.280.1.1 var class_go_1_1_hermite_app_s

Initial value:

```
=
[
    [ "HermiteAppS", "class_go_1_1_hermite_app_s.html#a2ff07b2356d1a56e949e78c4065872dc", null ],
    [ "HermiteAppS", "class_go_1_1_hermite_app_s.html#ac1ed3a2e63aace0271734d411b783975", null ],
    [ "~HermiteAppS", "class_go_1_1_hermite_app_s.html#a051342929f58766beba7535e30854676", null ],
    [ "getCurves", "class_go_1_1_hermite_app_s.html#a9d86f1ca7c3af1f68fc5057a24e7605a", null ],
    [ "refineApproximation", "class_go_1_1_hermite_app_s.html#a7b39c26e87f1cbcbf4ec8ca4b7d9173d", null ]
]
```

Definition at line 1 of file class_go_1_1_hermite_app_s.js.

30.281 doc/html/class_go_1_1_hermite_appr_eval_surf.js File Reference

Variables

- var class_go_1_1_hermite_appr_eval_surf

30.281.1 Variable Documentation

30.281.1.1 var class_go_1_1_hermite_appr_eval_surf

Initial value:

```
=
[
    [ "HermiteApprEvalSurf", "class_go_1_1_hermite_appr_eval_surf.html#a1a8384dd2d0b16693bc5ceec64e24545",
      null ],
    [ "HermiteApprEvalSurf", "class_go_1_1_hermite_appr_eval_surf.html#a543290f3c8b594c33f798fdb2dc61829",
      null ],
    [ "~HermiteApprEvalSurf", "class_go_1_1_hermite_appr_eval_surf.html#a5fc02763c166960341d1e972f7be54cd",
       null ],
    [ "getGrid", "class_go_1_1_hermite_appr_eval_surf.html#a58fc0b4472305da14ec6c5f53d309a77", null ],
    [ "getSurface", "class_go_1_1_hermite_appr_eval_surf.html#a5503754fab767b035fe6560761db5e8b", null ],
    [ "refineApproximation", "class_go_1_1_hermite_appr_eval_surf.html#a45b27206ac7510f9f7a1543a3619a981",
      null ],
    [ "removeGridLines", "class_go_1_1_hermite_appr_eval_surf.html#a488bfcc03194718559b1804f9caa6161", null
       ],
    [ "setNoSplit", "class_go_1_1_hermite_appr_eval_surf.html#aa2026be935bbdf883acd7b68576d1914", null ]
]
```

Definition at line 1 of file class_go_1_1_hermite_appr_eval_surf.js.

30.282 doc/html/class_go_1_1_hermite_grid1_d.js File Reference

Variables

- var class_go_1_1_hermite_grid1_d

30.282.1 Variable Documentation

30.282.1.1 var class_go_1_1_hermite_grid1_d

Initial value:

```
=
[
    [ "HermiteGrid1D", "class_go_1_1_hermite_grid1_d.html#a1b81f053ba34e2a982a6f718d68a433c", null ],
    [ "HermiteGrid1D", "class_go_1_1_hermite_grid1_d.html#aa3329e478d6cd783b77b509c9fa227ea", null ],
    [ "~HermiteGrid1D", "class_go_1_1_hermite_grid1_d.html#a934186e38205a15deb1359ab19a913e1", null ],
    [ "addKnot", "class_go_1_1_hermite_grid1_d.html#af02c064ffac2e277322f461bfac3a47e", null ],
    [ "dim", "class_go_1_1_hermite_grid1_d.html#a31f7a904e168d258f5918f3b47424632", null ],
    [ "getData", "class_go_1_1_hermite_grid1_d.html#abcb3e9670ba08213a5a43e613a4f1db8", null ],
    [ "getKnots", "class_go_1_1_hermite_grid1_d.html#a3b8c8c081bf266a096c292fe7ce25b34", null ],
    [ "getSegment", "class_go_1_1_hermite_grid1_d.html#a6506abbf1ad2ae7ded6eda6cb24611f9", null ],
    [ "size", "class_go_1_1_hermite_grid1_d.html#ad698a4b9b46029bd50974dcd9c5e1bf0", null ]
]
```

Definition at line 1 of file class_go_1_1_hermite_grid1_d.js.

30.283 doc/html/class_go_1_1_hermite_grid1_d_multi.js File Reference

Variables

- var class_go_1_1_hermite_grid1_d_multi

30.283.1 Variable Documentation

30.283.1.1 var class_go_1_1_hermite_grid1_d_multi

Initial value:

```
=
[
    [ "HermiteGrid1DMulti", "class_go_1_1_hermite_grid1_d_multi.html#ae7c75ec1562eeb19d988721db3f1da0f",
      null ],
    [ "HermiteGrid1DMulti", "class_go_1_1_hermite_grid1_d_multi.html#af1c804b7313f736d1cf6a2fabfc459b5",
      null ],
    [ "~HermiteGrid1DMulti", "class_go_1_1_hermite_grid1_d_multi.html#ae00f2b7b0c4a8da2ccee89e5e92ac4a2",
      null ],
    [ "addKnot", "class_go_1_1_hermite_grid1_d_multi.html#a54769997303b03a47d40876aec0c5399", null ],
    [ "dims", "class_go_1_1_hermite_grid1_d_multi.html#a5b754461948e41d978f654cc790a0b12", null ],
    [ "getData", "class_go_1_1_hermite_grid1_d_multi.html#abe6459e25f1b19d220886ab4b9f98f8e", null ],
    [ "getKnots", "class_go_1_1_hermite_grid1_d_multi.html#aab9a3975f3402005d4d4b6a71bf4ad35", null ],
    [ "getSegment", "class_go_1_1_hermite_grid1_d_multi.html#adb5eb3b602206625e441c81fec10f2c8", null ],
    [ "size", "class_go_1_1_hermite_grid1_d_multi.html#a6ee2725031e371d94e071b8b1cc4e8f0", null ]
]
```

Definition at line 1 of file class_go_1_1_hermite_grid1_d_multi.js.

30.284 doc/html/class_go_1_1_hermite_grid2_d.js File Reference

Variables

- var class_go_1_1_hermite_grid2_d

30.284.1 Variable Documentation

30.284.1.1 var class_go_1_1_hermite_grid2_d

Initial value:

```
=
[
    [ "HermiteGrid2D", "class_go_1_1_hermite_grid2_d.html#ae81d862f9800ddc6e47bdf14f2326b6c", null ],
    [ "HermiteGrid2D", "class_go_1_1_hermite_grid2_d.html#a91d5e279416a29d2c5ac7f38a6b3765a", null ],
    [ "~HermiteGrid2D", "class_go_1_1_hermite_grid2_d.html#a35254c89198d2a9349d47b951e54d6db", null ],
    [ "addKnot", "class_go_1_1_hermite_grid2_d.html#a566111484d7c08960b0801993f53ccd0", null ],
    [ "dim", "class_go_1_1_hermite_grid2_d.html#a3f764774344045559 05d872e8d9404ce", null ],
    [ "getData", "class_go_1_1_hermite_grid2_d.html#ad282e73379d3d17d1aa31bffdb61b1cc", null ],
    [ "getKnots", "class_go_1_1_hermite_grid2_d.html#ac0d38cf0efe2dcf73f907cf46716f939", null ],
    [ "getNoSplitStatus", "class_go_1_1_hermite_grid2_d.html#addea8cf9b57ffd49a1a197de1833eee6", null ],
    [ "getSegment", "class_go_1_1_hermite_grid2_d.html#aa9d9011b0d98df4730d03ec86e36ae7c", null ],
    [ "removeGridLines", "class_go_1_1_hermite_grid2_d.html#a4c276b7cbebadce38d320b5a9b182a1d", null ],
    [ "setNoSplitStatus", "class_go_1_1_hermite_grid2_d.html#aef1b566e91c2e332eb14c49792b9e144", null ],
    [ "size1", "class_go_1_1_hermite_grid2_d.html#a2dc8d7cba101cef564d6e485c13ad51b", null ],
    [ "size2", "class_go_1_1_hermite_grid2_d.html#a67525fbddcd890f0ae16ecd8edddf629", null ]
]
```

Definition at line 1 of file class_go_1_1_hermite_grid2_d.js.

30.285 doc/html/class_go_1_1_hermite_interpolator.js File Reference

Variables

- var class_go_1_1_hermite_interpolator

30.285.1 Variable Documentation

30.285.1.1 var class_go_1_1_hermite_interpolator

Initial value:

```
=
[
    [ "HermiteInterpolator", "class_go_1_1_hermite_interpolator.html#a7e25bb3a71ad4970945158567091185a",
      null ],
    [ "~HermiteInterpolator", "class_go_1_1_hermite_interpolator.html#ae63830bfb3e2f612ce81c58de90a9bd2",
      null ],
    [ "basis", "class_go_1_1_hermite_interpolator.html#afc7bd50c2ce97845859c0d709fcf8a52", null ],
    [ "interpolate", "class_go_1_1_hermite_interpolator.html#a68e50f552daa807516e02308fd7d5d39", null ],
    [ "interpolate", "class_go_1_1_hermite_interpolator.html#a2187f35b4e95e6017fc8e2499d4681cf", null ]
]
```

Definition at line 1 of file class_go_1_1_hermite_interpolator.js.

30.286 doc/html/class_go_1_1_hyperbola.js File Reference

Variables

- var class_go_1_1_hyperbola

30.286.1 Variable Documentation

30.286.1.1 var class_go_1_1_hyperbola

Definition at line 1 of file class_go_1_1_hyperbola.js.

30.287 doc/html/class_go_1_1_i_g_e_sconverter.js File Reference

Variables

- var class_go_1_1_i_g_e_sconverter

30.287.1 Variable Documentation

30.287.1.1 var class_go_1_1_i_g_e_sconverter

Initial value:

```
=
[
    [ "IGESconverter", "class_go_1_1_i_g_e_sconverter.html#abc89d7444873a3bf95cb251f48488080", null ],
    [ "IGESconverter", "class_go_1_1_i_g_e_sconverter.html#a9cc2a58937a1e2f744dc8ebf86e0de6d", null ],
    [ "~IGESconverter", "class_go_1_1_i_g_e_sconverter.html#a1f250f2764974dbf68ce3208c1ad13ee", null ],
    [ "addGeom", "class_go_1_1_i_g_e_sconverter.html#a6f6556ad80f83e2186437d4d8e0d9136", null ],
    [ "getColour", "class_go_1_1_i_g_e_sconverter.html#ad4093f5ada9d0ceb642a73b8f201d55f", null ],
    [ "getGoGeom", "class_go_1_1_i_g_e_sconverter.html#a1078c220e3f7a12d09ae711e64567dba", null ],
    [ "getGroup", "class_go_1_1_i_g_e_sconverter.html#a49c0a7c5a7b5a09b7ca3c92f4bedb967", null ],
    [ "header", "class_go_1_1_i_g_e_sconverter.html#a13e6f5f9c53cc67d6eb7f74a27d89e99", null ],
    [ "minResolution", "class_go_1_1_i_g_e_sconverter.html#a617cd9a7fc03caa270590dc950cce4a5", null ],
    [ "num_geom", "class_go_1_1_i_g_e_sconverter.html#a3d9a5e1044f2d08e14d97cbdfc8bf6e3", null ],
    [ "num_group", "class_go_1_1_i_g_e_sconverter.html#a52a55d0882142aa3fad6637464ce1d83", null ],
    [ "readdisp", "class_go_1_1_i_g_e_sconverter.html#ae3780587f267dbe1829ffeb6a28858e6", null ],
    [ "readgo", "class_go_1_1_i_g_e_sconverter.html#a9efb92459fed2d88e231d3031cf74390", null ],
    [ "readIGES", "class_go_1_1_i_g_e_sconverter.html#a558b37c0b9a7850a9ad016c031e95988", null ],
    [ "readsislcrvs", "class_go_1_1_i_g_e_sconverter.html#aa6c8a2a81c9a91ef646e3626b5bd5a5f", null ],
    [ "readsislsrfs", "class_go_1_1_i_g_e_sconverter.html#ab95f5e0eda003d0d8f7ee4f99d356d48", null ],
    [ "writedisp", "class_go_1_1_i_g_e_sconverter.html#aa48025e09158d3df2aebdd188c1dab05", null ],
    [ "writego", "class_go_1_1_i_g_e_sconverter.html#a5f25c2b363c2ee650deea96950eab445", null ],
    [ "writeIGES", "class_go_1_1_i_g_e_sconverter.html#a12b1ab902e4cbb47fd1c10a324fb5fcb", null ]
]
```

Definition at line 1 of file class_go_1_1_i_g_e_sconverter.js.

30.288 doc/html/class_go_1_1_identity.js File Reference

Variables

- var class_go_1_1_identity

30.288.1 Variable Documentation

30.288.1.1 var class_go_1_1_identity

Initial value:

```
=
[
    [ "identicalCvs", "class_go_1_1_identity.html#acf3fc01c2e37aa833e398ad4d81d9fee", null ],
    [ "identicalSfs", "class_go_1_1_identity.html#a14ba65d23ce10a0689f5f353aff2d25a", null ]
]
```

Definition at line 1 of file class_go_1_1_identity.js.

30.289 doc/html/class_go_1_1_implicitize_curve_algo.js File Reference

Variables

- var class_go_1_1_implicitize_curve_algo

30.289.1 Variable Documentation

30.289.1.1 var class_go_1_1_implicitize_curve_algo

Initial value:

```
=
[
    [ "ImplicitizeCurveAlgo", "class_go_1_1_implicitize_curve_algo.html#a8ba7d946e84aa0f3c2fd1cba6369bc84",
      null ],
    [ "ImplicitizeCurveAlgo", "class_go_1_1_implicitize_curve_algo.html#a64bc2aa9582de885cff5b3596d89d332",
      null ],
    [ "ImplicitizeCurveAlgo", "class_go_1_1_implicitize_curve_algo.html#aacc0a11e92c206f7db6f731885f6ec43",
      null ],
    [ "getResultData", "class_go_1_1_implicitize_curve_algo.html#a39d80d4ab3aa45910413b025a1915e38", null ]
    ,
    [ "perform", "class_go_1_1_implicitize_curve_algo.html#a6f12e7225bed0c7b2929a0154b958d63", null ],
    [ "setDegree", "class_go_1_1_implicitize_curve_algo.html#a61f6d229c42e3697581bfb3a20d85641", null ],
    [ "setTolerance", "class_go_1_1_implicitize_curve_algo.html#aa3f875e818a5e92ab1dc430a967a0504", null ],
    [ "useSplineCurve", "class_go_1_1_implicitize_curve_algo.html#a939b612b7484c57f9b16c5968d14c9cc", null
      ]
]
```

Definition at line 1 of file class_go_1_1_implicitize_curve_algo.js.

30.290 doc/html/class_go_1_1_implicitize_curve_and_vector_algo.js File Reference

Variables

- var class_go_1_1_implicitize_curve_and_vector_algo

30.290.1 Variable Documentation

30.290.1.1 var class_go_1_1_implicitize_curve_and_vector_algo

Initial value:

```
=
[
    [ "ImplicitizeCurveAndVectorAlgo", "
      class_go_1_1_implicitize_curve_and_vector_algo.html#a2835321bb2f08b93348677e7de9462d7", null ],
    [ "ImplicitizeCurveAndVectorAlgo", "
      class_go_1_1_implicitize_curve_and_vector_algo.html#ac714e00d39489b629f567c74076e9f62", null ],
    [ "ImplicitizeCurveAndVectorAlgo", "
      class_go_1_1_implicitize_curve_and_vector_algo.html#a4c10042b074532089af07aaa090b4eb1", null ],
    [ "getResultData", "
      class_go_1_1_implicitize_curve_and_vector_algo.html#a123db1e99d3ab524fd4b8452ba831b8b", null ],
    [ "perform", "class_go_1_1_implicitize_curve_and_vector_algo.html#a6e679ce6cf7377743e56f55a829dfea2",
      null ],
    [ "setDegree", "class_go_1_1_implicitize_curve_and_vector_algo.html#a01b6d54ae7bdf9c71dd3ab989c1a7487",
       null ],
    [ "setTolerance", "
      class_go_1_1_implicitize_curve_and_vector_algo.html#a821e18cb61f8fbe530409275c9a0c985", null ],
    [ "useSplineCurve", "
      class_go_1_1_implicitize_curve_and_vector_algo.html#aeb94fd01cadbfbedb760eee2f6daea73", null ],
    [ "useVector", "class_go_1_1_implicitize_curve_and_vector_algo.html#a96f5c125df5dd849bdf081cfde23af96",
       null ]
]
```

Definition at line 1 of file class_go_1_1_implicitize_curve_and_vector_algo.js.

30.291 doc/html/class_go_1_1_implicitize_point_cloud_algo.js File Reference

Variables

- var class_go_1_1_implicitize_point_cloud_algo

30.291.1 Variable Documentation

30.291.1.1 var class_go_1_1_implicitize_point_cloud_algo

Initial value:

```
=
[
    [ "ImplicitizePointCloudAlgo", "
      class_go_1_1_implicitize_point_cloud_algo.html#a56817f5ef22777c80ffafc1d7a9ebbba", null ],
    [ "ImplicitizePointCloudAlgo", "
      class_go_1_1_implicitize_point_cloud_algo.html#a2033dedcaeeb3c2ff8122bd71763cb8d", null ],
    [ "ImplicitizePointCloudAlgo", "
      class_go_1_1_implicitize_point_cloud_algo.html#a5d83ca3ddae5e07902d984fe3f96e892", null ],
    [ "getResultData", "class_go_1_1_implicitize_point_cloud_algo.html#ab26d12a65128964e9bca2ba889020272",
      null ],
    [ "perform", "class_go_1_1_implicitize_point_cloud_algo.html#a13a2323f9e7364577c6129fcb09f80ef", null ]
    ,
    [ "setDegree", "class_go_1_1_implicitize_point_cloud_algo.html#adb74703b42a2db51f58ae2ee0ff11979", null
       ],
    [ "setTolerance", "class_go_1_1_implicitize_point_cloud_algo.html#a8f71deb3bb6843f905b0f7c6a09875f2",
      null ],
    [ "usePointCloud", "class_go_1_1_implicitize_point_cloud_algo.html#aec01db50bf187f939a3b0b33dfceb5aa",
      null ]
]
```

Definition at line 1 of file class_go_1_1_implicitize_point_cloud_algo.js.

30.292 doc/html/class_go_1_1_implicitize_surface_algo.js File Reference

Variables

- var class_go_1_1_implicitize_surface_algo

30.292.1 Variable Documentation

30.292.1.1 var class_go_1_1_implicitize_surface_algo

Initial value:

```
=
[
    [ "ImplicitizeSurfaceAlgo", "
      class_go_1_1_implicitize_surface_algo.html#ac8cfe4021e223dca749e76ce3d23e681", null ],
    [ "ImplicitizeSurfaceAlgo", "
      class_go_1_1_implicitize_surface_algo.html#a8ab33df8d56a57d9e16cc89194a6ffb0", null ],
    [ "ImplicitizeSurfaceAlgo", "
      class_go_1_1_implicitize_surface_algo.html#a5257feced044874f73c4c6dbcc6c2e61", null ],
    [ "getResultData", "class_go_1_1_implicitize_surface_algo.html#aae034eac7b892ee40184c58f92cbd646", null
      ],
    [ "perform", "class_go_1_1_implicitize_surface_algo.html#a55760971a434c9855fdc2d11d40093c7", null ],
    [ "setDegree", "class_go_1_1_implicitize_surface_algo.html#ac28c46855c2ca5dcfc2196cfcaae4399", null ],
    [ "setTolerance", "class_go_1_1_implicitize_surface_algo.html#ac6bc70f82cede59b2038835e22aec0c0", null
      ],
    [ "useSplineSurface", "class_go_1_1_implicitize_surface_algo.html#a0ae851ad58fce208d8f9e868a5b758c7",
      null ]
]
```

Definition at line 1 of file class_go_1_1_implicitize_surface_algo.js.

30.293 doc/html/class_go_1_1_index_mesh2_d_iterator.js File Reference

Variables

- var class_go_1_1_index_mesh2_d_iterator

30.293.1 Variable Documentation

30.293.1.1 var class_go_1_1_index_mesh2_d_iterator

Initial value:

```
=
[
    [ "IndexMesh2DIterator", "class_go_1_1_index_mesh2_d_iterator.html#a489ffd145fab0714f8e19c6db2051adf",
      null ],
    [ "operator!=", "class_go_1_1_index_mesh2_d_iterator.html#ac141669bbe4cee43488d112d8a6a0a14", null ],
    [ "operator*", "class_go_1_1_index_mesh2_d_iterator.html#aad063a5ce63ee01ce6c0695a96a87f2b", null ],
    [ "operator++", "class_go_1_1_index_mesh2_d_iterator.html#a75ff1f9fdfd67889a0f0128cb95db10a", null ],
    [ "operator==", "class_go_1_1_index_mesh2_d_iterator.html#a6b74f5c71ddfff353ee5d46ff525d7bc", null ]
]
```

Definition at line 1 of file class_go_1_1_index_mesh2_d_iterator.js.

30.294 doc/html/class_go_1_1_int_crv_evaluator.js File Reference

Variables

- var class_go_1_1_int_crv_evaluator

30.294.1 Variable Documentation

30.294.1.1 var class_go_1_1_int_crv_evaluator

Initial value:

```
=
[
    [ "IntCrvEvaluator", "class_go_1_1_int_crv_evaluator.html#a588d5572ae712c10fb0619c330eb42f3", null ],
    [ "~IntCrvEvaluator", "class_go_1_1_int_crv_evaluator.html#a1311da99f6ae0f828ce9f9acd7010f23", null ],
    [ "approximationOK", "class_go_1_1_int_crv_evaluator.html#ab173e8c1a5e26341deadfb30c8d28473", null ],
    [ "dim", "class_go_1_1_int_crv_evaluator.html#a55988451a46e7982b16d33e976917e68", null ],
    [ "end", "class_go_1_1_int_crv_evaluator.html#a26b27e0e2dd99a85d0d91a74f7e9ee2b", null ],
    [ "eval", "class_go_1_1_int_crv_evaluator.html#ab9f4d31119d434a7399b4f57a99c7efb", null ],
    [ "eval", "class_go_1_1_int_crv_evaluator.html#a212ac4e6d0896e12fef2d5a0bd895e58", null ],
    [ "getMaxErr", "class_go_1_1_int_crv_evaluator.html#a84caa845e65e381a79545a200b52dc3f", null ],
    [ "nmbCvs", "class_go_1_1_int_crv_evaluator.html#a2a6d139b257cbab81385d1a5b3f03905", null ],
    [ "resetErr", "class_go_1_1_int_crv_evaluator.html#a151e46048397db954352f388c409c2c3", null ],
    [ "start", "class_go_1_1_int_crv_evaluator.html#ad5622093eda08e7c27d4a06e5d9e0060", null ]
]
```

Definition at line 1 of file class_go_1_1_int_crv_evaluator.js.

30.295 doc/html/class_go_1_1_int_results_comp_cv.js File Reference

Variables

- var class_go_1_1_int_results_comp_cv

30.295.1 Variable Documentation

30.295.1.1 var class_go_1_1_int_results_comp_cv

Initial value:

```
=
[
    [ "IntResultsCompCv", "class_go_1_1_int_results_comp_cv.html#a39913161fc82b56def0dff1dfc8ac964", null ]
      ,
    [ "IntResultsCompCv", "class_go_1_1_int_results_comp_cv.html#adb349e45f1f3d0db949dc41544595b42", null ]
      ,
    [ "~IntResultsCompCv", "class_go_1_1_int_results_comp_cv.html#a15116e6ea54db12ad8d530ac633a4f78", null
      ],
    [ "addIntCv", "class_go_1_1_int_results_comp_cv.html#ae2899f24ed3eafee66fd43e9932a7b0e", null ],
    [ "addIntPt", "class_go_1_1_int_results_comp_cv.html#ae57b06c0659eeb57546103c2e49581fa", null ],
    [ "getIntersectionCurves", "class_go_1_1_int_results_comp_cv.html#ab5a011b67270f12265151fc393caad07",
      null ],
    [ "getIntersectionPoints", "class_go_1_1_int_results_comp_cv.html#a413551fbc611a02b8eeb65ba79015256",
      null ],
    [ "hasIntCurves", "class_go_1_1_int_results_comp_cv.html#a1a87b6dfd2ae43340f88b25321b515c1", null ],
    [ "hasIntersections", "class_go_1_1_int_results_comp_cv.html#a6e3f3295623b4f774c81746ee70be724", null ]
      ,
    [ "hasIntPoints", "class_go_1_1_int_results_comp_cv.html#a553c3b81a105302a5f99539c7b806ddd", null ],
    [ "nmbCurveSegments", "class_go_1_1_int_results_comp_cv.html#aa1ab06a91745daa8bfc8fd368e1de952", null ]
      ,
    [ "nmbIntPoints", "class_go_1_1_int_results_comp_cv.html#add3a6f4ed07c05dc81b96eef002d00a2", null ],
    [ "tesselate", "class_go_1_1_int_results_comp_cv.html#a0a2c6122f9a871bf7b9666d2e0ad2a2f", null ],
    [ "tesselate", "class_go_1_1_int_results_comp_cv.html#aaa85f9ea710d6c6700b49456212c73ba", null ],
    [ "tesselate", "class_go_1_1_int_results_comp_cv.html#a679437896e0247ae64a4375234f1e270", null ]
]
```

Definition at line 1 of file class_go_1_1_int_results_comp_cv.js.

30.296 doc/html/class_go_1_1_int_results_model.js File Reference

Variables

- var class_go_1_1_int_results_model

30.296.1 Variable Documentation

30.296.1.1 var class_go_1_1_int_results_model

Initial value:

```
=
[
    [ "IntResultsModel", "class_go_1_1_int_results_model.html#a37c7c5856b4bcbdc4c768280a89332fa", null ],
    [ "~IntResultsModel", "class_go_1_1_int_results_model.html#a2c1bb1fbabe1e108981ac0991c7c4409", null ],
    [ "addLineInfo", "class_go_1_1_int_results_model.html#a3794036a737801309c23c848582e48bd", null ],
    [ "addPlaneInfo", "class_go_1_1_int_results_model.html#a45214769a80e4576533438d217bb4428", null ],
    [ "hasIntCurves", "class_go_1_1_int_results_model.html#a187610d37b96d7f4aa1e21e494270dc6", null ],
    [ "hasIntersections", "class_go_1_1_int_results_model.html#a4d12d17e152778ee104ce8647a54ec1e", null ],
    [ "hasIntPoints", "class_go_1_1_int_results_model.html#a7b3d18f6047b9702f10f3b01c8970606", null ],
    [ "nmbCurveSegments", "class_go_1_1_int_results_model.html#a784cbb4e684109f3d3890b4eee84ff08", null ],
    [ "nmbIntPoints", "class_go_1_1_int_results_model.html#abca77fdcbf99084d17de8e1d8dcb90ec", null ],
    [ "tesselate", "class_go_1_1_int_results_model.html#af758fa08a1d9a2e291102486e4029128", null ],
    [ "tesselate", "class_go_1_1_int_results_model.html#a5cba20336f32b65cfd840edbf8f46bbd", null ],
    [ "tesselate", "class_go_1_1_int_results_model.html#aa65af6225021c30ea430fc9287191cd9", null ],
    [ "line_", "class_go_1_1_int_results_model.html#a26a8c35b714e8b4d2197d3733bcd1b40", null ],
    [ "numpar_", "class_go_1_1_int_results_model.html#a5e5b3f81b17ef87819a0cd45a308ddf6", null ],
    [ "plane_", "class_go_1_1_int_results_model.html#a6d576fb9cf1d034f020d2ccc660d0ab0", null ],
    [ "type_", "class_go_1_1_int_results_model.html#a5590accd90a55e8c52874c67ae025e7d", null ]
]
```

Definition at line 1 of file class_go_1_1_int_results_model.js.

30.297 doc/html/class_go_1_1_int_results_sf_model.js File Reference

Variables

- var class_go_1_1_int_results_sf_model

30.297.1 Variable Documentation

30.297.1.1 var class_go_1_1_int_results_sf_model

Initial value:

```
=
[
    [ "IntResultsSfModel", "class_go_1_1_int_results_sf_model.html#a28ca82d75321afc3924e9a324126b16c", null
      ],
    [ "IntResultsSfModel", "class_go_1_1_int_results_sf_model.html#a5f7779331a8c02e73cf5ea82db399a8d", null
      ],
    [ "~IntResultsSfModel", "class_go_1_1_int_results_sf_model.html#a28e255c2d40fcf43a6dd9a414adb912f",
      null ],
    [ "addIntCvs", "class_go_1_1_int_results_sf_model.html#aa2895b90ffe93590a1540bbe2bbcef40", null ],
    [ "addIntPts", "class_go_1_1_int_results_sf_model.html#adf7cfa67e69fcc8e43790705fd2a11d2", null ],
    [ "getIntersectionCurves", "class_go_1_1_int_results_sf_model.html#a60ffd1eb09ed472a55fd4d782aadf016",
      null ],
    [ "getIntersectionPoints", "class_go_1_1_int_results_sf_model.html#abc0327970bcf4a9205cf18ffb29e9992",
      null ],
    [ "hasIntCurves", "class_go_1_1_int_results_sf_model.html#af2438d92c1844f33c2dc5479d0e0a126", null ],
    [ "hasIntersections", "class_go_1_1_int_results_sf_model.html#a22560da1c5a2ba7ed7a0819d6b84c7c2", null
      ],
    [ "hasIntPoints", "class_go_1_1_int_results_sf_model.html#a09a75034c35c6698915e9ca7f9b6f26e", null ],
    [ "nmbCurveSegments", "class_go_1_1_int_results_sf_model.html#ab0b2785827237422cf3a2236b9c22e0b", null
      ],
    [ "nmbIntPoints", "class_go_1_1_int_results_sf_model.html#afa7fff0fecdb5e074a38d23f9488811c", null ],
    [ "tesselate", "class_go_1_1_int_results_sf_model.html#ab7833b7cdf1ab93b3635e2d68cea77e4", null ],
    [ "tesselate", "class_go_1_1_int_results_sf_model.html#a0482f111c47cb1d5aa53dd87f7fa59f5", null ],
    [ "tesselate", "class_go_1_1_int_results_sf_model.html#a9f75cafb391badc9153f52c01393e207", null ]
]
```

Definition at line 1 of file class_go_1_1_int_results_sf_model.js.

30.298 doc/html/class_go_1_1_interpolated_intersection_curve.js File Reference

Variables

- var class_go_1_1_interpolated_intersection_curve

30.298.1 Variable Documentation

30.298.1.1 var class_go_1_1_interpolated_intersection_curve

Initial value:

```
=
[
    [ "~InterpolatedIntersectionCurve", "
      class_go_1_1_interpolated_intersection_curve.html#a2cc666f8a99ef65f09ed7ec33d83eddf", null ],
    [ "evaluateAt", "class_go_1_1_interpolated_intersection_curve.html#a55691f39dd225caf3c4f2ecafea9c488",
      null ],
    [ "getCurve", "class_go_1_1_interpolated_intersection_curve.html#a2298291895656223adb4885e21962ddc",
      null ],
    [ "getGuidePointTangent", "
      class_go_1_1_interpolated_intersection_curve.html#a54741b7a4c648ec5cdb38dba9f879fc4", null ],
    [ "getParamCurve", "class_go_1_1_interpolated_intersection_curve.html#ad2e38f7ec50c9e6b142599ef4af57d87
      ", null ],
    [ "getParamSpan", "class_go_1_1_interpolated_intersection_curve.html#ab75e62cd368335a219751766521c2752"
      , null ],
    [ "isDegenerated", "class_go_1_1_interpolated_intersection_curve.html#acb486e3188e2799ec14dd3d394ae7f51
      ", null ],
    [ "isIsocurve", "class_go_1_1_interpolated_intersection_curve.html#a375594c872bd6bb5396b58a277a3779c",
      null ],
    [ "read", "class_go_1_1_interpolated_intersection_curve.html#a91bc2564d6bc1f840f451e9850dcae5f", null ]
      ,
    [ "refine", "class_go_1_1_interpolated_intersection_curve.html#a0def052e3c76d761f6803f6d29a36d77", null
      ],
    [ "write", "class_go_1_1_interpolated_intersection_curve.html#aa6f5f6040f556d1b2c85846ae264c15b", null
      ],
    [ "constructIntersectionCurve", "
      class_go_1_1_interpolated_intersection_curve.html#a6ab34095fc2901f18aff0d440f5f9ea5", null ]
]
```

Definition at line 1 of file class_go_1_1_interpolated_intersection_curve.js.

30.299 doc/html/class_go_1_1_interpolator.js File Reference

Variables

- var class_go_1_1_interpolator

30.299.1 Variable Documentation

30.299.1.1 var class_go_1_1_interpolator

Initial value:

```
=
[
    [ "~Interpolator", "class_go_1_1_interpolator.html#a89e82a127c1680a5f65c7ecb1a2e989f", null ],
    [ "basis", "class_go_1_1_interpolator.html#af3b4041503a093bc17a8dbf7d62cd49d", null ],
    [ "interpolate", "class_go_1_1_interpolator.html#aa30a5694c065bf3664df3f269a16de77", null ]
]
```

Definition at line 1 of file class_go_1_1_interpolator.js.

30.300 doc/html/class_go_1_1_intersection_curve.js File Reference

Variables

- var class_go_1_1_intersection_curve

30.300.1 Variable Documentation

30.300.1.1 var class_go_1_1_intersection_curve

Initial value:

```
=
[
    [ "~IntersectionCurve", "class_go_1_1_intersection_curve.html#a6cf2e4736ade62dbb3985ef072d034e0", null
      ],
    [ "IntersectionCurve", "class_go_1_1_intersection_curve.html#ac4003ff43d0327c953305800ac2364cf", null ]
      ,
    [ "evaluateAt", "class_go_1_1_intersection_curve.html#a08b1e3c0a8b0a4c54351d79e035cc56a", null ],
    [ "getCurve", "class_go_1_1_intersection_curve.html#a0fa20bdfc6319f0baac26ce841b8b1bc", null ],
    [ "getGuidePoint", "class_go_1_1_intersection_curve.html#af9939e163fe8bf63c937b44df9432133", null ],
    [ "getGuidePointTangent", "class_go_1_1_intersection_curve.html#a88760b129ab2bb3ca6a7176e544339c5",
      null ],
    [ "getParamCurve", "class_go_1_1_intersection_curve.html#aa2c34260ae6d57e4099c51231e769f87", null ],
    [ "getParamSpan", "class_go_1_1_intersection_curve.html#acba1e0e9e4fc27bfa2f2c5aa8a9db7cf", null ],
    [ "isDegenerated", "class_go_1_1_intersection_curve.html#a3601834a09fa3ca28a806c6890352ca1", null ],
    [ "isIsocurve", "class_go_1_1_intersection_curve.html#ac9ff615827c0995f089f7f6c8c687fd6", null ],
    [ "numGuidePoints", "class_go_1_1_intersection_curve.html#a54f8c14777db7e2cf1ea606ae9c90479", null ],
    [ "refine", "class_go_1_1_intersection_curve.html#aab981c74101ef930bdaa69659c56aae6", null ],
    [ "writeIPointsToStream", "class_go_1_1_intersection_curve.html#a56df8bd8dc13845e89a18014952bf106",
      null ],
    [ "constructIntersectionCurve", "class_go_1_1_intersection_curve.html#a6ab34095fc2901f18aff0d440f5f9ea5
      ", null ],
    [ "ipoints_", "class_go_1_1_intersection_curve.html#a68cfad916eee474a4a67c5fe59d960c5", null ]
]
```

Definition at line 1 of file class_go_1_1_intersection_curve.js.

30.301 doc/html/class_go_1_1_intersection_link.js File Reference

Variables

- var class_go_1_1_intersection_link

30.301.1 Variable Documentation

30.301.1.1 var class_go_1_1_intersection_link

Initial value:

```
=
[
    [ "IntersectionLink", "class_go_1_1_intersection_link.html#a477cd7b24eff533968ee2bf98b835e21", null ],
    [ "copyMetaInformation", "class_go_1_1_intersection_link.html#a2bb0c1fe4e2d007c6dbe90fe52b6818b", null
      ],
    [ "crosses", "class_go_1_1_intersection_link.html#a67f77e2cc8b5e6a4aedcfd2863526ccd", null ],
    [ "delimitsPAC", "class_go_1_1_intersection_link.html#a2a3288dad241e87d64ab03bc4645cafe", null ],
    [ "dumpToStream", "class_go_1_1_intersection_link.html#afba207d4b816da43af23c7e7200130ac", null ],
    [ "getIntersectionPoints", "class_go_1_1_intersection_link.html#abb105a7042d65505d4fe6313d45aec59",
      null ],
    [ "getIntersectionPoints", "class_go_1_1_intersection_link.html#ae10db109ef2c456e73489b4fee5eb61b",
      null ],
    [ "getOtherPoint", "class_go_1_1_intersection_link.html#a3f76e5433759be357816d4b748600b34", null ],
    [ "isAttachedTo", "class_go_1_1_intersection_link.html#ad68a81877afad6ce1937beb724ce6f71", null ],
    [ "isIsoparametric", "class_go_1_1_intersection_link.html#a7657127d5b019eba307308b8289ac570", null ],
    [ "isIsoparametricIn", "class_go_1_1_intersection_link.html#a1113623834f5105dbdb86e0a3341a84a", null ],
    [ "linkType", "class_go_1_1_intersection_link.html#a0a766df4c33506fd0e0ef77dc3dc1154", null ],
    [ "linkType", "class_go_1_1_intersection_link.html#af16fc0f41eb6ac32d77f3bfbfc9a76e0", null ],
    [ "numParams", "class_go_1_1_intersection_link.html#a0f9b865218db7ac600972f4e44df4d66", null ],
    [ "setIsoparametricIn", "class_go_1_1_intersection_link.html#a8f3ff44ecd585946b0c45bd8813dbf7e", null ]
      ,
    [ "setPAC", "class_go_1_1_intersection_link.html#a28e5aa3a8a57c2a9dcec078703b09dde", null ],
    [ "writeInfo", "class_go_1_1_intersection_link.html#ad85f22a9a2be902612a768e8425fc671", null ]
]
```

Definition at line 1 of file class_go_1_1_intersection_link.js.

30.302 doc/html/class_go_1_1_intersection_point.js File Reference

Variables

- var class_go_1_1_intersection_point

30.302.1 Variable Documentation

30.302.1.1 var class_go_1_1_intersection_point

Definition at line 1 of file class_go_1_1_intersection_point.js.

30.303 doc/html/class_go_1_1_intersection_pool.js File Reference

Variables

- var class_go_1_1_intersection_pool

30.303.1 Variable Documentation

30.303.1.1 var class_go_1_1_intersection_pool

Definition at line 1 of file class_go_1_1_intersection_pool.js.

30.304 doc/html/class_go_1_1_intersector.js File Reference

Variables

- var class_go_1_1_intersector

30.304.1 Variable Documentation

30.304.1.1 var class_go_1_1_intersector

Definition at line 1 of file class_go_1_1_intersector.js.

30.305 doc/html/class_go_1_1_intersector2_obj.js File Reference

Variables

- var class_go_1_1_intersector2_obj

30.305.1 Variable Documentation

30.305.1.1 var class_go_1_1_intersector2_obj

Definition at line 1 of file class_go_1_1_intersector2_obj.js.

30.306 doc/html/class_go_1_1_intersector_alg_par.js File Reference

Variables

- var class_go_1_1_intersector_alg_par

30.306.1 Variable Documentation

30.306.1.1 var class_go_1_1_intersector_alg_par

Initial value:

```
=
[
    [ "IntersectorAlgPar", "class_go_1_1_intersector_alg_par.html#a1c694796c371a332dd93b5eb6f53dbcd", null
      ],
    [ "~IntersectorAlgPar", "class_go_1_1_intersector_alg_par.html#ac45bb8bc7ea8c2b3ed54fa9a43a171d9", null
       ],
    [ "checkCoincidence", "class_go_1_1_intersector_alg_par.html#a66286ac52cb3eb4425cd0317d4220119", null ]
      ,
    [ "complexityReduced", "class_go_1_1_intersector_alg_par.html#a6704561a8cf298374b282b1c11d26237", null
      ],
    [ "compute", "class_go_1_1_intersector_alg_par.html#a48b07877d418bce39c4c358ea484b46e", null ],
    [ "doSubdivide", "class_go_1_1_intersector_alg_par.html#aa68c2f708e7e5a9f9b0fad0bd034ebfc", null ],
    [ "getBoundaryIntersections", "class_go_1_1_intersector_alg_par.html#abde4c8ecb977e3eaebbcd8b8e5011d1a"
      , null ],
    [ "getResult", "class_go_1_1_intersector_alg_par.html#ad2a2470a8b2f294bd6fed0ed6c8baea7", null ],
    [ "handleComplexity", "class_go_1_1_intersector_alg_par.html#aa0a325a32e1aebc7d037d289b7392a5f", null ]
      ,
    [ "isLinear", "class_go_1_1_intersector_alg_par.html#a0cb169819cf12698621460ef2de17f90", null ],
    [ "linearCase", "class_go_1_1_intersector_alg_par.html#ad329ae8fd44ff253f65a550e6d98e789", null ],
    [ "microCase", "class_go_1_1_intersector_alg_par.html#a45f7221f062bfd84d22cf8602d7815e3", null ],
    [ "numParams", "class_go_1_1_intersector_alg_par.html#a37538dfac8aae3bf8b80d8029c06fbf9", null ],
    [ "performInterception", "class_go_1_1_intersector_alg_par.html#a9f3d35e28e826f010b8ace562b46867e",
      null ],
    [ "print_objs", "class_go_1_1_intersector_alg_par.html#aa5794587a6cfed1116cdad7f3d11ebb8", null ],
    [ "printDebugInfo", "class_go_1_1_intersector_alg_par.html#ab0dece88519c5dabde40bb1f0d2c1758", null ],
    [ "repairIntersections", "class_go_1_1_intersector_alg_par.html#a876949b1be857c253173f43981bf2da7",
      null ],
    [ "simpleCase", "class_go_1_1_intersector_alg_par.html#aa7cb69632605ec30f8599635426a77c4", null ],
    [ "updateIntersections", "class_go_1_1_intersector_alg_par.html#aeac71c7d5eae6e528d0dff692dae85c4",
      null ],
    [ "algobj_int_", "class_go_1_1_intersector_alg_par.html#a6e26ce4d645ba59581bcfd4863522bb8", null ],
    [ "int_func_const_", "class_go_1_1_intersector_alg_par.html#a410ff9bdc7efb7c7dcc1fa83d0497019", null ],
    [ "param_int_", "class_go_1_1_intersector_alg_par.html#ab5851b92d89b38e33ccd25df1e396b9e", null ]
]
```

Definition at line 1 of file class_go_1_1_intersector_alg_par.js.

30.307 doc/html/class_go_1_1_intersector_func_const.js File Reference

Variables

- var class_go_1_1_intersector_func_const

30.307.1 Variable Documentation

30.307.1.1 var class_go_1_1_intersector_func_const

Initial value:

```
=
[
    [ "IntersectorFuncConst", "class_go_1_1_intersector_func_const.html#a6bcb2cc97acf2965e4cfad9e5d28e22c",
      null ],
    [ "~IntersectorFuncConst", "class_go_1_1_intersector_func_const.html#a983904e7810e64e408440ee24f855eab"
      , null ],
    [ "checkCoincidence", "class_go_1_1_intersector_func_const.html#af5c7947ff3c6a1a080a0aee6e3d044e7",
      null ],
    [ "complexityReduced", "class_go_1_1_intersector_func_const.html#af9008c446f653e3e40a69ecf7c87ae9c",
      null ],
    [ "doSubdivide", "class_go_1_1_intersector_func_const.html#a57925a75587862d58ff47c983db6858a", null ],
    [ "getBoundaryIntersections", "
      class_go_1_1_intersector_func_const.html#ab1655bc8826029c5ee7b027f1a5fe65a", null ],
    [ "handleComplexity", "class_go_1_1_intersector_func_const.html#ad3578e18407c67f5104c659f1c2599b1",
      null ],
    [ "isLinear", "class_go_1_1_intersector_func_const.html#ab486f36f5ec691973af45a53249e7b72", null ],
    [ "linearCase", "class_go_1_1_intersector_func_const.html#a95cc7ee76c02164a95d1d6117ec82196", null ],
    [ "lowerOrderIntersector", "class_go_1_1_intersector_func_const.html#a78ee9f26cfec9eb60915138474000d99"
      , null ],
    [ "microCase", "class_go_1_1_intersector_func_const.html#a64378e6a401f57776a81e7bc26d8e70f", null ],
    [ "performInterception", "class_go_1_1_intersector_func_const.html#a1180d08f6237927a83a9dffdafa02726",
      null ],
    [ "print_objs", "class_go_1_1_intersector_func_const.html#ac18633acaa75673422e4c6ebc685404f", null ],
    [ "printDebugInfo", "class_go_1_1_intersector_func_const.html#a44f2d14e061331d73c796fea17f6e9be", null
      ],
    [ "simpleCase", "class_go_1_1_intersector_func_const.html#ac40bcda7d02c8f607a36c3beabbcc1bf", null ],
    [ "updateIntersections", "class_go_1_1_intersector_func_const.html#abb3abcdd46d34046f81562e3ce140c58",
      null ],
    [ "IntersectorAlgPar", "class_go_1_1_intersector_func_const.html#ae0bce107ca8435c4f869edb948b496cf",
      null ],
    [ "C_", "class_go_1_1_intersector_func_const.html#a6f6bea7870b300865b13e632ba7ff999", null ],
    [ "func_int_", "class_go_1_1_intersector_func_const.html#abc8f68ae80af7bc1a741a24c728d61aa", null ]
]
```

Definition at line 1 of file class_go_1_1_intersector_func_const.js.

30.308 doc/html/class_go_1_1_isogeometric_block.js File Reference

Variables

- var class_go_1_1_isogeometric_block

30.308.1 Variable Documentation

30.308.1.1 var class_go_1_1_isogeometric_block

Initial value:

```
=
[
    [ "IsogeometricBlock", "class_go_1_1_isogeometric_block.html#adbaef92b058186f56820f17ea7baf993", null ]
      ,
    [ "~IsogeometricBlock", "class_go_1_1_isogeometric_block.html#ae9dba3fa0afacf1125a11216937c980a", null
      ],
    [ "asIsogeometricSfBlock", "class_go_1_1_isogeometric_block.html#a89ceba2d4508f702d5b8102a9d0e327e",
      null ],
    [ "asIsogeometricVolBlock", "class_go_1_1_isogeometric_block.html#a2956de5b336cf9c1cf00178642942ea3",
      null ],
    [ "basis", "class_go_1_1_isogeometric_block.html#a5108d3b186ad71c55650b67d9f1c52b3", null ],
    [ "degree", "class_go_1_1_isogeometric_block.html#a142fc052d8bfe32d3739857a298d70aa", null ],
    [ "distinctKnots", "class_go_1_1_isogeometric_block.html#aafdc258372ef2ca1e6ce84a063b39dff", null ],
    [ "erasePreEvaluatedBasisFunctions", "
      class_go_1_1_isogeometric_block.html#abfae372b8a17aa83ae93896b60c9a66a", null ],
    [ "getNeighbour", "class_go_1_1_isogeometric_block.html#ac64b26be4b6943fe4c1a4edcf08c40c1", null ],
    [ "getNmbOfBoundaryConditions", "class_go_1_1_isogeometric_block.html#a45e7fc4d5f482308fa1e88cb9105b09c
      ", null ],
    [ "getNmbOfPointBdConditions", "class_go_1_1_isogeometric_block.html#a53f20a3c1bc3ad279009d3ac00bde336"
      , null ],
    [ "getTolerances", "class_go_1_1_isogeometric_block.html#a5befb6b5755ad2f6ae346c419461714b", null ],
    [ "increaseGeometryDegree", "class_go_1_1_isogeometric_block.html#aac6ae87fb733aeebfd3966e0d84f969a",
```

```
      null ],
    [ "isNeighbour", "class_go_1_1_isogeometric_block.html#ad8162b7aabb61ec205481cab51e924e4", null ],
    [ "knots", "class_go_1_1_isogeometric_block.html#ad515166c60c7e702dc9f27d48f7122d3", null ],
    [ "model", "class_go_1_1_isogeometric_block.html#a3291268349ffe201233515dd98180e51", null ],
    [ "nmbCoefs", "class_go_1_1_isogeometric_block.html#a1df8869cd9bf7fc7b81817efd6a383d5", null ],
    [ "nmbCoefs", "class_go_1_1_isogeometric_block.html#afec6077376d14cc322481b69544ce4ac", null ],
    [ "nmbOfNeighbours", "class_go_1_1_isogeometric_block.html#aba8aadfa2b253123d0843d9ddcaebadb", null ],
    [ "refineGeometry", "class_go_1_1_isogeometric_block.html#a183d6da50bc059de6c2e9ad9d450c2b2", null ],
    [ "refineGeometry", "class_go_1_1_isogeometric_block.html#a91d31036cf25a770ef78958f943a20e9", null ]
]
```

Definition at line 1 of file class_go_1_1_isogeometric_block.js.

30.309 doc/html/class_go_1_1_isogeometric_model.js File Reference

Variables

- var class_go_1_1_isogeometric_model

30.309.1 Variable Documentation

30.309.1.1 var class_go_1_1_isogeometric_model

Initial value:

```
=
[
    [ "IsogeometricModel", "class_go_1_1_isogeometric_model.html#a7713fd03f049fe5869c2c7f7aed83e44", null ]
      ,
    [ "~IsogeometricModel", "class_go_1_1_isogeometric_model.html#ac3b0754afc9a05cba86424d484354c40", null
      ],
    [ "getNmbOfBoundaries", "class_go_1_1_isogeometric_model.html#a3a93321f31a8fdf0bfe417f9a37d17c5", null
      ],
    [ "getTolerances", "class_go_1_1_isogeometric_model.html#ac0446a93c3803b137c6b5a9a2e68e27b", null ],
    [ "setMinimumDegree", "class_go_1_1_isogeometric_model.html#a88b11d5e9d7207ca6d648f4cc90263e7", null ],
    [ "setTolerances", "class_go_1_1_isogeometric_model.html#aa1ccd0d24f6689b4454bfdd8dbbce279", null ],
    [ "updateSolutionSplineSpace", "class_go_1_1_isogeometric_model.html#ae66cb05951237f68a9d8d25c044d7c04"
      , null ]
]
```

Definition at line 1 of file class_go_1_1_isogeometric_model.js.

30.310 doc/html/class_go_1_1_isogeometric_sf_block.js File Reference

Variables

- var class_go_1_1_isogeometric_sf_block

30.310.1 Variable Documentation

30.310.1.1 var class_go_1_1_isogeometric_sf_block

Definition at line 1 of file class_go_1_1_isogeometric_sf_block.js.

30.311 doc/html/class_go_1_1_isogeometric_sf_model.js File Reference

Variables

- var class_go_1_1_isogeometric_sf_model

30.311.1 Variable Documentation

30.311.1.1 var class_go_1_1_isogeometric_sf_model

Initial value:

```
=
[
    [ "IsogeometricSfModel", "class_go_1_1_isogeometric_sf_model.html#a616e969de7d558342e6efc6d7af6d9ba",
      null ],
    [ "~IsogeometricSfModel", "class_go_1_1_isogeometric_sf_model.html#a931c2cabd748d485b690c56acf67ecb8",
      null ],
    [ "addBoundaryCond", "class_go_1_1_isogeometric_sf_model.html#a01182f12f04c8e064649fd24ee0a7fe0", null
      ],
    [ "addDirichletPointBdCond", "class_go_1_1_isogeometric_sf_model.html#ab5c10a272b7025c1684da9a78b5c10ab
      ", null ],
    [ "getBoundary", "class_go_1_1_isogeometric_sf_model.html#a06136e015cb7cf3ce30f44457006e930", null ],
    [ "getIsogeometricBlocks", "class_go_1_1_isogeometric_sf_model.html#a3b8282ac229e6260944e9d459c51f538",
       null ],
    [ "getNmbOfBoundaries", "class_go_1_1_isogeometric_sf_model.html#a12df67ab6291c252cdd9f2d5d0c7e259",
      null ],
    [ "getOuterBoundary", "class_go_1_1_isogeometric_sf_model.html#af2b2fea00fe988f1336a4b38efa615a8", null
      ],
    [ "setMinimumDegree", "class_go_1_1_isogeometric_sf_model.html#a4867f7b27e486728802bc52782ff6af2", null
      ],
    [ "updateSolutionSplineSpace", "
      class_go_1_1_isogeometric_sf_model.html#a6986f65d9c64d1ae1da7e63288623970", null ],
    [ "updateSolutionSplineSpace", "
      class_go_1_1_isogeometric_sf_model.html#abab24442415ceebc7b5450aecd123557", null ]
]
```

Definition at line 1 of file class_go_1_1_isogeometric_sf_model.js.

30.312 doc/html/class_go_1_1_isogeometric_vol_block.js File Reference

Variables

- var class_go_1_1_isogeometric_vol_block

30.312.1 Variable Documentation

30.312.1.1 var class_go_1_1_isogeometric_vol_block

Definition at line 1 of file class_go_1_1_isogeometric_vol_block.js.

30.313 doc/html/class_go_1_1_isogeometric_vol_model.js File Reference

Variables

- var class_go_1_1_isogeometric_vol_model

30.313.1 Variable Documentation

30.313.1.1 var class_go_1_1_isogeometric_vol_model

Initial value:

```
=
[
    [ "IsogeometricVolModel", "class_go_1_1_isogeometric_vol_model.html#a191bda162849259a19a2645439413c53",
      null ],
    [ "~IsogeometricVolModel", "class_go_1_1_isogeometric_vol_model.html#ac2c540f181b13a49282c8f692ce36598"
      , null ],
    [ "addBoundaryCond", "class_go_1_1_isogeometric_vol_model.html#a03f5d3640ce444afdd95cbfc827d67fe", null
      ],
    [ "addDirichletPointBdCond", "
      class_go_1_1_isogeometric_vol_model.html#af652b4cc83bd08a7c59f632cd2a54e63", null ],
    [ "getBoundary", "class_go_1_1_isogeometric_vol_model.html#aec6dbe3d391c933a01dc859f4d40753c", null ],
    [ "getIsogeometricBlocks", "class_go_1_1_isogeometric_vol_model.html#a8083fd8d35010c10fda6e86fca59408c"
      , null ],
    [ "getNmbOfBoundaries", "class_go_1_1_isogeometric_vol_model.html#ad2a0e7d195efa4f550c6b79a7f6822bb",
      null ],
    [ "getOuterBoundary", "class_go_1_1_isogeometric_vol_model.html#ad671f34d6688a4896f9d3146599cfec7",
      null ],
    [ "setMinimumDegree", "class_go_1_1_isogeometric_vol_model.html#a9a325bc4fc0f75f22dcf2cced31f2978",
      null ],
    [ "updateSolutionSplineSpace", "
      class_go_1_1_isogeometric_vol_model.html#a56a7137a0a3ed9ca016d5c61654dfd16", null ],
    [ "updateSolutionSplineSpace", "
      class_go_1_1_isogeometric_vol_model.html#addf842e26fcce1d8d294471685ea3d51", null ]
]
```

Definition at line 1 of file class_go_1_1_isogeometric_vol_model.js.

30.314 doc/html/class_go_1_1_isoparametric_intersection_curve.js File Reference

Variables

- var class_go_1_1_isoparametric_intersection_curve

30.314.1 Variable Documentation

30.314.1.1 var class_go_1_1_isoparametric_intersection_curve

Initial value:

```
=
[
    [ "~IsoparametricIntersectionCurve", "
      class_go_1_1_isoparametric_intersection_curve.html#a33076578d4f57e3a0adaf23633a1ba9b", null ],
    [ "IsoparametricIntersectionCurve", "
      class_go_1_1_isoparametric_intersection_curve.html#a2be3f33607399b9123ef4791a308efa5", null ],
    [ "evaluateAt", "class_go_1_1_isoparametric_intersection_curve.html#ab8ffc72daf63c3fc8dc438786123d8e7",
      null ],
    [ "getCurve", "class_go_1_1_isoparametric_intersection_curve.html#aa65d454702cf7db78921d2c242e13f7a",
      null ],
    [ "getParamCurve", "
      class_go_1_1_isoparametric_intersection_curve.html#a99ee627cd4f96e3a974a956a1d8222cf", null ],
    [ "getParamSpan", "class_go_1_1_isoparametric_intersection_curve.html#a0bd9ce871cc54e8848eb1506f796fa34
      ", null ],
    [ "isDegenerated", "
      class_go_1_1_isoparametric_intersection_curve.html#aabbcb125bd7e2cb9d891114019a2011e", null ],
    [ "isIsocurve", "class_go_1_1_isoparametric_intersection_curve.html#a63dbd4d644632fd93f60d7322f93e851",
      null ],
    [ "precalculate_iso_curves", "
```

```
      class_go_1_1_isoparametric_intersection_curve.html#a04435fb820979d102fd49d877f3139e7", null ],
    [ "refine", "class_go_1_1_isoparametric_intersection_curve.html#adf83f654ee1cb30db922a470eb6fad81",
      null ],
    [ "constructIntersectionCurve", "
      class_go_1_1_isoparametric_intersection_curve.html#a6ab34095fc2901f18aff0d440f5f9ea5", null ],
    [ "isopar_geom_curve_", "
      class_go_1_1_isoparametric_intersection_curve.html#aeff1c36f6ae6a949a3225bf9a182b1b5", null ],
    [ "isopar_param_curve_1_", "
      class_go_1_1_isoparametric_intersection_curve.html#a6c228da0c9c5d9bed3789867be0b6a90", null ],
    [ "isopar_param_curve_2_", "
      class_go_1_1_isoparametric_intersection_curve.html#a5063222f0b360b3fed58a3822fbdc959", null ],
    [ "temp_", "class_go_1_1_isoparametric_intersection_curve.html#a93ea81ff005415650192405c4a3748f1", null
      ]
]
```

Definition at line 1 of file class_go_1_1_isoparametric_intersection_curve.js.

30.315 doc/html/class_go_1_1_l_r_b_spline2_d.js File Reference

Variables

- var class_go_1_1_l_r_b_spline2_d

30.315.1 Variable Documentation

30.315.1.1 var class_go_1_1_l_r_b_spline2_d

Definition at line 1 of file class_go_1_1_l_r_b_spline2_d.js.

30.316 doc/html/class_go_1_1_l_r_spline_eval_grid.js File Reference

Variables

- var class_go_1_1_l_r_spline_eval_grid

30.316.1 Variable Documentation

30.316.1.1 var class_go_1_1_l_r_spline_eval_grid

Initial value:

```
=
[
    [ "param_float_type", "class_go_1_1_l_r_spline_eval_grid.html#a054a8a1a64ac866831717daf34aef80c", null
      ],
    [ "LRSplineEvalGrid", "class_go_1_1_l_r_spline_eval_grid.html#a8cff465e2f97c8520954aa02c18bbd5b", null
      ],
    [ "LRSplineEvalGrid", "class_go_1_1_l_r_spline_eval_grid.html#a5d1a06e6aa41caf486ed2deaed5acbe4", null
      ],
    [ "computeBezCoefs", "class_go_1_1_l_r_spline_eval_grid.html#a12b44833237e752c5243763a284ead9b", null ]
    ,
    [ "dim", "class_go_1_1_l_r_spline_eval_grid.html#af31ce0f73a48c18dea1d2d4244022094", null ],
    [ "elements_begin", "class_go_1_1_l_r_spline_eval_grid.html#a09c1a952450107a7e610b803041d7d62", null ],
    [ "elements_end", "class_go_1_1_l_r_spline_eval_grid.html#ab4e82a60c327eed27dec27ce64647f77", null ],
    [ "evaluate", "class_go_1_1_l_r_spline_eval_grid.html#ad1191746b99b23ce99b488de54624bd4", null ],
    [ "evaluateGrid", "class_go_1_1_l_r_spline_eval_grid.html#a8f7e20b354263965d8f204df7af3d206", null ],
    [ "high", "class_go_1_1_l_r_spline_eval_grid.html#a15472d1bb9ee98179e8c889ddd580437", null ],
    [ "low", "class_go_1_1_l_r_spline_eval_grid.html#ad8ad2ec1e1a411bbfe600979dc5db1b0", null ],
    [ "numElements", "class_go_1_1_l_r_spline_eval_grid.html#a19bcc6cdfa3e2fa346722bbe0fe98adf", null ],
    [ "orderU", "class_go_1_1_l_r_spline_eval_grid.html#aa3476c89350806a253ca21c0bae55f77", null ],
    [ "orderV", "class_go_1_1_l_r_spline_eval_grid.html#aa3bfa78a3d1eeb6cc4d7a02752680180", null ],
    [ "origDom", "class_go_1_1_l_r_spline_eval_grid.html#a7b3b06e76e9922cf6e41856535011534", null ],
    [ "testCoefComputation", "class_go_1_1_l_r_spline_eval_grid.html#aa54fecef0eef9f16c192793911cad182",
      null ]
]
```

Definition at line 1 of file class_go_1_1_l_r_spline_eval_grid.js.

30.317 doc/html/class_go_1_1_l_r_spline_surface.js File Reference

Variables

- var class_go_1_1_l_r_spline_surface

30.317.1 Variable Documentation

30.317.1.1 var class_go_1_1_l_r_spline_surface

Definition at line 1 of file class_go_1_1_l_r_spline_surface.js.

30.318 doc/html/class_go_1_1_l_r_surf_approx.js File Reference

Variables

- var class_go_1_1_l_r_surf_approx

30.318.1 Variable Documentation

30.318.1.1 var class_go_1_1_l_r_surf_approx

Initial value:

```
=
[
    [ "LRSurfApprox", "class_go_1_1_l_r_surf_approx.html#a0e06814b34380b34a63ab1675a94630a", null ],
    [ "LRSurfApprox", "class_go_1_1_l_r_surf_approx.html#a83105920d7bf2b295a5266936ede7478", null ],
    [ "LRSurfApprox", "class_go_1_1_l_r_surf_approx.html#ad2a82ddd7bd1d5d7e0dbe26315ebded7", null ],
    [ "LRSurfApprox", "class_go_1_1_l_r_surf_approx.html#a5b82491974b46c97a9a41784f71b8cce", null ],
    [ "LRSurfApprox", "class_go_1_1_l_r_surf_approx.html#a7993228606deaac67888bbf2f68525fc", null ],
    [ "LRSurfApprox", "class_go_1_1_l_r_surf_approx.html#a6428c335796f1ae92fc4b47ba3e5c53f", null ],
    [ "~LRSurfApprox", "class_go_1_1_l_r_surf_approx.html#a5f1611b8f2fc051a6ab77c6578fc626b", null ],
    [ "addLowerConstraint", "class_go_1_1_l_r_surf_approx.html#a3cb5cccb10272bb19de0ca6cc40d7117", null ],
    [ "addUpperConstraint", "class_go_1_1_l_r_surf_approx.html#af85623897f46f555f2db433a472127ac", null ],
    [ "edgeFix", "class_go_1_1_l_r_surf_approx.html#a42a280081704a6d9c86491186fb24918", null ],
    [ "getApproxSurf", "class_go_1_1_l_r_surf_approx.html#ac020c8533e8a4afd38e020bdc4ff79de", null ],
    [ "setFixBoundary", "class_go_1_1_l_r_surf_approx.html#a04275515ac612e8b540bd3cad9c46443", null ],
    [ "setFixCorner", "class_go_1_1_l_r_surf_approx.html#a6ef4fa9bf486f9693e28f2db0b4bf4a9", null ],
    [ "setGridInfo", "class_go_1_1_l_r_surf_approx.html#a12118907424e0c3329691e2121b57814", null ],
    [ "setInitMBA", "class_go_1_1_l_r_surf_approx.html#a276e342a75da7d0f13aa18d1d302d64b", null ],
    [ "setLocalConstraint", "class_go_1_1_l_r_surf_approx.html#ad3d4f8821662e034cac32fb831e62901", null ],
    [ "setMakeGhostPoints", "class_go_1_1_l_r_surf_approx.html#ab37a0d43758446b5ed55a29c7f048763", null ],
    [ "setMinimumElementSize", "class_go_1_1_l_r_surf_approx.html#a89e9bc64a9979d7a51c49d16e1916852", null
    ],
    [ "setSmoothBoundary", "class_go_1_1_l_r_surf_approx.html#a035f8fe9c6ea3cdc270560f9dadcc375", null ],
    [ "setSmoothingWeight", "class_go_1_1_l_r_surf_approx.html#a6c58d5d5a79e64a0c0118051efe27a26", null ],
    [ "setSwitchToMBA", "class_go_1_1_l_r_surf_approx.html#a34710961e043c9f9ce69603ef405c1be", null ],
    [ "setTurn3D", "class_go_1_1_l_r_surf_approx.html#ab9c044bde47d60ed4ad67ab564e2c202", null ],
    [ "setUseMBA", "class_go_1_1_l_r_surf_approx.html#a5b8d1edbc06cddbf7dc4d2aaa050c4e1", null ],
    [ "setVerbose", "class_go_1_1_l_r_surf_approx.html#a3e39c57d2d6762a710d17a971fc93c1f", null ]
]
```

Definition at line 1 of file class_go_1_1_l_r_surf_approx.js.

30.319 doc/html/class_go_1_1_l_r_surf_smooth_l_s.js File Reference

Variables

- var class_go_1_1_l_r_surf_smooth_l_s

30.319.1 Variable Documentation

30.319.1.1 var class_go_1_1_l_r_surf_smooth_l_s

Initial value:

```
=
[
    [ "LRSurfSmoothLS", "class_go_1_1_l_r_surf_smooth_l_s.html#a8acba4937645e7d7c619ce67ae71c5b8", null ],
    [ "LRSurfSmoothLS", "class_go_1_1_l_r_surf_smooth_l_s.html#ad3d1d6e980d0818742352b8719702ac8", null ],
    [ "~LRSurfSmoothLS", "class_go_1_1_l_r_surf_smooth_l_s.html#a7f78193fffe738e7136727d606d0ba90", null ],
    [ "addDataPoints", "class_go_1_1_l_r_surf_smooth_l_s.html#a02b7663ebae4b911bdde4f5815a72c13", null ],
    [ "equationSolve", "class_go_1_1_l_r_surf_smooth_l_s.html#a0640b72ec11008abc0bfd8ec302ab098", null ],
    [ "hasDataPoints", "class_go_1_1_l_r_surf_smooth_l_s.html#a0d01b246abdd6bf76dda9943a43c171f", null ],
    [ "setInitSf", "class_go_1_1_l_r_surf_smooth_l_s.html#aefa36938b4c58251e3a0417a8bc36432", null ],
    [ "setLeastSquares", "class_go_1_1_l_r_surf_smooth_l_s.html#a630e6d60764fc1aed9cdcd7cd5925c9e", null ],
    [ "setLeastSquares", "class_go_1_1_l_r_surf_smooth_l_s.html#ac1016970a65dc1a22f7024ce4a7c498d", null ],
    [ "setLeastSquares_omp", "class_go_1_1_l_r_surf_smooth_l_s.html#a1ba981415be945d8fe6d642819dffc15",
      null ],
    [ "setOptimize", "class_go_1_1_l_r_surf_smooth_l_s.html#a50b78986ea49afb693b745771cd58f53", null ],
    [ "smoothBoundary", "class_go_1_1_l_r_surf_smooth_l_s.html#ab2c5a16e1a90e18f01a0a7c0288da9f1", null ],
    [ "updateLocals", "class_go_1_1_l_r_surf_smooth_l_s.html#ae2f65b8eba961085a9e7343edc3d39ca", null ]
]
```

Definition at line 1 of file class_go_1_1_l_r_surf_smooth_l_s.js.

30.320 doc/html/class_go_1_1_lift_curve.js File Reference

Variables

- var class_go_1_1_lift_curve

30.320.1 Variable Documentation

30.320.1.1 var class_go_1_1_lift_curve

Initial value:

```
=
[
    [ "LiftCurve", "class_go_1_1_lift_curve.html#a655cb07426e304f64987a8a87dcd761a", null ],
    [ "~LiftCurve", "class_go_1_1_lift_curve.html#aa1ab368f807769e4528ad58e02b1c079", null ],
    [ "approximationOK", "class_go_1_1_lift_curve.html#a1bdb9dd6b1efe58b1278b5e3f0f54ff2", null ],
    [ "dim", "class_go_1_1_lift_curve.html#a1c9f085116ace80e3e112a55044739c0", null ],
    [ "end", "class_go_1_1_lift_curve.html#aab7ea38541b9c66e122406afa6e70dd2", null ],
    [ "eval", "class_go_1_1_lift_curve.html#ae512f443f85b1704a433e11bb8782af5", null ],
    [ "eval", "class_go_1_1_lift_curve.html#a2cb2e79f40e4d61f22303b5bcf2aeba3", null ],
    [ "start", "class_go_1_1_lift_curve.html#a3c30dfd4d4ae55fb36ec055f57db28eb", null ]
]
```

Definition at line 1 of file class_go_1_1_lift_curve.js.

30.321 doc/html/class_go_1_1_line.js File Reference

Variables

- var class_go_1_1_line

30.321.1 Variable Documentation

30.321.1.1 var class_go_1_1_line

Definition at line 1 of file class_go_1_1_line.js.

30.322 doc/html/class_go_1_1_line2_d_int.js File Reference

Variables

- var class_go_1_1_line2_d_int

30.322.1 Variable Documentation

30.322.1.1 var class_go_1_1_line2_d_int

Initial value:

```
=
[
    [ "Line2DInt", "class_go_1_1_line2_d_int.html#a952e7cb1b60293e602ca08379dc1ed40", null ],
    [ "Line2DInt", "class_go_1_1_line2_d_int.html#afd526f4b651e589a5de6bcfa49f6454d", null ],
    [ "~Line2DInt", "class_go_1_1_line2_d_int.html#a19e49dabf8e66c9906f116e15244e7bd", null ],
    [ "a", "class_go_1_1_line2_d_int.html#abcacfea3993471707231506965ed7e10", null ],
    [ "b", "class_go_1_1_line2_d_int.html#a1bf14760b8c49e8b71cd24fa7a38cd35", null ],
    [ "c", "class_go_1_1_line2_d_int.html#a267566d852799214325a5702eb5cef12", null ]
]
```

Definition at line 1 of file class_go_1_1_line2_d_int.js.

30.323 doc/html/class_go_1_1_line_cloud.js File Reference

Variables

- var class_go_1_1_line_cloud

30.323.1 Variable Documentation

30.323.1.1 var class_go_1_1_line_cloud

Initial value:

```
=
[
    [ "LineCloud", "class_go_1_1_line_cloud.html#a71f37875ee1d59cd8d1157481b97cbac", null ],
    [ "LineCloud", "class_go_1_1_line_cloud.html#a24910b33a551d9edbad30a93adb79ac0", null ],
    [ "~LineCloud", "class_go_1_1_line_cloud.html#a23e2c04166b62866378f350e0da0ddf4", null ],
    [ "boundingBox", "class_go_1_1_line_cloud.html#af24b05564a5513fbaa3ec0e298328672", null ],
    [ "clone", "class_go_1_1_line_cloud.html#a5b7d1724236c19e42ec4e18fa8e5f922", null ],
    [ "dimension", "class_go_1_1_line_cloud.html#a504af7fefd8693fdfa12ba0a5b7f35f3", null ],
    [ "instanceType", "class_go_1_1_line_cloud.html#a07c8f5ac835090a871029a2a5094136e", null ],
    [ "numLines", "class_go_1_1_line_cloud.html#abe9b6c2ebb9d26c8aadd0dec85ef4d81", null ],
    [ "point", "class_go_1_1_line_cloud.html#a1067891005886183a1f1662814e798e0", null ],
    [ "point", "class_go_1_1_line_cloud.html#a76a4ad5e381de0e8ba9a444909a164cc", null ],
    [ "rawData", "class_go_1_1_line_cloud.html#a3430f9f2b895c270e16190bdcc361a60", null ],
    [ "read", "class_go_1_1_line_cloud.html#a3f9b45790a01bc9a29ed9f3c3bd460eb", null ],
    [ "setCloud", "class_go_1_1_line_cloud.html#abbc686694baae61de1ab32a6f54d1693", null ],
    [ "write", "class_go_1_1_line_cloud.html#ad0108951f753e802c0deb441b83ec4b6", null ]
]
```

Definition at line 1 of file class_go_1_1_line_cloud.js.

30.324 doc/html/class_go_1_1_line_cloud_tesselator.js File Reference

Variables

- var class_go_1_1_line_cloud_tesselator

30.324.1 Variable Documentation

30.324.1.1 var class_go_1_1_line_cloud_tesselator

Initial value:

```
=
[
    [ "LineCloudTesselator", "class_go_1_1_line_cloud_tesselator.html#a8dbce8787df6e91c135995703e7206af",
      null ],
    [ "~LineCloudTesselator", "class_go_1_1_line_cloud_tesselator.html#af3c1b9270dca9d1cbe6f7a0bf1b6acd6",
      null ],
    [ "getRenderCloud", "class_go_1_1_line_cloud_tesselator.html#ae71455a7bc76b3e98bdba4de80fdc34b", null ]
      ,
    [ "getScale", "class_go_1_1_line_cloud_tesselator.html#ad663f41ec157353e7d588b2e552bed04", null ],
    [ "setScale", "class_go_1_1_line_cloud_tesselator.html#affe864cbece5d76e738c7043150abfaa", null ],
    [ "tesselate", "class_go_1_1_line_cloud_tesselator.html#a741142d2fb183073f3999edbd0987490", null ]
]
```

Definition at line 1 of file class_go_1_1_line_cloud_tesselator.js.

30.325 doc/html/class_go_1_1_line_strip.js File Reference

Variables

- var class_go_1_1_line_strip

30.325.1 Variable Documentation

30.325.1.1 var class_go_1_1_line_strip

Initial value:

```
=
[
    [ "LineStrip", "class_go_1_1_line_strip.html#a17ebfbc9a353bae4e9a2ce47b9806fd7", null ],
    [ "~LineStrip", "class_go_1_1_line_strip.html#a9cd2ed1410d2eb1b8140f3dc114fb499", null ],
    [ "asLineStrip", "class_go_1_1_line_strip.html#a0f8f068735d230132a601688f235cdd1", null ],
    [ "atBoundary", "class_go_1_1_line_strip.html#a34168c4b91f16e62867b03cbd7d9eaa5", null ],
    [ "numVertices", "class_go_1_1_line_strip.html#afba3b41d7d374de4a19dad3095684501", null ],
    [ "paramArray", "class_go_1_1_line_strip.html#af618b12bf6e99f89ac7460ae714a03e8", null ],
    [ "resize", "class_go_1_1_line_strip.html#a00a995b0ae74ff6b5fd7d04e991c87cd", null ],
    [ "stripArray", "class_go_1_1_line_strip.html#aa79b95ca91e96e2af3b9d3aacc7aae73", null ],
    [ "triangleIndexArray", "class_go_1_1_line_strip.html#af375f512ceb6aa626654cab1dfde79b6", null ],
    [ "vertexArray", "class_go_1_1_line_strip.html#a62aada6f75be07b856cb62d6247ab342", null ]
]
```

Definition at line 1 of file class_go_1_1_line_strip.js.

30.326 doc/html/class_go_1_1_locked_dir_dist_func.js File Reference

Variables

- var class_go_1_1_locked_dir_dist_func

30.326.1 Variable Documentation

30.326.1.1 var class_go_1_1_locked_dir_dist_func

Initial value:

```
=
[
    [ "LockedDirDistFunc", "class_go_1_1_locked_dir_dist_func.html#a041d8942dad387effdafb1f17920db8d", null
     ],
    [ "grad", "class_go_1_1_locked_dir_dist_func.html#ac2be05d7ef6c39967e72873a66c88442", null ],
    [ "maxPar", "class_go_1_1_locked_dir_dist_func.html#a53c05142ec881ffc80ff87c95db653d5", null ],
    [ "minPar", "class_go_1_1_locked_dir_dist_func.html#a384ecae731f9ca22fd6c773fc89d760f", null ],
    [ "operator()", "class_go_1_1_locked_dir_dist_func.html#a18bf8be5221b7cd88436347483f400c0", null ]
]
```

Definition at line 1 of file class_go_1_1_locked_dir_dist_func.js.

30.327 doc/html/class_go_1_1_loop.js File Reference

Variables

- var class_go_1_1_loop

30.327.1 Variable Documentation

30.327.1.1 var class_go_1_1_loop

Definition at line 1 of file class_go_1_1_loop.js.

30.328 doc/html/class_go_1_1_march_point.js File Reference

Variables

- var class_go_1_1_march_point

30.328.1 Variable Documentation

30.328.1.1 var class_go_1_1_march_point

Initial value:

```
=
[
    [ "MarchPoint", "class_go_1_1_march_point.html#a4cac7ff78f8455fbc03868a58d87fc8d", null ],
    [ "operator<", "class_go_1_1_march_point.html#ac78dc3d4fb54fecc91dc403cbabe29f4", null ],
    [ "cos_ang", "class_go_1_1_march_point.html#ae3e55443888a52d3ca2e4f4f52809641", null ],
    [ "dist", "class_go_1_1_march_point.html#a2ba6c91c4d397e6691978cdb43bf18d4", null ],
    [ "par", "class_go_1_1_march_point.html#a115fd23876bf53f582bac27500ca685d", null ],
    [ "par2", "class_go_1_1_march_point.html#a9b9a7eaa9e47863860e1ca7448a9c83c", null ],
    [ "pt", "class_go_1_1_march_point.html#a7c18a4cc30c19ed9440f704f172b5e60", null ],
    [ "status", "class_go_1_1_march_point.html#a61d65a560e49c61e7716af58c112b352", null ]
]
```

Definition at line 1 of file class_go_1_1_march_point.js.

30.329 doc/html/class_go_1_1_matrix_x_d.js File Reference

Variables

- var class_go_1_1_matrix_x_d

30.329.1 Variable Documentation

30.329.1.1 var class_go_1_1_matrix_x_d

Initial value:

```
=
[
    [ "MatrixXD", "class_go_1_1_matrix_x_d.html#abc36c9d0d865b01e4be5f7a5e3048acd", null ],
    [ "~MatrixXD", "class_go_1_1_matrix_x_d.html#a7d2e4060a4e8d4c306ad02910258a3fa", null ],
    [ "det", "class_go_1_1_matrix_x_d.html#af852c8d82a01fcc655b9d207f33b6298", null ],
    [ "frobeniusNorm", "class_go_1_1_matrix_x_d.html#a0aead8317fd39e96c220c6f6e01b4f30", null ],
    [ "get", "class_go_1_1_matrix_x_d.html#a6fcc68410e3e2145dd8bfd876c6f3812", null ],
    [ "identity", "class_go_1_1_matrix_x_d.html#a69ef9806148e42baf80b86cf813022b5", null ],
    [ "mult", "class_go_1_1_matrix_x_d.html#a5a3aef5518e8457f5096da4901edea21", null ],
    [ "operator()", "class_go_1_1_matrix_x_d.html#a21212214d40879c4497a9d31fd566975", null ],
    [ "operator()", "class_go_1_1_matrix_x_d.html#a41b31b7a1f978d57bb629b43c3f1df87", null ],
    [ "operator*", "class_go_1_1_matrix_x_d.html#ac1b00aebfa90c1bdf7eed2b2f85b2cd6", null ],
    [ "operator*", "class_go_1_1_matrix_x_d.html#a1009b735295cec2dadd0523e4e95d103", null ],
    [ "operator*", "class_go_1_1_matrix_x_d.html#ab0c202c6b895826501fb6c655c1daf7f", null ],
    [ "operator*=", "class_go_1_1_matrix_x_d.html#accce83f7be83a54d903d49e525b5436d", null ],
    [ "operator*=", "class_go_1_1_matrix_x_d.html#a0174e525d484ee78c6b1b12bfbd6ab22", null ],
    [ "operator+", "class_go_1_1_matrix_x_d.html#ade3dfae0fa095ecf94c4ed0b24a7a0d2", null ],
    [ "operator+=", "class_go_1_1_matrix_x_d.html#a729c48f6895d51b60e375f11fd5cf833", null ],
    [ "operator-", "class_go_1_1_matrix_x_d.html#a44145ce1b97d63fa93c4188df54d14f0", null ],
    [ "setToRotation", "class_go_1_1_matrix_x_d.html#a6ae1bd453269fc64eb6a341d27f9154a", null ],
    [ "setToRotation", "class_go_1_1_matrix_x_d.html#a88a8319cceec5f230019a38fdacb289e", null ],
    [ "setToRotation", "class_go_1_1_matrix_x_d.html#a406d3734ccc71684b136192dafd87205", null ],
    [ "setToRotation", "class_go_1_1_matrix_x_d.html#aab37d12a89916cc58ac7ff4efff76675", null ],
    [ "setToRotation", "class_go_1_1_matrix_x_d.html#aa803df5eb9aa5f2128c6e7e5acb07664", null ],
    [ "submatrix", "class_go_1_1_matrix_x_d.html#aa88a11a8b68a10040d2c845346dd8b0b", null ],
    [ "trace", "class_go_1_1_matrix_x_d.html#a052cc3bbe1edfb81cf346208e469c346", null ],
    [ "transpose", "class_go_1_1_matrix_x_d.html#a4aa305ce84a54651878dfa1c5e00157b", null ],
    [ "zero", "class_go_1_1_matrix_x_d.html#ac360b2abe7e401969db7516ce266e416", null ]
]
```

Definition at line 1 of file class_go_1_1_matrix_x_d.js.

30.330 doc/html/class_go_1_1_mesh2_d.js File Reference

Variables

- var class_go_1_1_mesh2_d

30.330.1 Variable Documentation

30.330.1.1 var class_go_1_1_mesh2_d

Definition at line 1 of file class_go_1_1_mesh2_d.js.

30.331 doc/html/class_go_1_1_mesh2_d_iterator.js File Reference

Variables

- var class_go_1_1_mesh2_d_iterator

30.331.1 Variable Documentation

30.331.1.1 var class_go_1_1_mesh2_d_iterator

Initial value:

```
=
[
    [ "Mesh2DIterator", "class_go_1_1_mesh2_d_iterator.html#ab203e32e6e6725d88e6b9ec6526da685", null ],
    [ "Mesh2DIterator", "class_go_1_1_mesh2_d_iterator.html#a0a999cdceeeaf922e9312e84b7025eb6", null ],
    [ "operator!=", "class_go_1_1_mesh2_d_iterator.html#ae168f09a65470e294e89eab7c935d8a6", null ],
    [ "operator*", "class_go_1_1_mesh2_d_iterator.html#ac6dbcb4e7100d2bc7a40017fc01b0ca1", null ],
    [ "operator++", "class_go_1_1_mesh2_d_iterator.html#a597307e4043a6b0091f7dcc65ad99382", null ],
    [ "operator==", "class_go_1_1_mesh2_d_iterator.html#a06395033f9730e9aa15cb9673e106999", null ],
    [ "swap", "class_go_1_1_mesh2_d_iterator.html#a47f82c40e166cb3eb24b97521e86546b", null ]
]
```

Definition at line 1 of file class_go_1_1_mesh2_d_iterator.js.

30.332 doc/html/class_go_1_1_model_quality.js File Reference

Variables

- var class_go_1_1_model_quality

30.332.1 Variable Documentation

30.332.1.1 var class_go_1_1_model_quality

Definition at line 1 of file class_go_1_1_model_quality.js.

30.333 doc/html/class_go_1_1_model_repair.js File Reference

Variables

- var class_go_1_1_model_repair

30.333.1 Variable Documentation

30.333.1.1 var class_go_1_1_model_repair

Initial value:

```
=
[
    [ "ModelRepair", "class_go_1_1_model_repair.html#ac1efabc94d69a90145525c8ec16322b3", null ],
    [ "ModelRepair", "class_go_1_1_model_repair.html#a4c080a1d32f0b35eff8c9caa132ccc3b", null ],
    [ "consistentFaceNormal", "class_go_1_1_model_repair.html#ab3446f078e05ba1336b932032c5f0b81", null ],
    [ "identicalAndEmbeddedFaces", "class_go_1_1_model_repair.html#a966573f66568b95f898e4e2d6bd0517f", null
      ],
    [ "identicalVertices", "class_go_1_1_model_repair.html#acb862290dbbc7a5a0045e771baa03c53", null ],
    [ "mendEdgeDistance", "class_go_1_1_model_repair.html#a9f10ebaa64e0b173656592e3752a7247", null ],
    [ "mendGaps", "class_go_1_1_model_repair.html#ac2b2377fb248f25c694845d80875fd43", null ],
    [ "optimizeVertexPosition", "class_go_1_1_model_repair.html#a7033e321f3a14b4ab46587f12b28124a", null ],
    [ "results_", "class_go_1_1_model_repair.html#a4e0074ebcc8f570fa3b15ae1b7c53560", null ]
]
```

Definition at line 1 of file class_go_1_1_model_repair.js.

30.334 doc/html/class_go_1_1_non_evaluable_intersection_curve.js File Reference

Variables

- var class_go_1_1_non_evaluable_intersection_curve

30.334.1 Variable Documentation

30.334.1.1 var class_go_1_1_non_evaluable_intersection_curve

Initial value:

```
=
[
    [ "~NonEvaluableIntersectionCurve", "
      class_go_1_1_non_evaluable_intersection_curve.html#a1336c1259406236ab0fbbbfd9a14e85a", null ],
    [ "evaluateAt", "class_go_1_1_non_evaluable_intersection_curve.html#a38301c7f2cc913a2de3b509258ad92dc",
       null ],
    [ "getCurve", "class_go_1_1_non_evaluable_intersection_curve.html#a52d5d35b2ab2cd538f17e8f5d381cb68",
      null ],
    [ "getParamCurve", "
      class_go_1_1_non_evaluable_intersection_curve.html#a94806b4652e34382d51f80cc15a00f23", null ],
    [ "getParamSpan", "class_go_1_1_non_evaluable_intersection_curve.html#a54c1038d6f86981191ee5db7bf0f525c
      ", null ],
    [ "isDegenerated", "
      class_go_1_1_non_evaluable_intersection_curve.html#a157e2231b3942a2d85f4480216c478fd", null ],
    [ "isIsocurve", "class_go_1_1_non_evaluable_intersection_curve.html#a2f78f13b63e1d0b02467d421887e44a0",
       null ],
    [ "refine", "class_go_1_1_non_evaluable_intersection_curve.html#ad98f3ef398ef8f75f6e46063d93a7df1",
      null ],
    [ "constructIntersectionCurve", "
      class_go_1_1_non_evaluable_intersection_curve.html#a6ab34095fc2901f18aff0d440f5f9ea5", null ]
]
```

Definition at line 1 of file class_go_1_1_non_evaluable_intersection_curve.js.

30.335 doc/html/class_go_1_1_noop_tesselator.js File Reference

Variables

- var class_go_1_1_noop_tesselator

30.335.1 Variable Documentation

30.335.1.1 var class_go_1_1_noop_tesselator

Initial value:

```
=
[
    [ "~NoopTesselator", "class_go_1_1_noop_tesselator.html#a6aee770a3a1923b56476499935bcbb7e", null ],
    [ "tesselate", "class_go_1_1_noop_tesselator.html#a098bad44d4975404a9ecbf097a895423", null ]
]
```

Definition at line 1 of file class_go_1_1_noop_tesselator.js.

30.336 doc/html/class_go_1_1_object_header.js File Reference

Variables

- var class_go_1_1_object_header

30.336.1 Variable Documentation

30.336.1.1 var class_go_1_1_object_header

Initial value:

```
=
[
    [ "ObjectHeader", "class_go_1_1_object_header.html#a9e3681d49e50d583c190d28e8463577a", null ],
    [ "ObjectHeader", "class_go_1_1_object_header.html#ad0ab83c08e83f08abc15c7e6bd7a3d53", null ],
    [ "ObjectHeader", "class_go_1_1_object_header.html#a061a7c83b6929bcc4ba64377213066f1", null ],
    [ "~ObjectHeader", "class_go_1_1_object_header.html#a3a9c9eb50ff26128020aba008648f603", null ],
    [ "auxdata", "class_go_1_1_object_header.html#a9feaa9009aeceeb738a4078889945994", null ],
    [ "auxdataSize", "class_go_1_1_object_header.html#aa17b0d9026afbb13ef8a33942afc7518", null ],
    [ "classType", "class_go_1_1_object_header.html#aa57081ec3377d55feeb6b6403ddeb484", null ],
    [ "majorVersion", "class_go_1_1_object_header.html#aea923ba58e068268585cc313e2a8dcd7", null ],
    [ "minorVersion", "class_go_1_1_object_header.html#ab0f37b183fab7d773722584c52553871", null ],
    [ "read", "class_go_1_1_object_header.html#a40795d9e4fa51548dfe133befd6085ac", null ],
    [ "write", "class_go_1_1_object_header.html#a9c9e45ce64df26134637633bc2c5cc8c", null ]
]
```

Definition at line 1 of file class_go_1_1_object_header.js.

30.337 doc/html/class_go_1_1_par0_func_intersector.js File Reference

Variables

- var class_go_1_1_par0_func_intersector

30.337.1 Variable Documentation

30.337.1.1 var class_go_1_1_par0_func_intersector

Initial value:

```
=
[
    [ "Par0FuncIntersector", "class_go_1_1_par0_func_intersector.html#a25ad497265e8d5c922ea8a7355518d1c",
      null ],
    [ "~Par0FuncIntersector", "class_go_1_1_par0_func_intersector.html#a12827957c6bca3572887835fdb426695",
      null ],
    [ "checkCoincidence", "class_go_1_1_par0_func_intersector.html#a158ccd51ee0f49c97e4bc5a165a8198d", null
       ],
    [ "doSubdivide", "class_go_1_1_par0_func_intersector.html#acea16fb2e5679e359b6e3c5ec8fcb95e", null ],
    [ "lowerOrderIntersector", "class_go_1_1_par0_func_intersector.html#ab5d84c1b2360f24b675710dadf27a034",
       null ],
    [ "microCase", "class_go_1_1_par0_func_intersector.html#a281a2f47287385dc505a9c6835f5ebb9", null ],
    [ "numParams", "class_go_1_1_par0_func_intersector.html#a0067a654e9a3737e3dad07fd84c0cbfb", null ],
    [ "repairIntersections", "class_go_1_1_par0_func_intersector.html#ab5a6c10d8b9ac2a977c970535e54cafb",
      null ],
    [ "updateIntersections", "class_go_1_1_par0_func_intersector.html#aed50a6673c585cc8a4e30ba80d637d6e",
      null ]
]
```

Definition at line 1 of file class_go_1_1_par0_func_intersector.js.

30.338 doc/html/class_go_1_1_par1_func_intersector.js File Reference

Variables

- var class_go_1_1_par1_func_intersector

30.338.1 Variable Documentation

30.338.1.1 var class_go_1_1_par1_func_intersector

Initial value:

```
=
[
    [ "Par1FuncIntersector", "class_go_1_1_par1_func_intersector.html#a1814cfd747af220df82cc9311525a699",
      null ],
    [ "~Par1FuncIntersector", "class_go_1_1_par1_func_intersector.html#a4446d9a0bd19b1df7cb61afe75420d39",
      null ],
    [ "checkCoincidence", "class_go_1_1_par1_func_intersector.html#a175c2e760c41b924e57a39b88057b7c4", null
       ],
    [ "doSubdivide", "class_go_1_1_par1_func_intersector.html#adfcaf89a824ff6dbdb1954b0a83d8279", null ],
    [ "lowerOrderIntersector", "class_go_1_1_par1_func_intersector.html#a0ceda62694bf2ddca4dae43b779058ec",
       null ],
    [ "microCase", "class_go_1_1_par1_func_intersector.html#aa0115ece8e0c51b8cccb315a7dc2bb1a", null ],
    [ "numParams", "class_go_1_1_par1_func_intersector.html#a9e8fc1a9e2502b5647ee5f00b6ff31b0", null ],
    [ "repairIntersections", "class_go_1_1_par1_func_intersector.html#a002d05b76452464e0badb00106729352",
      null ],
    [ "updateIntersections", "class_go_1_1_par1_func_intersector.html#ab711341365c1b93dfa690f3581a388d1",
      null ]
]
```

Definition at line 1 of file class_go_1_1_par1_func_intersector.js.

30.339 doc/html/class_go_1_1_par2_func_intersector.js File Reference

Variables

- var class_go_1_1_par2_func_intersector

30.339.1 Variable Documentation

30.339.1.1 var class_go_1_1_par2_func_intersector

Initial value:

```
=
[
    [ "Par2FuncIntersector", "class_go_1_1_par2_func_intersector.html#a595ba972bafb1ec027ff0c1b0ba5af1f",
      null ],
    [ "~Par2FuncIntersector", "class_go_1_1_par2_func_intersector.html#a352be801cd61742f4282cdf08b3e4ae8",
      null ],
    [ "canConnect", "class_go_1_1_par2_func_intersector.html#ae3ae4e205f71319fcdccf332927c86aa", null ],
    [ "checkCoincidence", "class_go_1_1_par2_func_intersector.html#a729a8656409adb0165db1380b7f178e2", null
       ],
    [ "connectDirected", "class_go_1_1_par2_func_intersector.html#a23896c07fbc87b20a161a7e1735f793c", null
      ],
    [ "doSubdivide", "class_go_1_1_par2_func_intersector.html#a11a42067174f7e8710a84cbc689a0b97", null ],
    [ "isConnected", "class_go_1_1_par2_func_intersector.html#a3868472fa9ff67a24de9663fe4da554d", null ],
    [ "isConnected", "class_go_1_1_par2_func_intersector.html#a4d4f49287dfcd25c2ed048cdc025f893", null ],
    [ "lowerOrderIntersector", "class_go_1_1_par2_func_intersector.html#acca35ce72841e66325b368e851a21c96",
       null ],
    [ "microCase", "class_go_1_1_par2_func_intersector.html#a2741576ed17c7faa2b6f48fd0b02e9fe", null ],
    [ "numParams", "class_go_1_1_par2_func_intersector.html#aff355284c180fbc0911003a0f1dc4b86", null ],
    [ "repairIntersections", "class_go_1_1_par2_func_intersector.html#aaebda7a2875ce831b9d47dcce7cf915a",
      null ],
    [ "updateIntersections", "class_go_1_1_par2_func_intersector.html#a3cbd4e1b888316afd1d15c07bfd6b306",
      null ]
]
```

Definition at line 1 of file class_go_1_1_par2_func_intersector.js.

30.340 doc/html/class_go_1_1_parabola.js File Reference

Variables

- var class_go_1_1_parabola

30.340.1 Variable Documentation

30.340.1.1 var class_go_1_1_parabola

Definition at line 1 of file class_go_1_1_parabola.js.

30.341 doc/html/class_go_1_1_parallelepiped.js File Reference

Variables

- var class_go_1_1_parallelepiped

30.341.1 Variable Documentation

30.341.1.1 var class_go_1_1_parallelepiped

Initial value:

```
=
[
    [ "Parallelepiped", "class_go_1_1_parallelepiped.html#a462264b88bcb3fb72501ff635588f2d6", null ],
    [ "Parallelepiped", "class_go_1_1_parallelepiped.html#ab1b4f71b71ade8f4abc822cc78fcbd17", null ],
    [ "~Parallelepiped", "class_go_1_1_parallelepiped.html#a38c875eed4adee6d21c94111ae36a358", null ],
    [ "boundingBox", "class_go_1_1_parallelepiped.html#a902d894e6fc161ff0d283e837114c49b", null ],
    [ "clone", "class_go_1_1_parallelepiped.html#a3fc00924fc7e6dd2f39988dc261fb066", null ],
    [ "closestPoint", "class_go_1_1_parallelepiped.html#a2c2e1c088ea9235d5bcd32e6a1c06330", null ],
    [ "dimension", "class_go_1_1_parallelepiped.html#a094028bb7467bde915db6f2c0c62fa75", null ],
    [ "geometryVolume", "class_go_1_1_parallelepiped.html#a77725fc481eca9862548c45f1c4b4817", null ],
    [ "getAllBoundarySurfaces", "class_go_1_1_parallelepiped.html#a79fb25f5d453fd59e7ef8752f263f501", null
      ],
    [ "instanceType", "class_go_1_1_parallelepiped.html#a387a7463e29baaa90f94db11e520903b", null ],
    [ "nextSegmentVal", "class_go_1_1_parallelepiped.html#afab08aea8607a06b73c4e21abb5492a0", null ],
    [ "parameterSpan", "class_go_1_1_parallelepiped.html#afeb5a372f8f5cb2c8aacd21618571901", null ],
    [ "point", "class_go_1_1_parallelepiped.html#a1c862db9370a8e3238bab13a02935d28", null ],
    [ "point", "class_go_1_1_parallelepiped.html#a17879120de2721d210991fa03ce8fd46", null ],
    [ "read", "class_go_1_1_parallelepiped.html#ada24cffb4496199778e5371de67f716a", null ],
    [ "reverseParameterDirection", "class_go_1_1_parallelepiped.html#a2046346c0585a4da905f930430a05dd3",
      null ],
    [ "swapParameterDirection", "class_go_1_1_parallelepiped.html#aeb1c073f8739cc5674285ab56f66d217", null
      ],
    [ "tangentCone", "class_go_1_1_parallelepiped.html#a65b0a65033c8c65f6a2884fe2e6a11ca", null ],
    [ "translate", "class_go_1_1_parallelepiped.html#ab065301718efca14404a9a5419e6d53f", null ],
    [ "write", "class_go_1_1_parallelepiped.html#ada46eff243691531b4b0885515be7e1b", null ]
]
```

Definition at line 1 of file class_go_1_1_parallelepiped.js.

30.342 doc/html/class_go_1_1_param0_function_int.js File Reference

Variables

- var class_go_1_1_param0_function_int

30.342.1 Variable Documentation

30.342.1.1 var class_go_1_1_param0_function_int

Definition at line 1 of file class_go_1_1_param0_function_int.js.

30.343 doc/html/class_go_1_1_param1_function_int.js File Reference

Variables

- var class_go_1_1_param1_function_int

30.343.1 Variable Documentation

30.343.1.1 var class_go_1_1_param1_function_int

Definition at line 1 of file class_go_1_1_param1_function_int.js.

30.344 doc/html/class_go_1_1_param2_function_int.js File Reference

Variables

- var class_go_1_1_param2_function_int

30.344.1 Variable Documentation

30.344.1.1 var class_go_1_1_param2_function_int

Definition at line 1 of file class_go_1_1_param2_function_int.js.

30.345 doc/html/class_go_1_1_param_curve.js File Reference

Variables

- var class_go_1_1_param_curve

30.345.1 Variable Documentation

30.345.1.1 var class_go_1_1_param_curve

Definition at line 1 of file class_go_1_1_param_curve.js.

30.346 doc/html/class_go_1_1_param_curve_int.js File Reference

Variables

- var class_go_1_1_param_curve_int

30.346.1 Variable Documentation

30.346.1.1 var class_go_1_1_param_curve_int

Definition at line 1 of file class_go_1_1_param_curve_int.js.

30.347 doc/html/class_go_1_1_param_function_int.js File Reference

Variables

- var class_go_1_1_param_function_int

30.347.1 Variable Documentation

30.347.1.1 var class_go_1_1_param_function_int

Initial value:

```
=
[
    [ "~ParamFunctionInt", "class_go_1_1_param_function_int.html#a8a214e379c2dcccb1b4d5e49df049ea7", null ]
      ,
    [ "getBoundaryObjects", "class_go_1_1_param_function_int.html#abeb07b127558af03aa02e7c50f56ade9", null
      ],
    [ "getMesh", "class_go_1_1_param_function_int.html#a1fe259c2e850acea2b32a660ed15a801", null ],
    [ "getMeshSize", "class_go_1_1_param_function_int.html#ab2c20f161e853bd264125b603e1d2d32", null ],
    [ "getParam0FunctionInt", "class_go_1_1_param_function_int.html#a13566aed323615d740614e5691d9f500",
      null ],
    [ "getParam1FunctionInt", "class_go_1_1_param_function_int.html#a45343f900136c3b7c0442e795c1fb9b0",
      null ],
    [ "getParam2FunctionInt", "class_go_1_1_param_function_int.html#a396b2813d2462c5d8e31769a50625c3c",
      null ],
    [ "monotone", "class_go_1_1_param_function_int.html#a0746e0714a26dcba78d567f34d71b9bb", null ],
    [ "paramFromMesh", "class_go_1_1_param_function_int.html#a67db1e8d424105c98d76ef893f40873d", null ],
    [ "subdivide", "class_go_1_1_param_function_int.html#aa430f18ef349897dbae9317100ae6d74", null ],
    [ "boundary_obj_", "class_go_1_1_param_function_int.html#aecef00947ffe0462d0356b21a3612227", null ]
]
```

Definition at line 1 of file class_go_1_1_param_function_int.js.

30.348 doc/html/class_go_1_1_param_geom_int.js File Reference

Variables

- var class_go_1_1_param_geom_int

30.348.1 Variable Documentation

30.348.1.1 var class_go_1_1_param_geom_int

Initial value:

```
=
[
    [ "ParamGeomInt", "class_go_1_1_param_geom_int.html#a3e1e109e9f9ceb3e76d7b98a1cfdbbb4", null ],
    [ "~ParamGeomInt", "class_go_1_1_param_geom_int.html#ad9ee33938a318097a524213425ea9ac6", null ],
    [ "checkPeriodicity", "class_go_1_1_param_geom_int.html#a12d8e812fddc8b5872ff50fa2786e19e", null ],
    [ "compositeBox", "class_go_1_1_param_geom_int.html#a1deded580c47f7e36facd6b2722c90af", null ],
    [ "coneLargerThanPi", "class_go_1_1_param_geom_int.html#a72c4e7f6c41b7acacd8fc6677890e745", null ],
    [ "dimension", "class_go_1_1_param_geom_int.html#a12a5ea9d43671f311c69528d9285caf2", null ],
    [ "directionCone", "class_go_1_1_param_geom_int.html#a4392fb3e2447dc9a2b012f431d6ec14a", null ],
    [ "getBoundaryObject", "class_go_1_1_param_geom_int.html#a9b02408318205978eb4d6e1804a12989", null ],
    [ "getBoundaryObjects", "class_go_1_1_param_geom_int.html#a4ae4e9d29ea2e57238115b060fcca15d", null ],
    [ "getMesh", "class_go_1_1_param_geom_int.html#aa156d7e529cf37cbce8c8dd4cc856b25", null ],
    [ "getMeshSize", "class_go_1_1_param_geom_int.html#a6af02806353f736d262b2d29eeb83ac0", null ],
    [ "getOptimizedConeAngle", "class_go_1_1_param_geom_int.html#a5d0a7f71e603911c0a507c8e6643adcd", null ]
      ,
    [ "isDegenerate", "class_go_1_1_param_geom_int.html#a816a1737227d8e5e9cd56943730955b2", null ],
    [ "isDegenerate", "class_go_1_1_param_geom_int.html#a73ce9db41e9770d9be8580b51925dc9d", null ],
    [ "isLinear", "class_go_1_1_param_geom_int.html#ac9ee62ab3226e99bbf57826042e2d68c", null ],
    [ "isSpline", "class_go_1_1_param_geom_int.html#afb4151c2b0c41239914fe1b340e29c83", null ],
    [ "nmbBdObj", "class_go_1_1_param_geom_int.html#aeb78548d665d498273bdce9edafaa7c5", null ],
    [ "paramFromMesh", "class_go_1_1_param_geom_int.html#a25d1bb04c5d76b86846a52a99e7ec32d", null ],
    [ "reducedDirectionCone", "class_go_1_1_param_geom_int.html#a59f088e8e6dbdc0890ac3d7a0219bb49", null ],
    [ "subdivide", "class_go_1_1_param_geom_int.html#afbc32b467e418ddd4de459957b50e16e", null ],
    [ "boundary_obj_", "class_go_1_1_param_geom_int.html#aaebc3813fbe16f661a664f79dd13df90", null ]
]
```

Definition at line 1 of file class_go_1_1_param_geom_int.js.

30.349 doc/html/class_go_1_1_param_object_int.js File Reference

Variables

- var class_go_1_1_param_object_int

30.349.1 Variable Documentation

30.349.1.1 var class_go_1_1_param_object_int

Definition at line 1 of file class_go_1_1_param_object_int.js.

30.350 doc/html/class_go_1_1_param_point_int.js File Reference

Variables

- var class_go_1_1_param_point_int

30.350.1 Variable Documentation

30.350.1.1 var class_go_1_1_param_point_int

Definition at line 1 of file class_go_1_1_param_point_int.js.

30.351 doc/html/class_go_1_1_param_surface.js File Reference

Variables

- var class_go_1_1_param_surface

30.351.1 Variable Documentation

30.351.1.1 var class_go_1_1_param_surface

Definition at line 1 of file class_go_1_1_param_surface.js.

30.352 doc/html/class_go_1_1_param_surface_int.js File Reference

Variables

- var class_go_1_1_param_surface_int

30.352.1 Variable Documentation

30.352.1.1 var class_go_1_1_param_surface_int

Definition at line 1 of file class_go_1_1_param_surface_int.js.

30.353 doc/html/class_go_1_1_param_volume.js File Reference

Variables

- var class_go_1_1_param_volume

30.353.1 Variable Documentation

30.353.1.1 var class_go_1_1_param_volume

Initial value:

```
=
[
    [ "~ParamVolume", "class_go_1_1_param_volume.html#a4ea39ed9d48ccaf6360bb893db0ddd15", null ],
    [ "asSplineVolume", "class_go_1_1_param_volume.html#ab5cb2687d903913bb4059448d38b807a", null ],
    [ "clone", "class_go_1_1_param_volume.html#a1de81ce34caefb7e5fb10c917e209b25", null ],
    [ "closestPoint", "class_go_1_1_param_volume.html#aa63791c277eadd80f922c180d4f1327f", null ],
    [ "constParamSurface", "class_go_1_1_param_volume.html#acb411c77d591b150fb4324acdeabfe1e", null ],
    [ "getAllBoundarySurfaces", "class_go_1_1_param_volume.html#a05827157124165e1a563d25fe6cc2d32", null ],
    [ "isSpline", "class_go_1_1_param_volume.html#a6bfb414644129e1637a2c21bb9560946", null ],
    [ "nextSegmentVal", "class_go_1_1_param_volume.html#aaee67285d1ced1e0d5b589d0a555f5ff", null ],
    [ "parameterSpan", "class_go_1_1_param_volume.html#a5ca5317d0c2b6b337a59057f38f603d6", null ],
    [ "point", "class_go_1_1_param_volume.html#a20df50b9fd19d4b1033dc6d11826b96c", null ],
    [ "point", "class_go_1_1_param_volume.html#a58500ca3de9bc1ba3d810bad1eaf5df7", null ],
    [ "reverseParameterDirection", "class_go_1_1_param_volume.html#a5bca97a9401b74ca989e2e67f89ee6fe", null
      ],
    [ "swapParameterDirection", "class_go_1_1_param_volume.html#ab898ec524b6febc57b49aea98b8d0724", null ],
    [ "tangentCone", "class_go_1_1_param_volume.html#af5b51bc450da49f76b73f038618a57b6", null ],
    [ "translate", "class_go_1_1_param_volume.html#a0aea3fc27f39a5f4805589a7b8744ec8", null ]
]
```

Definition at line 1 of file class_go_1_1_param_volume.js.

30.354 doc/html/class_go_1_1_parametric_surface_tesselator.js File Reference

Variables

- var class_go_1_1_parametric_surface_tesselator

30.354.1 Variable Documentation

30.354.1.1 var class_go_1_1_parametric_surface_tesselator

Initial value:

```
=
[
    [ "ParametricSurfaceTesselator", "
      class_go_1_1_parametric_surface_tesselator.html#a77549810bc3c8c1ce9f06345f46f0fde", null ],
    [ "~ParametricSurfaceTesselator", "
      class_go_1_1_parametric_surface_tesselator.html#a4c6fef013ecb6c00b14d59801aad9a58", null ],
    [ "changeRes", "class_go_1_1_parametric_surface_tesselator.html#ac6cf0e50d6c2db47e3c0fd35d29a4d4b",
      null ],
    [ "getMesh", "class_go_1_1_parametric_surface_tesselator.html#aae43406f79ade6e3ce59bc63bf086398", null
      ],
    [ "getRes", "class_go_1_1_parametric_surface_tesselator.html#a4296acdedb75f67f557ea1238680b399", null ]
      ,
    [ "tesselate", "class_go_1_1_parametric_surface_tesselator.html#af0a157fa8039d15ed49d25eccf1d6d8b",
      null ]
]
```

Definition at line 1 of file class_go_1_1_parametric_surface_tesselator.js.

30.355 doc/html/class_go_1_1_plane.js File Reference

Variables

- var class_go_1_1_plane

30.355.1 Variable Documentation

30.355.1.1 var class_go_1_1_plane

Definition at line 1 of file class_go_1_1_plane.js.

30.356 doc/html/class_go_1_1_plane_int.js File Reference

Variables

- var class_go_1_1_plane_int

30.356.1 Variable Documentation

30.356.1.1 var class_go_1_1_plane_int

Initial value:

```
=
[
    [ "PlaneInt", "class_go_1_1_plane_int.html#ace6d9c215dbaac46b7e0cc2c7840a03c", null ],
    [ "PlaneInt", "class_go_1_1_plane_int.html#a9a3a7f5fcaaf1ef41b8868973358f807", null ],
    [ "PlaneInt", "class_go_1_1_plane_int.html#ad30a3bef23db55954c556ac2ab4e166a", null ],
    [ "~PlaneInt", "class_go_1_1_plane_int.html#a1cb315c135f20f3d5da0daf0bee52126", null ],
    [ "a", "class_go_1_1_plane_int.html#a75c4540ff637b7a3f2a33182e81fef33", null ],
    [ "b", "class_go_1_1_plane_int.html#aa61eda35ce195ebbb59321069d0b20f1", null ],
    [ "c", "class_go_1_1_plane_int.html#a4f9d4c6288fb0ee151a466648816fca1", null ],
    [ "d", "class_go_1_1_plane_int.html#adbef9642db16186c9411dce8c3fd7c92", null ],
    [ "read", "class_go_1_1_plane_int.html#affbfeab5d401db79d65ef540646358ce", null ],
    [ "surface", "class_go_1_1_plane_int.html#ae3448a0854290ca30e8255d0caf35c01", null ]
]
```

Definition at line 1 of file class_go_1_1_plane_int.js.

30.357 doc/html/class_go_1_1_point.js File Reference

Variables

- var class_go_1_1_point

30.357.1 Variable Documentation

30.357.1.1 var class_go_1_1_point

Definition at line 1 of file class_go_1_1_point.js.

30.358 doc/html/class_go_1_1_point_cloud.js File Reference

Variables

- var class_go_1_1_point_cloud

30.358.1 Variable Documentation

30.358.1.1 var class_go_1_1_point_cloud

Initial value:

```
=
[
    [ "PointCloud", "class_go_1_1_point_cloud.html#a7490ab07b2c7cf4310cce602a7ab9986", null ],
    [ "PointCloud", "class_go_1_1_point_cloud.html#a8f97cb147f7ebee848cdbcabbdf1b2a9", null ],
    [ "PointCloud", "class_go_1_1_point_cloud.html#a0f7871311a54860fc2034cf0e04e0b9f", null ],
    [ "~PointCloud", "class_go_1_1_point_cloud.html#ae5ea6d7258c0de75830c052d71560749", null ],
    [ "boundingBox", "class_go_1_1_point_cloud.html#a2dd12e28999339fc1c26e7f2746cfcc7", null ],
    [ "clone", "class_go_1_1_point_cloud.html#ae5ca0b7dfbb382a470f6320850fb937d", null ],
    [ "dimension", "class_go_1_1_point_cloud.html#ab41af5a432bbcaf4bd0e33fc7e40ecee", null ],
    [ "instanceType", "class_go_1_1_point_cloud.html#a03360c883d516a0d92126fd43e57ab79", null ],
    [ "numPoints", "class_go_1_1_point_cloud.html#a2f7f157ac7a85a17988a929d9c6bf46e", null ],
    [ "point", "class_go_1_1_point_cloud.html#ad7ac0d21c2c40d989392581665d9de18", null ],
    [ "point", "class_go_1_1_point_cloud.html#ac3a2b633ec9d4e1bb2046efafdf58c5c", null ],
    [ "pointVector", "class_go_1_1_point_cloud.html#a41f059d1c220fe273bb9c56904fec441", null ],
    [ "rawData", "class_go_1_1_point_cloud.html#aeb184284d03948126f32911f9bc18300", null ],
    [ "rawData", "class_go_1_1_point_cloud.html#a8d46240635ff22b7c3317c8a220a8eee", null ],
    [ "read", "class_go_1_1_point_cloud.html#afc7e14c4ab1b7b37ec56314124a28d18", null ],
    [ "rotate", "class_go_1_1_point_cloud.html#a452e3de6386a0028ce7cc8ed4be1d8f7", null ],
    [ "translate", "class_go_1_1_point_cloud.html#afcd16132768c8ca62f09e23ed8f6538d", null ],
    [ "write", "class_go_1_1_point_cloud.html#ad89fec212c58f01559025679842c0c1f", null ]
]
```

Definition at line 1 of file class_go_1_1_point_cloud.js.

30.359 doc/html/class_go_1_1_point_on_curve.js File Reference

Variables

- var class_go_1_1_point_on_curve

30.359.1 Variable Documentation

30.359.1.1 var class_go_1_1_point_on_curve

Initial value:

```
=
[
    [ "PointOnCurve", "class_go_1_1_point_on_curve.html#af7dc3923025103fe26069d15c6d79323", null ],
    [ "PointOnCurve", "class_go_1_1_point_on_curve.html#a707f6c1f8eb557cbf82bf024549357ca", null ],
    [ "PointOnCurve", "class_go_1_1_point_on_curve.html#ad7f9d6420bc461a316d17f5246d12318", null ],
    [ "~PointOnCurve", "class_go_1_1_point_on_curve.html#a9d4a33cf169f40a915691bfae715b5ff", null ],
    [ "evaluate", "class_go_1_1_point_on_curve.html#af6e6545ee40518b31c4965960beb6458", null ],
    [ "getCurve", "class_go_1_1_point_on_curve.html#a62985eeecb070c3a07358411c8746be3", null ],
    [ "getPar", "class_go_1_1_point_on_curve.html#ad690d68c8b17aef2f7cf91cf1cb3bde7", null ],
    [ "getPos", "class_go_1_1_point_on_curve.html#ac6254eed9d25e8467a0b0438411deda8", null ],
    [ "setParInterval", "class_go_1_1_point_on_curve.html#aec36cbd9c3c7255624655661d3fbc286", null ]
]
```

Definition at line 1 of file class_go_1_1_point_on_curve.js.

30.360 doc/html/class_go_1_1_point_on_edge.js File Reference

Variables

- var class_go_1_1_point_on_edge

30.360.1 Variable Documentation

30.360.1.1 var class_go_1_1_point_on_edge

Initial value:

```
=
[
    [ "PointOnEdge", "class_go_1_1_point_on_edge.html#a5e5f979e946582190563dec5095b2eab", null ],
    [ "~PointOnEdge", "class_go_1_1_point_on_edge.html#a3e5ceaf951feebf66b5a8e1f2c48b0df", null ],
    [ "edge", "class_go_1_1_point_on_edge.html#aaae9baee52e5453776627caa2fa9f37c", null ],
    [ "par", "class_go_1_1_point_on_edge.html#a7adaa2b8c7e136e1f073073ed9a0522d", null ],
    [ "position", "class_go_1_1_point_on_edge.html#aa17d25f9201f436aa7b23478f4dacedf", null ]
]
```

Definition at line 1 of file class_go_1_1_point_on_edge.js.

30.361 doc/html/class_go_1_1_point_sequence.js File Reference

Variables

- var class_go_1_1_point_sequence

30.361.1 Variable Documentation

30.361.1.1 var class_go_1_1_point_sequence

Initial value:

```
=
[
    [ "PointSequence", "class_go_1_1_point_sequence.html#a6ede86745290d981b66486135dbd3726", null ],
    [ "PointSequence", "class_go_1_1_point_sequence.html#a814deda46911d830408d171c2d6ba7ee", null ],
    [ "PointSequence", "class_go_1_1_point_sequence.html#a5451cae773d6f7b8a3b09ad6fc2bbf44", null ],
    [ "PointSequence", "class_go_1_1_point_sequence.html#ad03a7c46eda2eefcd84a95138c8360a5", null ],
    [ "~PointSequence", "class_go_1_1_point_sequence.html#a1b6de6c0745f63fb78e18de7d9ac49d8", null ],
    [ "coefs_begin", "class_go_1_1_point_sequence.html#aa10ccbc7ab05c9a6bfd342c3f7107f9f", null ],
    [ "coefs_begin", "class_go_1_1_point_sequence.html#af8497ebb399a76f8f0e7dd75c729a34c", null ],
    [ "coefs_end", "class_go_1_1_point_sequence.html#aa54646ece7c7152430533b333723d558", null ],
    [ "coefs_end", "class_go_1_1_point_sequence.html#aa383d5038fecac721e34b4b133c4ee01", null ],
    [ "dimension", "class_go_1_1_point_sequence.html#aaed3864489fec99e60c824e5a8abab7b", null ],
    [ "grid_dimension", "class_go_1_1_point_sequence.html#af79419e2681dfa632d2a624d3e94512b", null ],
    [ "grid_length", "class_go_1_1_point_sequence.html#ad33f7300513ca8053eacce4c50430cf7", null ],
    [ "type", "class_go_1_1_point_sequence.html#a340ee55ee4cb9794d34caf81378e55d4", null ]
]
```

Definition at line 1 of file class_go_1_1_point_sequence.js.

30.362 doc/html/class_go_1_1_project_curve.js File Reference

Variables

- var class_go_1_1_project_curve

30.362.1 Variable Documentation

30.362.1.1 var class_go_1_1_project_curve

Initial value:

```
=
[
    [ "ProjectCurve", "class_go_1_1_project_curve.html#a903a63cbfc5d148e426569683cd35c9a", null ],
    [ "~ProjectCurve", "class_go_1_1_project_curve.html#aee78cf0ca3ae9e2d100d3f105c07b1ec", null ],
    [ "approximationOK", "class_go_1_1_project_curve.html#aa3dac6e8cd4eff8508c08069fb8f3593", null ],
    [ "dim", "class_go_1_1_project_curve.html#ac7df656a336fc7b892b78abfe6bfb2f0", null ],
    [ "end", "class_go_1_1_project_curve.html#a0ece1dae182c841b612368fdff62d60d", null ],
    [ "eval", "class_go_1_1_project_curve.html#af98b1ced4a661a5876e60db1d659f4fa", null ],
    [ "eval", "class_go_1_1_project_curve.html#a96186d4cf98720c6777bfd7686f27f49", null ],
    [ "eval", "class_go_1_1_project_curve.html#aa04bfd8be7761c82b715e59ab2537bc3", null ],
    [ "start", "class_go_1_1_project_curve.html#ad717dabd8cfd3e33c8a8f2ec2c15d108", null ]
]
```

Definition at line 1 of file class_go_1_1_project_curve.js.

30.363 doc/html/class_go_1_1_project_curve_and_cross_tan.js File Reference

Variables

- var class_go_1_1_project_curve_and_cross_tan

30.363.1 Variable Documentation

30.363.1.1 var class_go_1_1_project_curve_and_cross_tan

Initial value:

```
=
[
    [ "ProjectCurveAndCrossTan", "
      class_go_1_1_project_curve_and_cross_tan.html#aa98cefc1fc3a7db17ca6bf8adf1cc2cb", null ],
    [ "~ProjectCurveAndCrossTan", "
      class_go_1_1_project_curve_and_cross_tan.html#ab15663097429c73fd5aabc8bf688dd0c", null ],
    [ "approximationOK", "class_go_1_1_project_curve_and_cross_tan.html#a8e4d5da040b79e7292393b61e96e807e",
       null ],
    [ "dim", "class_go_1_1_project_curve_and_cross_tan.html#a97b9499363e6ee7ec50c328b9a4c3be7", null ],
    [ "end", "class_go_1_1_project_curve_and_cross_tan.html#a2b9c6580329f03cd67d13be3fc1c6bfb", null ],
    [ "eval", "class_go_1_1_project_curve_and_cross_tan.html#a2887b1adafc03d983eb8405ea079f828", null ],
    [ "eval", "class_go_1_1_project_curve_and_cross_tan.html#afe33ce9e2590e0bfe7808194acce9ebb", null ],
    [ "nmbCvs", "class_go_1_1_project_curve_and_cross_tan.html#a30550274a1876d054692881e34d62f74", null ],
    [ "start", "class_go_1_1_project_curve_and_cross_tan.html#a208c12f85f1e92823c65e59a8b8ce593", null ]
]
```

Definition at line 1 of file class_go_1_1_project_curve_and_cross_tan.js.

30.364 doc/html/class_go_1_1_project_intersection_curve.js File Reference

Variables

- var class_go_1_1_project_intersection_curve

30.364.1 Variable Documentation

30.364.1.1 var class_go_1_1_project_intersection_curve

Initial value:

```
=
[
    [ "ProjectIntersectionCurve", "
      class_go_1_1_project_intersection_curve.html#a94cbed76f44f8128cf07e807fb51e5aa", null ],
    [ "~ProjectIntersectionCurve", "
      class_go_1_1_project_intersection_curve.html#a54b56fd7d6b0b35a7b91058e249443f9", null ],
    [ "approximationOK", "class_go_1_1_project_intersection_curve.html#a98edd82310fd00192191691dd4015fb8",
      null ],
    [ "dim", "class_go_1_1_project_intersection_curve.html#ad1d0f0e7b7ffd406d0f341c2e7caca5f", null ],
    [ "end", "class_go_1_1_project_intersection_curve.html#a0b38e17e16d84dda80bf971151f30fc6", null ],
    [ "eval", "class_go_1_1_project_intersection_curve.html#a6c51a345c6bc7eef9ad51c6a6af1a6a7", null ],
    [ "eval", "class_go_1_1_project_intersection_curve.html#ae83c55aba4c48f4f9e67ee10a469eebd", null ],
    [ "start", "class_go_1_1_project_intersection_curve.html#a513617c2b52868c77eddb71a2e57571b", null ]
]
```

Definition at line 1 of file class_go_1_1_project_intersection_curve.js.

30.365 doc/html/class_go_1_1_pt_pt_intersector.js File Reference

Variables

- var class_go_1_1_pt_pt_intersector

30.365.1 Variable Documentation

30.365.1.1 var class_go_1_1_pt_pt_intersector

Initial value:

```
=
[
    [ "PtPtIntersector", "class_go_1_1_pt_pt_intersector.html#a8abebb35c917366d6bbaf41829b286ea", null ],
    [ "PtPtIntersector", "class_go_1_1_pt_pt_intersector.html#a25f10f779cccf595aea7571b90967b0c", null ],
    [ "~PtPtIntersector", "class_go_1_1_pt_pt_intersector.html#a79c8f5cee79db3b1ecf43f8107b79c55", null ],
    [ "checkCoincidence", "class_go_1_1_pt_pt_intersector.html#ab52e5b1f4165d2039a897d8cbcf156a9", null ],
    [ "doSubdivide", "class_go_1_1_pt_pt_intersector.html#a320d02f07500b9860d90f1d1c2f5d7cb", null ],
    [ "linearCase", "class_go_1_1_pt_pt_intersector.html#a0dd0c8e19b541c4062ba5ccd5f73ce76", null ],
    [ "lowerOrderIntersector", "class_go_1_1_pt_pt_intersector.html#a6944d80db8438f36edef75789e19e720",
      null ],
    [ "microCase", "class_go_1_1_pt_pt_intersector.html#afdd93b4cc9a0eaaf17125d6a3497da15", null ],
    [ "numParams", "class_go_1_1_pt_pt_intersector.html#a40f4c4e8b3303e805b27410c06ba5933", null ],
    [ "repairIntersections", "class_go_1_1_pt_pt_intersector.html#a2f0b05861cfb6eb0e2897cd2f28b0893", null
      ],
    [ "updateIntersections", "class_go_1_1_pt_pt_intersector.html#a8bd72351be94e541948b869caca74671", null
      ]
]
```

Definition at line 1 of file class_go_1_1_pt_pt_intersector.js.

30.366 doc/html/class_go_1_1_quad_mesh.js File Reference

Variables

- var class_go_1_1_quad_mesh

30.366.1 Variable Documentation

30.366.1.1 var class_go_1_1_quad_mesh

Initial value:

```
=
[
    [ "QuadMesh", "class_go_1_1_quad_mesh.html#a42a89aad9e6131930a1a030446d8cbd4", null ],
    [ "atBoundary", "class_go_1_1_quad_mesh.html#ad422630ca2b536ac79ce4f4b30df1017", null ],
    [ "normalArray", "class_go_1_1_quad_mesh.html#a530f168f59723189046abf2c8a314ed1", null ],
    [ "numQuads", "class_go_1_1_quad_mesh.html#ad1cc15c4ab4222a6d92291c7d20b9e1a", null ],
    [ "numTriangles", "class_go_1_1_quad_mesh.html#aac1def69f7fb92e427c3374a612407d8", null ],
    [ "numVertices", "class_go_1_1_quad_mesh.html#aad6b01f5c482f7130a3169e11a1119ec", null ],
    [ "paramArray", "class_go_1_1_quad_mesh.html#a62a86c6ad3deb2b5d69535e57ce268b2", null ],
    [ "quadIndexArray", "class_go_1_1_quad_mesh.html#ab0e105fbfa07d09fc909edcfa843a601", null ],
    [ "resize", "class_go_1_1_quad_mesh.html#abec0e7c5c07b8c3f3e9a2e64d5dc8825", null ],
    [ "texcoordArray", "class_go_1_1_quad_mesh.html#a8f4773fb463b4596728438fe326ce9c2", null ],
    [ "triangleIndexArray", "class_go_1_1_quad_mesh.html#a51a80ee53f7f8c9177e59396088cec5a", null ],
    [ "useNormals", "class_go_1_1_quad_mesh.html#a1c6c4ccf80cfaa4f74032526e854f3e7", null ],
    [ "useTexCoords", "class_go_1_1_quad_mesh.html#a444e1bc577f7f56e98c2d1a0e922deea", null ],
    [ "vertexArray", "class_go_1_1_quad_mesh.html#a3af97e3ee79b09302191ff51f01b6f6a", null ]
]
```

Definition at line 1 of file class_go_1_1_quad_mesh.js.

30.367 doc/html/class_go_1_1_quality_results.js File Reference

Variables

- var class_go_1_1_quality_results

30.367.1 Variable Documentation

30.367.1.1 var class_go_1_1_quality_results

Initial value:

```
=
[
    [ "~QualityResults", "class_go_1_1_quality_results.html#a5e06951b5eeb29104be4a68f080ec03c", null ],
    [ "FaceSetQuality", "class_go_1_1_quality_results.html#ae820d513170db3b6b7ce7887b8a0d4dc", null ],
    [ "FaceSetRepair", "class_go_1_1_quality_results.html#a18e8ba52e738ee5a12e03dab6f012c27", null ],
    [ "ModelQuality", "class_go_1_1_quality_results.html#a8b28ece74f17b35d5d93ee5b4e8bb3a1", null ],
    [ "ModelRepair", "class_go_1_1_quality_results.html#adbeec2dc762f5b47140d310dbba07cf8", null ]
]
```

Definition at line 1 of file class_go_1_1_quality_results.js.

30.368 doc/html/class_go_1_1_rational.js File Reference

Variables

- var class_go_1_1_rational

30.368.1 Variable Documentation

30.368.1.1 var class_go_1_1_rational

Initial value:

```
=
[
    [ "Rational", "class_go_1_1_rational.html#a986b1722c95bc708600cfc0114e0451a", null ],
    [ "Rational", "class_go_1_1_rational.html#acadf8909244c77f7bb16036cd69d0700", null ],
    [ "Rational", "class_go_1_1_rational.html#a2bd8648917321cbfa7bb8b04279b582a", null ],
    [ "operator!=", "class_go_1_1_rational.html#ab4ae93c96df696d22d2e6c6340508c33", null ],
    [ "operator*=", "class_go_1_1_rational.html#ad4340450c2910a6fed4bab7a3e571e33", null ],
    [ "operator+=", "class_go_1_1_rational.html#a8748a34a9c3d6c49b2ee9f1d56424684", null ],
    [ "operator-", "class_go_1_1_rational.html#a1859a8d2e77f0fc874023112994361 17", null ],
    [ "operator-=", "class_go_1_1_rational.html#a587873f26e68502c1451badf78fc84d6", null ],
    [ "operator/=", "class_go_1_1_rational.html#a8663ea66582a6031b6e04323316c8a9e", null ],
    [ "operator==", "class_go_1_1_rational.html#a64fc86530525676d751aefb80677e73b", null ],
    [ "simplify", "class_go_1_1_rational.html#a856e2194491fe5c02d399ef93ed74fb4", null ],
    [ "write", "class_go_1_1_rational.html#ac7152300ba2fd30d30012851ae15feff", null ]
]
```

Definition at line 1 of file class_go_1_1_rational.js.

30.369 doc/html/class_go_1_1_rect_domain.js File Reference

Variables

- var class_go_1_1_rect_domain

30.369.1 Variable Documentation

30.369.1.1 var class_go_1_1_rect_domain

Initial value:

```
=
[
    [ "RectDomain", "class_go_1_1_rect_domain.html#a6139e6ec57ff66593293bc88ce6f9e07", null ],
    [ "RectDomain", "class_go_1_1_rect_domain.html#a06296bd084d733d10574aeaab9bbe6d0", null ],
    [ "~RectDomain", "class_go_1_1_rect_domain.html#a70400b3359fb09ba4d499b7bfeaffe25", null ],
    [ "addUnionWith", "class_go_1_1_rect_domain.html#a7eef80b8d800ef0c13526c7b0548d877", null ],
    [ "closestInDomain", "class_go_1_1_rect_domain.html#abe899d3313ccc0d7d66ba21b542c3c20", null ],
    [ "closestOnBoundary", "class_go_1_1_rect_domain.html#a160cc78d4037a479ce7025397dff06a9", null ],
    [ "diagLength", "class_go_1_1_rect_domain.html#a6945d4911e2f94263b5b0207e2ccad3e", null ],
    [ "intersectWith", "class_go_1_1_rect_domain.html#a75d70b5c718c4c7e322cbaa715040401", null ],
    [ "isInDomain", "class_go_1_1_rect_domain.html#a4b6fd9c3cabebb20053f4a5294d3645c", null ],
    [ "isInDomain2", "class_go_1_1_rect_domain.html#ad0913c6796862086c00ec3f886ffb3c5", null ],
    [ "isOnBoundary", "class_go_1_1_rect_domain.html#a6cbe39ae203ae9544d1de840a69d4b39", null ],
    [ "isOnCorner", "class_go_1_1_rect_domain.html#a006f5cfb2f639ff1002cb26ea48823d7", null ],
    [ "lowerLeft", "class_go_1_1_rect_domain.html#aa39c894a00fd949d85ae545da89feb7e", null ],
    [ "umax", "class_go_1_1_rect_domain.html#a262526c21dfe11aaafa83df300bf7cd0", null ],
    [ "umin", "class_go_1_1_rect_domain.html#af2bc2771491bc66906aceae6b077c08d", null ],
    [ "upperRight", "class_go_1_1_rect_domain.html#a85738771848251c582c3f45fcdc73b4f", null ],
    [ "vmax", "class_go_1_1_rect_domain.html#a1098315f51edb78f585dfa554ec0ef82", null ],
    [ "vmin", "class_go_1_1_rect_domain.html#ac0f08bf7180b9bdcfafe21c9ec19b9cc", null ],
    [ "whichBoundary", "class_go_1_1_rect_domain.html#a846d3147d576b8c7b1ddad3a5d282ee7", null ]
]
```

Definition at line 1 of file class_go_1_1_rect_domain.js.

30.370 doc/html/class_go_1_1_rect_grid.js File Reference

Variables

- var class_go_1_1_rect_grid

30.370.1 Variable Documentation

30.370.1.1 var class_go_1_1_rect_grid

Initial value:

```
=
[
    [ "RectGrid", "class_go_1_1_rect_grid.html#a405bf6317ae2a11be80be4f42c2cc892", null ],
    [ "RectGrid", "class_go_1_1_rect_grid.html#a706aca3d44753123da4927551af3426b", null ],
    [ "~RectGrid", "class_go_1_1_rect_grid.html#aa5a6481237c7dd736a85778e178eb6c0", null ],
    [ "boundingBox", "class_go_1_1_rect_grid.html#a4047b6a21de4b111d61b55858c5c5a62", null ],
    [ "clone", "class_go_1_1_rect_grid.html#a1a1ad87fbda4442c4d4afb3925be4710", null ],
    [ "dimension", "class_go_1_1_rect_grid.html#a7e7c780dbc4b78c1400b23627a4c1d9c", null ],
    [ "instanceType", "class_go_1_1_rect_grid.html#a1d2eaff39f755862c57e1a6499c8cc48", null ],
    [ "numCoefs_u", "class_go_1_1_rect_grid.html#af20d6c6ee42c7b4380b8d1830a6f4acd", null ],
    [ "numCoefs_v", "class_go_1_1_rect_grid.html#a138dfe11ad3e11e78791c481af903e00", null ],
    [ "rawData", "class_go_1_1_rect_grid.html#a2228c05541484aeec6f376769db48a3f", null ],
    [ "rawData", "class_go_1_1_rect_grid.html#a8838e86fa3c332093ed997b3233b7102", null ],
    [ "read", "class_go_1_1_rect_grid.html#ab674ee685f79f10cbf7513391c7b138f", null ],
    [ "setGrid", "class_go_1_1_rect_grid.html#a25aa21a9281f7f4abd0f8ed49e66a4b6", null ],
    [ "swapDirections", "class_go_1_1_rect_grid.html#a3990ed52f8ced0fbae066db4bf47c5af", null ],
    [ "write", "class_go_1_1_rect_grid.html#aff9c01ccc35a6db444c68e8c62e31335", null ]
]
```

Definition at line 1 of file class_go_1_1_rect_grid.js.

30.371 doc/html/class_go_1_1_rect_grid_tesselator.js File Reference

Variables

- var class_go_1_1_rect_grid_tesselator

30.371.1 Variable Documentation

30.371.1.1 var class_go_1_1_rect_grid_tesselator

Initial value:

```
=
[
    [ "RectGridTesselator", "class_go_1_1_rect_grid_tesselator.html#a9df6f4cf94ed15445f949330c1324b91",
      null ],
    [ "~RectGridTesselator", "class_go_1_1_rect_grid_tesselator.html#a940255dc109fdc0b63e9be1b0599eb82",
      null ],
    [ "getMesh", "class_go_1_1_rect_grid_tesselator.html#a5386d70b1a291ebf8c4b217fc43883b4", null ],
    [ "tesselate", "class_go_1_1_rect_grid_tesselator.html#a37c7dac1717250aae0fe930161e4406b", null ]
]
```

Definition at line 1 of file class_go_1_1_rect_grid_tesselator.js.

30.372 doc/html/class_go_1_1_rectangular_surface_tesselator.js File Reference

Variables

- var class_go_1_1_rectangular_surface_tesselator

30.372.1 Variable Documentation

30.372.1.1 var class_go_1_1_rectangular_surface_tesselator

Initial value:

```
=
[
    [ "RectangularSurfaceTesselator", "
      class_go_1_1_rectangular_surface_tesselator.html#a94f824a5aa465420949b0ec0ea023ec3", null ],
    [ "~RectangularSurfaceTesselator", "
      class_go_1_1_rectangular_surface_tesselator.html#a653dcbcd23292b65b7bd762cc581338a", null ],
    [ "changeIsolineNumRes", "
      class_go_1_1_rectangular_surface_tesselator.html#af26e32ee9754f890c6623043a5a73944", null ],
    [ "changeIsolines", "class_go_1_1_rectangular_surface_tesselator.html#a19df054bd56bff01332bb12564b6cfce
      ", null ],
    [ "changeRes", "class_go_1_1_rectangular_surface_tesselator.html#a0b0146a3cc6bf0f683811b1c2414d49e",
      null ],
    [ "getIsolineNumRes", "
      class_go_1_1_rectangular_surface_tesselator.html#aff81e68e4dcf66dcfe2e6441dec7aee6", null ],
    [ "getIsolines", "class_go_1_1_rectangular_surface_tesselator.html#a54cb336dcd511cddfe642c061b91fc53",
      null ],
    [ "getIsolineStrips", "
      class_go_1_1_rectangular_surface_tesselator.html#ae6753b2a326964bed1da65145579851b", null ],
    [ "getMesh", "class_go_1_1_rectangular_surface_tesselator.html#aa52bea5d343ea5c478adbb7423fc6421", null
      ],
    [ "getRes", "class_go_1_1_rectangular_surface_tesselator.html#afd3e3c52a9a795e7158ca34e12c0d972", null
      ],
    [ "tesselate", "class_go_1_1_rectangular_surface_tesselator.html#a98bc65dc65f847c17602033717c41843",
      null ]
]
```

Definition at line 1 of file class_go_1_1_rectangular_surface_tesselator.js.

30.373 doc/html/class_go_1_1_rectangular_volume_tesselator.js File Reference

Variables

- var class_go_1_1_rectangular_volume_tesselator

30.373.1 Variable Documentation

30.373.1.1 var class_go_1_1_rectangular_volume_tesselator

Initial value:

```
=
[
    [ "RectangularVolumeTesselator", "
      class_go_1_1_rectangular_volume_tesselator.html#a8ca37a7589470343564d4b0e1ab70d3a", null ],
    [ "~RectangularVolumeTesselator", "
      class_go_1_1_rectangular_volume_tesselator.html#a2f2d395814ce7e30b16c9f1d9445a194", null ],
    [ "changeRes", "class_go_1_1_rectangular_volume_tesselator.html#aec3b68a4550e588adc68030b0cb9d3ea",
      null ],
    [ "getMesh", "class_go_1_1_rectangular_volume_tesselator.html#a0e95ba4459220e4b64bb0a365d44194c", null
      ],
    [ "getRes", "class_go_1_1_rectangular_volume_tesselator.html#ab6b4b2ae2d4fe17754d89d5e058f712a", null ]
      ,
    [ "tesselate", "class_go_1_1_rectangular_volume_tesselator.html#a81d00516682f244ebac9097b6de6da78",
      null ]
]
```

Definition at line 1 of file class_go_1_1_rectangular_volume_tesselator.js.

30.374 doc/html/class_go_1_1_registrator.js File Reference

Variables

- var class_go_1_1_registrator

30.374.1 Variable Documentation

30.374.1.1 var class_go_1_1_registrator

Initial value:

```
=
[
    [ "Registrator", "class_go_1_1_registrator.html#a4a0166f70ae0c394255192a1de75cdcd", null ]
]
```

Definition at line 1 of file class_go_1_1_registrator.js.

30.375 doc/html/class_go_1_1_regular_mesh.js File Reference

Variables

- var class_go_1_1_regular_mesh

30.375.1 Variable Documentation

30.375.1.1 var class_go_1_1_regular_mesh

Initial value:

```
=
[
    [ "RegularMesh", "class_go_1_1_regular_mesh.html#a29769a85f7b602a60a0a0f40cec517f2", null ],
    [ "~RegularMesh", "class_go_1_1_regular_mesh.html#a6e7f58ac32c6dede6759e8bf0cddca82", null ],
    [ "asRegularMesh", "class_go_1_1_regular_mesh.html#ad7b90ae67f047691a9bb14caa942c7e4", null ],
    [ "atBoundary", "class_go_1_1_regular_mesh.html#a2f536b939f395cf4ca82dcc52009a83d", null ],
    [ "normalArray", "class_go_1_1_regular_mesh.html#a94757a0a4f89d6f175fce85322c2336e", null ],
    [ "numStrips", "class_go_1_1_regular_mesh.html#a90e12891714f58f59ba7277f97e49f97", null ],
    [ "numTriangles", "class_go_1_1_regular_mesh.html#ade5afca2996ffc7c37c97f8d54320015", null ],
    [ "numVertices", "class_go_1_1_regular_mesh.html#a1e3b557e2f657967e3def1ebee433779", null ],
    [ "paramArray", "class_go_1_1_regular_mesh.html#ae09bbe206c2c880bf58368a2ab4d48f6", null ],
    [ "resize", "class_go_1_1_regular_mesh.html#a708b79258bc5bbb1f1d2bff72da9e35e", null ],
    [ "stripArray", "class_go_1_1_regular_mesh.html#afe793fae50dc92ea2827ef43d8f9b248", null ],
    [ "stripLength", "class_go_1_1_regular_mesh.html#a31db9c56238e8ec9d1a0e743ee78232e", null ],
    [ "texcoordArray", "class_go_1_1_regular_mesh.html#a4f7d4bcb69cbe7ebefa3ca9e20212535", null ],
    [ "translate", "class_go_1_1_regular_mesh.html#ac7c87ccafd92b52a264ca0e42b54494d", null ],
    [ "triangleArray", "class_go_1_1_regular_mesh.html#a21a2c136bca8cff0423630ae15aa622d", null ],
    [ "triangleIndexArray", "class_go_1_1_regular_mesh.html#a2a712930e8f589c6f476ef44fef45eb4", null ],
    [ "useNormals", "class_go_1_1_regular_mesh.html#a7b4fb9e0919ab6d13b0f4ea7c79a7a22", null ],
    [ "useTexCoords", "class_go_1_1_regular_mesh.html#a9ce0af7c87c09f192914683a83052c93", null ],
    [ "vertexArray", "class_go_1_1_regular_mesh.html#a8864170fb6e43b991e6d7aa824a59eec", null ]
]
```

Definition at line 1 of file class_go_1_1_regular_mesh.js.

30.376 doc/html/class_go_1_1_regular_vol_mesh.js File Reference

Variables

- var class_go_1_1_regular_vol_mesh

30.376.1 Variable Documentation

30.376.1.1 var class_go_1_1_regular_vol_mesh

Initial value:

```
=
[
    [ "RegularVolMesh", "class_go_1_1_regular_vol_mesh.html#ac4fc411b5c481015ac0689c83ee9989e", null ],
    [ "~RegularVolMesh", "class_go_1_1_regular_vol_mesh.html#a7372faed2d9a370c63c7493aa98dfa49", null ],
    [ "asRegularMesh", "class_go_1_1_regular_vol_mesh.html#a6fac7e08e05112d16e4bb6e5e3212017", null ],
    [ "atBoundary", "class_go_1_1_regular_vol_mesh.html#a323aac367245aba58261f0eec3749a67", null ],
    [ "normalArray", "class_go_1_1_regular_vol_mesh.html#aa033c470d67c77ffa9ff3029fdbd283d", null ],
    [ "numStrips", "class_go_1_1_regular_vol_mesh.html#ab329df8832a21b5ad327e99839e9e71d", null ],
    [ "numTriangles", "class_go_1_1_regular_vol_mesh.html#a30e4455a9c235be9dd1a22da1750c304", null ],
    [ "numVertices", "class_go_1_1_regular_vol_mesh.html#aac90df3b33cb53c7bc82565d0d6e3e5b", null ],
    [ "paramArray", "class_go_1_1_regular_vol_mesh.html#a011e0502fb2df42b1702174f9432794c", null ],
    [ "resize", "class_go_1_1_regular_vol_mesh.html#a4edc77e881efd887150ff09572e8c7b4", null ],
    [ "stripArray", "class_go_1_1_regular_vol_mesh.html#ac3ac9119971a83aa32d23e5d3d4195dd", null ],
    [ "stripLength", "class_go_1_1_regular_vol_mesh.html#ad960f397db6b7c381abb637eb15dfad9", null ],
    [ "texcoordArray", "class_go_1_1_regular_vol_mesh.html#aa00172245efedb41eb2654d5a39a50e2", null ],
    [ "triangleArray", "class_go_1_1_regular_vol_mesh.html#af5396255502298b2bb3a7b175254d2da", null ],
    [ "triangleIndexArray", "class_go_1_1_regular_vol_mesh.html#a2e6e9892f7b90e98a932a9799cb09363", null ],
    [ "useNormals", "class_go_1_1_regular_vol_mesh.html#aa181fa9878a84e2922b3920ddff7da0f", null ],
    [ "useTexCoords", "class_go_1_1_regular_vol_mesh.html#a1c2bd4d2707c711bdbc3ef8217abd72f", null ],
    [ "vertexArray", "class_go_1_1_regular_vol_mesh.html#aa4a1ae38f84a2def4df60ade47676a39", null ]
]
```

Definition at line 1 of file class_go_1_1_regular_vol_mesh.js.

30.377 doc/html/class_go_1_1_regularize_face.js File Reference

Variables

- var class_go_1_1_regularize_face

30.377.1 Variable Documentation

30.377.1.1 var class_go_1_1_regularize_face

Initial value:

```
=
[
    [ "RegularizeFace", "class_go_1_1_regularize_face.html#ae66c33b8e763792881e3fe8d48d49bc6", null ],
    [ "RegularizeFace", "class_go_1_1_regularize_face.html#ae4eda51c1c8af89aedcf3a14f1b984a9", null ],
    [ "RegularizeFace", "class_go_1_1_regularize_face.html#a8930b47f709f146c62e441863074b175", null ],
    [ "~RegularizeFace", "class_go_1_1_regularize_face.html#ac717a1845370d38f03cfbfdf7bbfc427", null ],
    [ "classifyVertices", "class_go_1_1_regularize_face.html#a33df81a44d92b45ceba2e2bd16133db2", null ],
    [ "fetchVxPntCorr", "class_go_1_1_regularize_face.html#a919c13841fade539b38a4de946ba5de8", null ],
    [ "getRegularFaces", "class_go_1_1_regularize_face.html#a20ab6b81d7092740b17edef7edd9fdcd", null ],
    [ "getSeamJointInfo", "class_go_1_1_regularize_face.html#aaf4eba16bbd976d0b2aee107129aee67", null ],
    [ "setAxis", "class_go_1_1_regularize_face.html#ae59fb2b79693d9a47906ccfe66f44e9b", null ],
    [ "setCandSplit", "class_go_1_1_regularize_face.html#a72d4abae8e9aabe7aee610e67187bce9", null ],
    [ "setDivideInT", "class_go_1_1_regularize_face.html#a92a9f45e89d93c3bd816a8aba6f53ddb", null ],
    [ "setNonTjointFaces", "class_go_1_1_regularize_face.html#a5e3aa322a925409e1f5967d82988c16c", null ],
    [ "setSplitMode", "class_go_1_1_regularize_face.html#a5f4880db4aac0cc6d1f5adcf39071de6", null ],
    [ "unsetAxis", "class_go_1_1_regularize_face.html#a2cd655766d474e9acadf7800b38b6139", null ]
]
```

Definition at line 1 of file class_go_1_1_regularize_face.js.

30.378 doc/html/class_go_1_1_regularize_face_set.js File Reference

Variables

- var class_go_1_1_regularize_face_set

30.378.1 Variable Documentation

30.378.1.1 var class_go_1_1_regularize_face_set

Initial value:

```
=
[
    [ "RegularizeFaceSet", "class_go_1_1_regularize_face_set.html#a2f2f0ecc6bb750aff0491f64231e1de4", null
      ],
    [ "RegularizeFaceSet", "class_go_1_1_regularize_face_set.html#af04cbe86d84deccb8046bebf8a684e8c", null
      ],
    [ "RegularizeFaceSet", "class_go_1_1_regularize_face_set.html#ad9edfadd6cccc6d4743e3323f838f2d4", null
      ],
    [ "~RegularizeFaceSet", "class_go_1_1_regularize_face_set.html#a8cab4384c3a972a4277d8019e1ed6c7e", null
       ],
    [ "fetchVxPntCorr", "class_go_1_1_regularize_face_set.html#a8fd526b05f5e833e036b35954b16042b", null ],
    [ "getModifiedAdjacentModels", "class_go_1_1_regularize_face_set.html#a34990507c71ab0eda950a7ac7d5f7262
      ", null ],
    [ "getRegularFaces", "class_go_1_1_regularize_face_set.html#ac57ef67ddab543bacf1d58b326034a5d", null ],
    [ "getRegularModel", "class_go_1_1_regularize_face_set.html#a6252578be66c666df2c91cf9cc87f9fc", null ],
    [ "setFaceCorrespondance", "class_go_1_1_regularize_face_set.html#a60fd9cdce49eda1e5a4ccc02b2aa7656",
      null ],
    [ "setSplitMode", "class_go_1_1_regularize_face_set.html#aa1561739318f51557d51bb5544864310", null ]
]
```

Definition at line 1 of file class_go_1_1_regularize_face_set.js.

30.379 doc/html/class_go_1_1_rotated_box.js File Reference

Variables

- var class_go_1_1_rotated_box

30.379.1 Variable Documentation

30.379.1.1 var class_go_1_1_rotated_box

Initial value:

```
=
[
    [ "RotatedBox", "class_go_1_1_rotated_box.html#a6e66e8aa97df21c0f3b9713f2282ec04", null ],
    [ "RotatedBox", "class_go_1_1_rotated_box.html#af1a80a629a9a03f8a49dc69e87f05fce", null ],
    [ "~RotatedBox", "class_go_1_1_rotated_box.html#a202785ee700306fdd294c3346e854846", null ],
    [ "box", "class_go_1_1_rotated_box.html#a595c578a5270ed58a88a7786ed9bbbea", null ],
    [ "containsBox", "class_go_1_1_rotated_box.html#ad4081a3019f80f5b974a40021689280b", null ],
    [ "containsPoint", "class_go_1_1_rotated_box.html#af492b49fc4134d967968a580b5130076", null ],
    [ "dimension", "class_go_1_1_rotated_box.html#aaf893877961275937968119db5e1c98d", null ],
    [ "high", "class_go_1_1_rotated_box.html#ada40640cc038e93a5247edb0bad109cc", null ],
    [ "high_rot", "class_go_1_1_rotated_box.html#a1bd0b0f72dc928e337646752d5152e90", null ],
    [ "low", "class_go_1_1_rotated_box.html#a693566afb0380c8cf682c2d005a1a3a4", null ],
    [ "low_rot", "class_go_1_1_rotated_box.html#a001cfbfde2371156ffa216b2d018bfe2", null ],
    [ "overlaps", "class_go_1_1_rotated_box.html#a5ccb8f04bc93e7d8e6d7d30b68ad6e2b", null ],
    [ "setFromArray", "class_go_1_1_rotated_box.html#a3dc5a303224f779564e9a4c861b37827", null ],
    [ "setFromPoints", "class_go_1_1_rotated_box.html#a4d42e0ef9d11ae23de0d593a33c2ceb8", null ]
]
```

Definition at line 1 of file class_go_1_1_rotated_box.js.

30.380 doc/html/class_go_1_1_scratch_vect.js File Reference

Variables

- var class_go_1_1_scratch_vect

30.380.1 Variable Documentation

30.380.1.1 var class_go_1_1_scratch_vect

Initial value:

```
=
[
    [ "const_iterator", "class_go_1_1_scratch_vect.html#a3ec1bec2fc393949be4a21c24d98f87a", null ],
    [ "iterator", "class_go_1_1_scratch_vect.html#a32fb8c0c9542cc419f37d1d88d921fd1", null ],
    [ "ScratchVect", "class_go_1_1_scratch_vect.html#a6ce2b342b4fef39b03401b6bc1446fd8", null ],
    [ "ScratchVect", "class_go_1_1_scratch_vect.html#a3a7e8c7efc23c5b2f2f97ac6256c1bca", null ],
    [ "ScratchVect", "class_go_1_1_scratch_vect.html#a71c323d17436f29df665b72cc83053d3", null ],
    [ "ScratchVect", "class_go_1_1_scratch_vect.html#abb5789f4f2b661add44ecdb88756b1ef", null ],
    [ "ScratchVect", "class_go_1_1_scratch_vect.html#a4f2b1691b9acf034e049c057ecddc072", null ],
    [ "ScratchVect", "class_go_1_1_scratch_vect.html#a67c0c1ca3eb678e8bdd40f20cd93721a", null ],
    [ "assign", "class_go_1_1_scratch_vect.html#a31b2194dac225c9dee3ae40c4fd4db40", null ],
    [ "begin", "class_go_1_1_scratch_vect.html#a8da0cecb4d2706137378d32cf66bb47b", null ],
    [ "begin", "class_go_1_1_scratch_vect.html#a64a482100e4a62901119fec2a83f288b", null ],
    [ "clear", "class_go_1_1_scratch_vect.html#abd402d4e3e7377bab1ba270c98565492", null ],
    [ "end", "class_go_1_1_scratch_vect.html#a826bdc8790ec02ba7ccef221c7316747", null ],
    [ "end", "class_go_1_1_scratch_vect.html#a8e920737b60f7e7ab11293b0a0ada95c", null ],
    [ "operator=", "class_go_1_1_scratch_vect.html#ac26468529663df92e39b7c17d9a3a67e", null ],
    [ "operator[]", "class_go_1_1_scratch_vect.html#ab36a541205e92d2a565b362dd79c423b", null ],
    [ "operator[]", "class_go_1_1_scratch_vect.html#a991556544538c31eb8510d2f33b2190f", null ],
    [ "push_back", "class_go_1_1_scratch_vect.html#a6635d6ad2fec63775b0aff5225967236", null ],
    [ "resize", "class_go_1_1_scratch_vect.html#aa531f2726f96d8a3d3daba65a583a17d", null ],
    [ "size", "class_go_1_1_scratch_vect.html#a06699229f96c54b0a507f58273d794d0", null ]
]
```

Definition at line 1 of file class_go_1_1_scratch_vect.js.

30.381 doc/html/class_go_1_1_sf_boundary_condition.js File Reference

Variables

- var class_go_1_1_sf_boundary_condition

30.381.1 Variable Documentation

30.381.1.1 var class_go_1_1_sf_boundary_condition

Initial value:

```
=
[
    [ "SfBoundaryCondition", "class_go_1_1_sf_boundary_condition.html#a1c041de3bffec3d96cd7f9d040e599fe",
      null ],
    [ "SfBoundaryCondition", "class_go_1_1_sf_boundary_condition.html#aec91fce1684b4a81dffa7846c9cabe6f",
      null ],
    [ "~SfBoundaryCondition", "class_go_1_1_sf_boundary_condition.html#a268d6191f998901f5dd99602bc689e9b",
      null ],
    [ "edgeNumber", "class_go_1_1_sf_boundary_condition.html#a4a6db47690ed1a613d229433524e61fb", null ],
    [ "getBasisFunctions", "class_go_1_1_sf_boundary_condition.html#ae4102fc1e7a23a7734b8b7e9289cb8b1",
      null ],
    [ "getBdCoefficients", "class_go_1_1_sf_boundary_condition.html#a2779e540b7012c00a91f93dcb11a12c5",
      null ],
    [ "getBdCoefficients", "class_go_1_1_sf_boundary_condition.html#a5d9fb20a43e34fdf923da0bed7d70fcf",
      null ],
    [ "getCoefficientsEnumeration", "
      class_go_1_1_sf_boundary_condition.html#a9464332ed2e576b13115a2898ccf5751", null ],
    [ "getCoefficientsEnumeration", "
      class_go_1_1_sf_boundary_condition.html#a498aff2c5e5fa0c3fbe664e7fcd48abf", null ],
    [ "getSplineApproximation", "class_go_1_1_sf_boundary_condition.html#aafdfa9becaee39d468649bd4a62a8cd0"
      , null ],
    [ "getTolerances", "class_go_1_1_sf_boundary_condition.html#afb48a2afb30f74ba9e1721897f789a29", null ],
    [ "update", "class_go_1_1_sf_boundary_condition.html#a2e1c4b265662294ed2c345e93d40e48d", null ],
    [ "updateBoundaryValue", "class_go_1_1_sf_boundary_condition.html#adaf032fe7da6a50fdf3fb9b837a8e7b5",
      null ]
]
```

Definition at line 1 of file class_go_1_1_sf_boundary_condition.js.

30.382 doc/html/class_go_1_1_sf_cv_intersector.js File Reference

Variables

- var class_go_1_1_sf_cv_intersector

30.382.1 Variable Documentation

30.382.1.1 var class_go_1_1_sf_cv_intersector

Initial value:

```
=
[
    [ "SfCvIntersector", "class_go_1_1_sf_cv_intersector.html#a7cbd7559c549dcf97a3f558368dc4156", null ],
    [ "SfCvIntersector", "class_go_1_1_sf_cv_intersector.html#aa4d5f1d7975a52e38eab1a7e964e281b", null ],
    [ "~SfCvIntersector", "class_go_1_1_sf_cv_intersector.html#a4d1e54a1a2664035b7930cebb0730338", null ],
    [ "checkCoincidence", "class_go_1_1_sf_cv_intersector.html#ae6a99e5274d1bba3886c286b3e6e42f0", null ],
    [ "doSubdivide", "class_go_1_1_sf_cv_intersector.html#adb8c5a7d56bf130367ec54dcb6d17638", null ],
    [ "foundIntersectionNearBoundary", "
      class_go_1_1_sf_cv_intersector.html#a94902bbebc892d94038b3b26ac721048", null ],
    [ "linearCase", "class_go_1_1_sf_cv_intersector.html#a23a2ed2ada6f80a6ad6b98c21656cdbb", null ],
    [ "lowerOrderIntersector", "class_go_1_1_sf_cv_intersector.html#aa41c798641134369a99cb72d03be514b",
      null ],
    [ "microCase", "class_go_1_1_sf_cv_intersector.html#a2150d138f6c474f492a2c64ca70d95f6", null ],
    [ "numParams", "class_go_1_1_sf_cv_intersector.html#aac37e15b03fb3fac620c8e7cba8a4109", null ],
    [ "performRotatedBoxTest", "class_go_1_1_sf_cv_intersector.html#a6bc43c7a6e5ec19e935a1495384cbf40",
      null ],
    [ "postIterate", "class_go_1_1_sf_cv_intersector.html#a16ea99f766b4a831ff889462de90f8a5", null ],
    [ "postIterateBd", "class_go_1_1_sf_cv_intersector.html#a00d1b0b929be7995656dc5ac93cab6dd", null ],
    [ "repairIntersections", "class_go_1_1_sf_cv_intersector.html#a920d1a5009fa813fbb1c232149cdfe4c", null
      ],
    [ "simpleCase", "class_go_1_1_sf_cv_intersector.html#acb048f5e9313fdbb4925baa7e2f83ed2", null ],
    [ "simpleCase2", "class_go_1_1_sf_cv_intersector.html#a99af53068b40d2836e9711ce08afcc0c", null ],
    [ "updateIntersections", "class_go_1_1_sf_cv_intersector.html#a5319f2c616b9e9ef80928c10bba09850", null
      ]
]
```

Definition at line 1 of file class_go_1_1_sf_cv_intersector.js.

30.383 doc/html/class_go_1_1_sf_point_bd_cond.js File Reference

Variables

- var class_go_1_1_sf_point_bd_cond

30.383.1 Variable Documentation

30.383.1.1 var class_go_1_1_sf_point_bd_cond

Initial value:

```
=
[
    [ "SfPointBdCond", "class_go_1_1_sf_point_bd_cond.html#a1c6300a8c267ef1e993605e5dfb7799e", null ],
    [ "~SfPointBdCond", "class_go_1_1_sf_point_bd_cond.html#ac62802ef7a9d6ba59c3b3d7da19a58fd", null ],
    [ "edgeNumber", "class_go_1_1_sf_point_bd_cond.html#a96f0401fc151e72922b8c54866da9375", null ],
    [ "getCoefficientsEnumeration", "class_go_1_1_sf_point_bd_cond.html#a8336434dd73f3b3d3c8d775c73140c8a",
      null ],
    [ "getConditionValue", "class_go_1_1_sf_point_bd_cond.html#ae00d934a9b19dd1947408c669e2bc657", null ],
    [ "getInterpolationFactors", "class_go_1_1_sf_point_bd_cond.html#ac6f9125824a4518fccdb2bf5d898898b",
      null ],
    [ "getParam", "class_go_1_1_sf_point_bd_cond.html#afe3046bb2d3451ae74a021fbf680207d", null ]
]
```

Definition at line 1 of file class_go_1_1_sf_point_bd_cond.js.

30.384 doc/html/class_go_1_1_sf_pt_intersector.js File Reference

Variables

- var class_go_1_1_sf_pt_intersector

30.384.1 Variable Documentation

30.384.1.1 var class_go_1_1_sf_pt_intersector

Initial value:

```
=
[
    [ "SfPtIntersector", "class_go_1_1_sf_pt_intersector.html#a6725e40907178685dbdcdf7ad42b0176", null ],
    [ "~SfPtIntersector", "class_go_1_1_sf_pt_intersector.html#a06f1038df8f0d3de9dfe394fcf4be8d8", null ],
    [ "checkCoincidence", "class_go_1_1_sf_pt_intersector.html#a2d28043817a9593aba93a145f9433cc2", null ],
    [ "doSubdivide", "class_go_1_1_sf_pt_intersector.html#a4d6f8b65b3c65a99003a857b3eec7fa0", null ],
    [ "linearCase", "class_go_1_1_sf_pt_intersector.html#a7293a5a1f82fa696a9792395de1b5fb3", null ],
    [ "lowerOrderIntersector", "class_go_1_1_sf_pt_intersector.html#ab45e535c287a829b4e97b8b14a8a9312",
      null ],
    [ "microCase", "class_go_1_1_sf_pt_intersector.html#a3ffe21eebdb2fce42761a435b20b5aba", null ],
    [ "numParams", "class_go_1_1_sf_pt_intersector.html#afe092761f4da1a0d27219d81a44ee0f4", null ],
    [ "performRotatedBoxTest", "class_go_1_1_sf_pt_intersector.html#a25c6c68449fd891dda8087055b85fd72",
      null ],
    [ "repairIntersections", "class_go_1_1_sf_pt_intersector.html#adc8345bfad76daef30b266e35084c32d", null
      ],
    [ "updateIntersections", "class_go_1_1_sf_pt_intersector.html#a01bb670cd8e24286a9ed82efbc63a525", null
      ]
]
```

Definition at line 1 of file class_go_1_1_sf_pt_intersector.js.

30.385 doc/html/class_go_1_1_sf_self_intersector.js File Reference

Variables

- var class_go_1_1_sf_self_intersector

30.385.1 Variable Documentation

30.385.1.1 var class_go_1_1_sf_self_intersector

Initial value:

```
=
[
    [ "SfSelfIntersector", "class_go_1_1_sf_self_intersector.html#a292603cfa3655e634ce2cdf8cada8bab", null
      ],
    [ "SfSelfIntersector", "class_go_1_1_sf_self_intersector.html#af93f199faa8152d934c83dc4ebf108d5", null
      ],
    [ "~SfSelfIntersector", "class_go_1_1_sf_self_intersector.html#a8c26fed06a4be0d1b4bc3615a58633bc", null
       ],
    [ "addComplexDomain", "class_go_1_1_sf_self_intersector.html#a2607f572f485a4eb9fa9303d9a62e6da", null ]
      ,
    [ "checkCoincidence", "class_go_1_1_sf_self_intersector.html#ab26ef10d07b7fa0d67207872ca61e3ac", null ]
      ,
    [ "complexityReduced", "class_go_1_1_sf_self_intersector.html#a85f403cf97c1a8b8302fa747b25f71bf", null
      ],
    [ "compute", "class_go_1_1_sf_self_intersector.html#a960f75b41c6b74c3bdc7f648e5c4b4fe", null ],
    [ "computeG1", "class_go_1_1_sf_self_intersector.html#a858ae1504bd971f811fb753b44f3d58b", null ],
    [ "doSubdivide", "class_go_1_1_sf_self_intersector.html#ac19c3db16d630fadde0dd9a2c5a163cf", null ],
    [ "getBoundaryIntersections", "class_go_1_1_sf_self_intersector.html#a8f85396926b50fce8576df5db562c9bd"
      , null ],
    [ "getNmbComplexDomain", "class_go_1_1_sf_self_intersector.html#acd33e130f0cd93696e1a1403921bbc88",
      null ],
    [ "getNonSelfintersecting", "class_go_1_1_sf_self_intersector.html#aa938d6e5d5a8dca7480f27d976a60358",
      null ],
    [ "handleComplexity", "class_go_1_1_sf_self_intersector.html#a10116a1fb0208e84f11096c6b620f4d3", null ]
      ,
```

```
    [ "isLinear", "class_go_1_1_sf_self_intersector.html#afb7774dd883c4ef72df3e90d88099a9f", null ],
    [ "isSelfIntersection", "class_go_1_1_sf_self_intersector.html#a0b8581f4298ef335817492d26b3d6bdb", null
      ],
    [ "linearCase", "class_go_1_1_sf_self_intersector.html#a8837d1aabd305fde4e348cf69ea3ddbe", null ],
    [ "microCase", "class_go_1_1_sf_self_intersector.html#a68c79e3acda0e303715607c82341f6f7", null ],
    [ "numParams", "class_go_1_1_sf_self_intersector.html#a473fd548a0e9b7e5fed70033fd048ba7", null ],
    [ "performInterception", "class_go_1_1_sf_self_intersector.html#ab5eb703e184e265bb0403a1cf388efe3",
      null ],
    [ "print_objs", "class_go_1_1_sf_self_intersector.html#a1da8df452bde7d8b7c75f01b9dd5f371", null ],
    [ "printDebugInfo", "class_go_1_1_sf_self_intersector.html#a3d6fa6e97cd99b62b3a640584f78a38d", null ],
    [ "repairIntersections", "class_go_1_1_sf_self_intersector.html#a9ddbaa701f5f07b6548cbe4ad9562f77",
      null ],
    [ "setMaxRec", "class_go_1_1_sf_self_intersector.html#a380314647ff6707a6d4bc8b47a5731f8", null ],
    [ "simpleCase", "class_go_1_1_sf_self_intersector.html#a7728685ee6435b631a0a18f32614e51c", null ],
    [ "updateIntersections", "class_go_1_1_sf_self_intersector.html#ae57a60093ced3c944dd989cf295955e4",
      null ]
]
```

Definition at line 1 of file class_go_1_1_sf_self_intersector.js.

30.386 doc/html/class_go_1_1_sf_sf_intersector.js File Reference

Variables

- var class_go_1_1_sf_sf_intersector

30.386.1 Variable Documentation

30.386.1.1 var class_go_1_1_sf_sf_intersector

Definition at line 1 of file class_go_1_1_sf_sf_intersector.js.

30.387 doc/html/class_go_1_1_sf_solution.js File Reference

Variables

- var class_go_1_1_sf_solution

30.387.1 Variable Documentation

30.387.1.1 var class_go_1_1_sf_solution

Definition at line 1 of file class_go_1_1_sf_solution.js.

30.388 doc/html/class_go_1_1_singularity_info.js File Reference

Variables

- var class_go_1_1_singularity_info

30.388.1 Variable Documentation

30.388.1.1 var class_go_1_1_singularity_info

Initial value:

```
=
[
    [ "SingularityInfo", "class_go_1_1_singularity_info.html#a9f59b8ecc0f46dcaa8f92f2dd9a496fb", null ],
    [ "SingularityInfo", "class_go_1_1_singularity_info.html#a5ac06c970d1fa621f89f621fd7ea9b8d", null ],
    [ "SingularityInfo", "class_go_1_1_singularity_info.html#a7186becaa454a4e63d10dfc09b656cae", null ],
    [ "addIterationCount", "class_go_1_1_singularity_info.html#a9d97fbed7caf7832d2052aa6890084af", null ],
    [ "addSimpleCount", "class_go_1_1_singularity_info.html#a00e6fa1617e6737f8339d0b2188603d2", null ],
    [ "addSingularPoint", "class_go_1_1_singularity_info.html#ac620460320aadd62d78d6ca148037cf3", null ],
    [ "cleanUp", "class_go_1_1_singularity_info.html#a9469003aba26ccecc140cbd686fbeffb", null ],
    [ "getHighPriSing", "class_go_1_1_singularity_info.html#a4ba9c54f65cfa62649356c94edc44053", null ],
    [ "getHighPriSing", "class_go_1_1_singularity_info.html#a78e8baed1532507502a8830e5685d28c", null ],
    [ "getNmbPoints", "class_go_1_1_singularity_info.html#ac96ed326e4d316ccb6fcedbd426a2b51", null ],
    [ "getParam", "class_go_1_1_singularity_info.html#a54fb1464f75d0015f25608050197a5d0", null ],
    [ "getPoint", "class_go_1_1_singularity_info.html#a1c0dad3c017e250db65608b68180aefd", null ],
    [ "hasHighPriSing", "class_go_1_1_singularity_info.html#a65a274b95eeb3096cbc51e66bcc5e817", null ],
    [ "hasPoint", "class_go_1_1_singularity_info.html#a96c00aa4f624a8cbf211f8d89fb02edb", null ],
    [ "iterationDone", "class_go_1_1_singularity_info.html#acb6bbfc680a27d94c7f35e74179093ff", null ],
    [ "iterationSucceed", "class_go_1_1_singularity_info.html#aab4c59c2815c462f7cb638cb7daac11a", null ],
    [ "nmbSimple1", "class_go_1_1_singularity_info.html#a10bd21a92cdd61718650f03e77ceb8ad", null ],
    [ "nmbSimple2", "class_go_1_1_singularity_info.html#ad918021f37a1f0c960e816f55f443fa6", null ],
    [ "setHighPriSing", "class_go_1_1_singularity_info.html#a0f2381178f0bc334f9e75208e06cfe12", null ],
    [ "setHighPriSingType", "class_go_1_1_singularity_info.html#ac1ae9e7f6860f0d5b6d37bc2d07dc194", null ],
    [ "setSingularPoint", "class_go_1_1_singularity_info.html#ad57cff2b86dc536b5f6bf5d3d7fa9ce5", null ]
]
```

Definition at line 1 of file class_go_1_1_singularity_info.js.

30.389 doc/html/class_go_1_1_smooth_curve.js File Reference

Variables

- var class_go_1_1_smooth_curve

30.389.1 Variable Documentation

30.389.1.1 var class_go_1_1_smooth_curve

Initial value:

```
=
[
    [ "SmoothCurve", "class_go_1_1_smooth_curve.html#afa997891fc729c75c15e7d51fb696f7e", null ],
    [ "~SmoothCurve", "class_go_1_1_smooth_curve.html#af462faaecc2dec14fe83a50e8ecaa7f6", null ],
    [ "attach", "class_go_1_1_smooth_curve.html#af8827ed574dd9b6396c81c2686e7621f", null ],
    [ "equationSolve", "class_go_1_1_smooth_curve.html#a9ec9db6e387593e2a2c1357bb21a0d1f", null ],
    [ "setLeastSquares", "class_go_1_1_smooth_curve.html#a4315d10efe2bff4647aaca76368ac360", null ],
    [ "setOptim", "class_go_1_1_smooth_curve.html#a6a0621a4371cc0a8204f793395029981", null ],
    [ "setPeriodicity", "class_go_1_1_smooth_curve.html#a9af91497da714d4c282f3fd662f7c623", null ],
    [ "setSideConstraints", "class_go_1_1_smooth_curve.html#a8712b606e347145b7e1b0d7aa23c9d13", null ]
]
```

Definition at line 1 of file class_go_1_1_smooth_curve.js.

30.390 doc/html/class_go_1_1_smooth_curve_set.js File Reference

Variables

- var class_go_1_1_smooth_curve_set

30.390.1 Variable Documentation

30.390.1.1 var class_go_1_1_smooth_curve_set

Initial value:

```
=
[
    [ "SmoothCurveSet", "class_go_1_1_smooth_curve_set.html#ab1c06166e4ff97daad32cc9bd5aaab4a", null ],
    [ "~SmoothCurveSet", "class_go_1_1_smooth_curve_set.html#aa800dae0c9d242c0b20297614cc51935", null ],
    [ "attach", "class_go_1_1_smooth_curve_set.html#a3e52c06a3d2731e5e74cec22b8b7a105", null ],
    [ "equationSolve", "class_go_1_1_smooth_curve_set.html#af0dc5d9c6876b8ad40a7e501856028cd", null ],
    [ "setApproxOrig", "class_go_1_1_smooth_curve_set.html#a3100515e453d2583013952882fc3f3ae", null ],
    [ "setApproxSideConstraints", "class_go_1_1_smooth_curve_set.html#a219153549040f251397b83070de38d1f",
      null ],
    [ "setCvSetConstraints", "class_go_1_1_smooth_curve_set.html#a80a2995a97446fabc7b5688e12ed5a55", null ]
    ,
    [ "setInterpolationConditions", "class_go_1_1_smooth_curve_set.html#adcbb3725d37a4baca1e8aae285b62407",
       null ],
    [ "setLeastSquares", "class_go_1_1_smooth_curve_set.html#ac547146ba45d1708ccb203c71d3dc2b2", null ],
    [ "setOptimize", "class_go_1_1_smooth_curve_set.html#a87a858d3333ea8ce25bc78bb390cfcba", null ],
    [ "setOrthCond", "class_go_1_1_smooth_curve_set.html#a96c9878fc673ae367d5f6bc9b8276e85", null ],
    [ "setSideConstraints", "class_go_1_1_smooth_curve_set.html#a1a90097414632550addc5a8726264bcb", null ]
]
```

Definition at line 1 of file class_go_1_1_smooth_curve_set.js.

30.391 doc/html/class_go_1_1_smooth_surf.js File Reference

Variables

- var class_go_1_1_smooth_surf

30.391.1 Variable Documentation

30.391.1.1 var class_go_1_1_smooth_surf

Definition at line 1 of file class_go_1_1_smooth_surf.js.

30.392 doc/html/class_go_1_1_smooth_surf_set.js File Reference

Variables

- var class_go_1_1_smooth_surf_set

30.392.1 Variable Documentation

30.392.1.1 var class_go_1_1_smooth_surf_set

Initial value:

```
=
[
    [ "SmoothSurfSet", "class_go_1_1_smooth_surf_set.html#adb08dff7bccd990ed1eb86a61e493d7c", null ],
    [ "SmoothSurfSet", "class_go_1_1_smooth_surf_set.html#a56a91451a7169ae7d482d77bd5c6f122", null ],
    [ "~SmoothSurfSet", "class_go_1_1_smooth_surf_set.html#a6dbdecfb93357dffa803363e6df733d1", null ],
    [ "approxOrig", "class_go_1_1_smooth_surf_set.html#a0ec9042766eed55423b805d4c057f47a", null ],
    [ "attach", "class_go_1_1_smooth_surf_set.html#a8e2c19721cef02da423a6f73118db412", null ],
    [ "equationSolve", "class_go_1_1_smooth_surf_set.html#a1a6aee6aeb5d6dcc04fa8922b34aa611", null ],
    [ "getBasis", "class_go_1_1_smooth_surf_set.html#a2b762aa31a7566841e8833622f17bf46", null ],
    [ "setApproxSideConstraints", "class_go_1_1_smooth_surf_set.html#aa558e24ac46b2f9cef5c5eb495f4cf22",
      null ],
    [ "setLeastSquares", "class_go_1_1_smooth_surf_set.html#aec7cae351a4dcd6998f4b076d4847b75", null ],
    [ "setNormalCond", "class_go_1_1_smooth_surf_set.html#a57998100f559697262419a2d61aa724b", null ],
    [ "setOptimize", "class_go_1_1_smooth_surf_set.html#a21fd1b98cea633463871448d2c4bb6ce", null ],
    [ "setSideConstraints", "class_go_1_1_smooth_surf_set.html#ad7d25ee1d9ca1638678b7bd7436454d3", null ],
    [ "coef_array_", "class_go_1_1_smooth_surf_set.html#a502c7f2a3b6baaf699faa76628b78fd4", null ],
    [ "coef_known_", "class_go_1_1_smooth_surf_set.html#a513e1c358f983184c48594b199214431", null ],
    [ "copy_coefs_", "class_go_1_1_smooth_surf_set.html#a0a8877e05ec6b51709dbd3a1d1089aee", null ],
    [ "gmat_", "class_go_1_1_smooth_surf_set.html#ad1e20276ff25cfde6a017b252adf9a0d", null ],
    [ "gright_", "class_go_1_1_smooth_surf_set.html#abb8d17ab393b7f693037d20085d694cd", null ],
    [ "ider_", "class_go_1_1_smooth_surf_set.html#a9cd4f276e32e6b8a8af0f717f1d73ecc", null ],
    [ "idim1_", "class_go_1_1_smooth_surf_set.html#a6bc8ed2b7ed1be18453f2a33078ec191", null ],
    [ "idim_", "class_go_1_1_smooth_surf_set.html#ad0418ef35691b72afb35924f95b211cc", null ],
    [ "kdim_", "class_go_1_1_smooth_surf_set.html#a16650b6975a4aaf03bf49ccd70a973e1", null ],
    [ "kncond_", "class_go_1_1_smooth_surf_set.html#aa530cc21c18294d89efb3e986b5f1ad3", null ],
    [ "knconstraint_", "class_go_1_1_smooth_surf_set.html#ab4b15fa0722035377b4651a00d147e5f", null ],
    [ "pivot_", "class_go_1_1_smooth_surf_set.html#a6bc1e1268bfded5066fb14ad898ecfa5", null ],
    [ "srfs_", "class_go_1_1_smooth_surf_set.html#a8f87da302f483b02568e3eda83659f96", null ]
]
```

Definition at line 1 of file class_go_1_1_smooth_surf_set.js.

30.393 doc/html/class_go_1_1_smooth_transition.js File Reference

Variables

- var class_go_1_1_smooth_transition

30.393.1 Variable Documentation

30.393.1.1 var class_go_1_1_smooth_transition

Initial value:

```
=
[
    [ "SmoothTransition", "class_go_1_1_smooth_transition.html#ac9d86a12ebaf5d3ca69cdc0c6597e40b", null ],
    [ "~SmoothTransition", "class_go_1_1_smooth_transition.html#a05192f1a013464642634c41f237b6ab1", null ],
    [ "approximationOK", "class_go_1_1_smooth_transition.html#a2da0b7a28bbaae2d1718bfbf9ea1b054", null ],
    [ "dim", "class_go_1_1_smooth_transition.html#a8340dbd93a462b989b31cb09d7ab1287", null ],
    [ "end", "class_go_1_1_smooth_transition.html#ac5f27b776ad38a26b224ec780b59f00d", null ],
    [ "eval", "class_go_1_1_smooth_transition.html#a9dec775aeea43960e2f31389536c020d", null ],
    [ "eval", "class_go_1_1_smooth_transition.html#a3014fd12933c038db7eb267fbed90b50", null ],
    [ "nmbCvs", "class_go_1_1_smooth_transition.html#a1f4a21968fb3891636dfbce556dd0889", null ],
    [ "start", "class_go_1_1_smooth_transition.html#aaeea6284f240bf81a519ce02a117dc10", null ]
]
```

Definition at line 1 of file class_go_1_1_smooth_transition.js.

30.394 doc/html/class_go_1_1_smooth_volume.js File Reference

Variables

- var class_go_1_1_smooth_volume

30.394.1 Variable Documentation

30.394.1.1 var class_go_1_1_smooth_volume

Initial value:

```
=
[
    [ "SmoothVolume", "class_go_1_1_smooth_volume.html#ab36c61f3ee1035f33e73f33950fd901c", null ],
    [ "SmoothVolume", "class_go_1_1_smooth_volume.html#a323d38d3a85eb6ba7dbf4f6f5162c7e0", null ],
    [ "~SmoothVolume", "class_go_1_1_smooth_volume.html#a4fd31d89cef318c5e2ab15ca9f7f361d", null ],
    [ "attach", "class_go_1_1_smooth_volume.html#ae184d6e53a42c286ec7c8e657decbe71", null ],
    [ "equationSolve", "class_go_1_1_smooth_volume.html#ac673b1170a398dae4375eeee9a79b0e9", null ],
    [ "reset", "class_go_1_1_smooth_volume.html#ad4d7ccb13cee80f696a0e13b2f6e71e0", null ],
    [ "setLeastSquares", "class_go_1_1_smooth_volume.html#a23f0583c789f13276efcea7fe4ba29ff", null ],
    [ "setOptimize", "class_go_1_1_smooth_volume.html#a46f42b0dc67d40329c991e2e77dbbc5c", null ],
    [ "setPeriodicity", "class_go_1_1_smooth_volume.html#a03b396a1f59e001d04d0ed05dc26b2fc", null ]
]
```

Definition at line 1 of file class_go_1_1_smooth_volume.js.

30.395 doc/html/class_go_1_1_solve_b_c_g.js File Reference

Variables

- var class_go_1_1_solve_b_c_g

30.395.1 Variable Documentation

30.395.1.1 var class_go_1_1_solve_b_c_g

Initial value:

```
=
[
    [ "SolveBCG", "class_go_1_1_solve_b_c_g.html#a95775031e0ba5483999cb9232ffdcd26", null ],
    [ "~SolveBCG", "class_go_1_1_solve_b_c_g.html#a6a286f7629218dcafd7405d0550a6d5f", null ],
    [ "precond", "class_go_1_1_solve_b_c_g.html#aab460752091a97b5e71ee1b1f347a17f", null ],
    [ "solve", "class_go_1_1_solve_b_c_g.html#afd42fc309a7bc7a560d2d8a81b7122e3", null ]
]
```

Definition at line 1 of file class_go_1_1_solve_b_c_g.js.

30.396 doc/html/class_go_1_1_solve_c_g.js File Reference

Variables

- var class_go_1_1_solve_c_g

30.396.1 Variable Documentation

30.396.1.1 var class_go_1_1_solve_c_g

Initial value:

```
=
[
    [ "SolveCG", "class_go_1_1_solve_c_g.html#afb6a00eaa7eaba2769d150cd6a2cee41", null ],
    [ "~SolveCG", "class_go_1_1_solve_c_g.html#a252ba2c8835b8bb120108e0a1ed9dcbe", null ],
    [ "attachMatrix", "class_go_1_1_solve_c_g.html#a38cc2291f0077b8a4450256c4a2583fb", null ],
    [ "forwBack", "class_go_1_1_solve_c_g.html#ab6a1730362dbd3d7fe17e0be0222876b", null ],
    [ "getIndex", "class_go_1_1_solve_c_g.html#a9407314f95f0213a2f2d83a743197789", null ],
    [ "matrixProduct", "class_go_1_1_solve_c_g.html#a5f9f78040e15ebb974d1f5634589e54d", null ],
    [ "precondRILU", "class_go_1_1_solve_c_g.html#a219af16e5a129711e165e45151db4947", null ],
    [ "printPrecond", "class_go_1_1_solve_c_g.html#ada542105c2a69c44a542729aa5b3b64d", null ],
    [ "setMaxIterations", "class_go_1_1_solve_c_g.html#ac713f643a8bf5856af40e6779e8e7a85", null ],
    [ "setTolerance", "class_go_1_1_solve_c_g.html#a9e5aff10de6c1125c4de120aecf6ea3b", null ],
    [ "solve", "class_go_1_1_solve_c_g.html#a7d29fb9ae4fbae0c9ae50d8aed46ea0b", null ],
    [ "solveRILU", "class_go_1_1_solve_c_g.html#ace35787c89741236cef838423d3c022c", null ],
    [ "solveStd", "class_go_1_1_solve_c_g.html#a36f1fe62558ae9b76ca764caf28a75b5", null ],
    [ "transposedMatrixProduct", "class_go_1_1_solve_c_g.html#a5eed0d88e65581da9f97632998084e97", null ],
    [ "A_", "class_go_1_1_solve_c_g.html#a3de1a62612cb883f2f7af53f13057fd7", null ],
    [ "diagonal_", "class_go_1_1_solve_c_g.html#ac8ae0582fc46b18fcbba1257abdc3f37", null ],
    [ "diagset_", "class_go_1_1_solve_c_g.html#afbd7021a161b7500c76bd32d8dd8e7ec", null ],
    [ "irow_", "class_go_1_1_solve_c_g.html#a8331b9396a655ff1ffcc5770b48665eb", null ],
    [ "jcol_", "class_go_1_1_solve_c_g.html#a5718e8d392c16f9adfc2b1c2147b8c8f", null ],
    [ "M_", "class_go_1_1_solve_c_g.html#ac8ef49ab38d13d40f19874a80534d645", null ],
    [ "max_iterations_", "class_go_1_1_solve_c_g.html#a8d84c3337b466ea8a2935b3a63fa95f7", null ],
    [ "nn_", "class_go_1_1_solve_c_g.html#af771970e012471d59d9158e0138cc943", null ],
    [ "np_", "class_go_1_1_solve_c_g.html#af30c8e220d9e4c7285e446d71161e6ff", null ],
    [ "omega_", "class_go_1_1_solve_c_g.html#a895bee6e49c4b8bfefdde37741693433", null ],
    [ "tolerance_", "class_go_1_1_solve_c_g.html#a285f20e1f80b1c792914b35ed926e464", null ]
]
```

Definition at line 1 of file class_go_1_1_solve_c_g.js.

30.397 doc/html/class_go_1_1_solve_c_g_c_o.js File Reference

Variables

- var class_go_1_1_solve_c_g_c_o

30.397.1 Variable Documentation

30.397.1.1 var class_go_1_1_solve_c_g_c_o

Initial value:

```
=
[
    [ "SolveCGCO", "class_go_1_1_solve_c_g_c_o.html#a2a2fb754327fd23316c826fb7cd9bce0", null ],
    [ "~SolveCGCO", "class_go_1_1_solve_c_g_c_o.html#a1200ae5180d1bb549d3a4dc46108e79e", null ],
    [ "precondRILU", "class_go_1_1_solve_c_g_c_o.html#a11595655ce535ab77b037c70370e07e0", null ]
]
```

Definition at line 1 of file class_go_1_1_solve_c_g_c_o.js.

30.398 doc/html/class_go_1_1_space_int_crv.js File Reference

Variables

- var class_go_1_1_space_int_crv

30.398.1 Variable Documentation

30.398.1.1 var class_go_1_1_space_int_crv

Initial value:

```
=
[
    [ "SpaceIntCrv", "class_go_1_1_space_int_crv.html#aac5ae41720a39f76fae66def168e0f34", null ],
    [ "~SpaceIntCrv", "class_go_1_1_space_int_crv.html#a3b1f2c843cbb4819924654a30acd953b", null ],
    [ "approximationOK", "class_go_1_1_space_int_crv.html#a5378ef678a717768958de4c974d200f0", null ],
    [ "dim", "class_go_1_1_space_int_crv.html#ad0f940e4e1ef71cc46cb8f575dd29173", null ],
    [ "end", "class_go_1_1_space_int_crv.html#afd98ec991b60b68feb1ec9f79ba30dcc", null ],
    [ "eval", "class_go_1_1_space_int_crv.html#ab9a922c9e907889610ba88f507340ed3", null ],
    [ "eval", "class_go_1_1_space_int_crv.html#a52581fc9d01325d625eff7e90fd5ad23", null ],
    [ "start", "class_go_1_1_space_int_crv.html#a76ac6fd8de4800f53e2e29670e56737f", null ]
]
```

Definition at line 1 of file class_go_1_1_space_int_crv.js.

30.399 doc/html/class_go_1_1_sphere.js File Reference

Variables

- var class_go_1_1_sphere

30.399.1 Variable Documentation

30.399.1.1 var class_go_1_1_sphere

Definition at line 1 of file class_go_1_1_sphere.js.

30.400 doc/html/class_go_1_1_sphere_int.js File Reference

Variables

- var class_go_1_1_sphere_int

30.400.1 Variable Documentation

30.400.1.1 var class_go_1_1_sphere_int

Initial value:

```
=
[
    [ "SphereInt", "class_go_1_1_sphere_int.html#ae7cc09fbdbe552545e302b764aa89c28", null ],
    [ "SphereInt", "class_go_1_1_sphere_int.html#ad0240982e2c5359a8cdaaeeb6148e874", null ],
    [ "~SphereInt", "class_go_1_1_sphere_int.html#a482fe2bb316a6f3acc0b5aaa58e00c28", null ],
    [ "center", "class_go_1_1_sphere_int.html#aa9bd1fdc153147b5811610bff1e8af4b", null ],
    [ "radius", "class_go_1_1_sphere_int.html#abb8450f4ca8990149d73b1eea2f3015d", null ],
    [ "read", "class_go_1_1_sphere_int.html#a0bfbff9d7fd3639303e1deb0fda46d57", null ],
    [ "surface", "class_go_1_1_sphere_int.html#a95e1198a35b5a37f2859f7b57b8561eb", null ]
]
```

Definition at line 1 of file class_go_1_1_sphere_int.js.

30.401 doc/html/class_go_1_1_sphere_volume.js File Reference

Variables

- var class_go_1_1_sphere_volume

30.401.1 Variable Documentation

30.401.1.1 var class_go_1_1_sphere_volume

Initial value:

```
=
[
    [ "SphereVolume", "class_go_1_1_sphere_volume.html#a9dc16295cadf204488037a6150eff3d9", null ],
    [ "SphereVolume", "class_go_1_1_sphere_volume.html#ab90843ec3286e9bcb9ddc7370ecf8d22", null ],
    [ "~SphereVolume", "class_go_1_1_sphere_volume.html#a640957dd5250d634ab62b26ffab9f215", null ],
    [ "boundingBox", "class_go_1_1_sphere_volume.html#a270f903cd3b8e089d3a675fd6f49a13f", null ],
    [ "clone", "class_go_1_1_sphere_volume.html#ad45ef3f270b63649b5845db77ef359c2", null ],
    [ "closestPoint", "class_go_1_1_sphere_volume.html#ab74c0aeea8fc5058b027ae5988546b4f", null ],
    [ "dimension", "class_go_1_1_sphere_volume.html#acc766755a92f0aa8bc9775391fd96236", null ],
    [ "geometryVolume", "class_go_1_1_sphere_volume.html#a0b1bdd00aab5d0aca43f23703c421c2f", null ],
    [ "getAllBoundarySurfaces", "class_go_1_1_sphere_volume.html#a892d1585351de32b9821b007f430adb1", null ]
    ,
    [ "instanceType", "class_go_1_1_sphere_volume.html#a4aa5be5278afe92f64363a2f4f5ba06a", null ],
    [ "nextSegmentVal", "class_go_1_1_sphere_volume.html#aef2daa2809a336204eb23e0fa7eec994", null ],
    [ "parameterSpan", "class_go_1_1_sphere_volume.html#a55310ecd2f752023b347cccd32490240", null ],
    [ "point", "class_go_1_1_sphere_volume.html#a80097f92d21d95203b08963d77e19ddf", null ],
    [ "point", "class_go_1_1_sphere_volume.html#a386ad949073f0d00007d37a8a207aa14", null ],
    [ "read", "class_go_1_1_sphere_volume.html#a5c808dfd3cdab6319034a20cdc0b286b", null ],
    [ "reverseParameterDirection", "class_go_1_1_sphere_volume.html#a9370080898f867930b91f1f7d2be420e",
      null ],
    [ "swapParameterDirection", "class_go_1_1_sphere_volume.html#adc04ac96070f95360e8fc43f98491562", null ]
    ,
    [ "tangentCone", "class_go_1_1_sphere_volume.html#a6f5a787cfa1abfd98de924e4dc36f262", null ],
    [ "translate", "class_go_1_1_sphere_volume.html#a6d0fe28f10cb283757ba6fda1e29e6d6", null ],
    [ "write", "class_go_1_1_sphere_volume.html#af39ffdf622b868ef6cc6d7915b28bade", null ]
]
```

Definition at line 1 of file class_go_1_1_sphere_volume.js.

30.402 doc/html/class_go_1_1_spline1_function_int.js File Reference

Variables

- var class_go_1_1_spline1_function_int

30.402.1 Variable Documentation

30.402.1.1 var class_go_1_1_spline1_function_int

Initial value:

```
=
[
    [ "Spline1FunctionInt", "class_go_1_1_spline1_function_int.html#a2c6d8568c778780eaa59b52c993984eb",
      null ],
    [ "Spline1FunctionInt", "class_go_1_1_spline1_function_int.html#a5fed7ec6319a7066360ef881c20d2ced",
      null ],
    [ "~Spline1FunctionInt", "class_go_1_1_spline1_function_int.html#a39a1398bcb5c34569b2a1f6eaf9c9873",
      null ],
    [ "getCriticalValsAndKnots", "class_go_1_1_spline1_function_int.html#af1c3bd9b79e881b04bd750edfb63cff4"
      , null ],
    [ "getInnerKnotVals", "class_go_1_1_spline1_function_int.html#ab3b8861e222f919911bb8cb4ca63dce5", null
      ],
    [ "getMesh", "class_go_1_1_spline1_function_int.html#afabb39444f6cf87ab6b8f99a7148f7e4", null ],
    [ "getMeshSize", "class_go_1_1_spline1_function_int.html#a5bedbf83800128fa9b3bdcaecf4868c3", null ],
    [ "hasCriticalValsOrKnots", "class_go_1_1_spline1_function_int.html#aa9c57b16305da4da62cda9719346defc",
       null ],
    [ "hasInnerKnots", "class_go_1_1_spline1_function_int.html#a4d9497d0e8cf61630cdf06ee5cb5c81f", null ],
    [ "knotIntervalFuzzy", "class_go_1_1_spline1_function_int.html#ae54cff5b82d26a4171300d8fbb3de2d8", null
       ],
    [ "makeIntFunction", "class_go_1_1_spline1_function_int.html#af16f6194cdf0ce72d9ae949035610c99", null ]
    ,
    [ "monotone", "class_go_1_1_spline1_function_int.html#ad050f3ae8c56910a289edb8803a2f67b", null ],
    [ "nextSegmentVal", "class_go_1_1_spline1_function_int.html#a3b8fba9596b7a15cbc111842a8f18eec", null ],
    [ "paramFromMesh", "class_go_1_1_spline1_function_int.html#ae4fdec921bf54d84215f37f429a4cf8e", null ],
    [ "spcv_", "class_go_1_1_spline1_function_int.html#ad6c174a54dea53f965539d968cc4bf41", null ]
]
```

Definition at line 1 of file class_go_1_1_spline1_function_int.js.

30.403 doc/html/class_go_1_1_spline2_function_int.js File Reference

Variables

- var class_go_1_1_spline2_function_int

30.403.1 Variable Documentation

30.403.1.1 var class_go_1_1_spline2_function_int

Initial value:

```
=
[
    [ "Spline2FunctionInt", "class_go_1_1_spline2_function_int.html#a4d564c97b16b1d64d7559c034be3669e",
      null ],
    [ "Spline2FunctionInt", "class_go_1_1_spline2_function_int.html#aba434cf4df79a3bc591e92bef0f7018b",
      null ],
    [ "~Spline2FunctionInt", "class_go_1_1_spline2_function_int.html#a4bba6d6032510758566a41f8f18a36d5",
      null ],
    [ "createGradSurface", "class_go_1_1_spline2_function_int.html#adb0cc518cd429dc5cdd18087a2ae3ce6", null
      ],
    [ "endParam", "class_go_1_1_spline2_function_int.html#a5c49dc316446c1522954af89cc16cdc8", null ],
    [ "getBoundaryObjects", "class_go_1_1_spline2_function_int.html#a246f53cdce46d0fe36de82587cbcf82b",
      null ],
    [ "getCriticalValsAndKnots", "class_go_1_1_spline2_function_int.html#a7a82482309720707001c78e86dc6c18b"
      , null ],
    [ "getInnerKnotVals", "class_go_1_1_spline2_function_int.html#a418ef2e18dc5f1564a1cfda136b22831", null
      ],
    [ "hasCriticalValsOrKnots", "class_go_1_1_spline2_function_int.html#af76103f813d05c0f6a8fddfbab62f8ec",
      null ],
    [ "hasInnerKnots", "class_go_1_1_spline2_function_int.html#a7d1177a5519455fdbb360963715b58e9", null ],
    [ "knotIntervalFuzzy", "class_go_1_1_spline2_function_int.html#a7229f63cd797e93f4aed7b4f3f8650ba", null
      ],
    [ "makeIntFunction", "class_go_1_1_spline2_function_int.html#ac3c433d64c98fa115ab59934fd35d886", null ]
    ,
    [ "monotone", "class_go_1_1_spline2_function_int.html#a97f28f20e0f89e748ec2141838eccf1e", null ],
    [ "nextSegmentVal", "class_go_1_1_spline2_function_int.html#ab5e6f71b156eea6e5b04a5d54e58daec", null ],
    [ "startParam", "class_go_1_1_spline2_function_int.html#aff91e09e7bf96b3c430071483dc14a72", null ],
    [ "surface3D", "class_go_1_1_spline2_function_int.html#a4996265954c03b57d1ba94bec7f75f95", null ],
    [ "spsf_", "class_go_1_1_spline2_function_int.html#a495b8863489c0c6cf28eb861263f8281", null ]
]
```

Definition at line 1 of file class_go_1_1_spline2_function_int.js.

30.404 doc/html/class_go_1_1_spline_approximator.js File Reference

Variables

- var class_go_1_1_spline_approximator

30.404.1 Variable Documentation

30.404.1.1 var class_go_1_1_spline_approximator

Initial value:

```
=
[
    [ "SplineApproximator", "class_go_1_1_spline_approximator.html#a8b17f58e863857c7b4e6f9d754558fc4", null
      ],
    [ "~SplineApproximator", "class_go_1_1_spline_approximator.html#a997b02a8ab659082a8f1a9081a6a0536",
      null ],
    [ "basis", "class_go_1_1_spline_approximator.html#a13933317f34367974941c838d3d4ed5c", null ],
    [ "interpolate", "class_go_1_1_spline_approximator.html#a7de87b26c84b508582a797f534dc3a7b", null ],
    [ "setNumCoefs", "class_go_1_1_spline_approximator.html#af1a5920f8f77fa41473903e6841413c6", null ],
    [ "setSplineSpace", "class_go_1_1_spline_approximator.html#a5647a74af450dc2f60719334d73ae2ba", null ]
]
```

Definition at line 1 of file class_go_1_1_spline_approximator.js.

30.405 doc/html/class_go_1_1_spline_curve.js File Reference

Variables

- var class_go_1_1_spline_curve

30.405.1 Variable Documentation

30.405.1.1 var class_go_1_1_spline_curve

Definition at line 1 of file class_go_1_1_spline_curve.js.

30.406 doc/html/class_go_1_1_spline_curve_int.js File Reference

Variables

- var class_go_1_1_spline_curve_int

30.406.1 Variable Documentation

30.406.1.1 var class_go_1_1_spline_curve_int

Initial value:

```
=
[
    [ "SplineCurveInt", "class_go_1_1_spline_curve_int.html#ad51a929635f99ec6829f5436780635bd", null ],
    [ "SplineCurveInt", "class_go_1_1_spline_curve_int.html#aa8087368a9c9584162e8379f0aba222b", null ],
    [ "~SplineCurveInt", "class_go_1_1_spline_curve_int.html#a49f3bad30d5918d43efc581daf5547cf", null ],
    [ "checkPeriodicity", "class_go_1_1_spline_curve_int.html#a0676afa57028113c50e7b468d3171a8e", null ],
    [ "getCriticalValsAndKnots", "class_go_1_1_spline_curve_int.html#a1046378d116335428f89c43757924720",
      null ],
    [ "getInnerKnotVals", "class_go_1_1_spline_curve_int.html#a1a3de5f76a1802397d9fc49324bd29c2", null ],
    [ "getMesh", "class_go_1_1_spline_curve_int.html#a18b45016c1317321050d9405b5062449", null ],
    [ "getMeshSize", "class_go_1_1_spline_curve_int.html#a67760ffce1c4ab5a496615f86793d57f", null ],
    [ "getOptimizedConeAngle", "class_go_1_1_spline_curve_int.html#af39040af24e52ba2220c8f84d4c7623e", null
      ],
    [ "getRotatedBox", "class_go_1_1_spline_curve_int.html#a67f76c52a91887640ad572bbcb99ec31", null ],
    [ "getSpline", "class_go_1_1_spline_curve_int.html#ad5054a07cc39131012f96516854a6c0d", null ],
    [ "hasCriticalValsOrKnots", "class_go_1_1_spline_curve_int.html#ad6a95462ef0764b34de570d3f96aeb06",
      null ],
    [ "hasInnerKnots", "class_go_1_1_spline_curve_int.html#af0f24e3fb1ed7abba5522a130a268ff1", null ],
    [ "isSpline", "class_go_1_1_spline_curve_int.html#a4aaefbb06506ac85d3433657f4c0d788", null ],
    [ "knotIntervalFuzzy", "class_go_1_1_spline_curve_int.html#aaccc36c235ff72d3989818aa3d99b024", null ],
    [ "makeIntObject", "class_go_1_1_spline_curve_int.html#ac9f02f98f6700b360043e574b3330827", null ],
    [ "nextSegmentVal", "class_go_1_1_spline_curve_int.html#a246edc5a71c414dd042c412aaf11cca8", null ],
    [ "paramFromMesh", "class_go_1_1_spline_curve_int.html#ac20cafe73fc3cc741579753e4fa47748", null ],
    [ "spcv_", "class_go_1_1_spline_curve_int.html#a2b22620d48228bf1a41565f0220c9584", null ]
]
```

Definition at line 1 of file class_go_1_1_spline_curve_int.js.

30.407 doc/html/class_go_1_1_spline_interpolator.js File Reference

Variables

- var class_go_1_1_spline_interpolator

30.407.1 Variable Documentation

30.407.1.1 var class_go_1_1_spline_interpolator

Initial value:

```
=
[
    [ "CondType", "class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78", [
      [ "None", "
      class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78a02bef9ce6e415b73a3cd9fe89aace722", null ],
      [ "Hermite", "
      class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78a51b46c3d3f007d4d2ef458f51d85610c", null ],
      [ "Natural", "
      class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78a97ae16f658015873c02850158cd655fd", null ],
      [ "Free", "
      class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78abfde7d7c13ab6f25fd3025e73385e147", null ],
      [ "NaturalAtStart", "
      class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78a5b6b1f58b2d5ddefab7785b4e637e213", null ],
      [ "NaturalAtEnd", "
      class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78a94a08e9e644774498ad7e091d8535415", null ]
    ] ],
    [ "SplineInterpolator", "class_go_1_1_spline_interpolator.html#af479204f61f6910c9a1d6497c7963280", null
      ],
    [ "~SplineInterpolator", "class_go_1_1_spline_interpolator.html#a35a552cf7bd9b6d2cb25cb96c61bc90d",
      null ],
    [ "basis", "class_go_1_1_spline_interpolator.html#a440b6c23ced112a1df18c75287379ba1", null ],
    [ "getCondType", "class_go_1_1_spline_interpolator.html#a0d18b08c5d7b321c274f11ec29428f18", null ],
    [ "interpolate", "class_go_1_1_spline_interpolator.html#a719a56b88881dcaeeeeeec2c177b9526", null ],
    [ "interpolate", "class_go_1_1_spline_interpolator.html#ac3c845e4babcd0b547bbb129b1fb4f58", null ],
    [ "interpolate", "class_go_1_1_spline_interpolator.html#a2cbea93b5c2bbdb028d96aba219bc6f9", null ],
    [ "makeBasis", "class_go_1_1_spline_interpolator.html#abd5d723fd648cbcb546a7a40930e98c1", null ],
    [ "setBasis", "class_go_1_1_spline_interpolator.html#a0a6bbc78efd2a6d0976cc7395dafeaf0", null ],
    [ "setEndTangents", "class_go_1_1_spline_interpolator.html#a53357524e94a651351d5b35684595452", null ],
    [ "setFreeConditions", "class_go_1_1_spline_interpolator.html#a38f8655b7996cfc6326e788cc5991b43", null
      ],
    [ "setHermiteConditions", "class_go_1_1_spline_interpolator.html#a7963acba60b6c8d09b2423af655191d1",
      null ],
    [ "setNaturalConditions", "class_go_1_1_spline_interpolator.html#a2b0f0350ea2ddc78d099b095a01551ba",
      null ],
    [ "setNaturalEndCondition", "class_go_1_1_spline_interpolator.html#a79393970684c01eb300c005ee5b831ac",
      null ],
    [ "setNaturalStartCondition", "class_go_1_1_spline_interpolator.html#ada472681b18c81f58888d7abf68439e0"
      , null ]
]
```

Definition at line 1 of file class_go_1_1_spline_interpolator.js.

30.408 doc/html/class_go_1_1_spline_surface.js File Reference

Variables

- var class_go_1_1_spline_surface

30.408.1 Variable Documentation

30.408.1.1 var class_go_1_1_spline_surface

Definition at line 1 of file class_go_1_1_spline_surface.js.

30.409 doc/html/class_go_1_1_spline_surface_int.js File Reference

Variables

- var class_go_1_1_spline_surface_int

30.409.1 Variable Documentation

30.409.1.1 var class_go_1_1_spline_surface_int

Definition at line 1 of file class_go_1_1_spline_surface_int.js.

30.410 doc/html/class_go_1_1_spline_volume.js File Reference

Variables

- var class_go_1_1_spline_volume

30.410.1 Variable Documentation

30.410.1.1 var class_go_1_1_spline_volume

Definition at line 1 of file class_go_1_1_spline_volume.js.

30.411 doc/html/class_go_1_1_streamable.js File Reference

Variables

- var class_go_1_1_streamable

30.411.1 Variable Documentation

30.411.1.1 var class_go_1_1_streamable

Initial value:

```
=
[
    [ "EofException", "class_go_1_1_streamable_1_1_eof_exception.html", null ],
    [ "~Streamable", "class_go_1_1_streamable.html#aaf0c80b774e961da637d83049423e231", null ],
    [ "read", "class_go_1_1_streamable.html#a22b855f93460bfe8942090502a15fb01", null ],
    [ "write", "class_go_1_1_streamable.html#ae8180cc0ef0185251251e1e48714ad79", null ]
]
```

Definition at line 1 of file class_go_1_1_streamable.js.

30.412 doc/html/class_go_1_1_surface_assembly.js File Reference

Variables

- var class_go_1_1_surface_assembly

30.412.1 Variable Documentation

30.412.1.1 var class_go_1_1_surface_assembly

Initial value:

```
=
[
    [ "SurfaceAssembly", "class_go_1_1_surface_assembly.html#afd932cf53c41869a0ca1c762b026eee1", null ],
    [ "~SurfaceAssembly", "class_go_1_1_surface_assembly.html#a529d17a8f3e4a81be3289c3044f39c99", null ],
    [ "doTouch", "class_go_1_1_surface_assembly.html#ac6b9d0ec9a3b08740309b87dc74f3375", null ],
    [ "getNextAssembly", "class_go_1_1_surface_assembly.html#a4782048bda2526dc64ee0195759748f4", null ],
    [ "getNextSubSurface", "class_go_1_1_surface_assembly.html#a70ea748bb136dc2d63fa745a599fc17b", null ],
    [ "getNmbSubSurface", "class_go_1_1_surface_assembly.html#aacf40d4c4a29105fd4086760ee09b963", null ],
    [ "getSubSurfaceIndex", "class_go_1_1_surface_assembly.html#a265282a66502d77dd1075d89bf652f29", null ],
    [ "getUdiv", "class_go_1_1_surface_assembly.html#af832fa5d003e154e0fc57005e8bfa5c8", null ],
    [ "getVdiv", "class_go_1_1_surface_assembly.html#a7cebafe387a7619b4388b6031b5ab3ee", null ],
    [ "isInFirstAssembly", "class_go_1_1_surface_assembly.html#ad6d88d0730cbedc343dd67bc23c0e804", null ],
    [ "isInPrevAssembly", "class_go_1_1_surface_assembly.html#a19025a8731f8318d667a8896b5616861", null ],
    [ "resetAssemblyIndex", "class_go_1_1_surface_assembly.html#a16f355a2cb9cd9f591212d6421efb953", null ],
    [ "resetSubIndex", "class_go_1_1_surface_assembly.html#a7828ecf6cc02b5685265fef693044d02", null ],
    [ "subSfNeighbour", "class_go_1_1_surface_assembly.html#aad350becfdf1a86b37825e7a372057fd", null ],
    [ "touchAtSingularity", "class_go_1_1_surface_assembly.html#a7100fd21e0ab170f696bbee50e03892e", null ]
]
```

Definition at line 1 of file class_go_1_1_surface_assembly.js.

30.413 doc/html/class_go_1_1_surface_model.js File Reference

Variables

- var class_go_1_1_surface_model

30.413.1 Variable Documentation

30.413.1.1 var class_go_1_1_surface_model

Definition at line 1 of file class_go_1_1_surface_model.js.

30.414 doc/html/class_go_1_1_surface_of_linear_extrusion.js File Reference

Variables

- var class_go_1_1_surface_of_linear_extrusion

30.414.1 Variable Documentation

30.414.1.1 var class_go_1_1_surface_of_linear_extrusion

Definition at line 1 of file class_go_1_1_surface_of_linear_extrusion.js.

30.415 doc/html/class_go_1_1_surface_of_revolution.js File Reference

Variables

- var class_go_1_1_surface_of_revolution

30.415.1 Variable Documentation

30.415.1.1 var class_go_1_1_surface_of_revolution

Definition at line 1 of file class_go_1_1_surface_of_revolution.js.

30.416 doc/html/class_go_1_1_surface_on_volume.js File Reference

Variables

- var class_go_1_1_surface_on_volume

30.416.1 Variable Documentation

30.416.1.1 var class_go_1_1_surface_on_volume

Definition at line 1 of file class_go_1_1_surface_on_volume.js.

30.417 doc/html/class_go_1_1_sweep_surface_creator.js File Reference

Variables

- var class_go_1_1_sweep_surface_creator

30.417.1 Variable Documentation

30.417.1.1 var class_go_1_1_sweep_surface_creator

Initial value:

```
=
[
    [ "~SweepSurfaceCreator", "class_go_1_1_sweep_surface_creator.html#a15a2b5747aa42c90f1efe1ddaf289c30",
      null ]
]
```

Definition at line 1 of file class_go_1_1_sweep_surface_creator.js.

30.418 doc/html/class_go_1_1_sweep_volume_creator.js File Reference

Variables

- var class_go_1_1_sweep_volume_creator

30.418.1 Variable Documentation

30.418.1.1 var class_go_1_1_sweep_volume_creator

Initial value:

```
=
[
    [ "~SweepVolumeCreator", "class_go_1_1_sweep_volume_creator.html#ab6401ce96389698269ab22c171b84075",
      null ]
]
```

Definition at line 1 of file class_go_1_1_sweep_volume_creator.js.

30.419 doc/html/class_go_1_1_tesselator.js File Reference

Variables

- var class_go_1_1_tesselator

30.419.1 Variable Documentation

30.419.1.1 var class_go_1_1_tesselator

Initial value:

```
=
[
    [ "~Tesselator", "class_go_1_1_tesselator.html#a2390ddf5ca3451622eb5dd23eda35b91", null ],
    [ "tesselate", "class_go_1_1_tesselator.html#ac990c28ea9a36e37b26edd30cc523ac3", null ]
]
```

Definition at line 1 of file class_go_1_1_tesselator.js.

30.420 doc/html/class_go_1_1_test_in_domain.js File Reference

Variables

- var class_go_1_1_test_in_domain

30.420.1 Variable Documentation

30.420.1.1 var class_go_1_1_test_in_domain

Initial value:

```
=
[
    [ "argument_type", "class_go_1_1_test_in_domain.html#a5190b2f25aa4dd7d98dffa5ffc306291", null ],
    [ "result_type", "class_go_1_1_test_in_domain.html#ae3accb3874ee41024e38e02d09e63a90", null ],
    [ "TestInDomain", "class_go_1_1_test_in_domain.html#a0884e5a897b9217af52967dc2713a52c", null ],
    [ "operator()", "class_go_1_1_test_in_domain.html#a85187fdd79b35e3d79884b45cfabbc74", null ]
]
```

Definition at line 1 of file class_go_1_1_test_in_domain.js.

30.421 doc/html/class_go_1_1_torus.js File Reference

Variables

- var class_go_1_1_torus

30.421.1 Variable Documentation

30.421.1.1 var class_go_1_1_torus

Definition at line 1 of file class_go_1_1_torus.js.

30.422 doc/html/class_go_1_1_torus_volume.js File Reference

Variables

- var class_go_1_1_torus_volume

30.422.1 Variable Documentation

30.422.1.1 var class_go_1_1_torus_volume

Initial value:

```
=
[
    [ "TorusVolume", "class_go_1_1_torus_volume.html#a0c3dc4910d48a2a9d1450b19be226d7c", null ],
    [ "TorusVolume", "class_go_1_1_torus_volume.html#a516fdfbcade6037b9879f657f9ace662", null ],
    [ "~TorusVolume", "class_go_1_1_torus_volume.html#ab336a8d113ebd8f59f782b036f98d364", null ],
    [ "boundingBox", "class_go_1_1_torus_volume.html#a4335419037adac3514e85a55ebe0b109", null ],
    [ "clone", "class_go_1_1_torus_volume.html#a1ff48a493a6c5996a7520ef218f010c0", null ],
    [ "closestPoint", "class_go_1_1_torus_volume.html#af674b7b73d3ed5094f40036a652a7962", null ],
    [ "dimension", "class_go_1_1_torus_volume.html#a4fd9bd42fc92d18308f835492dca6dde", null ],
    [ "geometryVolume", "class_go_1_1_torus_volume.html#aeb2024c1909972c22fde6a19bd4b2b7d", null ],
    [ "getAllBoundarySurfaces", "class_go_1_1_torus_volume.html#a10fcdd38505a34d65d94fb2b21c88342", null ],
    [ "instanceType", "class_go_1_1_torus_volume.html#a9ca9cdb4f81f3d50ed4ea8706ffc7dd0", null ],
    [ "nextSegmentVal", "class_go_1_1_torus_volume.html#af861ea80b6f06756411cb7f30c663de4", null ],
    [ "parameterSpan", "class_go_1_1_torus_volume.html#a6018ef9de8b522522f4df5dce4c05155", null ],
    [ "point", "class_go_1_1_torus_volume.html#a74901d29fd70d4753974c6839465f77a", null ],
    [ "point", "class_go_1_1_torus_volume.html#a0ad5f99df06ee7ae8ceb2ea8a8a73348", null ],
    [ "read", "class_go_1_1_torus_volume.html#a1257580f5c26ae9ee6378065bbcf9bb3", null ],
    [ "reverseParameterDirection", "class_go_1_1_torus_volume.html#aea36af2167236eb7c01a433a8b7151db", null
     ],
    [ "setParameters", "class_go_1_1_torus_volume.html#a210544afaf286644f7e98f5b3c0b918b", null ],
    [ "swapParameterDirection", "class_go_1_1_torus_volume.html#a601ce6f28a1f1738903c02e741d0ff79", null ],
    [ "tangentCone", "class_go_1_1_torus_volume.html#a4e5d384ca79038f368e5f447959407c2", null ],
    [ "translate", "class_go_1_1_torus_volume.html#a28984c3d0545a533f1990db25dd95d35", null ],
    [ "useCentreDegen", "class_go_1_1_torus_volume.html#a7c6fc62e10fc1f6e1b90b93e51698893", null ],
    [ "useCornerDegen", "class_go_1_1_torus_volume.html#a51c25ad52acb084648ea406a4bef2d23", null ],
    [ "write", "class_go_1_1_torus_volume.html#a6add375e29268f3fcfa51fb5335401b4", null ]
]
```

Definition at line 1 of file class_go_1_1_torus_volume.js.

30.423 doc/html/class_go_1_1_triangle.js File Reference

Variables

- var class_go_1_1_triangle

30.423.1 Variable Documentation

30.423.1.1 var class_go_1_1_triangle

Initial value:

```
=
[
    [ "Triangle", "class_go_1_1_triangle.html#af127a9641996c2230f101a3e5406c645", null ],
    [ "index", "class_go_1_1_triangle.html#a96b16c3ada91986b2c220b65d348cd33", null ],
    [ "setIndex", "class_go_1_1_triangle.html#ae108e05d561ebfa913a755e43dc6197f", null ]
]
```

Definition at line 1 of file class_go_1_1_triangle.js.

30.424 doc/html/class_go_1_1_trim_curve.js File Reference

Variables

- var class_go_1_1_trim_curve

30.424.1 Variable Documentation

30.424.1.1 var class_go_1_1_trim_curve

Initial value:

```
=
[
    [ "TrimCurve", "class_go_1_1_trim_curve.html#a6525211e9b874c3d27187e06d27365ab", null ],
    [ "TrimCurve", "class_go_1_1_trim_curve.html#ab22e895bf04a4aa16cb0c6c1f1881fc3", null ],
    [ "TrimCurve", "class_go_1_1_trim_curve.html#a9bb20e93689b7a98cf88acbdc3292c2c", null ],
    [ "~TrimCurve", "class_go_1_1_trim_curve.html#ad8584545d4d86980244eac16ba7f8cf2", null ],
    [ "approximationOK", "class_go_1_1_trim_curve.html#a8acd45f1699c5d978926b12c53f4e936", null ],
    [ "dim", "class_go_1_1_trim_curve.html#a7bc5bdebd06185cdfbaa6f84dc9d9776", null ],
    [ "end", "class_go_1_1_trim_curve.html#a3d558100c2f6cbe660b3dc91e0f17532", null ],
    [ "eval", "class_go_1_1_trim_curve.html#a383077ca958c414fc6c39ecde49df68f", null ],
    [ "eval", "class_go_1_1_trim_curve.html#a94b8b25ba0369b8bf01a5e18caafa7da", null ],
    [ "nmbCvs", "class_go_1_1_trim_curve.html#a529938e5cfff3d1bf3e863a80fe8ae36", null ],
    [ "start", "class_go_1_1_trim_curve.html#a7f1bb7e3edd36d68ffa4a26d1280ac19", null ]
]
```

Definition at line 1 of file class_go_1_1_trim_curve.js.

30.425 doc/html/class_go_1_1_vertex.js File Reference

Variables

- var class_go_1_1_vertex

30.425.1 Variable Documentation

30.425.1.1 var class_go_1_1_vertex

Definition at line 1 of file class_go_1_1_vertex.js.

30.426 doc/html/class_go_1_1_vol_boundary_condition.js File Reference

Variables

- var class_go_1_1_vol_boundary_condition

30.426.1 Variable Documentation

30.426.1.1 var class_go_1_1_vol_boundary_condition

Initial value:

```
=
[
    [ "VolBoundaryCondition", "class_go_1_1_vol_boundary_condition.html#a985022cb5c4455ded9c807b97572a1e7",
      null ],
    [ "VolBoundaryCondition", "class_go_1_1_vol_boundary_condition.html#a35a8cc1d5cbdc30b2325dd9454b4b5ab",
      null ],
    [ "~VolBoundaryCondition", "class_go_1_1_vol_boundary_condition.html#ad4457d87135143681c4f35d78553130f"
    , null ],
    [ "faceNumber", "class_go_1_1_vol_boundary_condition.html#a917407b5d8f423b026002d6b0f1dacc1", null ],
    [ "getBasisFunctions", "class_go_1_1_vol_boundary_condition.html#a1cbd6ba58dcc3613431f89c1f405374b",
      null ],
    [ "getBdCoefficients", "class_go_1_1_vol_boundary_condition.html#a8f27e48926dca66230faca4a63a8b71a",
      null ],
    [ "getBdCoefficients", "class_go_1_1_vol_boundary_condition.html#aad93e802e1e2c8c984b3a9fe6db27dbc",
      null ],
    [ "getCoefficientsEnumeration", "
      class_go_1_1_vol_boundary_condition.html#a6ce6cfa45df2f48eaee4b6213fa4f0e4", null ],
    [ "getCoefficientsEnumeration", "
      class_go_1_1_vol_boundary_condition.html#a3df5d53a4de859552e8ab183c978e367", null ],
    [ "getSplineApproximation", "class_go_1_1_vol_boundary_condition.html#a5fb8fdba7a405791fcea72c2ee9cff42
      ", null ],
    [ "getTolerances", "class_go_1_1_vol_boundary_condition.html#a0c2d2f72c5e91742072b3bd4f3ab08ca", null ]
    ,
    [ "update", "class_go_1_1_vol_boundary_condition.html#a26620f80a54a7abc88f5aab52436162d", null ],
    [ "updateBoundaryValue", "class_go_1_1_vol_boundary_condition.html#ad3a26eef46fb942f2e3974d49b545f09",
      null ]
]
```

Definition at line 1 of file class_go_1_1_vol_boundary_condition.js.

30.427 doc/html/class_go_1_1_vol_point_bd_cond.js File Reference

Variables

- var class_go_1_1_vol_point_bd_cond

30.427.1 Variable Documentation

30.427.1.1 var class_go_1_1_vol_point_bd_cond

Initial value:

```
=
[
    [ "VolPointBdCond", "class_go_1_1_vol_point_bd_cond.html#a64429f5f92a4ed25aee5a5fee6e6d348", null ],
    [ "~VolPointBdCond", "class_go_1_1_vol_point_bd_cond.html#a77171dab2e277ecaa9756a4fe274116d", null ],
    [ "faceNumber", "class_go_1_1_vol_point_bd_cond.html#a64e1b684ea2f63c8eeb42a1e6219cd38", null ],
    [ "getCoefficientsEnumeration", "class_go_1_1_vol_point_bd_cond.html#a38b405221f1771b32af415f34062a354"
    , null ],
    [ "getConditionValue", "class_go_1_1_vol_point_bd_cond.html#a702d0d011f48f4c14892a5f062dd25d8", null ],
    [ "getInterpolationFactors", "class_go_1_1_vol_point_bd_cond.html#af9b62460eb7dec2b616586c741d70497",
      null ],
    [ "getParam", "class_go_1_1_vol_point_bd_cond.html#a19a06569354848e104c9b9eeaa6e6a36", null ]
]
```

Definition at line 1 of file class_go_1_1_vol_point_bd_cond.js.

30.428 doc/html/class_go_1_1_vol_solution.js File Reference

Variables

- var class_go_1_1_vol_solution

30.428.1 Variable Documentation

30.428.1.1 var class_go_1_1_vol_solution

Definition at line 1 of file class_go_1_1_vol_solution.js.

30.429 doc/html/class_go_1_1_volume_adjacency.js File Reference

Variables

- var class_go_1_1_volume_adjacency

30.429.1 Variable Documentation

30.429.1.1 var class_go_1_1_volume_adjacency

Initial value:

```
=
[
    [ "VolumeAdjacency", "class_go_1_1_volume_adjacency.html#a5444a3b2c457925ca3c6b5dcc8fc5681", null ],
    [ "~VolumeAdjacency", "class_go_1_1_volume_adjacency.html#a196d094e8f0fc59610180e957b19f7c7", null ],
    [ "setAdjacency", "class_go_1_1_volume_adjacency.html#aaa0ec7940d4a1b262311c2b0686b4f29", null ],
    [ "setAdjacency", "class_go_1_1_volume_adjacency.html#a309fdde674bf6c8b2cac5da3961ad760", null ]
]
```

Definition at line 1 of file class_go_1_1_volume_adjacency.js.

30.430 doc/html/class_go_1_1_volume_model.js File Reference

Variables

- var class_go_1_1_volume_model

30.430.1 Variable Documentation

30.430.1.1 var class_go_1_1_volume_model

Definition at line 1 of file class_go_1_1_volume_model.js.

30.431 doc/html/class_go_1_1_volume_model_file_handler.js File Reference

Variables

- var class_go_1_1_volume_model_file_handler

30.431.1 Variable Documentation

30.431.1.1 var class_go_1_1_volume_model_file_handler

Initial value:

```
=
[
    [ "VolumeModelFileHandler", "
      class_go_1_1_volume_model_file_handler.html#ad7e0d3efd94523e835406a97beb7d059", null ],
    [ "~VolumeModelFileHandler", "
      class_go_1_1_volume_model_file_handler.html#a1b249da05dedaff81762fa07b937aa67", null ],
    [ "readVolume", "class_go_1_1_volume_model_file_handler.html#a2cb244f3583e6a6a52ba0613653c3a2e", null ]
      ,
    [ "readVolumeModel", "class_go_1_1_volume_model_file_handler.html#a4b009237ca68adb7d5a853d15a44b52a",
      null ],
    [ "writeVolume", "class_go_1_1_volume_model_file_handler.html#a33ec81b81c6c421f7a3b8fb46386a431", null
      ],
    [ "writeVolumeModel", "class_go_1_1_volume_model_file_handler.html#a95961adb981b37907e23673cb18505a0",
      null ]
]
```

Definition at line 1 of file class_go_1_1_volume_model_file_handler.js.

30.432 doc/html/class_go_1_1_volume_parameter_curve.js File Reference

Variables

- var class_go_1_1_volume_parameter_curve

30.432.1 Variable Documentation

30.432.1.1 var class_go_1_1_volume_parameter_curve

Initial value:

```
=
[
    [ "VolumeParameterCurve", "class_go_1_1_volume_parameter_curve.html#a9c53fbdb8c50484783d122f3041788c4",
       null ],
    [ "VolumeParameterCurve", "class_go_1_1_volume_parameter_curve.html#adaeb5c4b719b82cf31accbdb89840cb9",
       null ],
    [ "~VolumeParameterCurve", "class_go_1_1_volume_parameter_curve.html#a003c2f1384c02c34dc11f7453ecea143"
      , null ],
    [ "approximationOK", "class_go_1_1_volume_parameter_curve.html#a94ed3214219c50ccb994be11319cf7df", null
       ],
    [ "dim", "class_go_1_1_volume_parameter_curve.html#a791188c37d4dda0e212f5e1ee5d2bac3", null ],
    [ "end", "class_go_1_1_volume_parameter_curve.html#a87a3c5acb7a0484c6dc29f640a28a836", null ],
    [ "eval", "class_go_1_1_volume_parameter_curve.html#a9fe5deedf6c920a026949df25a804eeb", null ],
    [ "eval", "class_go_1_1_volume_parameter_curve.html#a7a1967e05c656a34b29c9e455c6985d3", null ],
    [ "start", "class_go_1_1_volume_parameter_curve.html#a2eb4e73a4ae17c7a0a57e33c797f0960", null ]
]
```

Definition at line 1 of file class_go_1_1_volume_parameter_curve.js.

30.433 doc/html/class_go_1_1_volume_space_curve.js File Reference

Variables

- var class_go_1_1_volume_space_curve

30.433.1 Variable Documentation

30.433.1.1 var class_go_1_1_volume_space_curve

Initial value:

```
=
[
    [ "VolumeSpaceCurve", "class_go_1_1_volume_space_curve.html#a95eae74b6d93c2e4ae5ff3cb675813f4", null ],
    [ "~VolumeSpaceCurve", "class_go_1_1_volume_space_curve.html#adbce44f47e7d50e7b77b6ecd59749afe", null ]
      ,
    [ "approximationOK", "class_go_1_1_volume_space_curve.html#a27dccb1129ce3c426679b09eb8903420", null ],
    [ "dim", "class_go_1_1_volume_space_curve.html#a9d0c85b04c21ae090dcabc0d4e617e8b", null ],
    [ "end", "class_go_1_1_volume_space_curve.html#a74c52038b1d9a4989ee16e7306ea3484", null ],
    [ "eval", "class_go_1_1_volume_space_curve.html#a9c680f8db2892c4000e199d3591c4ec6", null ],
    [ "eval", "class_go_1_1_volume_space_curve.html#adf40f504a4ffcd83d09f88dd023deb69", null ],
    [ "start", "class_go_1_1_volume_space_curve.html#a82e4dd31f04cfeeb2944f2d38bfab9c9", null ]
]
```

Definition at line 1 of file class_go_1_1_volume_space_curve.js.

30.434 doc/html/class_go_1_1box_structuring_1_1_bounding_box_structure.js File Reference

Variables

- var class_go_1_1box_structuring_1_1_bounding_box_structure

30.434.1 Variable Documentation

30.434.1.1 var class_go_1_1box_structuring_1_1_bounding_box_structure

Initial value:

```
=
[
    [ "addBox", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#aa6e1a511a5f48c80dd1042ba69bb68ff", null ],
    [ "addSurface", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#a0e5b6293f56db1709b1ef89c7311a1bb", null ],
    [ "big_vox_low", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#a736464d67dfef8fd9282e106cf343e70", null ],
    [ "boxes_in_voxel", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#a202bbc9eabebc042a3fda903381058f0", null ],
    [ "BuildVoxelStructure", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#ab4ffd31e7ff43f6fbe0070e5911d0fab", null ],
    [ "closestPoint", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#a9d3483bf9db84395d7b0243f1a83f1d8", null ],
    [ "getBox", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#a76008f7678515e6b849abdc5ab263814", null ],
    [ "getSurface", "
```

```
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#a0c63afb6c73a475dbad5ba9c7f67d294", null ],
    [ "n_boxes", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#a60971e92b7351db884394bb924002f99", null ],
    [ "n_surfaces", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#aa51b875860291f92adb86b4034bdef4e", null ],
    [ "n_voxels_x", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#af796d20691409c02d3d3831106917bba", null ],
    [ "n_voxels_y", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#a70d433f73cb7086fd851e190a3ede696", null ],
    [ "n_voxels_z", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#a6e6bec0d1412870fabcf13a14c244e3d", null ],
    [ "setSurfaceCopies", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#aac1768031db6b3832c58e4aff59640ae", null ],
    [ "voxel_length", "
      class_go_1_1box_structuring_1_1_bounding_box_structure.html#a650cf3d4173e47c2eb0caa919471a7a2", null ]
]
```

Definition at line 1 of file class_go_1_1box_structuring_1_1_bounding_box_structure.js.

30.435 doc/html/class_go_1_1box_structuring_1_1_1_sub_surface_bounding_box.js File Reference

Variables

- var class_go_1_1box_structuring_1_1_sub_surface_bounding_box

30.435.1 Variable Documentation

30.435.1.1 var class_go_1_1box_structuring_1_1_sub_surface_bounding_box

Initial value:

```
=
[
    [ "SubSurfaceBoundingBox", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#a028931b8aef4c065a3af24bba3c9c6d7", null ],
    [ "add_polygon_corners", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#a3561f48b916a553d92531b1fe6ec1bd8", null ],
    [ "box", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#a1523a25a1aeaa8ae277807aa680ce357", null ],
    [ "has_polygon", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#a80a5139fc405eae3fe76b423b6df55ec", null ],
    [ "inside", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#ab382401be6394619919c2b1eb46a3849", null ],
    [ "inside", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#a38c7a0bb3c94ecedd32bbcf9bb023c5f", null ],
    [ "par_domain", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#a45940dcad0e6712eb009e8079494c5ae", null ],
    [ "pos_u", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#a04c502630091ab5ce64eb27dffabcca9", null ],
    [ "pos_v", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#abcd64cb19ec756fecf9b212cdd1a7776", null ],
    [ "remove_polygon", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#a6f1290e112dd8f28fce991ed6c1c3638", null ],
    [ "setInside", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#a067587c6ca6ecb9e3399438d96eda11b", null ],
    [ "size_polygon", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#a4914de8c686a57577f57fc4eed7762cc", null ],
    [ "surface_data", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html#add41a4bbfaf7be7e4ac1ce36f30f9246", null ]
]
```

Definition at line 1 of file class_go_1_1box_structuring_1_1_sub_surface_bounding_box.js.

30.436 doc/html/class_go_1_1box_structuring_1_1_surface_data.js File Reference

Variables

- var class_go_1_1box_structuring_1_1_surface_data

30.436.1 Variable Documentation

30.436.1.1 var class_go_1_1box_structuring_1_1_surface_data

Initial value:

```
=
[
    [ "SurfaceData", "class_go_1_1box_structuring_1_1_surface_data.html#ac3260cf68ee70164ae4d70e6e8d63e5d",
      null ],
    [ "add_inside_point", "
      class_go_1_1box_structuring_1_1_surface_data.html#a8c85c14e584efc5f4367ed68c01f2dd4", null ],
    [ "index", "class_go_1_1box_structuring_1_1_surface_data.html#adb3818aaf057e43c17aef99f9056945e", null
      ],
    [ "inside_points", "class_go_1_1box_structuring_1_1_surface_data.html#a305cfe037489488770c8b5ded9de7bf8
      ", null ],
    [ "segs_u", "class_go_1_1box_structuring_1_1_surface_data.html#a14685aae32717091917327b622f1afde", null
      ],
    [ "segs_v", "class_go_1_1box_structuring_1_1_surface_data.html#a47316eeba2205c1ee16dbdbae91a8be2", null
      ],
    [ "setIndex", "class_go_1_1box_structuring_1_1_surface_data.html#a0082256cb9d872df530a36ed2ee2c949",
      null ],
    [ "setSegments", "class_go_1_1box_structuring_1_1_surface_data.html#a9f84328f4883871ea62da278bfbc7ce6",
      null ],
    [ "setSurfaceCopies", "
      class_go_1_1box_structuring_1_1_surface_data.html#af30a1c4ee89f538b46ba55c42c943538", null ],
    [ "surface", "class_go_1_1box_structuring_1_1_surface_data.html#a82208ca531f95f68c442e2fa22d0d41d",
      null ]
]
```

Definition at line 1 of file class_go_1_1box_structuring_1_1_surface_data.js.

30.437 doc/html/class_go_1_1ft_cell.js File Reference

Variables

- var class_go_1_1ft_cell

30.437.1 Variable Documentation

30.437.1.1 var class_go_1_1ft_cell

Initial value:

```
=
[
    [ "ftCell", "class_go_1_1ft_cell.html#aa92b81a003e69f3c2b7712abc39dcc13", null ],
    [ "~ftCell", "class_go_1_1ft_cell.html#a1133f48e5add15a8503563c34cb5251d", null ],
    [ "addFace", "class_go_1_1ft_cell.html#a9a5e3adbd11434a6ad181ba660be853c", null ],
    [ "addFaceBox", "class_go_1_1ft_cell.html#ab1e64e97467a88d5c2827abf4e178e9e", null ],
    [ "box", "class_go_1_1ft_cell.html#afe2c069e75af417181523d1d6c7454a8", null ],
    [ "face", "class_go_1_1ft_cell.html#aa121981ee3b13d136e7d29b0ee4bcd77", null ],
    [ "faceBox", "class_go_1_1ft_cell.html#a5e5ae761c933390e66693af8ae239122", null ],
    [ "num_faces", "class_go_1_1ft_cell.html#a2612f2186d11c244866b9e01032f49ba", null ],
    [ "removeFace", "class_go_1_1ft_cell.html#a485d9f75df9713040406521a722351e7", null ],
    [ "setBox", "class_go_1_1ft_cell.html#a4dda9139b4201bfeae98f593ba51d8ef", null ],
    [ "box_", "class_go_1_1ft_cell.html#adcd3dc1436e37ba68b9a56bb9faf24aa", null ],
    [ "face_boxes_", "class_go_1_1ft_cell.html#a9947e2f9b0e6a893dc537205c65c8442", null ],
    [ "faces_", "class_go_1_1ft_cell.html#a1818339a8ddd910cf35a2953c311b4af", null ]
]
```

Definition at line 1 of file class_go_1_1ft_cell.js.

30.438 doc/html/class_go_1_1ft_cell_info.js File Reference

Variables

- var class_go_1_1ft_cell_info

30.438.1 Variable Documentation

30.438.1.1 var class_go_1_1ft_cell_info

Initial value:

```
=
[
    [ "ftCellInfo", "class_go_1_1ft_cell_info.html#ac201d70737750e45dcaea2e5c692f543", null ],
    [ "ftCellInfo", "class_go_1_1ft_cell_info.html#aed8671b7fe5c84685e89521cf3043f0f", null ],
    [ "operator<", "class_go_1_1ft_cell_info.html#ad7af2b236ba39886b8b4d3ec7e5e95a4", null ],
    [ "dist_", "class_go_1_1ft_cell_info.html#aea93ce0074a9eb7c419a77362ea20390", null ],
    [ "index_", "class_go_1_1ft_cell_info.html#aafd2de5219d54de3d4f41995ba620282", null ]
]
```

Definition at line 1 of file class_go_1_1ft_cell_info.js.

30.439 doc/html/class_go_1_1ft_chart_surface.js File Reference

Variables

- var class_go_1_1ft_chart_surface

30.439.1 Variable Documentation

30.439.1.1 var class_go_1_1ft_chart_surface

Definition at line 1 of file class_go_1_1ft_chart_surface.js.

30.440 doc/html/class_go_1_1ft_curve.js File Reference

Variables

- var class_go_1_1ft_curve

30.440.1 Variable Documentation

30.440.1.1 var class_go_1_1ft_curve

Definition at line 1 of file class_go_1_1ft_curve.js.

30.441 doc/html/class_go_1_1ft_curve_segment.js File Reference

Variables

- var class_go_1_1ft_curve_segment

30.441.1 Variable Documentation

30.441.1.1 var class_go_1_1ft_curve_segment

Definition at line 1 of file class_go_1_1ft_curve_segment.js.

30.442 doc/html/class_go_1_1ft_edge.js File Reference

Variables

- var class_go_1_1ft_edge

30.442.1 Variable Documentation

30.442.1.1 var class_go_1_1ft_edge

Definition at line 1 of file class_go_1_1ft_edge.js.

30.443 doc/html/class_go_1_1ft_edge_base.js File Reference

Variables

- var class_go_1_1ft_edge_base

30.443.1 Variable Documentation

30.443.1.1 var class_go_1_1ft_edge_base

Definition at line 1 of file class_go_1_1ft_edge_base.js.

30.444 doc/html/class_go_1_1ft_face_base.js File Reference

Variables

- var class_go_1_1ft_face_base

30.444.1 Variable Documentation

30.444.1.1 var class_go_1_1ft_face_base

Initial value:

```
=
[
    [ "ftFaceBase", "class_go_1_1ft_face_base.html#aeb3a1f454567c2413295b8399f4b49e8", null ],
    [ "ftFaceBase", "class_go_1_1ft_face_base.html#a013d8c2cb9df9e4522323822df28c61d", null ],
    [ "~ftFaceBase", "class_go_1_1ft_face_base.html#a069103abb148ef2b0d05a4d2f86a828b", null ],
    [ "asFtSurface", "class_go_1_1ft_face_base.html#a0cf6138638e06631722761cbbd7105e2", null ],
    [ "boundingBox", "class_go_1_1ft_face_base.html#ad73654559003e7e2c5255255c06a4af1", null ],
    [ "clearInitialEdges", "class_go_1_1ft_face_base.html#a44cc2ead4dc2f6c7a09ee91d84d95d4b", null ],
    [ "closestPoint", "class_go_1_1ft_face_base.html#accc397f0ca4ceae1b3fb6f8c23cae768", null ],
    [ "createInitialEdges", "class_go_1_1ft_face_base.html#a7630d69756a3487446041ea364b863e3", null ],
    [ "createSurf", "class_go_1_1ft_face_base.html#ab4a79799a587e2bcbfad8abd4368d629", null ],
    [ "getError", "class_go_1_1ft_face_base.html#a233bf7917d3bda72e7ffba165cfacdf7", null ],
    [ "getId", "class_go_1_1ft_face_base.html#a53510da9b831537e94cc77f99dfb4fde", null ],
    [ "getPrioType", "class_go_1_1ft_face_base.html#a87d1107a1aa219882d2f5707bce975fa", null ],
    [ "isolateFace", "class_go_1_1ft_face_base.html#a92563f5059c70b0b6a7f8503108549e2", null ],
    [ "normal", "class_go_1_1ft_face_base.html#a9f903c0a338ee84d697b6244017c2409", null ],
    [ "point", "class_go_1_1ft_face_base.html#a8bfc890d8a1145f7e0d3586af4a6e0f1", null ],
    [ "removeGap", "class_go_1_1ft_face_base.html#aa72131ebf12e16648e6ac3fc534aa265", null ],
    [ "setId", "class_go_1_1ft_face_base.html#ad52d1e2593360de63c77830781a1f0ac", null ],
    [ "startEdges", "class_go_1_1ft_face_base.html#aad97f5fbef285cc4187afce79e00e903", null ],
    [ "surface", "class_go_1_1ft_face_base.html#a7682502dea96834e44693b25e4db533a", null ],
    [ "updateBoundaryLoops", "class_go_1_1ft_face_base.html#aa41f6fd57d5df5959edd9f2ed2de72c5", null ],
    [ "id_", "class_go_1_1ft_face_base.html#a26ef3f6e5e428b74b4e6aa0a79cd712a", null ]
]
```

Definition at line 1 of file class_go_1_1ft_face_base.js.

30.445 doc/html/class_go_1_1ft_graph_edge.js File Reference

Variables

- var class_go_1_1ft_graph_edge

30.445.1 Variable Documentation

30.445.1.1 var class_go_1_1ft_graph_edge

Initial value:

```
=
[
    [ "ftGraphEdge", "class_go_1_1ft_graph_edge.html#a6ea3131608912062d5e7af5403fb5f5d", null ],
    [ "ftGraphEdge", "class_go_1_1ft_graph_edge.html#a96fa14bb1c156fcad495d4789fd5fc33", null ],
    [ "~ftGraphEdge", "class_go_1_1ft_graph_edge.html#a50ab56d28b980d23b91e9cd55938b308", null ],
    [ "endparam", "class_go_1_1ft_graph_edge.html#a260f3773935b8d875bc075e51a1f82df", null ],
    [ "endPoint", "class_go_1_1ft_graph_edge.html#a45c4087b05f202f4e0f4152c21808c75", null ],
    [ "getFaces", "class_go_1_1ft_graph_edge.html#a7ca2917fa8fae6dea9929f7435c21e28", null ],
    [ "lower", "class_go_1_1ft_graph_edge.html#a1d387d43635dc8870a4a1f8d1d607c64", null ],
    [ "point", "class_go_1_1ft_graph_edge.html#ac8253558686f05c30089f5eb5d6c3d98", null ],
    [ "point", "class_go_1_1ft_graph_edge.html#afe85117484ec43cbc63ca666c4988ed4", null ],
    [ "startparam", "class_go_1_1ft_graph_edge.html#a4bab461425a733b333930120c0fab079", null ],
    [ "startPoint", "class_go_1_1ft_graph_edge.html#ab83312300bcd3c4235a60bf6007266a9", null ],
    [ "upper", "class_go_1_1ft_graph_edge.html#a8069fd01ad452256e44353be62bb91da", null ]
]
```

Definition at line 1 of file class_go_1_1ft_graph_edge.js.

30.446 doc/html/class_go_1_1ft_group_geom.js File Reference

Variables

- var class_go_1_1ft_group_geom

30.446.1 Variable Documentation

30.446.1.1 var class_go_1_1ft_group_geom

Initial value:

```
=
[
    [ "ftGroupGeom", "class_go_1_1ft_group_geom.html#a81e48684597d986148f78a926375ee22", null ],
    [ "~ftGroupGeom", "class_go_1_1ft_group_geom.html#af927889ce7acd322f29b03a8f1057bce", null ],
    [ "addGeomObj", "class_go_1_1ft_group_geom.html#a6deb85d14d38905ac1e98c520efcdf87", null ],
    [ "getType", "class_go_1_1ft_group_geom.html#a6ae7c836a918765c1da2678fee62098b", null ],
    [ "operator[]", "class_go_1_1ft_group_geom.html#a8f7683e608575d829d0834679d561854", null ],
    [ "setType", "class_go_1_1ft_group_geom.html#ac4459cc4013744086035b74fae2bedd3", null ],
    [ "size", "class_go_1_1ft_group_geom.html#a438c8a5ccec38260202b6597497c64d9", null ],
    [ "geomobj_", "class_go_1_1ft_group_geom.html#a777549837a91518c25e875647a5b4280", null ],
    [ "type_", "class_go_1_1ft_group_geom.html#a369b7c907a4ad9176cbac044ef45239b", null ]
]
```

Definition at line 1 of file class_go_1_1ft_group_geom.js.

30.447 doc/html/class_go_1_1ft_line.js File Reference

Variables

- var class_go_1_1ft_line

30.447.1 Variable Documentation

30.447.1.1 var class_go_1_1ft_line

Initial value:

```
=
[
    [ "ftLine", "class_go_1_1ft_line.html#a50680feb6bc47518f7e4ec29e9b3705e", null ],
    [ "ftLine", "class_go_1_1ft_line.html#a50559440f5f6cbae2c0a1ad31ea6ca2e", null ],
    [ "~ftLine", "class_go_1_1ft_line.html#a36ab8167ae4398c8eab81e69abaa033f", null ],
    [ "closeToScaledPoint", "class_go_1_1ft_line.html#a3d7867a61227b67f16c611e57fa38733", null ],
    [ "direction", "class_go_1_1ft_line.html#a0ef27b802dd865c8d93f8ace19d3f5d5", null ],
    [ "getTwoPlanes", "class_go_1_1ft_line.html#af583cd5f86689072ce4c153ec374edba", null ],
    [ "intersectsBox", "class_go_1_1ft_line.html#ac9ab61527c36d5ea0128891bae6f0b21", null ],
    [ "intersectsSphereOfBox", "class_go_1_1ft_line.html#a98718b75fec0f28dc66c9e71596c29a6", null ],
    [ "planesIntersectBox", "class_go_1_1ft_line.html#a67e729b07c42c78ce4d845a1fad402f4", null ],
    [ "point", "class_go_1_1ft_line.html#af959e5b16b21130f038dd3523d1f4af3", null ],
    [ "scaled", "class_go_1_1ft_line.html#a05c3f88742e2579e793de0f7bca89c2e", null ],
    [ "dir_", "class_go_1_1ft_line.html#a4ee4aab40795d2e7414bc20c53742d90", null ],
    [ "point_", "class_go_1_1ft_line.html#a4717d36b942e5c0309e88af802a808e3", null ]
]
```

Definition at line 1 of file class_go_1_1ft_line.js.

30.448 doc/html/class_go_1_1ft_message.js File Reference

Variables

- var class_go_1_1ft_message

30.448.1 Variable Documentation

30.448.1.1 var class_go_1_1ft_message

Initial value:

```
=
[
    [ "ftMessage", "class_go_1_1ft_message.html#a1f5e69c82a65f1ce04d2a606fd50559b", null ],
    [ "ftMessage", "class_go_1_1ft_message.html#a8280d5a84f869825940ddd77de4cb49e", null ],
    [ "~ftMessage", "class_go_1_1ft_message.html#ad2003bdf49ad919afa044983fb4dd113", null ],
    [ "addWarning", "class_go_1_1ft_message.html#aa4370d4b71dd0e273d9db94cdb84941e", null ],
    [ "getMessage", "class_go_1_1ft_message.html#acb1cb1a277521c8da8581f2157ac89d8", null ],
    [ "getWarning", "class_go_1_1ft_message.html#a0c7185d252ac2498128ce55aef59ba52", null ],
    [ "isOK", "class_go_1_1ft_message.html#abbc9876b12c5b0314c8aece95044531d", null ],
    [ "noOfWarnings", "class_go_1_1ft_message.html#ad3df0b7fe89f8a74551fc340896e6e19", null ],
    [ "setError", "class_go_1_1ft_message.html#aead9aadc3f2830c8cd4710780ee2f725", null ]
]
```

Definition at line 1 of file class_go_1_1ft_message.js.

30.449 doc/html/class_go_1_1ft_planar_graph.js File Reference

Variables

- var class_go_1_1ft_planar_graph

30.449.1 Variable Documentation

30.449.1.1 var class_go_1_1ft_planar_graph

Initial value:

```
=
[
    [ "ftPlanarGraph", "class_go_1_1ft_planar_graph.html#a55856f344896114fd0d9ffc2b5344e40", null ],
    [ "ftPlanarGraph", "class_go_1_1ft_planar_graph.html#a995726dc6cbcfd3c62a01aa0b71efaff", null ],
    [ "~ftPlanarGraph", "class_go_1_1ft_planar_graph.html#a374ad049daa19cb189d9c0182ef4e029", null ],
    [ "getLocalParameters", "class_go_1_1ft_planar_graph.html#adb3fda7dc1ec6f160ad04438f4fdfe11", null ],
    [ "locateInGraph", "class_go_1_1ft_planar_graph.html#a02126a5ddc1b4881e27111f03effedf6", null ],
    [ "setGraph", "class_go_1_1ft_planar_graph.html#a31693e3927059d80cd0f0b1790fb7cc2", null ]
]
```

Definition at line 1 of file class_go_1_1ft_planar_graph.js.

30.450 doc/html/class_go_1_1ft_plane.js File Reference

Variables

- var class_go_1_1ft_plane

30.450.1 Variable Documentation

30.450.1.1 var class_go_1_1ft_plane

Initial value:

```
=
[
    [ "ftPlane", "class_go_1_1ft_plane.html#ad7ba7ffd1fcccdd41130daad7c21a0c2", null ],
    [ "ftPlane", "class_go_1_1ft_plane.html#ac22d30d3b20998b447e9137482142770", null ],
    [ "ftPlane", "class_go_1_1ft_plane.html#a52c1e63299a028bf909026a188f65cba", null ],
    [ "ftPlane", "class_go_1_1ft_plane.html#a6925de11b4ca78706fdd8e430ceec640", null ],
    [ "~ftPlane", "class_go_1_1ft_plane.html#a72f222fc0ca1ab772bb0bcb9510479f2", null ],
    [ "intersectsBox", "class_go_1_1ft_plane.html#a0cb13a54332b9bd081d02eafcd73ee47", null ],
    [ "normal", "class_go_1_1ft_plane.html#a0afd0f1c5b74089f089f5b4c9716ac08", null ],
    [ "point", "class_go_1_1ft_plane.html#a09ad762952a3c02f1adab49d88df9347", null ],
    [ "normal_", "class_go_1_1ft_plane.html#a1ee6b0d639a4e8b46397d1cfdb97fb1a", null ],
    [ "point_", "class_go_1_1ft_plane.html#a68667709fb05418daafd32c7ec48c31c", null ]
]
```

Definition at line 1 of file class_go_1_1ft_plane.js.

30.451 doc/html/class_go_1_1ft_point.js File Reference

Variables

- var class_go_1_1ft_point

30.451.1 Variable Documentation

30.451.1.1 var class_go_1_1ft_point

Initial value:

```
=
[
    [ "ftPoint", "class_go_1_1ft_point.html#a2bef21b59ea7fd6f6f869939696442c4", null ],
    [ "ftPoint", "class_go_1_1ft_point.html#a71e8cda1fee6e4d77e8e47cc9de67fe7", null ],
    [ "face", "class_go_1_1ft_point.html#aa32c53f685602d17fa5e4f9a1e1f0c4d", null ],
    [ "normal", "class_go_1_1ft_point.html#ab6216a92b607e1b71e13ba6e5c991f5b", null ],
    [ "position", "class_go_1_1ft_point.html#af3b40057fbad3323002e27ef98035dd5", null ],
    [ "u", "class_go_1_1ft_point.html#a6d2038f4d89e1b35e149cc47f782fc29", null ],
    [ "v", "class_go_1_1ft_point.html#a5f721b935eeefed8e81d0cf416cf0f2a", null ],
    [ "pt_", "class_go_1_1ft_point.html#ac9649d1cfcf1216802eaedbcae856d13", null ],
    [ "surface_", "class_go_1_1ft_point.html#af5409e867eadda68994b4facf1e1d49b", null ],
    [ "u_", "class_go_1_1ft_point.html#a3a514101ecd669aeb1feb67bf095a176", null ],
    [ "v_", "class_go_1_1ft_point.html#ae66d28de47384fb0fd2f113281a83848", null ]
]
```

Definition at line 1 of file class_go_1_1ft_point.js.

30.452 doc/html/class_go_1_1ft_point_set.js File Reference

Variables

- var class_go_1_1ft_point_set

30.452.1 Variable Documentation

30.452.1.1 var class_go_1_1ft_point_set

Definition at line 1 of file class_go_1_1ft_point_set.js.

30.453 doc/html/class_go_1_1ft_s_sf_edge.js File Reference

Variables

- var class_go_1_1ft_s_sf_edge

30.453.1 Variable Documentation

30.453.1.1 var class_go_1_1ft_s_sf_edge

Initial value:

```
=
[
    [ "ftSSfEdge", "class_go_1_1ft_s_sf_edge.html#a9cabfea3f1d54e47004a0a61b47fd868", null ],
    [ "~ftSSfEdge", "class_go_1_1ft_s_sf_edge.html#a74ab8de1f47ed43d3e3c96bcf37cdca2", null ],
    [ "boundingBox", "class_go_1_1ft_s_sf_edge.html#a2b186aa55a6150d1d26b49d10e2f90e0", null ],
    [ "closestPoint", "class_go_1_1ft_s_sf_edge.html#aad89474f862f07a2f26226e01b33500c", null ],
    [ "entryId", "class_go_1_1ft_s_sf_edge.html#af2517c199e5fdb6417ae12ced7f4bc37", null ],
    [ "face", "class_go_1_1ft_s_sf_edge.html#a2659c6f1a432256dab88ba2d2b110b84", null ],
    [ "geomEdge", "class_go_1_1ft_s_sf_edge.html#a7195ecf4fdfc77ca4e8664f6d269bd73", null ],
    [ "isReversed", "class_go_1_1ft_s_sf_edge.html#ad79d781e4c515601f460b0495b6a2dfa", null ],
    [ "normal", "class_go_1_1ft_s_sf_edge.html#a0aff4574036a73c4d507cb5674ae6ed4", null ],
    [ "normal", "class_go_1_1ft_s_sf_edge.html#a6b4f82925064c770f2fbfb295e6484fa", null ],
    [ "point", "class_go_1_1ft_s_sf_edge.html#acbec7c42e8fc53b27ddf66a620ce1d32", null ],
    [ "setEntryId", "class_go_1_1ft_s_sf_edge.html#a12dba8ed3961568f73783adb5e42c8c9", null ],
    [ "setFace", "class_go_1_1ft_s_sf_edge.html#a8a9e6849b17317c94e0bbfb770c8ce8b", null ],
    [ "setReversed", "class_go_1_1ft_s_sf_edge.html#a30fd26f69b7a09999eb9368b25914ac0", null ],
    [ "split", "class_go_1_1ft_s_sf_edge.html#aec6284ac13d112ae5f4c35373d686015", null ],
    [ "tangent", "class_go_1_1ft_s_sf_edge.html#aec5af9042c2a159c2b8dce97f88eb4ad", null ],
    [ "tMax", "class_go_1_1ft_s_sf_edge.html#ade89d8991d27a0ac9a3d6f42d13ed1e5", null ],
    [ "tMin", "class_go_1_1ft_s_sf_edge.html#a21b6a3c201008dc2eebbe6d91a95b721", null ]
]
```

Definition at line 1 of file class_go_1_1ft_s_sf_edge.js.

30.454 doc/html/class_go_1_1ft_sample_point.js File Reference

Variables

- var class_go_1_1ft_sample_point

30.454.1 Variable Documentation

30.454.1.1 var class_go_1_1ft_sample_point

Definition at line 1 of file class_go_1_1ft_sample_point.js.

30.455 doc/html/class_go_1_1ft_search_node.js File Reference

Variables

- var class_go_1_1ft_search_node

30.455.1 Variable Documentation

30.455.1.1 var class_go_1_1ft_search_node

Initial value:

```
=
[
    [ "ftSearchNode", "class_go_1_1ft_search_node.html#a9c55cef76fa0622368b25392da282f99", null ],
    [ "~ftSearchNode", "class_go_1_1ft_search_node.html#aebf452021f76a83b39a418404a6c71d3", null ],
    [ "getOrderedSegments", "class_go_1_1ft_search_node.html#afdca877312a1141ab057e330a5a536a5", null ],
    [ "node", "class_go_1_1ft_search_node.html#aba44c9cf35c551cca4d4f5828242028a", null ],
    [ "setOrderedSegments", "class_go_1_1ft_search_node.html#abc57b221eb7c3025d81ca2cfc2cf1011", null ]
]
```

Definition at line 1 of file class_go_1_1ft_search_node.js.

30.456 doc/html/class_go_1_1ft_smooth_surf.js File Reference

Variables

- var class_go_1_1ft_smooth_surf

30.456.1 Variable Documentation

30.456.1.1 var class_go_1_1ft_smooth_surf

Initial value:

```
=
[
    [ "ftSmoothSurf", "class_go_1_1ft_smooth_surf.html#a187b305c0c5c021395b9d9540f0b5151", null ],
    [ "~ftSmoothSurf", "class_go_1_1ft_smooth_surf.html#a01388579e24fd359b452409b55224a0e", null ],
    [ "getApproxWeight", "class_go_1_1ft_smooth_surf.html#aca11835e16f9ce421fe98e518e636e70", null ],
    [ "getError", "class_go_1_1ft_smooth_surf.html#a31be1435532cae978198475d9f607418", null ],
    [ "refineSurf", "class_go_1_1ft_smooth_surf.html#ab418789f68680dd0a809117e62b4eb7a", null ],
    [ "setApproxWeight", "class_go_1_1ft_smooth_surf.html#a71684faf5912cfc9f38dd964f7f14072", null ],
    [ "setSmoothU", "class_go_1_1ft_smooth_surf.html#aae9f578161e0a2238cf322da89402d8d", null ],
    [ "setSmoothV", "class_go_1_1ft_smooth_surf.html#a9698869692e3c10328c3b149661cd597", null ],
    [ "update", "class_go_1_1ft_smooth_surf.html#a3312c5bdd8f78cb80f91c6ee48885d54", null ],
    [ "approx_orig_tol_", "class_go_1_1ft_smooth_surf.html#a2ef7fc8e3c6c1ace11c672ef0ea32035", null ],
    [ "approxtol_", "class_go_1_1ft_smooth_surf.html#aec9cdafc2633142a81e2fd4a8388ba45", null ],
    [ "ccw_edge_derivs_", "class_go_1_1ft_smooth_surf.html#ac3b463dca9a0004897472a5beead0dc2", null ],
    [ "init_approx_weight_", "class_go_1_1ft_smooth_surf.html#a3f8e09ac76a0bee1e43db724bc400863", null ],
    [ "lock_corner_points_", "class_go_1_1ft_smooth_surf.html#ae4675b41bfff97e8184886a852b5128c", null ],
    [ "max_error_", "class_go_1_1ft_smooth_surf.html#a5948eda4719c97b821472899d2cc6182", null ],
    [ "maxiter_", "class_go_1_1ft_smooth_surf.html#a1e0ff1517a1e42f0cdd01d3165b22f4b", null ],
    [ "mean_error_", "class_go_1_1ft_smooth_surf.html#a90a9c488ef8fffbcaf7c2d34333a7ecc", null ],
    [ "orig_surf_", "class_go_1_1ft_smooth_surf.html#a99cfc4c9acec4aa03bb3a1d080c0d734", null ],
    [ "seem_", "class_go_1_1ft_smooth_surf.html#abab3501bbd777ad43b21717703a4e23d", null ],
    [ "surf_", "class_go_1_1ft_smooth_surf.html#aee983c68219bd47b0ec83b0250d4cc2d", null ]
]
```

Definition at line 1 of file class_go_1_1ft_smooth_surf.js.

30.457 doc/html/class_go_1_1ft_surface.js File Reference

Variables

- var class_go_1_1ft_surface

30.457.1 Variable Documentation

30.457.1.1 var class_go_1_1ft_surface

Definition at line 1 of file class_go_1_1ft_surface.js.

30.458 doc/html/class_go_1_1ft_surface_set.js File Reference

Variables

- var class_go_1_1ft_surface_set

30.458.1 Variable Documentation

30.458.1.1 var class_go_1_1ft_surface_set

Definition at line 1 of file class_go_1_1ft_surface_set.js.

30.459 doc/html/class_go_1_1ft_surface_set_point.js File Reference

Variables

- var class_go_1_1ft_surface_set_point

30.459.1 Variable Documentation

30.459.1.1 var class_go_1_1ft_surface_set_point

Initial value:

```
=
[
    [ "ftSurfaceSetPoint", "class_go_1_1ft_surface_set_point.html#a2c11652111741e4486588b26b22dab9c", null
      ],
    [ "ftSurfaceSetPoint", "class_go_1_1ft_surface_set_point.html#a7abfd754aaba91e4c10a8a7472ea1381", null
      ],
    [ "~ftSurfaceSetPoint", "class_go_1_1ft_surface_set_point.html#af662d8194c31ecf162b0e7375bc7002c", null
       ],
    [ "addFace", "class_go_1_1ft_surface_set_point.html#a11a3c2b1185b37518ad982f5c3188718", null ],
    [ "addInfo", "class_go_1_1ft_surface_set_point.html#a5f827e634b8d8987e283882d4279fbc9", null ],
    [ "addPair", "class_go_1_1ft_surface_set_point.html#abc20be3c9c4ba403d5efc118117ba142", null ],
    [ "asSurfaceSetPoint", "class_go_1_1ft_surface_set_point.html#a1e0b31c2c6eca592a7e8002e6bc449c2", null
      ],
    [ "containsFace", "class_go_1_1ft_surface_set_point.html#a6f694c0103e18c8dd988e3fef15747bc", null ],
    [ "face", "class_go_1_1ft_surface_set_point.html#a882e43b4b07c97b22f9979ab5d0099ee", null ],
    [ "getPar", "class_go_1_1ft_surface_set_point.html#ae36505aa31d4df12cd9068298de1114e", null ],
    [ "nmbFaces", "class_go_1_1ft_surface_set_point.html#acd99898cd40e2fc60fb59c682d555eca", null ],
    [ "parValue", "class_go_1_1ft_surface_set_point.html#a6a49adffdf46d2768d353c7931c0fa93", null ],
    [ "resetPosition", "class_go_1_1ft_surface_set_point.html#a96763241dcfcbb9e309ab41f34410ce2", null ],
    [ "resetPosition", "class_go_1_1ft_surface_set_point.html#af8bbb1ec6824ade183e3dc7b99fc767b", null ],
    [ "write2Dval", "class_go_1_1ft_surface_set_point.html#a92b64340d0c99eb8523bf9dca4777ee9", null ]
]
```

Definition at line 1 of file class_go_1_1ft_surface_set_point.js.

30.460 doc/html/class_go_1_1ft_volume.js File Reference

Variables

- var class_go_1_1ft_volume

30.460.1 Variable Documentation

30.460.1.1 var class_go_1_1ft_volume

Definition at line 1 of file class_go_1_1ft_volume.js.

30.461 doc/html/class_go_1_1tp_edge.js File Reference

Variables

- var class_go_1_1tp_edge

30.461.1 Variable Documentation

30.461.1.1 var class_go_1_1tp_edge

Definition at line 1 of file class_go_1_1tp_edge.js.

30.462 doc/html/class_go_1_1tp_face.js File Reference

Variables

- var class_go_1_1tp_face

30.462.1 Variable Documentation

30.462.1.1 var class_go_1_1tp_face

Initial value:

```
=
[
    [ "~tpFace", "class_go_1_1tp_face.html#a29bcd236ece78bef73e6364517b8c112", null ],
    [ "boundingBox", "class_go_1_1tp_face.html#a0c64958bd2e7f5d129034b40ef280e16", null ],
    [ "createInitialEdges", "class_go_1_1tp_face.html#a7945efcd0158e5b183282e0625ac8da5", null ],
    [ "getId", "class_go_1_1tp_face.html#a1c77809ad89ac49d234bf1c4c904cec2", null ],
    [ "isolateFace", "class_go_1_1tp_face.html#a1cbd052eab1bd604c192967c8e517636", null ],
    [ "normal", "class_go_1_1tp_face.html#a3a926d8b81c1a61332ac7eaad6436e06", null ],
    [ "point", "class_go_1_1tp_face.html#a921bf8edf4ad997f7a890946f90985be", null ],
    [ "startEdges", "class_go_1_1tp_face.html#a7767aca4a185fbb8ca05bfab02cbb235", null ]
]
```

Definition at line 1 of file class_go_1_1tp_face.js.

30.463 doc/html/class_go_1_1tp_march_point.js File Reference

Variables

- var class_go_1_1tp_march_point

30.463.1 Variable Documentation

30.463.1.1 var class_go_1_1tp_march_point

Initial value:

```
=
[
    [ "tpMarchPoint", "class_go_1_1tp_march_point.html#a67adf9a6e441ed8caeb02dd152cca489", null ],
    [ "operator<", "class_go_1_1tp_march_point.html#aa16a43a59721a561a2fcb8d9bde5b82c", null ],
    [ "cos_ang", "class_go_1_1tp_march_point.html#a6b22182dc006480534a965d063c06aae", null ],
    [ "dist", "class_go_1_1tp_march_point.html#a660a6dc7deb2c0e9579a018fed56397e", null ],
    [ "par", "class_go_1_1tp_march_point.html#a1c1248c51b31a2f75f55529ddb1396e7", null ],
    [ "par2", "class_go_1_1tp_march_point.html#ae2df4e93f348b6b4c60a5e2c2231c2ef", null ],
    [ "pt", "class_go_1_1tp_march_point.html#ade241004d5a81a0c4d4a50cfac161bc4", null ],
    [ "status", "class_go_1_1tp_march_point.html#a18526aa481bb814dddabb5f172a3295b", null ]
]
```

Definition at line 1 of file class_go_1_1tp_march_point.js.

30.464 doc/html/class_go_1_1tp_table_entry.js File Reference

Variables

- var class_go_1_1tp_table_entry

30.464.1 Variable Documentation

30.464.1.1 var class_go_1_1tp_table_entry

Initial value:

```
=
[
    [ "tpTableEntry", "class_go_1_1tp_table_entry.html#ad0fe1ab4b188650b6ac1892dc08d98d6", null ],
    [ "Info", "class_go_1_1tp_table_entry.html#a1cd7aa94340381cc43831c095bb9f8aa", null ],
    [ "e1_", "class_go_1_1tp_table_entry.html#ab2e9e30e315ec2fd05d5d37114296884", null ],
    [ "e2_", "class_go_1_1tp_table_entry.html#a2e23e6a84effa6180933fe8e6fa6e61c", null ],
    [ "info_", "class_go_1_1tp_table_entry.html#ad64c99903a46aeb303baac34b8a3d9a9", null ]
]
```

Definition at line 1 of file class_go_1_1tp_table_entry.js.

30.465 doc/html/class_go_1_1tp_topology_table.js File Reference

Variables

- var class_go_1_1tp_topology_table

30.465.1 Variable Documentation

30.465.1.1 var class_go_1_1tp_topology_table

Initial value:

```
=
[
    [ "tpTopologyTable", "class_go_1_1tp_topology_table.html#a280f476f704632649026f9416ea9ed72", null ],
    [ "~tpTopologyTable", "class_go_1_1tp_topology_table.html#ad0f0c163cd7ca7534e75cd982999e7c9", null ],
    [ "addEntry", "class_go_1_1tp_topology_table.html#aedde77944ab89619f33224b60f8d34df", null ],
    [ "addFaceToTable", "class_go_1_1tp_topology_table.html#a9ce5f349cd350f63afef12c05a1e2083", null ],
    [ "BoundaryLoops", "class_go_1_1tp_topology_table.html#af23c20fcdfa4e757515f4349346ffa5e", null ],
    [ "BoundaryLoops", "class_go_1_1tp_topology_table.html#a7f8860c61aac68b28cde19466a039adc", null ],
    [ "connectedEdges", "class_go_1_1tp_topology_table.html#a1220adebcb4f84d74b54cd9f81b33824", null ],
    [ "connectTwins", "class_go_1_1tp_topology_table.html#adfc4e616b827771b00196f0f26ce12f2", null ],
    [ "constructTable", "class_go_1_1tp_topology_table.html#a449c512f37a6b24f76c67f5cc52adb40", null ],
    [ "cornersAndKinks", "class_go_1_1tp_topology_table.html#aed1c391542da8504be6e8a89492da8cb", null ],
    [ "disjointObjects", "class_go_1_1tp_topology_table.html#af7486be8ef6128f36b4f310b501ea352", null ],
    [ "edgesBoundingFace", "class_go_1_1tp_topology_table.html#ae258c9c944e48754cf7016a89d726e8c", null ],
    [ "getInconsistentFaces", "class_go_1_1tp_topology_table.html#aad161c1c0118ca0e226537303b0abcc0", null
      ],
    [ "getTolerances", "class_go_1_1tp_topology_table.html#ac616042148c3047428ec3b21ee8babf3", null ],
    [ "info", "class_go_1_1tp_topology_table.html#ac0b1051546e2a5c3062ffcc0a6f1161c", null ],
    [ "prepareTable", "class_go_1_1tp_topology_table.html#a09af231da32b51ecc65f96366fcea852", null ],
    [ "removeFaceFromTable", "class_go_1_1tp_topology_table.html#a10fb7df54b8706366a71d25ef9762d3a", null ]
      ,
    [ "setTable", "class_go_1_1tp_topology_table.html#ade56576beb580a2a6dd35516ae76a59f", null ],
    [ "setTolerances", "class_go_1_1tp_topology_table.html#ab1cb76026a20dc775539f77bc01221b7", null ],
    [ "updateTableEntry", "class_go_1_1tp_topology_table.html#a6f183699fa5757ade0cfb85af22d062f", null ],
    [ "Validate", "class_go_1_1tp_topology_table.html#a82cf7ad03299185589e0ac28bf6c30a6", null ],
    [ "edges_", "class_go_1_1tp_topology_table.html#abf3e86281c1bdb12fda93bf752f8923e", null ],
    [ "orientation_inconsist_", "class_go_1_1tp_topology_table.html#af611ebf3e740eef65964c53e827cb463",
      null ],
    [ "table_", "class_go_1_1tp_topology_table.html#a144bdf017ad7970a1a1d85386652fbd7", null ],
    [ "tol_", "class_go_1_1tp_topology_table.html#af6ae926cb5d60909655fcc5fd63c0c2f", null ]
]
```

Definition at line 1 of file class_go_1_1tp_topology_table.js.

30.466 doc/html/class_go_1_1ttl_point.js File Reference

Variables

- var class_go_1_1ttl_point

30.466.1 Variable Documentation

30.466.1.1 var class_go_1_1ttl_point

Initial value:

```
=
[
    [ "ttlPoint", "class_go_1_1ttl_point.html#afb76122074fccee549b3fa1bca716b25", null ],
    [ "~ttlPoint", "class_go_1_1ttl_point.html#a484d35c0299a097f038f3a85b5ec5199", null ],
    [ "pnt_iter", "class_go_1_1ttl_point.html#a1aa8e7179388f1852041da7fa4e2da8b", null ],
    [ "x", "class_go_1_1ttl_point.html#a2edfd5b3a2a64c8c3af3e02c06ae2357", null ],
    [ "y", "class_go_1_1ttl_point.html#aa68070e89bc646943dcfff514e3d194f", null ],
    [ "z", "class_go_1_1ttl_point.html#ac3852f5d65cea6fc03ded418c52b1224", null ]
]
```

Definition at line 1 of file class_go_1_1ttl_point.js.

30.467 doc/html/class_handle.js File Reference

Variables

- var class_handle

30.467.1 Variable Documentation

30.467.1.1 var class_handle

Initial value:

```
=
[
    [ "Handle", "class_handle.html#a6a72028918adf79c0ff8d9996e5e4107", null ],
    [ "Handle", "class_handle.html#a1b0a3e0e3449918fac3bf223a70b8709", null ],
    [ "Handle", "class_handle.html#ad2cab6ea66970629a381c70738b0b472", null ],
    [ "Handle", "class_handle.html#a9cadb5daacd62808eb3d3dd059a6fe2e", null ],
    [ "~Handle", "class_handle.html#af44781eaf3bf4a8dc43c03bbffb6a99b", null ],
    [ "getPtr", "class_handle.html#ab4ab29f577789c0577d1b44faf6a8f3f", null ],
    [ "getPtr", "class_handle.html#a904517eada1393456c257bba79f8ee31", null ],
    [ "getRef", "class_handle.html#aa2b0e477fbab690dc33e4f8751235a54", null ],
    [ "getRef", "class_handle.html#aa0d40f86fb91881263135e468c500c61", null ],
    [ "operator!=", "class_handle.html#ab0daceecdfdb7a3c6a986ec4e44c1bef", null ],
    [ "operator()", "class_handle.html#ae240e5153753350da4c7e12bdca5606e", null ],
    [ "operator()", "class_handle.html#a71a32d9971601ddc7370f1487b1b0b9f", null ],
    [ "operator*", "class_handle.html#a400771b1a292b9cc986458a17fdd56a4", null ],
    [ "operator*", "class_handle.html#aa363f58481614502dd4c81b850689dfe", null ],
    [ "operator->", "class_handle.html#a8b1e1184484b93dbb43bd2718f09b36a", null ],
    [ "operator->", "class_handle.html#a86614303c99dd2616bec91f67d09c648", null ],
    [ "operator<", "class_handle.html#a2f06bad9eb8d12daa63e9ab0d22589d2", null ],
    [ "operator=", "class_handle.html#a90a09410b859358597334c0e8faa0e72", null ],
    [ "operator=", "class_handle.html#aa393552601be7cb81793a0633d2b74ed", null ],
    [ "operator=", "class_handle.html#adc4a85d1badceeb701e514681212e6c9", null ],
    [ "operator==", "class_handle.html#a091df1aff90d6308007bbd7729ef61b8", null ],
    [ "operator>", "class_handle.html#a0b7895dd362d162168e6fe1aa0315fc7", null ],
    [ "rebind", "class_handle.html#ad185ab655996c9f4f4d3c6d60b82f2ab", null ],
    [ "rebind", "class_handle.html#a150c54fa8c15a76a656c844ef73e5962", null ],
    [ "classptr", "class_handle.html#adaead7076a54db6aff6cd20c3d5effa7", null ]
]
```

Definition at line 1 of file class_handle.js.

30.468 doc/html/class_handle_id.js File Reference

Variables

- var class_handle_id

30.468.1 Variable Documentation

30.468.1.1 var class_handle_id

Initial value:

```
=
[
    [ "HandleId", "class_handle_id.html#a01fddf4a8dc585f3e586995abbaf9c18", null ],
    [ "~HandleId", "class_handle_id.html#aa51e63467689ea379db024af0afbd232", null ],
    [ "decrement", "class_handle_id.html#a60c877566273852f57db0c287e8e20e9", null ],
    [ "dynamicObj", "class_handle_id.html#a731b580ced4cf492c117d400845ffa9e", null ],
    [ "getNoRefs", "class_handle_id.html#a7056b61e814da1d6efdaa829abb41113", null ],
    [ "increment", "class_handle_id.html#a6203b5c7c6abb05b2f29c8867957ed91", null ],
    [ "isReferenced", "class_handle_id.html#abb43ecc44cbdee2b224ffac88ac93fff", null ],
    [ "operator delete", "class_handle_id.html#a93674a6e3b006910a7622fb342963c93", null ],
    [ "operator new", "class_handle_id.html#a35338ac3a826d0b9932787918adb92f6", null ],
    [ "operator new", "class_handle_id.html#a63c4e34f17f25e7ba5197e81449d39e4", null ],
    [ "dynamic_object", "class_handle_id.html#a6f50f94d066f1e7ac940446a4a57040e", null ],
    [ "refcount", "class_handle_id.html#aafccc3f78cf1734743a9c0a4c85e731d", null ]
]
```

Definition at line 1 of file class_handle_id.js.

30.469 doc/html/class_heap_node.js File Reference

Variables

- var class_heap_node

30.469.1 Variable Documentation

30.469.1.1 var class_heap_node

Initial value:

```
=
[
    [ "HeapNode", "class_heap_node.html#a3a3dad2d61930cf4c4c45594419958ed", null ],
    [ "HeapNode", "class_heap_node.html#a1e2d06f1f13c75ccf3431521a8c4fd42", null ],
    [ "~HeapNode", "class_heap_node.html#ad9a3c1e2d881e7834a1bb7027e40f38c", null ],
    [ "operator>", "class_heap_node.html#ae5cd253973c2925786d7e3574a0d756c", null ],
    [ "operator>=", "class_heap_node.html#a41be61494c745036fc31c52128fd0ab5", null ],
    [ "idx_", "class_heap_node.html#aba2e8f78c366d1cc212d27d717603b72", null ],
    [ "key_", "class_heap_node.html#ae07076e227f6a24b9a70d2dff7031110", null ]
]
```

Definition at line 1 of file class_heap_node.js.

30.470 doc/html/class_heap_node2.js File Reference

Variables

- var class_heap_node2

30.470.1 Variable Documentation

30.470.1.1 var class_heap_node2

Initial value:

```
=
[
    [ "HeapNode2", "class_heap_node2.html#a6b8d602cb46fe0701e3c6dab995b051e", null ],
    [ "HeapNode2", "class_heap_node2.html#a5b22b052c82980a29916634dbf753c47", null ],
    [ "~HeapNode2", "class_heap_node2.html#a08d62ecd298e35b71c6e627bf627ab6d", null ],
    [ "operator>", "class_heap_node2.html#a7b164608b4c4a2d4f6139ffcc26340d1", null ],
    [ "operator>=", "class_heap_node2.html#a743db5dba90e1dc9633b4a7ef8209d12", null ],
    [ "idx_", "class_heap_node2.html#a5ebe9e5b913a025e8f4c5438bdba056a", null ],
    [ "key_", "class_heap_node2.html#a5834899269c09b811d1f2cf807e41e22", null ]
]
```

Definition at line 1 of file class_heap_node2.js.

30.471 doc/html/class_load_and_store_flag.js File Reference

Variables

- var class_load_and_store_flag

30.471.1 Variable Documentation

30.471.1.1 var class_load_and_store_flag

Initial value:

```
=
[
    [ "LoadAndStoreFlag", "class_load_and_store_flag.html#ae2c278f4da8c79b1201f529862b5a09c", null ],
    [ "LoadAndStoreFlag", "class_load_and_store_flag.html#ab66e21ad7c510154322ec490200a768d", null ],
    [ "LoadAndStoreFlag", "class_load_and_store_flag.html#a917efd271950913a6e326b7cd8c4276a", null ],
    [ "LoadAndStoreFlag", "class_load_and_store_flag.html#a57a4a0a3ca90e13866d0424b54289782", null ]
]
```

Definition at line 1 of file class_load_and_store_flag.js.

30.472 doc/html/class_matrix_col.js File Reference

Variables

- var class_matrix_col

30.472.1 Variable Documentation

30.472.1.1 var class_matrix_col

Initial value:

```
=
[
    [ "MatrixCol", "class_matrix_col.html#a7c8e045a6e5659da6874a6cc7e645414", null ],
    [ "MatrixCol", "class_matrix_col.html#a602517d82b0fc10f8dee909aa74df436", null ],
    [ "~MatrixCol", "class_matrix_col.html#a9961882559950e092da0d22500ed0e5a", null ],
    [ "Next", "class_matrix_col.html#aca56b4e4e476005d501c210627563969", null ]
]
```

Definition at line 1 of file class_matrix_col.js.

30.473 doc/html/class_matrix_col_x.js File Reference

Variables

- var class_matrix_col_x

30.473.1 Variable Documentation

30.473.1.1 var class_matrix_col_x

Initial value:

```
=
[
    [ "MatrixColX", "class_matrix_col_x.html#ab3094151ba6d460736e03c9fcaf55ac1", null ],
    [ "~MatrixColX", "class_matrix_col_x.html#a237c59fd0549030b0f46b013a9963421", null ],
    [ "Next", "class_matrix_col_x.html#a1d23ac481679b1c07896ce31f9cc5e34", null ],
    [ "store", "class_matrix_col_x.html#aa0cd295e552adc80f7dba9be15640a04", null ]
]
```

Definition at line 1 of file class_matrix_col_x.js.

30.474 doc/html/class_matrix_row.js File Reference

Variables

- var class_matrix_row

30.474.1 Variable Documentation

30.474.1.1 var class_matrix_row

Initial value:

```
=
[
    [ "MatrixRow", "class_matrix_row.html#a0bee1c69c70ae9b6314509c3ff0f20b8", null ],
    [ "~MatrixRow", "class_matrix_row.html#a8e9d1e2ef5f0ca9de9d4a77c239c0d5c", null ],
    [ "Next", "class_matrix_row.html#a733500292e7c2a65299c3096f21e7331", null ]
]
```

Definition at line 1 of file class_matrix_row.js.

30.475 doc/html/class_matrix_row_col.js File Reference

Variables

- var class_matrix_row_col

30.475.1 Variable Documentation

30.475.1.1 var class_matrix_row_col

Definition at line 1 of file class_matrix_row_col.js.

30.476 doc/html/class_model__3pe.js File Reference

Variables

- var class_model__3pe

30.476.1 Variable Documentation

30.476.1.1 var class_model__3pe

Initial value:

```
=
[
    [ "Model_3pe", "class_model__3pe.html#ae8bf015434dee0b6b5a81839c269af37", null ],
    [ "Derivatives", "class_model__3pe.html#a2b665c06c033d60364ebc4d14ed3f05b", null ],
    [ "IsValid", "class_model__3pe.html#a89ed75f468bf008647f1fd1ff8af607d", null ],
    [ "operator()", "class_model__3pe.html#aa6364b4b037f1abd64077b25746280f2", null ]
]
```

Definition at line 1 of file class_model__3pe.js.

30.477 doc/html/class_multi_dijkstra.js File Reference

Variables

- var class_multi_dijkstra

30.477.1 Variable Documentation

30.477.1.1 var class_multi_dijkstra

Initial value:

```
=
[
    [ "MultiDijkstra", "class_multi_dijkstra.html#a172dde104dc4c23e159334898f60fac7", null ],
    [ "~MultiDijkstra", "class_multi_dijkstra.html#ad642ce853461abb1a07876bd0a733fef", null ],
    [ "closestNeighbour", "class_multi_dijkstra.html#aa6a3d03f9862ec3dcb2495d863db42a2", null ],
    [ "getDistance", "class_multi_dijkstra.html#a169d72adef61b6040ab0968c3d916964", null ],
    [ "getDistance", "class_multi_dijkstra.html#a1be7065940136798e36b3f2e17ccfb5b", null ],
    [ "getLabel", "class_multi_dijkstra.html#a763ccc7047d5d74a0023a6edc136b722", null ],
    [ "initialize", "class_multi_dijkstra.html#abfa5931197be1bd6d8f7715e9630147e", null ],
    [ "insertInCandidates", "class_multi_dijkstra.html#ab60bfdddf5d54180172d09618dd42b9f", null ],
    [ "isFinished", "class_multi_dijkstra.html#a54908b8519dc81257fb12f3950620767", null ],
    [ "run", "class_multi_dijkstra.html#a3a7ea26538adb1abc6debb41d0c9ab53", null ],
    [ "run", "class_multi_dijkstra.html#a574042b10007e564f3b9926ed0dec49d", null ],
    [ "run", "class_multi_dijkstra.html#a1b75b2ecd04a85ceab11d3aa231a4011", null ],
    [ "setFinished", "class_multi_dijkstra.html#a6222cb416af690c90259720c01c9b048", null ],
    [ "setGraph", "class_multi_dijkstra.html#a3e658fe99ddb8e3d51ced0dfbbb268ba", null ],
    [ "setSource", "class_multi_dijkstra.html#ac6e50d5f99fbb3c9d1dae327d10012a5", null ],
    [ "back_trace_", "class_multi_dijkstra.html#ad4aba15e5b77c17e32dbe6e0b6cb2ad8", null ],
    [ "distances_", "class_multi_dijkstra.html#aa3d7557171ee639aa6c84e93b25e4c9a", null ],
    [ "flags_", "class_multi_dijkstra.html#a0d6da2fa60a1854c199275fc1218e63f", null ],
    [ "graph_", "class_multi_dijkstra.html#a01cba4633b91a539cb4b663016db6d70", null ],
    [ "label_", "class_multi_dijkstra.html#a7e2736e3c6d24b2a5b451c5d6f4b02ff", null ],
    [ "large_distance_", "class_multi_dijkstra.html#a4cc650703fd03dae2d075afb06563c2f", null ],
    [ "queue_", "class_multi_dijkstra.html#a0c4bdac62aa04c86ef015a9c2c3a5507", null ]
]
```

Definition at line 1 of file class_multi_dijkstra.js.

30.478 doc/html/class_n_e_w_m_a_t_1_1_added_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_added_matrix

30.478.1 Variable Documentation

30.478.1.1 var class_n_e_w_m_a_t_1_1_added_matrix

Initial value:

```
=
[
    [ "AddedMatrix", "class_n_e_w_m_a_t_1_1_added_matrix.html#ad77e556ba16299946e8e98782c83c150", null ],
    [ "~AddedMatrix", "class_n_e_w_m_a_t_1_1_added_matrix.html#aef827a1b165d1eeae87b6b5b5224f186", null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_added_matrix.html#a1a06e50e5fb74e5ee21315551294ad82", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_added_matrix.html#a51cbf3c7f1f820b935368b28528362e0", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_added_matrix.html#afcc50b811bd45d547cae53941018fdde", null ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_added_matrix.html#abaf0969f44c36896ac567a558a330771", null ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_added_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_added_matrix.js.

30.479 doc/html/class_n_e_w_m_a_t_1_1_array_length_specifier.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_array_length_specifier

30.479.1 Variable Documentation

30.479.1.1 var class_n_e_w_m_a_t_1_1_array_length_specifier

Initial value:

```
=
[
    [ "ArrayLengthSpecifier", "
      class_n_e_w_m_a_t_1_1_array_length_specifier.html#a3c09f07ca24b7e83ba5d0c13d5359ff0", null ],
    [ "Value", "class_n_e_w_m_a_t_1_1_array_length_specifier.html#a4cf0a24f1c538cfc06ab285933919abb", null
      ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_array_length_specifier.js.

30.480 doc/html/class_n_e_w_m_a_t_1_1_band_l_u_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_band_l_u_matrix

30.480.1 Variable Documentation

30.480.1.1 var class_n_e_w_m_a_t_1_1_band_l_u_matrix

Initial value:

```
=
[
    [ "BandLUMatrix", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#abf1a3f2bf633e9c5e1b3d9ab13899ebf", null
      ],
    [ "~BandLUMatrix", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#a59e4522041a5d8d1b52dbf670da9c092", null
       ],
    [ "CleanUp", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#a47551f47c5cd3fcdb019c033d669904f", null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#ac10b8111c08a815effebb7e65af05542", null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#a9a6126cdedb40da1d56e65f1a4035e15", null ],
    [ "GetRow", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#a7035e511da75d3028f776c8ec89ba66c", null ],
    [ "IsEqual", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#a23b14d1c78863bf424f70d18c242827d", null ],
    [ "IsSingular", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#aba4bc7c5b518dc1f454cf3f59a26b2ec", null ],
    [ "LogDeterminant", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#a17eed4e0e740ff224d12d50f1e1cbfc8",
      null ],
    [ "lubksb", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#aa6b6344001665e9241bd7a3e6564c7da", null ],
    [ "MakeSolver", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#a3700705a64f6cd1752dea6155b5075c8", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#a87d2ce9e16b90fee44b387af9b032cc7", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#ad45e86466e3969ec2cdabea010901804", null ],
    [ "Solver", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#a38d4bb7d84c9c536e1606e9e2164ad11", null ],
    [ "Type", "class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#ad7d8038615cc14e3582ec69f9be90b42", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_band_l_u_matrix.js.

30.481 doc/html/class_n_e_w_m_a_t_1_1_band_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_band_matrix

30.481.1 Variable Documentation

30.481.1.1 var class_n_e_w_m_a_t_1_1_band_matrix

Definition at line 1 of file class_n_e_w_m_a_t_1_1_band_matrix.js.

30.482 doc/html/class_n_e_w_m_a_t_1_1_base_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_base_matrix

30.482.1 Variable Documentation

30.482.1.1 var class_n_e_w_m_a_t_1_1_base_matrix

Definition at line 1 of file class_n_e_w_m_a_t_1_1_base_matrix.js.

30.483 doc/html/class_n_e_w_m_a_t_1_1_cannot_build_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_cannot_build_exception

30.483.1 Variable Documentation

30.483.1.1 var class_n_e_w_m_a_t_1_1_cannot_build_exception

Initial value:

```
=
[
    [ "CannotBuildException", "
      class_n_e_w_m_a_t_1_1_cannot_build_exception.html#abd05302f4155f571d4efe275fae63992", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_cannot_build_exception.js.

30.484 doc/html/class_n_e_w_m_a_t_1_1_coled_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_coled_matrix

30.484.1 Variable Documentation

30.484.1.1 var class_n_e_w_m_a_t_1_1_coled_matrix

Initial value:

```
=
[
    [ "~ColedMatrix", "class_n_e_w_m_a_t_1_1_coled_matrix.html#af183979b1260e8395a26275083c4ce03", null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_coled_matrix.html#a48ff151a8dd9ccc0c3cc13c427b53b41", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_coled_matrix.html#a7f3964e2bf5f19e7928936baeb5d7ea6", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_coled_matrix.html#afcc50b811bd45d547cae53941018fdde", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_coled_matrix.js.

30.485 doc/html/class_n_e_w_m_a_t_1_1_column_vector.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_column_vector

30.485.1 Variable Documentation

30.485.1.1 var class_n_e_w_m_a_t_1_1_column_vector

Initial value:

```
=
[
    [ "ColumnVector", "class_n_e_w_m_a_t_1_1_column_vector.html#a5b0c165a9ecee3313dbc0255579e0e8e", null ],
    [ "~ColumnVector", "class_n_e_w_m_a_t_1_1_column_vector.html#ab57241ece59a6dfcbe0cd1e7a7fc42a6", null ]
      ,
    [ "ColumnVector", "class_n_e_w_m_a_t_1_1_column_vector.html#a625731389b21c037ea40516b2009fa30", null ],
    [ "ColumnVector", "class_n_e_w_m_a_t_1_1_column_vector.html#a7dcc6e2dce014f0be26ff94e79c33994", null ],
    [ "ColumnVector", "class_n_e_w_m_a_t_1_1_column_vector.html#a23e4d4faf5af6441fd7203e90c308288", null ],
    [ "CleanUp", "class_n_e_w_m_a_t_1_1_column_vector.html#a6627ff0f7aeccf701cd9e9b374b4223a", null ],
    [ "element", "class_n_e_w_m_a_t_1_1_column_vector.html#a3c8bb596dd3700fceb988f59373f9c86", null ],
    [ "element", "class_n_e_w_m_a_t_1_1_column_vector.html#a5aeff3a1f6ee88ea872c940dc682ea28", null ],
    [ "nric", "class_n_e_w_m_a_t_1_1_column_vector.html#ad47280b00e105c22a9e698d6488c114c", null ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_column_vector.html#ac3b7731645747d6753f7eb5887bb44a3", null ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_column_vector.html#a7bae66e57d02ee96c2c295f173e5157c", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_column_vector.html#a31570d20b88a3c3dc6ebc433d9db4417", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_column_vector.html#a0d2252fb6cd4a2129fc26e9b4c9b4760", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_column_vector.html#add4db6d278e6d0984906ad46c33a9841", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_column_vector.html#afc4ca58241ef5581837ce5f2c9a6f244", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_column_vector.html#a9ce10dcae7e68a4da583c869c84368ed", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_column_vector.html#aa041a520e6a2aee426fbc4ee4fbbf670", null ],
    [ "Transpose", "class_n_e_w_m_a_t_1_1_column_vector.html#a5aed881c8b3c5eec69a3fd190705be41", null ],
    [ "Type", "class_n_e_w_m_a_t_1_1_column_vector.html#a8d495b637032fc7b05e39fe69ae58c05", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_column_vector.js.

30.486 doc/html/class_n_e_w_m_a_t_1_1_concatenated_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_concatenated_matrix

30.486.1 Variable Documentation

30.486.1.1 var class_n_e_w_m_a_t_1_1_concatenated_matrix

Initial value:

```
=
[
    [ "ConcatenatedMatrix", "
      class_n_e_w_m_a_t_1_1_concatenated_matrix.html#ab81c83f6bc125d9dad45eadd24f8a209", null ],
    [ "~ConcatenatedMatrix", "
      class_n_e_w_m_a_t_1_1_concatenated_matrix.html#a3e7816e53c7b7b9187189f903cab1034", null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_concatenated_matrix.html#aaac39d73963b04599e75aa47909ee0cd", null
      ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_concatenated_matrix.html#a7002d1ad0e96c63d585fef8c1a174c21", null
      ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_concatenated_matrix.html#afcc50b811bd45d547cae53941018fdde",
      null ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_concatenated_matrix.html#abaf0969f44c36896ac567a558a330771",
      null ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_concatenated_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237",
      null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_concatenated_matrix.js.

30.487 doc/html/class_n_e_w_m_a_t_1_1_convergence_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_convergence_exception

30.487.1 Variable Documentation

30.487.1.1 var class_n_e_w_m_a_t_1_1_convergence_exception

Initial value:

```
=
[
    [ "ConvergenceException", "
      class_n_e_w_m_a_t_1_1_convergence_exception.html#a5e4003ffd88f6878ee2d06bbe30ad0a4", null ],
    [ "ConvergenceException", "
      class_n_e_w_m_a_t_1_1_convergence_exception.html#a5336d432ba1ba5ad7a6b87c0bf0ce8b1", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_convergence_exception.js.

30.488 doc/html/class_n_e_w_m_a_t_1_1_crout_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_crout_matrix

30.488.1 Variable Documentation

30.488.1.1 var class_n_e_w_m_a_t_1_1_crout_matrix

Initial value:

```
=
[
    [ "CroutMatrix", "class_n_e_w_m_a_t_1_1_crout_matrix.html#a9d2bb8a8375726f2244d0286a3ec4ee9", null ],
    [ "~CroutMatrix", "class_n_e_w_m_a_t_1_1_crout_matrix.html#a0d8066614076ec97635f90695a05f05a", null ],
    [ "CleanUp", "class_n_e_w_m_a_t_1_1_crout_matrix.html#a3812c09942872971d5b94f4c18e2c165", null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_crout_matrix.html#a2685489fcbcd281a7a6cf824d0c342ad", null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_crout_matrix.html#add3b9113e948eaa102ffd8adba9fa98e", null ],
    [ "GetRow", "class_n_e_w_m_a_t_1_1_crout_matrix.html#a82cc652216aa77871e6ca337db55664d", null ],
    [ "IsEqual", "class_n_e_w_m_a_t_1_1_crout_matrix.html#ac1cbbc4791df15e19b82337497e28e92", null ],
    [ "IsSingular", "class_n_e_w_m_a_t_1_1_crout_matrix.html#a7316146e8f084c57bea844f6e431ca7d", null ],
    [ "LogDeterminant", "class_n_e_w_m_a_t_1_1_crout_matrix.html#ae8538150bbdb49778b728a9ef7e71031", null ]
      ,
    [ "lubksb", "class_n_e_w_m_a_t_1_1_crout_matrix.html#afcfb1bcd9b105d4be4f13b9dc85a0f98", null ],
    [ "MakeSolver", "class_n_e_w_m_a_t_1_1_crout_matrix.html#a4280df1fcceea0e6283b1f8ed4302cd1", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_crout_matrix.html#aba89f95906ae140fe016ddb507bdc02f", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_crout_matrix.html#a52a6aeec80d85af469ae2f3512bdfd7f", null ],
    [ "Solver", "class_n_e_w_m_a_t_1_1_crout_matrix.html#a408949e52d007455d1737e31edfa53c0", null ],
    [ "Type", "class_n_e_w_m_a_t_1_1_crout_matrix.html#a52a29d6a758743dda05cb8be7d3dfb9b", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_crout_matrix.js.

30.489 doc/html/class_n_e_w_m_a_t_1_1_diaged_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_diaged_matrix

30.489.1 Variable Documentation

30.489.1.1 var class_n_e_w_m_a_t_1_1_diaged_matrix

Initial value:

```
=
[
    [ "~DiagedMatrix", "class_n_e_w_m_a_t_1_1_diaged_matrix.html#aec0265288aa9e33ed7b7827b0226ad5e", null ]
    ,
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_diaged_matrix.html#ad7a7e9f78927564a819f4374b7d8fb50", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_diaged_matrix.html#a7d6342a05708d740d7ea5975b002a863", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_diaged_matrix.html#afcc50b811bd45d547cae53941018fdde", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_diaged_matrix.js.

30.490 doc/html/class_n_e_w_m_a_t_1_1_diagonal_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_diagonal_matrix

30.490.1 Variable Documentation

30.490.1.1 var class_n_e_w_m_a_t_1_1_diagonal_matrix

Definition at line 1 of file class_n_e_w_m_a_t_1_1_diagonal_matrix.js.

30.491 doc/html/class_n_e_w_m_a_t_1_1_find_maximum2.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_find_maximum2

30.491.1 Variable Documentation

30.491.1.1 var class_n_e_w_m_a_t_1_1_find_maximum2

Initial value:

```
=
[
    [ "~FindMaximum2", "class_n_e_w_m_a_t_1_1_find_maximum2.html#a5b8f707cdf9b42a853d248097c361b23", null ]
    ,
    [ "Fit", "class_n_e_w_m_a_t_1_1_find_maximum2.html#ac535f364bf2417435b4abaf042669b84", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_find_maximum2.js.

30.492 doc/html/class_n_e_w_m_a_t_1_1_general_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_general_matrix

30.492.1 Variable Documentation

30.492.1.1 var class_n_e_w_m_a_t_1_1_general_matrix

Definition at line 1 of file class_n_e_w_m_a_t_1_1_general_matrix.js.

30.493 doc/html/class_n_e_w_m_a_t_1_1_generic_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_generic_matrix

30.493.1 Variable Documentation

30.493.1.1 var class_n_e_w_m_a_t_1_1_generic_matrix

Initial value:

```
=
[
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a19947b73823ee9150213f5f3bcbd24c8", null
      ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a45820078a0784bca1acada47f4ad0c85", null
      ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a14afe7f8860aa9fd0d8a906d240fc5c4", null
      ],
    [ "~GenericMatrix", "class_n_e_w_m_a_t_1_1_generic_matrix.html#abe3a629cf585506d54d6331223968b3d", null
       ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_generic_matrix.html#afe1f02c324cd2201997d3054c2a36ad4", null ],
    [ "CleanUp", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a4f7bf7d205291b933078a96bdaa40580", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a7108ff51fc81ef4ced62b3dd8e5980f0", null ],
    [ "operator&=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a8743f0f1e522261f4497bdf135ab820a", null ],
    [ "operator*=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a72ddaee7647faa7e47873f308511c485", null ],
    [ "operator*=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a16d0d84d9e614394146f6a54312078a8", null ],
    [ "operator+=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#abe00f1f180355b1af2ff46769bcb2d36", null ],
    [ "operator+=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a0d01ea669d8deb1fe34f822a28f2cd81", null ],
    [ "operator-=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#ae26ce111d0d75bba35cd555215b651de", null ],
    [ "operator-=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#aae6694a5ba6428ca75c5c44cd22a6c96", null ],
    [ "operator/=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#aaac78f3ba609a6d4a393ec3ff251a448", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a44c5a34e643d475ff1f3409f7017c893", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a88ee4c0dae3036bf45110f4ac1549fd5", null ],
    [ "operator|=", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a416fcfe8e834866abc39b82433fec2d2", null ],
    [ "Release", "class_n_e_w_m_a_t_1_1_generic_matrix.html#a998692fc87fa7101da13f10473ce89f8", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_generic_matrix.html#afcc50b811bd45d547cae53941018fdde", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_generic_matrix.js.

30.494 doc/html/class_n_e_w_m_a_t_1_1_get_sub_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_get_sub_matrix

30.494.1 Variable Documentation

30.494.1.1 var class_n_e_w_m_a_t_1_1_get_sub_matrix

Initial value:

```
=
[
    [ "GetSubMatrix", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a0766a66aa428c36c724f8a36b9dead7d", null ]
      ,
    [ "~GetSubMatrix", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a8a417b260c066d14d5fe4a307dfd000a", null
      ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#acf67fbbe9f8638abf617c340f93ae315", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a0e4401bdc043ca76cf8a6d2757ab155b", null ],
    [ "Inject", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#aeb4da21c26be6132051fc8b393de405a", null ],
    [ "operator*=", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#abdd7893f548ee765fb2672f0064f42d7", null ],
    [ "operator+=", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a41c915cc444e70c3cd63ef61cf755f8a", null ],
    [ "operator+=", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a98d05b3640c8d6e3429a855ca81db699", null ],
    [ "operator-=", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a5001d48272ad2d2b8bc538be1736fa85", null ],
    [ "operator-=", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#aecdd7669168ec6743f7378e11b4f5551", null ],
    [ "operator/=", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a8d2114ebf339c20e20f2a8846589d50d", null ],
    [ "operator<<", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a6d25816fa55b2f04e3b06554516f84c6", null ],
    [ "operator<<", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#ad4350f3a2a9aac7311900ada841dc6cd", null ],
    [ "operator<<", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#aed28ef23d97aaa205607c5fb29e46f23", null ],
    [ "operator<<", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a659b0c1b17d6b52afb3ea25f175a8b5a", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a15f489f0c5828e3ffdd7d36e00b43231", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a0b45e7db37f29b77ec2d7d168288ae22", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#a7f528208d6f7fe11e59ddbd6b6f203ca", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_get_sub_matrix.html#afcc50b811bd45d547cae53941018fdde", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_get_sub_matrix.js.

30.495 doc/html/class_n_e_w_m_a_t_1_1_identity_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_identity_matrix

30.495.1 Variable Documentation

30.495.1.1 var class_n_e_w_m_a_t_1_1_identity_matrix

Initial value:

```
=
[
    [ "IdentityMatrix", "class_n_e_w_m_a_t_1_1_identity_matrix.html#acd9124ff1b21a69afd415a9e68d073b8",
      null ],
    [ "~IdentityMatrix", "class_n_e_w_m_a_t_1_1_identity_matrix.html#afe7cae0a323c04f609859e3ce0ba35a6",
      null ],
    [ "IdentityMatrix", "class_n_e_w_m_a_t_1_1_identity_matrix.html#ad9a24dff9b08f41cda062438666d942f",
      null ],
    [ "IdentityMatrix", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a4f3706dc33b285d3a8706b945a4dfc17",
      null ],
    [ "IdentityMatrix", "class_n_e_w_m_a_t_1_1_identity_matrix.html#aeed6ff0975f66d11b1ce9f2464e10b32",
      null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_identity_matrix.html#aac5be3a3284b7eb8b1a2509e587c7676", null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a07576967a3a0862fc7d72f78b0206bfb", null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_identity_matrix.html#aa66481cff64f3252d68ee10750e85622", null ],
    [ "GetRow", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a08b3ea293ddb4a1e0f7a0001667ebd30", null ],
    [ "LogDeterminant", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a7974e44f060885229d4b40a290f07d1c",
      null ],
    [ "MakeSolver", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a7a70a662fc02229693131978889c3310", null ],
    [ "NextCol", "class_n_e_w_m_a_t_1_1_identity_matrix.html#adb2537c21d81ef7ff6f4b8478cc1a027", null ],
    [ "NextCol", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a8295eb1e6130ab1207e09f3f610214b4", null ],
    [ "NextRow", "class_n_e_w_m_a_t_1_1_identity_matrix.html#ae6ca2f1dac32d5e2dd357c9206b7bb95", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a3c6539e1c255ac0e64abc254e07ac9f9", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a5f742b07e107232fb77c431d0fa5d0f1", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a1a5b0ca4f3123cc1802fa603c506d233", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a9ccf3675e789c6ad8f4f89c7879f058b", null ],
    [ "Solver", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a7b10efb4ab2a0c4989963f2d2aff542d", null ],
    [ "Sum", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a3fd6ffc96fcec64e7f3821b0e7049287", null ],
    [ "SumAbsoluteValue", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a886ad1bab9224eb18bf87892677da50e",
      null ],
    [ "SumSquare", "class_n_e_w_m_a_t_1_1_identity_matrix.html#aa82c67bf82f8ee120ecbc30bed16f4cd", null ],
    [ "Trace", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a23a058aa000a07177f2cae30583c819e", null ],
    [ "Transpose", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a903a3c67e3ce707a932a186696ae73e1", null ],
    [ "Type", "class_n_e_w_m_a_t_1_1_identity_matrix.html#a220e75cc95126af4658e247e2b1851db", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_identity_matrix.js.

30.496 doc/html/class_n_e_w_m_a_t_1_1_incompatible_dimensions_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_incompatible_dimensions_exception

30.496.1 Variable Documentation

30.496.1.1 var class_n_e_w_m_a_t_1_1_incompatible_dimensions_exception

Initial value:

```
=
[
    [ "IncompatibleDimensionsException", "
      class_n_e_w_m_a_t_1_1_incompatible_dimensions_exception.html#aa9fc3f81c3c2f311bad5f19a859e0225", null ],
    [ "IncompatibleDimensionsException", "
      class_n_e_w_m_a_t_1_1_incompatible_dimensions_exception.html#a649572ecbc15d9b72f6b6b4ea611c57c", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_incompatible_dimensions_exception.js.

30.497 doc/html/class_n_e_w_m_a_t_1_1_index_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_index_exception

30.497.1 Variable Documentation

30.497.1.1 var class_n_e_w_m_a_t_1_1_index_exception

Initial value:

```
=
[
    [ "IndexException", "class_n_e_w_m_a_t_1_1_index_exception.html#a68214876072adca2b9dfc8cb8aba3d49",
      null ],
    [ "IndexException", "class_n_e_w_m_a_t_1_1_index_exception.html#a4118806c61a30e461d1d78f007143ee0",
      null ],
    [ "IndexException", "class_n_e_w_m_a_t_1_1_index_exception.html#a1146753e80d758e8a229a1b886f71eaf",
      null ],
    [ "IndexException", "class_n_e_w_m_a_t_1_1_index_exception.html#a03c22303fcd82829f86cefb1186b114d",
      null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_index_exception.js.

30.498 doc/html/class_n_e_w_m_a_t_1_1_internal_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_internal_exception

30.498.1 Variable Documentation

30.498.1.1 var class_n_e_w_m_a_t_1_1_internal_exception

Initial value:

```
=
[
    [ "InternalException", "class_n_e_w_m_a_t_1_1_internal_exception.html#a12b6e89c3b1d9b5a64d10f3398192033
      ", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_internal_exception.js.

30.499 doc/html/class_n_e_w_m_a_t_1_1_inverted_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_inverted_matrix

30.499.1 Variable Documentation

30.499.1.1 var class_n_e_w_m_a_t_1_1_inverted_matrix

Initial value:

```
=
[
    [ "~InvertedMatrix", "class_n_e_w_m_a_t_1_1_inverted_matrix.html#a3af182a6d83d0d1f61ab4d527f90cbaa",
      null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_inverted_matrix.html#ab127880731fd9c2e5202fbd15df3122a", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_inverted_matrix.html#abce7668a90eeb91b60683baddc932c3a", null ],
    [ "operator*", "class_n_e_w_m_a_t_1_1_inverted_matrix.html#afd48b81d0392f67fbc803b52ee3d9bc9", null ],
    [ "operator*", "class_n_e_w_m_a_t_1_1_inverted_matrix.html#ada3589f22bec18dc2302742332b35409", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_inverted_matrix.html#afcc50b811bd45d547cae53941018fdde", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_inverted_matrix.js.

30.500 doc/html/class_n_e_w_m_a_t_1_1_k_p_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_k_p_matrix

30.500.1 Variable Documentation

30.500.1.1 var class_n_e_w_m_a_t_1_1_k_p_matrix

Initial value:

```
=
[
    [ "KPMatrix", "class_n_e_w_m_a_t_1_1_k_p_matrix.html#ac3bc1829dd4dff55fbb7bb77c231a393", null ],
    [ "~KPMatrix", "class_n_e_w_m_a_t_1_1_k_p_matrix.html#ae8f939b0eb657d86754a43f7d394203f", null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_k_p_matrix.html#a709cda05547fd9eb8bf3335dc4b22026", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_k_p_matrix.html#a17e0256578b704146c777df48356b81a", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_k_p_matrix.html#afcc50b811bd45d547cae53941018fdde", null ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_k_p_matrix.html#abaf0969f44c36896ac567a558a330771", null ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_k_p_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237", null ],
    [ "KP", "class_n_e_w_m_a_t_1_1_k_p_matrix.html#a7b84f8e43bac4608bf225867306c9450", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_k_p_matrix.js.

30.501 doc/html/class_n_e_w_m_a_t_1_1_l_l___d___f_i.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_l_l___d___f_i

30.501.1 Variable Documentation

30.501.1.1 var class_n_e_w_m_a_t_1_1_l_l___d___f_i

Initial value:

```
=
[
    [ "~LL_D_FI", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#ab965296fff06ea79e2da67a63020c780", null ],
    [ "Derivatives", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#adf4f3d247ce14423a4a56cc71208e2f8", null ],
    [ "FI", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#ac3705dc4e71588f1f783a96ee298a414", null ],
    [ "IsValid", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#a00363cd032220a81358b7174f2054277", null ],
    [ "IsValid", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#ad966a18cf175f6a21c06ecc6f6183d66", null ],
    [ "LogLikelihood", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#aa6f46c203df838a8aa42aeb60a526e2a", null ]
    ,
    [ "LogLikelihood", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#ae42e54f6ff22e50475877585f3fee8e2", null ]
    ,
    [ "Set", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#a9fe13f8c5df42e74475218d512ff8e57", null ],
    [ "WG", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#ae6376b9b2bed94af9ca3f16abcf7926b", null ],
    [ "para", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#afac709c2cc3f61d8c8f25fc34a2bf0f0", null ],
    [ "wg", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html#a49099740d783df4fff02c19cf63d2dd0", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_l_l___d___f_i.js.

30.502 doc/html/class_n_e_w_m_a_t_1_1_linear_equation_solver.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_linear_equation_solver

30.502.1 Variable Documentation

30.502.1.1 var class_n_e_w_m_a_t_1_1_linear_equation_solver

Initial value:

```
=
[
    [ "LinearEquationSolver", "
      class_n_e_w_m_a_t_1_1_linear_equation_solver.html#a82d651f3a49527923663e1e3df357dcf", null ],
    [ "~LinearEquationSolver", "
      class_n_e_w_m_a_t_1_1_linear_equation_solver.html#ac745945f382f7fb07a88738c40d274cc", null ],
    [ "CleanUp", "class_n_e_w_m_a_t_1_1_linear_equation_solver.html#aeba950921f42308c3edd4ae0bfa20cc3",
      null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_linear_equation_solver.html#aa8d4e2567a0316d998d7e946e67ce30a",
      null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_linear_equation_solver.html#afcc50b811bd45d547cae53941018fdde",
      null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_linear_equation_solver.js.

30.503 doc/html/class_n_e_w_m_a_t_1_1_log_and_sign.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_log_and_sign

30.503.1 Variable Documentation

30.503.1.1 var class_n_e_w_m_a_t_1_1_log_and_sign

Initial value:

```
=
[
    [ "LogAndSign", "class_n_e_w_m_a_t_1_1_log_and_sign.html#ac42e0b1df7255dec4978506ac3df4cd8", null ],
    [ "LogAndSign", "class_n_e_w_m_a_t_1_1_log_and_sign.html#ae15f7eb74654dd7ab77a8ed36d750808", null ],
    [ "ChangeSign", "class_n_e_w_m_a_t_1_1_log_and_sign.html#a73ebcfb9d621135b52de9d6854b6fa4b", null ],
    [ "LogValue", "class_n_e_w_m_a_t_1_1_log_and_sign.html#a6a39d90313933b380017ba59a6918a98", null ],
    [ "operator*=", "class_n_e_w_m_a_t_1_1_log_and_sign.html#a66c387cba687d87053c1e6197f226773", null ],
    [ "PowEq", "class_n_e_w_m_a_t_1_1_log_and_sign.html#a48c7e57757033d2c4f8b01d652897d68", null ],
    [ "Sign", "class_n_e_w_m_a_t_1_1_log_and_sign.html#a0b02fdbb4f4b7dca9541bc3b39895937", null ],
    [ "Value", "class_n_e_w_m_a_t_1_1_log_and_sign.html#a4f61ca76c5ce21da7cf88b7e158b9edd", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_log_and_sign.js.

30.504 doc/html/class_n_e_w_m_a_t_1_1_lower_band_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_lower_band_matrix

30.504.1 Variable Documentation

30.504.1.1 var class_n_e_w_m_a_t_1_1_lower_band_matrix

Initial value:

```
=
[
    [ "LowerBandMatrix", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a12e243740c28b360091ee25e07113e27",
      null ],
    [ "~LowerBandMatrix", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#ae578ca1f8e46ab77e2db35182d56b8f4",
       null ],
    [ "LowerBandMatrix", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a92141d3195b42b665372521d1aefd5d1",
      null ],
    [ "LowerBandMatrix", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a121f58ef4aa72767ac16c3f98b25487c",
      null ],
    [ "LowerBandMatrix", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a6ad80552fbcd29aff0040506db8f576e",
      null ],
    [ "element", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a3f9adfe5aa9ece9e0d7e1bb4f3021795", null ],
    [ "element", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a7750a8015c8ba15bfc791c939f484e22", null ],
    [ "LogDeterminant", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#aaf9bf5640a81963818e43c698a490d75",
      null ],
    [ "MakeSolver", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a2038b006aa59bce1428e6c332e2087b0", null
      ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a10cd2a784a238ae526c18fd996e4201b", null
      ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a8418ae7db16357fac6dbab51362119ce", null
      ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a9c75ae6e1c94879737d81954ee6d2f4e", null ]
      ,
    [ "operator=", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#ad2023669751f223f226034dc5d5b64fc", null ]
      ,
    [ "operator=", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a100f05b1071da1777cc0c7b2cb93452d", null ]
      ,
    [ "ReSize", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#ad43a907de1a77e742bf71096e9ff86de", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a445e12ff06f55f06ef01a252f9c65187", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#a55038bb353ceda56220dcd9b701dd6a7", null ],
    [ "Solver", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#ac05534ef98fa35e6bf036c300f8fe16b", null ],
    [ "Type", "class_n_e_w_m_a_t_1_1_lower_band_matrix.html#abd0b6523049546535d2d04ceeba4e599", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_lower_band_matrix.js.

30.505 doc/html/class_n_e_w_m_a_t_1_1_lower_triangular_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_lower_triangular_matrix

30.505.1 Variable Documentation

30.505.1.1 var class_n_e_w_m_a_t_1_1_lower_triangular_matrix

Initial value:

```
=
[
    [ "LowerTriangularMatrix", "
      class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a56952dae68203bc29e46d8b9f3b83a5d", null ],
    [ "~LowerTriangularMatrix", "
      class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#af2ecf4e88d34b5171a52f8b39f1237b8", null ],
    [ "LowerTriangularMatrix", "
      class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a79c9dcdd376b210bc45adaa77c977b29", null ],
    [ "LowerTriangularMatrix", "
      class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a355167e691bd8d2d2b704bca14d5cbbd", null ],
    [ "LowerTriangularMatrix", "
      class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a3196cc213e94a1981a0335d24d09fc49", null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#ac013b9b6637f10717bb95a67a5f8b6f3",
      null ],
    [ "element", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a10efe5a7596f2da5296ba91d89fd0a38",
      null ],
    [ "element", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#aa93224ff0071bbe08c506370a0562ef7",
      null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a9b46ebb160718c0d31e2e553b0480244",
      null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a56dd64c41b7cc8510a30e05b1df25190",
      null ],
    [ "GetRow", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#ae9fe462a3691de3526f5cc96b45bc9ca",
      null ],
    [ "LogDeterminant", "
      class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#addeb7782b7216f9e8b1e64eb76e6af74", null ],
    [ "MakeSolver", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#aaf15c79abca72399d73349365ba1bf63",
       null ],
    [ "NextRow", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a024858c07ef86d76795b7d87903355b1",
      null ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#ae8cda30ee5c6443a986fccedc70013fc",
       null ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#ac8e10e826580c79cdfd1aab81e2de998",
       null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a175e694fd53e2ff4df2c0f9f60af1a32",
      null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a74b03d90ac5a95107a80efd11dec64ae",
      null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a37ff031c03dd819a1db6b4f07baf70c9",
      null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a1a96cec059fc60a14028a778575bef44",
      null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a42fac429a1c6dda428f3ee1123152605",
      null ],
    [ "RestoreCol", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a5dc8cb06cf924013d7bfa95dacfe9ce9",
       null ],
    [ "RestoreCol", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#ab0266c190a902bcb14b462a2ecb1784b",
       null ],
    [ "Solver", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#acc2fc134ef66b3375d0dd5e90b20152e",
      null ],
    [ "Trace", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a6e9414133bffc9eddb0b03f216b05120", null
       ],
    [ "Type", "class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html#a83de7e5c9d6dc4bb3d3655cf742b8d6a", null
      ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_lower_triangular_matrix.js.

30.506 doc/html/class_n_e_w_m_a_t_1_1_m_l_e___d___f_i.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_m_l_e___d___f_i

30.506.1 Variable Documentation

30.506.1.1 var class_n_e_w_m_a_t_1_1_m_l_e___d___f_i

Initial value:

```
=
[
    [ "MLE_D_FI", "class_n_e_w_m_a_t_1_1_m_l_e___d___f_i.html#aa292fc72b7d11982aa7f3f9a23609066", null ],
    [ "Fit", "class_n_e_w_m_a_t_1_1_m_l_e___d___f_i.html#adf0b21c31ac54c10da3ab58d1d5b7adc", null ],
    [ "GetCorrelations", "class_n_e_w_m_a_t_1_1_m_l_e___d___f_i.html#a6c5d64ceee4776d6c2fb6e8836a64346",
      null ],
    [ "GetStandardErrors", "class_n_e_w_m_a_t_1_1_m_l_e___d___f_i.html#a739a01e754b9afbdb843cfd8deaa65db",
      null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_m_l_e___d___f_i.js.

30.507 doc/html/class_n_e_w_m_a_t_1_1_mated_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_mated_matrix

30.507.1 Variable Documentation

30.507.1.1 var class_n_e_w_m_a_t_1_1_mated_matrix

Initial value:

```
=
[
    [ "~MatedMatrix", "class_n_e_w_m_a_t_1_1_mated_matrix.html#ac3bbe550857e1e51eed5487a0779fbf3", null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_mated_matrix.html#a0f939899325f755b57d4ea52f711f181", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_mated_matrix.html#a382011d95b6de199da3ad59fef2966a8", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_mated_matrix.html#afcc50b811bd45d547cae53941018fdde", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_mated_matrix.js.

30.508 doc/html/class_n_e_w_m_a_t_1_1_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_matrix

30.508.1 Variable Documentation

30.508.1.1 var class_n_e_w_m_a_t_1_1_matrix

Definition at line 1 of file class_n_e_w_m_a_t_1_1_matrix.js.

30.509 doc/html/class_n_e_w_m_a_t_1_1_matrix_band_width.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_matrix_band_width

30.509.1 Variable Documentation

30.509.1.1 var class_n_e_w_m_a_t_1_1_matrix_band_width

Initial value:

```
=
[
    [ "MatrixBandWidth", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#a4288a21bfba52a769f48f250cd3a4da1",
      null ],
    [ "MatrixBandWidth", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#aea29765dfcbd849cf7d1a2bab5fdbad1",
      null ],
    [ "Lower", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#a99b3d410de03bcd35ae2d6c02c3d06c4", null ],
    [ "minimum", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#a12e7af8c334838c29c084052f6f452eb", null ],
    [ "operator!=", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#a2fc0f5876d7a64926aad2c77a5300c2d", null
      ],
    [ "operator*", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#aa78e571f2ff9367fee14ec20a4ebd80e", null ]
      ,
    [ "operator+", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#aec95298228050e06bb9f7e3852e11f87", null ]
      ,
    [ "operator==", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#a64d7e146dcb7b1db62c368109c838886", null
      ],
    [ "t", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#a9282c4ccc63ddeadc55483508c5c2794", null ],
    [ "Upper", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#a01e7a15fda15b5a069e462824cb9927f", null ],
    [ "lower", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#a6f001a0586946b9c25d86de8d1f0eb3e", null ],
    [ "upper", "class_n_e_w_m_a_t_1_1_matrix_band_width.html#a6b13bddfdaa1318d25610484b8504e74", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_matrix_band_width.js.

30.510 doc/html/class_n_e_w_m_a_t_1_1_matrix_input.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_matrix_input

30.510.1 Variable Documentation

30.510.1.1 var class_n_e_w_m_a_t_1_1_matrix_input

Initial value:

```
=
[
    [ "MatrixInput", "class_n_e_w_m_a_t_1_1_matrix_input.html#a187dd140a0a0eecf339adf489ece229b", null ],
    [ "MatrixInput", "class_n_e_w_m_a_t_1_1_matrix_input.html#ada6c50a6ea79741cb20ecef999623f26", null ],
    [ "~MatrixInput", "class_n_e_w_m_a_t_1_1_matrix_input.html#a47890afd4a2c2e309adaf80ce9025de8", null ],
    [ "operator<<", "class_n_e_w_m_a_t_1_1_matrix_input.html#adf42553daed4a107ad31c26b4063bdb0", null ],
    [ "operator<<", "class_n_e_w_m_a_t_1_1_matrix_input.html#ab921d2ec1f1e0ef4e958cede988769dc", null ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_matrix_input.html#abaf0969f44c36896ac567a558a330771", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_matrix_input.js.

30.511 doc/html/class_n_e_w_m_a_t_1_1_matrix_type.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_matrix_type

30.511.1 Variable Documentation

30.511.1.1 var class_n_e_w_m_a_t_1_1_matrix_type

Definition at line 1 of file class_n_e_w_m_a_t_1_1_matrix_type.js.

30.512 doc/html/class_n_e_w_m_a_t_1_1_multi_radix_counter.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_multi_radix_counter

30.512.1 Variable Documentation

30.512.1.1 var class_n_e_w_m_a_t_1_1_multi_radix_counter

Initial value:

```
=
[
    [ "MultiRadixCounter", "
      class_n_e_w_m_a_t_1_1_multi_radix_counter.html#a8daaaa635a2650e3368e6fba3dd0ea55", null ],
    [ "Counter", "class_n_e_w_m_a_t_1_1_multi_radix_counter.html#ab50c824e081ee104b74a9e7c10b25a83", null ]
      ,
    [ "Finish", "class_n_e_w_m_a_t_1_1_multi_radix_counter.html#a97cea9382aa4b253ab923e96a5caa25b", null ],
    [ "operator++", "class_n_e_w_m_a_t_1_1_multi_radix_counter.html#add6df1b99428c4aecb043f6ccb06ef89",
      null ],
    [ "Reverse", "class_n_e_w_m_a_t_1_1_multi_radix_counter.html#ad76063e8eef4b31e893b526c0f86cd1a", null ]
      ,
    [ "Swap", "class_n_e_w_m_a_t_1_1_multi_radix_counter.html#a446f0e6e72ae1b545dda4bb1296075f7", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_multi_radix_counter.js.

30.513 doc/html/class_n_e_w_m_a_t_1_1_multiplied_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_multiplied_matrix

30.513.1 Variable Documentation

30.513.1.1 var class_n_e_w_m_a_t_1_1_multiplied_matrix

Initial value:

```
=
[
    [ "MultipliedMatrix", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#a76ed97f5bdbb946fc6b3d8f962d4807d",
      null ],
    [ "~MultipliedMatrix", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#a2cca473c4b32b6d380abee3f5c4fef04"
      , null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#a366ba8ce1f9cacd84ab385f48d0580ff", null ]
    ,
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#a399f18d0dfef4da879004ea51df54a50", null ],
    [ "search", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#a4e77970d04e62fdbb487b5d1fe74b041", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#afcc50b811bd45d547cae53941018fdde", null
      ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#abaf0969f44c36896ac567a558a330771",
      null ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237",
      null ],
    [ "bm1", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#ac0fc18145168f1ed15c0e060fdb55362", null ],
    [ "bm2", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#a5f2f88b7d4d7853ef12bc9a602ad610d", null ],
    [ "gm1", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#a7803a6d673c5d8761701a9bccbe8c91d", null ],
    [ "gm2", "class_n_e_w_m_a_t_1_1_multiplied_matrix.html#ab52429edb38c4019ebec3accd2806115", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_multiplied_matrix.js.

30.514 doc/html/class_n_e_w_m_a_t_1_1_n_p_d_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_n_p_d_exception

30.514.1 Variable Documentation

30.514.1.1 var class_n_e_w_m_a_t_1_1_n_p_d_exception

Initial value:

```
=
[
    [ "NPDException", "class_n_e_w_m_a_t_1_1_n_p_d_exception.html#ad8029f357546ebd430716d97f52c8756", null
      ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_n_p_d_exception.js.

30.515 doc/html/class_n_e_w_m_a_t_1_1_neg_shifted_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_neg_shifted_matrix

30.515.1 Variable Documentation

30.515.1.1 var class_n_e_w_m_a_t_1_1_neg_shifted_matrix

Initial value:

```
=
[
    [ "NegShiftedMatrix", "class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#a759d2cc85daee8a6f22f9f07559fc272"
      , null ],
    [ "~NegShiftedMatrix", "class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#a746ad3204ac976a759bc91ef5633ddeb
      ", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#aec54c83660bd17362305d8aad991f880", null ]
      ,
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#afcc50b811bd45d547cae53941018fdde", null
       ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#abaf0969f44c36896ac567a558a330771",
      null ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237",
      null ],
    [ "operator-", "class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#a12197e802fd1e5829c78adcaccb57840", null
      ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_neg_shifted_matrix.js.

30.516 doc/html/class_n_e_w_m_a_t_1_1_negated_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_negated_matrix

30.516.1 Variable Documentation

30.516.1.1 var class_n_e_w_m_a_t_1_1_negated_matrix

Initial value:

```
=
[
    [ "NegatedMatrix", "class_n_e_w_m_a_t_1_1_negated_matrix.html#a701a017652a4ec29860401e3f2292a30", null
      ],
    [ "~NegatedMatrix", "class_n_e_w_m_a_t_1_1_negated_matrix.html#af06146ab7897db6bee09b3ea21c5b5a6", null
       ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_negated_matrix.html#ad6ebbfc17da3a6446ae4a8583bec19e6", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_negated_matrix.html#aa70f58a700232f7e510eba5a8df8a88c", null ],
    [ "search", "class_n_e_w_m_a_t_1_1_negated_matrix.html#afd2bd1bc94cab6482b2c581f52047820", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_negated_matrix.html#afcc50b811bd45d547cae53941018fdde", null ],
    [ "bm", "class_n_e_w_m_a_t_1_1_negated_matrix.html#a3ba0a541aad27aba78a4802c1ecc1500", null ],
    [ "gm", "class_n_e_w_m_a_t_1_1_negated_matrix.html#a52bb6ea0a318be83c029bfa48346884a", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_negated_matrix.js.

30.517 doc/html/class_n_e_w_m_a_t_1_1_non_linear_least_squares.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_non_linear_least_squares

30.517.1 Variable Documentation

30.517.1.1 var class_n_e_w_m_a_t_1_1_non_linear_least_squares

Initial value:

```
=
[
    [ "NonLinearLeastSquares", "
      class_n_e_w_m_a_t_1_1_non_linear_least_squares.html#a7cd6a0f3d290cba610457b54fa583693", null ],
    [ "Fit", "class_n_e_w_m_a_t_1_1_non_linear_least_squares.html#a5925a2d291a1a0c222be2760f1efbbf3", null
      ],
    [ "GetCorrelations", "
      class_n_e_w_m_a_t_1_1_non_linear_least_squares.html#a7b5b04c531f7bc3d7d813231e2593e77", null ],
    [ "GetHatDiagonal", "
      class_n_e_w_m_a_t_1_1_non_linear_least_squares.html#a1e1dc84a4bb63289fcaf186d3e31b47d", null ],
    [ "GetResiduals", "
      class_n_e_w_m_a_t_1_1_non_linear_least_squares.html#aa5d35896e1de55d252db3a2b2cc082dc", null ],
    [ "GetStandardErrors", "
      class_n_e_w_m_a_t_1_1_non_linear_least_squares.html#a5d9b36b7fa0d657b53af77ed879403c5", null ],
    [ "ResidualVariance", "
      class_n_e_w_m_a_t_1_1_non_linear_least_squares.html#a0004dbc736ed51e72a22d279dc62ee68", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_non_linear_least_squares.js.

30.518 doc/html/class_n_e_w_m_a_t_1_1_not_defined_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_not_defined_exception

30.518.1 Variable Documentation

30.518.1.1 var class_n_e_w_m_a_t_1_1_not_defined_exception

Initial value:

```
=
[
    [ "NotDefinedException", "
      class_n_e_w_m_a_t_1_1_not_defined_exception.html#a609d715cfedbf7c4fcde1aca71ec55ba", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_not_defined_exception.js.

30.519 doc/html/class_n_e_w_m_a_t_1_1_not_square_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_not_square_exception

30.519.1 Variable Documentation

30.519.1.1 var class_n_e_w_m_a_t_1_1_not_square_exception

Initial value:

```
=
[
    [ "NotSquareException", "
      class_n_e_w_m_a_t_1_1_not_square_exception.html#a217c00379b3896dad851ee65d0094962", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_not_square_exception.js.

30.520 doc/html/class_n_e_w_m_a_t_1_1_overflow_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_overflow_exception

30.520.1 Variable Documentation

30.520.1.1 var class_n_e_w_m_a_t_1_1_overflow_exception

Initial value:

```
=
[
    [ "OverflowException", "class_n_e_w_m_a_t_1_1_overflow_exception.html#ac1a3b1d77140e5c84f706fb09398fdd3
      ", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_overflow_exception.js.

30.521 doc/html/class_n_e_w_m_a_t_1_1_program_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_program_exception

30.521.1 Variable Documentation

30.521.1.1 var class_n_e_w_m_a_t_1_1_program_exception

Initial value:

```
=
[
    [ "ProgramException", "class_n_e_w_m_a_t_1_1_program_exception.html#a2d4cea24b64fb16ee6048f4f86383e06",
      null ],
    [ "ProgramException", "class_n_e_w_m_a_t_1_1_program_exception.html#a942f03a341dca4cf811218611234aac1",
      null ],
    [ "ProgramException", "class_n_e_w_m_a_t_1_1_program_exception.html#ab82ffc9d2105d341fc8e50a13afb3ea0",
      null ],
    [ "ProgramException", "class_n_e_w_m_a_t_1_1_program_exception.html#a4ed405161910ff2df26975d5283cdc75",
      null ],
    [ "ProgramException", "class_n_e_w_m_a_t_1_1_program_exception.html#a42c8f9124591bfa8b63a46223a9f5249",
      null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_program_exception.js.

30.522 doc/html/class_n_e_w_m_a_t_1_1_r1___col___i___d.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_r1___col___i___d

30.522.1 Variable Documentation

30.522.1.1 var class_n_e_w_m_a_t_1_1_r1___col___i___d

Initial value:

```
=
[
    [ "~R1_Col_I_D", "class_n_e_w_m_a_t_1_1_r1___col___i___d.html#a4b42afe9c3af905fa5b10ae2df03e270", null
      ],
    [ "Derivatives", "class_n_e_w_m_a_t_1_1_r1___col___i___d.html#ade98cf3596655488ca5c6bb2a144d533", null
      ],
    [ "IsValid", "class_n_e_w_m_a_t_1_1_r1___col___i___d.html#a53e337c89f29c82018fed82d26a14c0c", null ],
    [ "IsValid", "class_n_e_w_m_a_t_1_1_r1___col___i___d.html#aad25b0e1fa8809ae15162ee8e4c3029c", null ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_r1___col___i___d.html#a471c68a909aefc99a2c63df3a7e3b285", null ]
      ,
    [ "operator()", "class_n_e_w_m_a_t_1_1_r1___col___i___d.html#a0b1da2aa2df01fd3ed4c25cfbc151131", null ]
      ,
    [ "Set", "class_n_e_w_m_a_t_1_1_r1___col___i___d.html#a13fb8540d785edaf4c71d3d754ff12ea", null ],
    [ "para", "class_n_e_w_m_a_t_1_1_r1___col___i___d.html#aa3b313d2a5b5d201c696f2a0aa54605e", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_r1___col___i___d.js.

30.523 doc/html/class_n_e_w_m_a_t_1_1_return_matrix_x.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_return_matrix_x

30.523.1 Variable Documentation

30.523.1.1 var class_n_e_w_m_a_t_1_1_return_matrix_x

Initial value:

```
=
[
    [ "~ReturnMatrixX", "class_n_e_w_m_a_t_1_1_return_matrix_x.html#a01eb5f2c346f54a15c437de09e59b85e",
      null ],
    [ "ReturnMatrixX", "class_n_e_w_m_a_t_1_1_return_matrix_x.html#ad7e94f23ea609d05b888e3a1564d6b8c", null
       ],
    [ "ReturnMatrixX", "class_n_e_w_m_a_t_1_1_return_matrix_x.html#a62362f1296e466dd62139d362100337f", null
       ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_return_matrix_x.html#aa4efcd17c7c446df9030443099f783bd", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_return_matrix_x.html#a844f43d6099446532b561d8ed85f48dd", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_return_matrix_x.html#afcc50b811bd45d547cae53941018fdde", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_return_matrix_x.js.

30.524 doc/html/class_n_e_w_m_a_t_1_1_reversed_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_reversed_matrix

30.524.1 Variable Documentation

30.524.1.1 var class_n_e_w_m_a_t_1_1_reversed_matrix

Initial value:

```
=
[
    [ "~ReversedMatrix", "class_n_e_w_m_a_t_1_1_reversed_matrix.html#a4a92bad182eea4298c73ae5ac21855bb",
      null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_reversed_matrix.html#a8435563352014a2a67095c09917458b9", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_reversed_matrix.html#afcc50b811bd45d547cae53941018fdde", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_reversed_matrix.js.

30.525 doc/html/class_n_e_w_m_a_t_1_1_row_vector.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_row_vector

30.525.1 Variable Documentation

30.525.1.1 var class_n_e_w_m_a_t_1_1_row_vector

Initial value:

```
=
[
    [ "RowVector", "class_n_e_w_m_a_t_1_1_row_vector.html#a9701e0f58e281c59380ec555ddc62319", null ],
    [ "~RowVector", "class_n_e_w_m_a_t_1_1_row_vector.html#afe9b63044065492e64fce0d02a3bf07d", null ],
    [ "RowVector", "class_n_e_w_m_a_t_1_1_row_vector.html#a43708d03410c9440956ed8d2584b28c5", null ],
    [ "RowVector", "class_n_e_w_m_a_t_1_1_row_vector.html#a6af0f84382f4526f7218bfa6e345da2d", null ],
    [ "RowVector", "class_n_e_w_m_a_t_1_1_row_vector.html#a9d47128cc46dbcf3f45d9ee88df623f7", null ],
    [ "CleanUp", "class_n_e_w_m_a_t_1_1_row_vector.html#ac575c694a61bca69175d159cd811d3de", null ],
    [ "element", "class_n_e_w_m_a_t_1_1_row_vector.html#a2833de5351de97e2650cff8599ad2bf2", null ],
    [ "element", "class_n_e_w_m_a_t_1_1_row_vector.html#ac59bffd10d1995cc4d1f41eb5302c0e0", null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_row_vector.html#a8c31cac109d8be98cfa5f57eab654677", null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_row_vector.html#a91a8ae10baa2ddf6fdd71a10b3c562bc", null ],
    [ "NextCol", "class_n_e_w_m_a_t_1_1_row_vector.html#aee35f8beb1fef8e177e89789d75205b6", null ],
    [ "NextCol", "class_n_e_w_m_a_t_1_1_row_vector.html#a48740232e7c3e8bf5eb9edb5f0cc7e63", null ],
    [ "nric", "class_n_e_w_m_a_t_1_1_row_vector.html#ad10b182e3ef0b4c517ae72851cf57ca8", null ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_row_vector.html#a1750a77091b11dbe69be40eeb9b608e3", null ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_row_vector.html#a1d7305fe114cafef636399a8c6321b0c", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_row_vector.html#afbea4642b4683e39b3306c379bbf4972", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_row_vector.html#a95c22c0a9760b7e4c3cf932be914cbc7", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_row_vector.html#a9b065f86d16ba0e39fcab43efc6ccb8f", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_row_vector.html#a49e0faad2f87c0f6c7dadd78ffa0bfcc", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_row_vector.html#a87c33a6b088b49d033cbfa6b4738aa36", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_row_vector.html#acec6671623eafc77e86399735e1d501e", null ],
    [ "RestoreCol", "class_n_e_w_m_a_t_1_1_row_vector.html#a03e1f86d7c0a282f1400aa1c24a2cbaa", null ],
    [ "RestoreCol", "class_n_e_w_m_a_t_1_1_row_vector.html#ad0a29256653ede6b3cf7dd1d8e3dedfe", null ],
    [ "Transpose", "class_n_e_w_m_a_t_1_1_row_vector.html#aec387a7c45e85ac1531619e77f1ca4c2", null ],
    [ "Type", "class_n_e_w_m_a_t_1_1_row_vector.html#a10cc6acf559410b5c27b7166fecb85e2", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_row_vector.js.

30.526 doc/html/class_n_e_w_m_a_t_1_1_rowed_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_rowed_matrix

30.526.1 Variable Documentation

30.526.1.1 var class_n_e_w_m_a_t_1_1_rowed_matrix

Initial value:

```
=
[
    [ "~RowedMatrix", "class_n_e_w_m_a_t_1_1_rowed_matrix.html#a5e8746cf82605c26fca5f16460c4a692", null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_rowed_matrix.html#a9f2e977a31bf1eeda306165de5a87096", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_rowed_matrix.html#a60efbef4a9bb00bc969acf2fedff64d2", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_rowed_matrix.html#afcc50b811bd45d547cae53941018fdde", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_rowed_matrix.js.

30.527 doc/html/class_n_e_w_m_a_t_1_1_s_p_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_s_p_matrix

30.527.1 Variable Documentation

30.527.1.1 var class_n_e_w_m_a_t_1_1_s_p_matrix

Initial value:

```
=
[
    [ "SPMatrix", "class_n_e_w_m_a_t_1_1_s_p_matrix.html#a6035578cfd08291078376d8a4607e615", null ],
    [ "~SPMatrix", "class_n_e_w_m_a_t_1_1_s_p_matrix.html#a82a219d831f08d839761d645a287dc1d", null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_s_p_matrix.html#acc13e5905128c73237ccbbda8ac9a09c", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_s_p_matrix.html#ab5c83f89a3d119fcccd89e661a062193", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_s_p_matrix.html#afcc50b811bd45d547cae53941018fdde", null ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_s_p_matrix.html#abaf0969f44c36896ac567a558a330771", null ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_s_p_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237", null ],
    [ "SP", "class_n_e_w_m_a_t_1_1_s_p_matrix.html#a2490eace871fe6269a3511e64cbba7e5", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_s_p_matrix.js.

30.528 doc/html/class_n_e_w_m_a_t_1_1_scaled_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_scaled_matrix

30.528.1 Variable Documentation

30.528.1.1 var class_n_e_w_m_a_t_1_1_scaled_matrix

Initial value:

```
=
[
    [ "~ScaledMatrix", "class_n_e_w_m_a_t_1_1_scaled_matrix.html#a2d68eb46f02dc78c1959843947b2adf7", null ]
      ,
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_scaled_matrix.html#a885f68b8cf7884a78c59f6f5fb162e03", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_scaled_matrix.html#a7399ad4622d03f4ba9dbac9cc850c25b", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_scaled_matrix.html#afcc50b811bd45d547cae53941018fdde", null ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_scaled_matrix.html#abaf0969f44c36896ac567a558a330771", null ]
      ,
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_scaled_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237", null ]
      ,
    [ "operator*", "class_n_e_w_m_a_t_1_1_scaled_matrix.html#ab1d04e45670e7e54332437ab81f69f69", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_scaled_matrix.js.

30.529 doc/html/class_n_e_w_m_a_t_1_1_shifted_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_shifted_matrix

30.529.1 Variable Documentation

30.529.1.1 var class_n_e_w_m_a_t_1_1_shifted_matrix

Initial value:

```
=
[
    [ "ShiftedMatrix", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#a56a3ac340fd61c618dd2cbc91a2bd591", null
      ],
    [ "~ShiftedMatrix", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#adc048235fff757ac2fe6c2901f893465", null
       ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#aa63702a58c882644182636a948e7b4df", null ],
    [ "search", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#a0344dbc7f75d90841f6bba253ccee476", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#afcc50b811bd45d547cae53941018fdde", null ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#abaf0969f44c36896ac567a558a330771", null
      ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237", null
      ],
    [ "operator+", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#afc960ce11532a76ca986ec75542bca02", null ],
    [ "bm", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#a9e74c66bae8849d269a7ff45b649384e", null ],
    [ "f", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#ab5a72558c082fafe0a11a708df102156", null ],
    [ "gm", "class_n_e_w_m_a_t_1_1_shifted_matrix.html#a19701ca94daecd6cdf5f137df145de8f", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_shifted_matrix.js.

30.530 doc/html/class_n_e_w_m_a_t_1_1_simple_int_array.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_simple_int_array

30.530.1 Variable Documentation

30.530.1.1 var class_n_e_w_m_a_t_1_1_simple_int_array

Initial value:

```
=
[
    [ "SimpleIntArray", "class_n_e_w_m_a_t_1_1_simple_int_array.html#a52278e08217d7e595bffb970f5208be1",
      null ],
    [ "~SimpleIntArray", "class_n_e_w_m_a_t_1_1_simple_int_array.html#a64381fcf4a22eaccf9e9d22e40785d23",
      null ],
    [ "SimpleIntArray", "class_n_e_w_m_a_t_1_1_simple_int_array.html#af70199c5bc49bf2c0fd817cc48a1d18e",
      null ],
    [ "CleanUp", "class_n_e_w_m_a_t_1_1_simple_int_array.html#aabe59095debd58dfefaae6c9ae0b9cba", null ],
    [ "Data", "class_n_e_w_m_a_t_1_1_simple_int_array.html#a224921d28dcde7d9131ae08d30adba79", null ],
    [ "Data", "class_n_e_w_m_a_t_1_1_simple_int_array.html#aa2caf98cf436c591d84b0c4ffa1f95d2", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_simple_int_array.html#a238024b853b528a282dc8f93f252981e", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_simple_int_array.html#a82db2ff57ad64ebc4615071c0cf9c060", null ],
    [ "operator[]", "class_n_e_w_m_a_t_1_1_simple_int_array.html#a870fcd80a615398c3e264b34aa3693b0", null ]
      ,
    [ "operator[]", "class_n_e_w_m_a_t_1_1_simple_int_array.html#afeba4cb444bef4f5a1c4d2a1a4398896", null ]
      ,
    [ "ReSize", "class_n_e_w_m_a_t_1_1_simple_int_array.html#ae47103ee042bb1515c32108427c0c96b", null ],
    [ "Size", "class_n_e_w_m_a_t_1_1_simple_int_array.html#ab3de14f18ff20c72b2bb8b43a2c7c745", null ],
    [ "a", "class_n_e_w_m_a_t_1_1_simple_int_array.html#af8aa7920093ee4bde2aa7dfb272cb403", null ],
    [ "n", "class_n_e_w_m_a_t_1_1_simple_int_array.html#a1bf5d83dbc38b5c9449fce83c9e860cd", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_simple_int_array.js.

30.531 doc/html/class_n_e_w_m_a_t_1_1_singular_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_singular_exception

30.531.1 Variable Documentation

30.531.1.1 var class_n_e_w_m_a_t_1_1_singular_exception

Initial value:

```
=
[
    [ "SingularException", "class_n_e_w_m_a_t_1_1_singular_exception.html#a2cc112843dfeb208e105780b5052321a
      ", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_singular_exception.js.

30.532 doc/html/class_n_e_w_m_a_t_1_1_solved_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_solved_matrix

30.532.1 Variable Documentation

30.532.1.1 var class_n_e_w_m_a_t_1_1_solved_matrix

Initial value:

```
=
[
    [ "~SolvedMatrix", "class_n_e_w_m_a_t_1_1_solved_matrix.html#ace985d37b92e55935ded5ab09553e462", null ]
      ,
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_solved_matrix.html#a1163aa0c6804e8d46c35342124c303d1", null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_solved_matrix.html#a64da575b20101f597f6547be91517392", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_solved_matrix.html#afcc50b811bd45d547cae53941018fdde", null ],
    [ "InvertedMatrix", "class_n_e_w_m_a_t_1_1_solved_matrix.html#ae361bc8ebdc01f511bb97ab6516e2e34", null
      ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_solved_matrix.js.

30.533 doc/html/class_n_e_w_m_a_t_1_1_stacked_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_stacked_matrix

30.533.1 Variable Documentation

30.533.1.1 var class_n_e_w_m_a_t_1_1_stacked_matrix

Initial value:

```
=
[
    [ "StackedMatrix", "class_n_e_w_m_a_t_1_1_stacked_matrix.html#a97b4a5bff808fff38f423a9cb21b7e86", null
      ],
    [ "~StackedMatrix", "class_n_e_w_m_a_t_1_1_stacked_matrix.html#a54ed4945bebe26ca97a52875230736d5", null
       ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_stacked_matrix.html#a96635ea72a30821f5bbc2888da015694", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_stacked_matrix.html#afcc50b811bd45d547cae53941018fdde", null ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_stacked_matrix.html#abaf0969f44c36896ac567a558a330771", null
      ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_stacked_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237", null
      ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_stacked_matrix.js.

30.534 doc/html/class_n_e_w_m_a_t_1_1_sub_matrix_dimension_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_sub_matrix_dimension_exception

30.534.1 Variable Documentation

30.534.1.1 var class_n_e_w_m_a_t_1_1_sub_matrix_dimension_exception

Initial value:

```
=
[
    [ "SubMatrixDimensionException", "
      class_n_e_w_m_a_t_1_1_sub_matrix_dimension_exception.html#abd25517936c0502b87e217ea1d7d048e", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_sub_matrix_dimension_exception.js.

30.535 doc/html/class_n_e_w_m_a_t_1_1_subtracted_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_subtracted_matrix

30.535.1 Variable Documentation

30.535.1.1 var class_n_e_w_m_a_t_1_1_subtracted_matrix

Initial value:

```
=
[
    [ "~SubtractedMatrix", "class_n_e_w_m_a_t_1_1_subtracted_matrix.html#a237be251e398ed213d5957a1acf20fb0"
      , null ],
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_subtracted_matrix.html#a8aa77be23c224971038968af5a3755b4", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_subtracted_matrix.html#afcc50b811bd45d547cae53941018fdde", null
      ],
    [ "GeneralMatrix", "class_n_e_w_m_a_t_1_1_subtracted_matrix.html#abaf0969f44c36896ac567a558a330771",
      null ],
    [ "GenericMatrix", "class_n_e_w_m_a_t_1_1_subtracted_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237",
      null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_subtracted_matrix.js.

30.536 doc/html/class_n_e_w_m_a_t_1_1_symmetric_band_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_symmetric_band_matrix

30.536.1 Variable Documentation

30.536.1.1 var class_n_e_w_m_a_t_1_1_symmetric_band_matrix

Definition at line 1 of file class_n_e_w_m_a_t_1_1_symmetric_band_matrix.js.

30.537 doc/html/class_n_e_w_m_a_t_1_1_symmetric_eigen_analysis.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_symmetric_eigen_analysis

30.537.1 Variable Documentation

30.537.1.1 var class_n_e_w_m_a_t_1_1_symmetric_eigen_analysis

Initial value:

```
=
[
    [ "SymmetricEigenAnalysis", "
      class_n_e_w_m_a_t_1_1_symmetric_eigen_analysis.html#abc9dfa5380987fa5d21f53b2f0cb63d2", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_symmetric_eigen_analysis.js.

30.538 doc/html/class_n_e_w_m_a_t_1_1_symmetric_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_symmetric_matrix

30.538.1 Variable Documentation

30.538.1.1 var class_n_e_w_m_a_t_1_1_symmetric_matrix

Initial value:

```
=
[
    [ "SymmetricMatrix", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#ae2c2a54db1d2c0e28bd2cfa380081832",
      null ],
    [ "~SymmetricMatrix", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#ae4b06b44e6f0b13f9872b8f1accbaac9",
      null ],
    [ "SymmetricMatrix", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#aa2491ee1127b26c9448f6b53456152ac",
      null ],
    [ "SymmetricMatrix", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a00594c6eced7cf7bd0e671dbf60a8361",
      null ],
    [ "SymmetricMatrix", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#ac3d2b731017c2cdccd0ff51a3533ea17",
      null ],
    [ "element", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a5dcb1771f7950ff61f08407c2c4775d9", null ],
    [ "element", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a897fc26dd1c25d7a16eb4aa543fa8c00", null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#af5a5246219e82ce63f793d8291465865", null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a888a89c2df9dca382660258c11fbf5f6", null ],
    [ "GetRow", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a6fb84e5efe10694f606b4b4df394ceb0", null ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a72c62160e3218d363dee73b88c1cbf38", null ]
    ,
    [ "operator()", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#ae9faab8a7a86aa812e9a474f67564a29", null ]
    ,
    [ "operator=", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a6d7784715f5cf7f8747c2680ba6a0fd6", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#ac525ed19d3e737524a903241859cbe59", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#ab4287c53c6b288d536d4e96d79a44298", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a5113a1fe376c5594a5e3d639c9f7dd9a", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#af0b59e1223600b7fe9fcba8373b90bc6", null ],
    [ "RestoreCol", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#ae1f90e1991bbdbee7133a03ff978ef74", null ]
    ,
    [ "RestoreCol", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#aabceff4b03eacd072182ae6a0384fcaa", null ]
    ,
    [ "Sum", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#acf6c7a8178db215880df3371eea89e4f", null ],
    [ "SumAbsoluteValue", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a6f28a4fd67d0eac4bcd003d1a67a0692",
      null ],
    [ "SumSquare", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a807fda06d1be9a7ce68c524b59654e23", null ],
    [ "Trace", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a7f8a432b844e187b231d834e359d3231", null ],
    [ "Transpose", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#ace2dc8ef50a08215d179d6692ff6f10c", null ],
    [ "Type", "class_n_e_w_m_a_t_1_1_symmetric_matrix.html#a7d7568c0effefd6e20bf4c2b04028d5a", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_symmetric_matrix.js.

30.539 doc/html/class_n_e_w_m_a_t_1_1_transposed_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_transposed_matrix

30.539.1 Variable Documentation

30.539.1.1 var class_n_e_w_m_a_t_1_1_transposed_matrix

Initial value:

```
=
[
    [ "~TransposedMatrix", "class_n_e_w_m_a_t_1_1_transposed_matrix.html#a017982953187584c1c174a62676060ac"
      , null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_transposed_matrix.html#a9778520c1dc1a3f9eb3961de8e2453b5", null ]
      ,
    [ "Evaluate", "class_n_e_w_m_a_t_1_1_transposed_matrix.html#a55d668cd4b198c0890bbb64f946491de", null ],
    [ "BaseMatrix", "class_n_e_w_m_a_t_1_1_transposed_matrix.html#afcc50b811bd45d547cae53941018fdde", null
      ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_transposed_matrix.js.

30.540 doc/html/class_n_e_w_m_a_t_1_1_upper_band_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_upper_band_matrix

30.540.1 Variable Documentation

30.540.1.1 var class_n_e_w_m_a_t_1_1_upper_band_matrix

Initial value:

```
=
[
    [ "UpperBandMatrix", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a05c4f4e8622790e93ed13b4c9d72cdd3",
      null ],
    [ "~UpperBandMatrix", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a9bd6b0632457947f7b1d9baacdda6908",
       null ],
    [ "UpperBandMatrix", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#aa74ef95dfa3cd81cebd55c9e282aa14f",
      null ],
    [ "UpperBandMatrix", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#ae8b1d68b382f3d5590709f5bad0cfd10",
      null ],
    [ "UpperBandMatrix", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a02bb7210ca57eda946ebe08e9acf75a1",
      null ],
    [ "element", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a384ea0a49773eca1ca86ff63089520a2", null ],
    [ "element", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#abceb4ef40e37bf9aa17c440542e2ae4b", null ],
    [ "LogDeterminant", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#af1983e7ef715eb025fe24e3883ea673f",
      null ],
    [ "MakeSolver", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a757aa1debf0a6095091a0ffe143ab779", null
      ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#ab9da207b110f5d0347756283b3f602d6", null
      ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a1eaf7c71b4cf361f9f4438ad88072766", null
      ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a52473f05645ea98ec740d6092b934d02", null ]
      ,
    [ "operator=", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a393f173335757127e29b3f588fa3a551", null ]
      ,
    [ "operator=", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a1abad0276818af6fe503cb55416ca806", null ]
      ,
    [ "ReSize", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a726258b2cd3f70e7a2753423592bd0ba", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a66e6cd23aafb315266c8859edff3ac97", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a45d44da0f4ef4c5f6288866d3a445857", null ],
    [ "Solver", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a1bf82143f11e8602ee26744be1ca498f", null ],
    [ "Type", "class_n_e_w_m_a_t_1_1_upper_band_matrix.html#a29318a563416d1ac12dd348329d2fc17", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_upper_band_matrix.js.

30.541 doc/html/class_n_e_w_m_a_t_1_1_upper_triangular_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_upper_triangular_matrix

30.541.1 Variable Documentation

30.541.1.1 var class_n_e_w_m_a_t_1_1_upper_triangular_matrix

Initial value:

```
=
[
    [ "UpperTriangularMatrix", "
      class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a60cccd528a0bedf79e99a0bd9bbe983d", null ],
    [ "~UpperTriangularMatrix", "
      class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#ae006061da058f7ce411ee781652a96ef", null ],
    [ "UpperTriangularMatrix", "
      class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a27433781a058f05692ab4d1f54b1c3b9", null ],
    [ "UpperTriangularMatrix", "
      class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a27c7b98a6f5db31c1d6f7385f9eaccab", null ],
    [ "UpperTriangularMatrix", "
      class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a348db76c945ac7ca58f35afb435bb6d4", null ],
    [ "BandWidth", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#ac44568df02e5f05406e7fc9c9327745b",
      null ],
    [ "element", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a046b84030cb32feccc089fe91f60074a",
      null ],
    [ "element", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a84e297d8a4393ee3ae0f25e38686928e",
      null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#af944a6f5e1f17ceee80900ee1b555bfb",
      null ],
    [ "GetCol", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#ad764b09007be88971afef3b21a7d9b25",
      null ],
    [ "GetRow", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a28f28ebf1f2aab9958d81d08c749cdce",
      null ],
    [ "LogDeterminant", "
      class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#ab6c08c946b89a2ef3cb4836c2a596f34", null ],
    [ "MakeSolver", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#aec1be799506cbec6b4e32c3d53e499c3",
       null ],
    [ "NextRow", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#ad88e19cb3b5395f92bb8cfa3ca5ea6db",
      null ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#aae00d4aeabea23cbca33031e5413945c",
       null ],
    [ "operator()", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a3b9736cf6890e220d38ea3be3a74a67f",
       null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#ae92d73c903f0f897e23b87c29834e3ab",
      null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a0473d8c547b7cfee5d514d0abb0f7eb3",
      null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#ac62b2c390d605a050f3c69e24291c512",
      null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a5b433191db6a5d868b3fdfba15e3e891",
      null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a2d6a62e39a7b3ee89c57365a9df7179c",
      null ],
    [ "RestoreCol", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a6cb4b5bab6258887dfbe3d689f18cbd5",
       null ],
    [ "RestoreCol", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a4ec93fdcd6582d743f2d8d284ab7a666",
       null ],
    [ "Solver", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a2d2d515ff4c2b6dc8813b1545dc11950",
      null ],
    [ "Trace", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#a533ac255a31c33813f3342e1385f2ba9", null
       ],
    [ "Type", "class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html#ac2b805ae46946254632b51ed6de80622", null
      ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_upper_triangular_matrix.js.

30.542 doc/html/class_n_e_w_m_a_t_1_1_vector_exception.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1_vector_exception

30.542.1 Variable Documentation

30.542.1.1 var class_n_e_w_m_a_t_1_1_vector_exception

Initial value:

```
=
[
    [ "VectorException", "class_n_e_w_m_a_t_1_1_vector_exception.html#aeb9ecef50b98576f64273e32cf7f6408",
      null ],
    [ "VectorException", "class_n_e_w_m_a_t_1_1_vector_exception.html#a1d8cbd2f76b53a840940c8073a923b32",
      null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1_vector_exception.js.

30.543 doc/html/class_n_e_w_m_a_t_1_1nric_matrix.js File Reference

Variables

- var class_n_e_w_m_a_t_1_1nric_matrix

30.543.1 Variable Documentation

30.543.1.1 var class_n_e_w_m_a_t_1_1nric_matrix

Initial value:

```
=
[
    [ "nricMatrix", "class_n_e_w_m_a_t_1_1nric_matrix.html#a71472915dd795bd4578bc8fcaf4df329", null ],
    [ "nricMatrix", "class_n_e_w_m_a_t_1_1nric_matrix.html#ab666d6af8ad5d123053868162bc15e8a", null ],
    [ "nricMatrix", "class_n_e_w_m_a_t_1_1nric_matrix.html#aa6d83044fd2538bb66f7587d219dbcee", null ],
    [ "nricMatrix", "class_n_e_w_m_a_t_1_1nric_matrix.html#a6fb0d3b24e679e712180eae750c7b0d1", null ],
    [ "~nricMatrix", "class_n_e_w_m_a_t_1_1nric_matrix.html#af2d9d74b656163c70d3218686f319b99", null ],
    [ "CleanUp", "class_n_e_w_m_a_t_1_1nric_matrix.html#a25d4c4c4f737472f212e7de2a89e81dd", null ],
    [ "nric", "class_n_e_w_m_a_t_1_1nric_matrix.html#a5cd5a86793112f0f1892d1dc9a6ea63f", null ],
    [ "operator<<", "class_n_e_w_m_a_t_1_1nric_matrix.html#ac2da22880599fe369cc0f2f4f8ba3302", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1nric_matrix.html#a1514a8b4d4008c579fd3fb5211f84afe", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1nric_matrix.html#a6eb27163366d6408ee85996505c5e73b", null ],
    [ "operator=", "class_n_e_w_m_a_t_1_1nric_matrix.html#ad76180daeeeb6bc55d9cb331b59afa2d", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1nric_matrix.html#a5e4658320bc41472e4b8a3d2a42570b2", null ],
    [ "ReSize", "class_n_e_w_m_a_t_1_1nric_matrix.html#ae40ad5647e371c2a6c253f1030d7c164", null ]
]
```

Definition at line 1 of file class_n_e_w_m_a_t_1_1nric_matrix.js.

30.544 doc/html/class_parametric_surface_property_sheet.js File Reference

Variables

- var class_parametric_surface_property_sheet

30.544.1 Variable Documentation

30.544.1.1 var class_parametric_surface_property_sheet

Initial value:

```
=
[
    [ "ParametricSurfacePropertySheet", "
      class_parametric_surface_property_sheet.html#a1988d5ca14218b7fe011986e94eeb8bc", null ],
    [ "ParametricSurfacePropertySheet", "
      class_parametric_surface_property_sheet.html#a8a926e205e3df7a1df5e7dfcf34c40e7", null ],
    [ "~ParametricSurfacePropertySheet", "
      class_parametric_surface_property_sheet.html#a58d075af3625aba3953bc1aec2c2d2c2", null ],
    [ "apply", "class_parametric_surface_property_sheet.html#a58153ab0ac1f11e082d73755e522146b", null ],
    [ "createSheet", "class_parametric_surface_property_sheet.html#a4993f8166745738be7c49633e039f339", null
      ]
]
```

Definition at line 1 of file class_parametric_surface_property_sheet.js.

30.545 doc/html/class_path_type.js File Reference

Variables

- var class_path_type

30.545.1 Variable Documentation

30.545.1.1 var class_path_type

Initial value:

```
=
[
    [ "funnelOfPath", "class_path_type.html#a4c49a86198da4ae6ae95b53c577c0f2b", null ],
    [ "initPathType", "class_path_type.html#a901e079d89cbb67ab32ac2efe75015b0", null ],
    [ "modification_l_path_", "class_path_type.html#a3c9dc01c75b91db2f7acff58727de110", null ],
    [ "modification_r_path_", "class_path_type.html#a36be5d505adcbf7c71066f10f6d6c9b7", null ],
    [ "print", "class_path_type.html#ac9ff569ae379418868d0fb54d79bf3c7", null ],
    [ "funnel_", "class_path_type.html#aa494c02211096f0fb748cc6e41002b01", null ],
    [ "l_path_", "class_path_type.html#a3849d634c4440974a3e8664f0adf2c88", null ],
    [ "r_path_", "class_path_type.html#a6698f5a904d409bc6779015e5ef36aca", null ]
]
```

Definition at line 1 of file class_path_type.js.

30.546 doc/html/class_point_cloud_property_sheet.js File Reference

Variables

- var class_point_cloud_property_sheet

30.546.1 Variable Documentation

30.546.1.1 var class_point_cloud_property_sheet

Initial value:

```
=
[
    [ "PointCloudPropertySheet", "class_point_cloud_property_sheet.html#ac7cee89813a163332d644d6156bce2e1",
      null ],
    [ "apply", "class_point_cloud_property_sheet.html#aa538a7cc2fb4d934bd70ee45a690ab4c", null ],
    [ "createSheet", "class_point_cloud_property_sheet.html#ac15fa68bf84eed7ee2ba9d6d39f329f7", null ]
]
```

Definition at line 1 of file class_point_cloud_property_sheet.js.

30.547 doc/html/class_pr_bi_c_g_stab.js File Reference

Variables

- var class_pr_bi_c_g_stab

30.547.1 Variable Documentation

30.547.1.1 var class_pr_bi_c_g_stab

Initial value:

```
=
[
    [ "PrBiCGStab", "class_pr_bi_c_g_stab.html#af29c17ca09bc2aaa00f77683ec9bf6b5", null ],
    [ "~PrBiCGStab", "class_pr_bi_c_g_stab.html#ae205ad572007535f67b698df4c0e256c", null ],
    [ "converged", "class_pr_bi_c_g_stab.html#a2ddd5368c09bf5ab2d376cec5286b903", null ],
    [ "getCPUTime", "class_pr_bi_c_g_stab.html#a6e0dcd08861df584e48d929c986fb72c", null ],
    [ "getItCount", "class_pr_bi_c_g_stab.html#af8a616464297663ba6f11a9287916156", null ],
    [ "setMaxIterations", "class_pr_bi_c_g_stab.html#a5c6ba709c4dd7308049c372827600bcc", null ],
    [ "setTolerance", "class_pr_bi_c_g_stab.html#a85ebae11f3711327bb5e1da225cdab7b", null ],
    [ "solve", "class_pr_bi_c_g_stab.html#ab823e064ec1a640a4db5660c07921a2b", null ],
    [ "converged_", "class_pr_bi_c_g_stab.html#abbb29cf5a3f4865b11a18c12980f143c", null ],
    [ "cpu_time_", "class_pr_bi_c_g_stab.html#a38f46357a634b412e03430e11d86f387", null ],
    [ "it_count_", "class_pr_bi_c_g_stab.html#a176255ece25cf5d314eeb07c25f496bc", null ],
    [ "max_iterations_", "class_pr_bi_c_g_stab.html#ae577a4afad04242659e1a607a445f532", null ],
    [ "tolerance_", "class_pr_bi_c_g_stab.html#a1fbebe8689dac50d78a1c4311c608942", null ]
]
```

Definition at line 1 of file class_pr_bi_c_g_stab.js.

30.548 doc/html/class_pr_c_g.js File Reference

Variables

- var class_pr_c_g

30.548.1 Variable Documentation

30.548.1.1 var class_pr_c_g

Initial value:

```
=
[
    [ "PrCG", "class_pr_c_g.html#a2a133e0edcf4255b13cc8ac87e5a2228", null ],
    [ "~PrCG", "class_pr_c_g.html#acc017672d6843d30f429ba8c96840b3d", null ],
    [ "converged", "class_pr_c_g.html#acdb4f70d9d04d84ddabcb89ffe70add6", null ],
    [ "getCPUTime", "class_pr_c_g.html#ada3cf282632645f08ed32c6dbbedf9dc", null ],
    [ "getItCount", "class_pr_c_g.html#ab086829e4149cc54ba8b681bf4437e73", null ],
    [ "setMaxIterations", "class_pr_c_g.html#a21f656df247b78293ef2471352e1f58d", null ],
    [ "setTolerance", "class_pr_c_g.html#a3bad356e25fbe9f7e13024d96be2fde5", null ],
    [ "solve", "class_pr_c_g.html#a502d86eebffa8902ffd6dee4c71985f3", null ],
    [ "converged_", "class_pr_c_g.html#a27546b7c46973f7fe38c6cd3e49599e6", null ],
    [ "cpu_time_", "class_pr_c_g.html#ab52a43118de67a07e8bb07db25519e80", null ],
    [ "it_count_", "class_pr_c_g.html#ac08eafdfd61250a817879da2de1155c2", null ],
    [ "max_iterations_", "class_pr_c_g.html#a033d3c4a9496d728fe4fed338db96232", null ],
    [ "tolerance_", "class_pr_c_g.html#aa2637b95f8234776302f534b945768e4", null ]
]
```

Definition at line 1 of file class_pr_c_g.js.

30.549 doc/html/class_pr_cell_structure.js File Reference

Variables

- var class_pr_cell_structure

30.549.1 Variable Documentation

30.549.1.1 var class_pr_cell_structure

Initial value:

```
=
[
    [ "PrCellStructure", "class_pr_cell_structure.html#a16c767a23002dad5f591618d7d6f3fb8", null ],
    [ "PrCellStructure", "class_pr_cell_structure.html#ad3f64b851371b0367f25ae3e72d96146", null ],
    [ "~PrCellStructure", "class_pr_cell_structure.html#a043accfc76dc40b62ce7870ca95c57ef", null ],
    [ "attach", "class_pr_cell_structure.html#a0fd188587af01f15c24ee6a7b40d4cbd", null ],
    [ "get3dNode", "class_pr_cell_structure.html#adfebfeed2dcf77015397080a85f4b896", null ],
    [ "getBall", "class_pr_cell_structure.html#a73cf4b75c2d19ac757ecfea9658b47bd", null ],
    [ "getI", "class_pr_cell_structure.html#a08e9a339747e562d66629f91c2f0e060", null ],
    [ "getIJK", "class_pr_cell_structure.html#ae6004d1ecd14afcfc5f2dd88995f4559", null ],
    [ "getKNearest", "class_pr_cell_structure.html#afe17f5f445707a2f79adfdf154218358", null ],
    [ "getNumCells", "class_pr_cell_structure.html#a9a2fc00537502476fee71c7831ac90d3", null ],
    [ "getNumNodes", "class_pr_cell_structure.html#a3796af23df95ea0e6735bc5078ab8a46", null ],
    [ "print", "class_pr_cell_structure.html#ac988110628e043a50e0220078e8ea6a4", null ],
    [ "scan", "class_pr_cell_structure.html#ac82976828f96e3c317ee708c3dedae01", null ],
    [ "set3dNode", "class_pr_cell_structure.html#a457b90475c8fcffbf6d837f739e60490", null ],
    [ "setNumCells", "class_pr_cell_structure.html#a19fde9a07e3263ddef38acd0ca0c8343", null ],
    [ "whichCell", "class_pr_cell_structure.html#a029bd0e3caec3c0041f84d4fbc9fde07", null ]
]
```

Definition at line 1 of file class_pr_cell_structure.js.

30.550 doc/html/class_pr_explicit_connectivity.js File Reference

Variables

- var class_pr_explicit_connectivity

30.550.1 Variable Documentation

30.550.1.1 var class_pr_explicit_connectivity

Initial value:

```
=
[
    [ "findFace", "class_pr_explicit_connectivity.html#a6dce993f368ce7a7cad039e3b1d1e13b", null ],
    [ "findGenus", "class_pr_explicit_connectivity.html#affe3cdfef5bec6753d506d4b0dd212f0", null ],
    [ "findNextEdgeInFace", "class_pr_explicit_connectivity.html#aeecdf5948bdf30cc86d100813ee928c2", null ]
      ,
    [ "findNumFaces", "class_pr_explicit_connectivity.html#ac8b48451df85182a5f53a635136f7b3c", null ],
    [ "isTriangulation", "class_pr_explicit_connectivity.html#a238f3c956286ed7a75d6e0533a82c9bd", null ],
    [ "printInfo", "class_pr_explicit_connectivity.html#ac740b4ea4b1640d31612630d9f114d97", null ],
    [ "printTexture", "class_pr_explicit_connectivity.html#a719878295d70b1580ad7cf780a6c58ba", null ],
    [ "printUVFaces", "class_pr_explicit_connectivity.html#a06eb38d64f4a84aa0ec252bb6e1d0520", null ],
    [ "printXYZFaces", "class_pr_explicit_connectivity.html#af7fd7c82f20dbbe1ce6f7b308308fb2b", null ],
    [ "printXYZFacesML", "class_pr_explicit_connectivity.html#acbfd5a2ed61ec4371bb1bd28ed52823c", null ],
    [ "printXYZFacesVRML", "class_pr_explicit_connectivity.html#ad5c0e34d9019ab2eeb492af581e8c40e", null ]
]
```

Definition at line 1 of file class_pr_explicit_connectivity.js.

30.551 doc/html/class_pr_faber___f.js File Reference

Variables

- var class_pr_faber___f

30.551.1 Variable Documentation

30.551.1.1 var class_pr_faber___f

Initial value:

```
=
[
    [ "PrFaber_F", "class_pr_faber___f.html#ae91ae9ab3f5a7245766f37c173ce2fab", null ],
    [ "~PrFaber_F", "class_pr_faber___f.html#ac0fb6798bb4739ad262bddb592aab18a", null ],
    [ "compose", "class_pr_faber___f.html#ad17db6cacf6a4df453ab1c40abea20cc", null ],
    [ "decompose", "class_pr_faber___f.html#a99c5dd908fc81d1720339296513e9c69", null ]
]
```

Definition at line 1 of file class_pr_faber___f.js.

30.552 doc/html/class_pr_fast_unorganized___o_p.js File Reference

Variables

- var class_pr_fast_unorganized___o_p

30.552.1 Variable Documentation

30.552.1.1 var class_pr_fast_unorganized___o_p

Initial value:

```
=
[
    [ "PrFastUnorganized_OP", "class_pr_fast_unorganized___o_p.html#ab8182ea9cc5a8e07c3505dd169c5f822",
      null ],
    [ "PrFastUnorganized_OP", "class_pr_fast_unorganized___o_p.html#abdd99ba6a2d89db4351e0155ce5d0661",
      null ],
    [ "~PrFastUnorganized_OP", "class_pr_fast_unorganized___o_p.html#a65161b706f068f6aa851a23420110837",
      null ],
    [ "get3dNode", "class_pr_fast_unorganized___o_p.html#ac2f22f010e169ab276e2067b9318cc96", null ],
    [ "getKNearest", "class_pr_fast_unorganized___o_p.html#aa2078e02765076407c79067bf0a5ab91", null ],
    [ "getNeighbours", "class_pr_fast_unorganized___o_p.html#a531b902b4380ca46ea790a2eed8cd6e2", null ],
    [ "getNumNodes", "class_pr_fast_unorganized___o_p.html#aa165f906680d6a6eaa2c41837fdeb841", null ],
    [ "getRadius", "class_pr_fast_unorganized___o_p.html#a5e7d347bcb669f63772af8ca7d119bb6", null ],
    [ "getU", "class_pr_fast_unorganized___o_p.html#ae48782e590d1e8c86c99e36b7e075b06", null ],
    [ "getV", "class_pr_fast_unorganized___o_p.html#aa3df19fc29a6beedb367195e9c26c9da", null ],
    [ "initNeighbours", "class_pr_fast_unorganized___o_p.html#adea6d686f19587064315b1b653c9a143", null ],
    [ "isBoundary", "class_pr_fast_unorganized___o_p.html#a07be1e2277a09ab684845fb04eb6e5dc", null ],
    [ "print", "class_pr_fast_unorganized___o_p.html#ae55ef2161e07741cfd73a92823afdad5", null ],
    [ "scanRawData", "class_pr_fast_unorganized___o_p.html#aa5b0440ba88b20d36b011b77161de050", null ],
    [ "set3dNode", "class_pr_fast_unorganized___o_p.html#a4e28572095a5c461866f98c5643cba0d", null ],
    [ "setKNearest", "class_pr_fast_unorganized___o_p.html#af846a4715a1bce09c74874caa179b304", null ],
    [ "setRadius", "class_pr_fast_unorganized___o_p.html#ad807e42f2ee8839ef50e10ef9a035497", null ],
    [ "setU", "class_pr_fast_unorganized___o_p.html#a6f30f46acbe3fbba0594f889c27653f5", null ],
    [ "setV", "class_pr_fast_unorganized___o_p.html#a8f8e937505e2e009a9760896465d90bb", null ],
    [ "useK", "class_pr_fast_unorganized___o_p.html#a3a7171a3f301bfc9c9a98fcd69b6fe65", null ],
    [ "useRadius", "class_pr_fast_unorganized___o_p.html#a9228f86f8f8c016c94c25dad375e80ab", null ]
]
```

Definition at line 1 of file class_pr_fast_unorganized___o_p.js.

30.553 doc/html/class_pr_filterbank.js File Reference

Variables

- var class_pr_filterbank

30.553.1 Variable Documentation

30.553.1.1 var class_pr_filterbank

Initial value:

```
=
[
    [ "~PrFilterbank", "class_pr_filterbank.html#aae382f21ce649fca3a4d935a057ed108", null ],
    [ "attach", "class_pr_filterbank.html#a28a908fc7e930da4a931cfa621334111", null ],
    [ "compose", "class_pr_filterbank.html#a1c33322f58debf95147b815bebd70fd1", null ],
    [ "composeAll", "class_pr_filterbank.html#a38e75c91887cd1a90e7bb80ebedb9ad0", null ],
    [ "composeUpTo", "class_pr_filterbank.html#a287e238fec6a5175d8c50b1ea7f22728", null ],
    [ "decompose", "class_pr_filterbank.html#ad88fd562db95c8995e3363758a9b5ec9", null ],
    [ "decomposeAll", "class_pr_filterbank.html#a04a34136e554217d24e4f5be34e12cf0", null ],
    [ "decomposeFrom", "class_pr_filterbank.html#a6b1af55dc2804c168fc2b7e2562561cf", null ],
    [ "neighbours_", "class_pr_filterbank.html#a5e17246b697fc4e617a1c859701f7c36", null ],
    [ "t_", "class_pr_filterbank.html#a8ba3a2c1b525d44832be09fc86afe136", null ]
]
```

Definition at line 1 of file class_pr_filterbank.js.

30.554 doc/html/class_pr_heap.js File Reference

Variables

- var class_pr_heap

30.554.1 Variable Documentation

30.554.1.1 var class_pr_heap

Initial value:

```
=
[
    [ "PrHeap", "class_pr_heap.html#a885b0cd0ac71c273d64717266cae66ed", null ],
    [ "PrHeap", "class_pr_heap.html#a5f94d31251ae79f78c9158469b57b7ba", null ],
    [ "PrHeap", "class_pr_heap.html#a9fa6efec2ed32b287d8b8659043a962e", null ],
    [ "PrHeap", "class_pr_heap.html#af7653207d696ae3e4f8c2151110c61ca", null ],
    [ "~PrHeap", "class_pr_heap.html#acd55f02207eabf822ed4a2a51b83c611", null ],
    [ "emptyHeap", "class_pr_heap.html#ab6f635d7175614b79f924854b5f3e34a", null ],
    [ "getMaxSize", "class_pr_heap.html#ac1bded43c0b065be732d5f22e2119661", null ],
    [ "getSize", "class_pr_heap.html#a25b63a53b01007cedd3356a7f5568739", null ],
    [ "modify", "class_pr_heap.html#a40d87c74197e7c601f4c14e4f0cf61ef", null ],
    [ "pop", "class_pr_heap.html#adb0e42028fb225f697d1762a81b1b2b7", null ],
    [ "pop", "class_pr_heap.html#adbcbb76503eb4c6483bfddd7454f1649", null ],
    [ "print", "class_pr_heap.html#a3b4c2639f85e5fca72512f2cc1a348a3", null ],
    [ "push", "class_pr_heap.html#afd592c636c5c88af174fd56df80ccd8f", null ],
    [ "redim", "class_pr_heap.html#a88f289a9bbe49d069c55471eb62c1d73", null ]
]
```

Definition at line 1 of file class_pr_heap.js.

30.555 doc/html/class_pr_level_triangulation___o_p.js File Reference

Variables

- var class_pr_level_triangulation___o_p

30.555.1 Variable Documentation

30.555.1.1 var class_pr_level_triangulation___o_p

Initial value:

```
=
[
    [ "PrLevelTriangulation_OP", "class_pr_level_triangulation___o_p.html#a0c899f975fc8abcea05f0c09f899501b
      ", null ],
    [ "PrLevelTriangulation_OP", "class_pr_level_triangulation___o_p.html#a921e9bfbb0b17959bcf93f6d41b9e719
      ", null ],
    [ "~PrLevelTriangulation_OP", "
      class_pr_level_triangulation___o_p.html#a592917a6652ef2cb21733460c2e8fc5b", null ],
    [ "findNumFaces", "class_pr_level_triangulation___o_p.html#a5c127c36ea718199d7120e3d29dd35ed", null ],
    [ "get3dNode", "class_pr_level_triangulation___o_p.html#ae9a99c26709ad8718eb85a7717248bc7", null ],
    [ "getNeighbours", "class_pr_level_triangulation___o_p.html#af231b1530e5db60df4b0dc4efc140c5e", null ],
    [ "getNumNodes", "class_pr_level_triangulation___o_p.html#a359cd2d453f84ff4e749e687680250c7", null ],
    [ "getPrNestedNode", "class_pr_level_triangulation___o_p.html#a6f02a1310d843d0703e655b567ed4ff9", null
      ],
```

```
    [ "getPrTriangle", "class_pr_level_triangulation___o_p.html#ae51d8250ed18de53567d3cd1125d82b0", null ],
    [ "getU", "class_pr_level_triangulation___o_p.html#a5c93378b4b3334e9b480e0461fec6956", null ],
    [ "getV", "class_pr_level_triangulation___o_p.html#affb10f48fc1ad0635a5787c9d961eab4", null ],
    [ "isBoundary", "class_pr_level_triangulation___o_p.html#a240f978a14d57d4f2c27cdc78b2b8a67", null ],
    [ "print", "class_pr_level_triangulation___o_p.html#a358fe4c750cfc5dee4052dea4747d21a", null ],
    [ "printRawData", "class_pr_level_triangulation___o_p.html#a80323033557737bb267e40013aa690dda", null ],
    [ "printUV", "class_pr_level_triangulation___o_p.html#ad4a307ed0c86ed9c2e49c6f9aef60aa9", null ],
    [ "printUVTriangles", "class_pr_level_triangulation___o_p.html#a896d4dc8a46df866ba7d638479d4f965", null
      ],
    [ "printXYZTriangles", "class_pr_level_triangulation___o_p.html#ac0eea3a31094abf2764b3e2baafecbfe",
      null ],
    [ "set3dNode", "class_pr_level_triangulation___o_p.html#a571ffc12f02b671e22480338cc2df804", null ],
    [ "setU", "class_pr_level_triangulation___o_p.html#a3e2590222d6b52a8a0c59837f67c43c9", null ],
    [ "setV", "class_pr_level_triangulation___o_p.html#a246e9c75cea76bd570704f6a68191790", null ]
]
```

Definition at line 1 of file class_pr_level_triangulation___o_p.js.

30.556 doc/html/class_pr_mat.js File Reference

Variables

- var class_pr_mat

30.556.1 Variable Documentation

30.556.1.1 var class_pr_mat

Initial value:

```
=
[
    [ "~PrMat", "class_pr_mat.html#abac68fd201e66418a5f938317a9466e1", null ],
    [ "PrMat", "class_pr_mat.html#aba56565aee89245b11b9aec00bdd8ea7", null ],
    [ "PrMat", "class_pr_mat.html#a2323edeb3783c52d2b02a73bf97af7e7", null ],
    [ "colmns", "class_pr_mat.html#aed80d11429e1c2a0566db0d806d80f3f", null ],
    [ "operator()", "class_pr_mat.html#aa5f4ad3c596380c2eb0048986d55223b", null ],
    [ "operator()", "class_pr_mat.html#aff57354fbd39fc635924f0754f9d5cdb", null ],
    [ "prod", "class_pr_mat.html#a6f71a98524b14304d5b1a422da0c4a1a", null ],
    [ "read", "class_pr_mat.html#a137fb40cee88e91211c2df1a90a0e62c", null ],
    [ "redim", "class_pr_mat.html#a35b007c13f0732f4b379f1375fa97475", null ],
    [ "rows", "class_pr_mat.html#a51fc93a045aa5c0d2b6c357269441fbf", null ],
    [ "a_", "class_pr_mat.html#adc5bf006d2b3c60eb45bc6f374992a3d", null ],
    [ "m_", "class_pr_mat.html#a4808d661baa0b26acc1c87a5647e18ab", null ],
    [ "n_", "class_pr_mat.html#a02159b9afb6c616424f920abaaae8565", null ]
]
```

Definition at line 1 of file class_pr_mat.js.

30.557 doc/html/class_pr_mat_sparse.js File Reference

Variables

- var class_pr_mat_sparse

30.557.1 Variable Documentation

30.557.1.1 var class_pr_mat_sparse

Initial value:

```
=
[
    [ "~PrMatSparse", "class_pr_mat_sparse.html#aed116d1af35084249dd084d98d709b13", null ],
    [ "PrMatSparse", "class_pr_mat_sparse.html#a8eaf5655d57c3e281d3d505d3dec103a", null ],
    [ "PrMatSparse", "class_pr_mat_sparse.html#a514ba7377148959d9c62dca77467a3d4", null ],
    [ "PrMatSparse", "class_pr_mat_sparse.html#aad0459e91bc81ac8feb5456b42337698", null ],
    [ "colmns", "class_pr_mat_sparse.html#a22e218eabe43458adaf7acac161da74a", null ],
    [ "irow", "class_pr_mat_sparse.html#ad43793dd79a6c54bc5673700891c6b1b", null ],
    [ "irow", "class_pr_mat_sparse.html#a87cd1ddbb1985beefc4ea7d91f95632c", null ],
    [ "jcol", "class_pr_mat_sparse.html#ac228cc2de5b4e250dc528a3a1eb134e8", null ],
    [ "jcol", "class_pr_mat_sparse.html#ab2e769db2b0ae75bd1e098bf47c5f122", null ],
    [ "matProd", "class_pr_mat_sparse.html#a277e2097aedc2f6097bd00f56c9bbaaf", null ],
    [ "operator()", "class_pr_mat_sparse.html#aa90791838142418e3f4b32e292f236d0", null ],
    [ "operator()", "class_pr_mat_sparse.html#ab1a60337c6f4817d73079357518e0d3d", null ],
    [ "operator()", "class_pr_mat_sparse.html#ad9a41f7ecf950f83fe759bfa5662f4d6", null ],
    [ "print", "class_pr_mat_sparse.html#a70aabe01c24310aa91623fba9ebe86e9", null ],
    [ "printFull", "class_pr_mat_sparse.html#a3f24806e5b6ed1d7c0b23ceaa829cb89", null ],
    [ "prod", "class_pr_mat_sparse.html#afe016057a1857fbf926d736549488dc2", null ],
    [ "read", "class_pr_mat_sparse.html#a6ae00848a5bb4eee4b6cc0460ec09721", null ],
    [ "redim", "class_pr_mat_sparse.html#aff579539f8274becbb9ef2dd10d56804", null ],
    [ "rows", "class_pr_mat_sparse.html#ad9dae54e8b806e2d30e2e3522fe47665", null ],
    [ "scalProd", "class_pr_mat_sparse.html#a241293b891b9ff2edec937b6306cad3d", null ],
    [ "setToMatrix", "class_pr_mat_sparse.html#a6d1ddcc10fb7fe3c6db127cc2e3b5e7c", null ]
]
```

Definition at line 1 of file class_pr_mat_sparse.js.

30.558 doc/html/class_pr_matrix.js File Reference

Variables

- var class_pr_matrix

30.558.1 Variable Documentation

30.558.1.1 var class_pr_matrix

Initial value:

```
=
[
    [ "~PrMatrix", "class_pr_matrix.html#a874138ad2523d4e463466cdc22b87bfb", null ],
    [ "colmns", "class_pr_matrix.html#a8281ab6b6c20077323e3365c566e3df3", null ],
    [ "operator()", "class_pr_matrix.html#afe0e2980dcb97924cdbfc725f4ca983b", null ],
    [ "print", "class_pr_matrix.html#aa4232d5dcb7a16e7a7a1b9190b2f8c6f", null ],
    [ "prod", "class_pr_matrix.html#a04f041446176355c38d95e3eea40029b", null ],
    [ "read", "class_pr_matrix.html#afb99ca11e79ef21802d68cfdfb555bb8", null ],
    [ "rows", "class_pr_matrix.html#a098ac67f62a0a492f285b6608c9225e4", null ]
]
```

Definition at line 1 of file class_pr_matrix.js.

30.559 doc/html/class_pr_nested_node.js File Reference

Variables

- var class_pr_nested_node

30.559.1 Variable Documentation

30.559.1.1 var class_pr_nested_node

Initial value:

```
=
[
    [ "PrNestedNode", "class_pr_nested_node.html#a36fa389153b0aa64bd34c24b759d5c32", null ],
    [ "PrNestedNode", "class_pr_nested_node.html#a13c3548e0d0e223c732d8f65677bcf30", null ],
    [ "~PrNestedNode", "class_pr_nested_node.html#a33dd62c2b069247089acb492d38ac2c5", null ],
    [ "addTrianglePtr", "class_pr_nested_node.html#a91c4e46795b99d0efa7cbcceb5494ae9", null ],
    [ "init", "class_pr_nested_node.html#a860b7495910de6de3d14ec978cf248e2", null ],
    [ "level", "class_pr_nested_node.html#ab065c2aa60ce5c6fe4c9ab88afb9ca99", null ],
    [ "level", "class_pr_nested_node.html#ae3a88ecb71bed3cfae1a0af64a286c51", null ],
    [ "pnt", "class_pr_nested_node.html#a45d4a054f9161bbe67ad83291ba26375", null ],
    [ "pnt", "class_pr_nested_node.html#a52aa5fa14965b065f40597b9bcf0af8c", null ],
    [ "print", "class_pr_nested_node.html#ab38b4c82767fdfb7256c2a98318cf487", null ],
    [ "printUV", "class_pr_nested_node.html#acc7aa0e5795b71425fda2cde1fd4ba32", null ],
    [ "printXYZ", "class_pr_nested_node.html#a6648e0579589a09a43a7812d5bb90815", null ],
    [ "tr", "class_pr_nested_node.html#a3861d22889e30151bb28e3b38f9750a3", null ],
    [ "tr", "class_pr_nested_node.html#a4a01495e473dbe624e4db0881bedac14", null ],
    [ "u", "class_pr_nested_node.html#a7f9c2beee25a3bf8806907fe6b675b92", null ],
    [ "u", "class_pr_nested_node.html#a2fcd5ec45fa3515d66c959305db4a1ce", null ],
    [ "v", "class_pr_nested_node.html#a4fb696c20bedfb1aa45377050dfc8509", null ],
    [ "v", "class_pr_nested_node.html#aa0688bdd1fcd5d49dd45e3cbb56e0cec", null ],
    [ "x", "class_pr_nested_node.html#a69747eb489112d0560cebcf169df57f6", null ],
    [ "x", "class_pr_nested_node.html#a613b6c4885ec0097d356410119e8a4b9", null ],
    [ "y", "class_pr_nested_node.html#ac2aa9365d31b0e0bc8526ee52ca48f40", null ],
    [ "y", "class_pr_nested_node.html#a437a7f299f4aeb739d3c86fd434a5673", null ],
    [ "z", "class_pr_nested_node.html#ae5e6fab6058c33f1c08c5e7b335502ba", null ],
    [ "z", "class_pr_nested_node.html#a6b14152feaf1cdbe28caae15b42e1514", null ]
]
```

Definition at line 1 of file class_pr_nested_node.js.

30.560 doc/html/class_pr_nested_triangulation.js File Reference

Variables

- var class_pr_nested_triangulation

30.560.1 Variable Documentation

30.560.1.1 var class_pr_nested_triangulation

Initial value:

```
=
[
    [ "~PrNestedTriangulation", "class_pr_nested_triangulation.html#a59cad8d7ce5a400c389b0d5e69359ac9",
      null ],
    [ "getFinestLevel", "class_pr_nested_triangulation.html#adb5ff821ff46e6b1c74a2dfd83b8b861", null ],
    [ "getNeighbours", "class_pr_nested_triangulation.html#a670fe9a46eb1b32d538076b12f07928b", null ],
    [ "getNumNodes", "class_pr_nested_triangulation.html#ad24aad8c7d57742c6b1f5b6f2ab34b9e", null ],
    [ "getParents", "class_pr_nested_triangulation.html#a532957adaa30f7830cf126f0e6df362e", null ],
    [ "getX", "class_pr_nested_triangulation.html#abf3afb15cfe97fbe5bc45f1d43b0134a", null ],
    [ "getY", "class_pr_nested_triangulation.html#a971a214705cbb3860596dd4de59c2cf7", null ],
    [ "getZ", "class_pr_nested_triangulation.html#a3760b237a4bc2ccbfec5f64d35ad2c81", null ],
    [ "isBoundary", "class_pr_nested_triangulation.html#aa27033447f3f9c878c305d7d9243b7af", null ],
    [ "setX", "class_pr_nested_triangulation.html#aec4b07cb47b9444d811a917d55598bec", null ],
    [ "setY", "class_pr_nested_triangulation.html#abb034ddc03fb21360173a46f71d7cf39", null ],
    [ "setZ", "class_pr_nested_triangulation.html#ae6e08bb3cf714164ec08b811adc923a2", null ]
]
```

Definition at line 1 of file class_pr_nested_triangulation.js.

30.561 doc/html/class_pr_node.js File Reference

Variables

- var class_pr_node

30.561.1 Variable Documentation

30.561.1.1 var class_pr_node

Initial value:

```
=
[
    [ "PrNode", "class_pr_node.html#a46c035195d075cb92942e269ffa2f7f8", null ],
    [ "PrNode", "class_pr_node.html#aca41d00932e46e5a124a85b72987d6e0", null ],
    [ "init", "class_pr_node.html#abf10cdcbcc995052ca52112148e7e33b", null ],
    [ "point", "class_pr_node.html#a33a088c48aa4e8096ec27a855c110163", null ],
    [ "print", "class_pr_node.html#a1f1a2cc9dfc628f58efe93002b14e4a8", null ],
    [ "printUV", "class_pr_node.html#a069cc534c30ec1585b62ebeb2274c6fe", null ],
    [ "printXYZ", "class_pr_node.html#aae3da68a46e072df2ddcd4c4b7134a10", null ],
    [ "scan", "class_pr_node.html#a7fbc39d120b154a7ec36555061dab3ec", null ],
    [ "tr", "class_pr_node.html#ae9306b9497e98c93b895729879af2bb0", null ],
    [ "tr", "class_pr_node.html#ada7d8355857835362e85a9b487660b86", null ],
    [ "u", "class_pr_node.html#af32cd62efd6c560666a3ad4992e32c9d", null ],
    [ "u", "class_pr_node.html#affa228a107f5648aac56a8c79102b120", null ],
    [ "v", "class_pr_node.html#a7001ff1832d48c579c1b69deddb00db9", null ],
    [ "v", "class_pr_node.html#a8b59204989f4b21c4d88ea06f32e5203", null ],
    [ "x", "class_pr_node.html#a5a5865db2f78a4ccfd762634b4899e39", null ],
    [ "x", "class_pr_node.html#af1089d11e7ee670efb2007351752c1b6", null ],
    [ "y", "class_pr_node.html#ae837126218bc3668de1896a232be37bf", null ],
    [ "y", "class_pr_node.html#a5aa29384b673ee37acbd1cf7f95059e5", null ],
    [ "z", "class_pr_node.html#ad6eec21be11c8ba6ee3a0e4fe9d4693a", null ],
    [ "z", "class_pr_node.html#a323e95d93b0be8200fbfb5cf0b98afc1", null ]
]
```

Definition at line 1 of file class_pr_node.js.

30.562 doc/html/class_pr_organized_points.js File Reference

Variables

- var class_pr_organized_points

30.562.1 Variable Documentation

30.562.1.1 var class_pr_organized_points

Definition at line 1 of file class_pr_organized_points.js.

30.563 doc/html/class_pr_p_g_node.js File Reference

Variables

- var class_pr_p_g_node

30.563.1 Variable Documentation

30.563.1.1 var class_pr_p_g_node

Initial value:

```
=
[
    [ "PrPGNode", "class_pr_p_g_node.html#aef5c39ee78d7a13b8ae2ac418112a3c4", null ],
    [ "PrPGNode", "class_pr_p_g_node.html#aa609dd0d7d9317a5bb73dc0824086b92", null ],
    [ "PrPGNode", "class_pr_p_g_node.html#a7d8bfc8633cebc859a06391ee78d535e", null ],
    [ "~PrPGNode", "class_pr_p_g_node.html#aa2f5d24905661967c18e594767e65f4f", null ],
    [ "end", "class_pr_p_g_node.html#aed58c74a3dfea62e78c27438e263fd33", null ],
    [ "end", "class_pr_p_g_node.html#a17e4d0c73dcafa69d714cdb08e94387a", null ],
    [ "init", "class_pr_p_g_node.html#ae6a0717fc07928335c7466eaf4f44441", null ],
    [ "pnt", "class_pr_p_g_node.html#a6d7f992aaf478dc1ec5a1b0ff800e5f1", null ],
    [ "pnt", "class_pr_p_g_node.html#aa9ce8b832f049466aa8cffce2544de33", null ],
    [ "print", "class_pr_p_g_node.html#ad4c4ab93b1a9da4e5422a5a16dad37ae", null ],
    [ "printUV", "class_pr_p_g_node.html#a67dc61af63470497690c19fdb3ccd761", null ],
    [ "printXYZ", "class_pr_p_g_node.html#a5d79e6445006faff03b604684ecf7d4d", null ],
    [ "scan", "class_pr_p_g_node.html#a63a8e6a16953fbe0a2ab428d1cc948f3", null ],
    [ "u", "class_pr_p_g_node.html#adc28baec0a789a1d7e523cdb295b7754", null ],
    [ "u", "class_pr_p_g_node.html#aa05ad30e1b28840fa147e7a1cc7ae164", null ],
    [ "v", "class_pr_p_g_node.html#adaa1f1049de852bdad29fdd715d39419", null ],
    [ "v", "class_pr_p_g_node.html#a8476c3c6b52627b627a31ec7f0b0d046", null ],
    [ "x", "class_pr_p_g_node.html#af56272e39fbc9e4b0273b83d9d9aa970", null ],
    [ "x", "class_pr_p_g_node.html#a373e004d4ae77aa11f3aee38ecb7985d", null ],
    [ "y", "class_pr_p_g_node.html#a73c1340c393a2d29be3ab2aca97dfb88", null ],
    [ "y", "class_pr_p_g_node.html#acf61cce8b39c5f5f30f26961f447e00f", null ],
    [ "z", "class_pr_p_g_node.html#a302fb7445d4022c990244d61768aaa22", null ],
    [ "z", "class_pr_p_g_node.html#aab8d9580b6112f5342804c503aa5aa78", null ]
]
```

Definition at line 1 of file class_pr_p_g_node.js.

30.564 doc/html/class_pr_param_triangulation.js File Reference

Variables

- var class_pr_param_triangulation

30.564.1 Variable Documentation

30.564.1.1 var class_pr_param_triangulation

Initial value:

```
=
[
    [ "PrParamTriangulation", "class_pr_param_triangulation.html#a1b09c2d6db5bf76c8bd8ffb4d32cfdb6", null ]
      ,
    [ "~PrParamTriangulation", "class_pr_param_triangulation.html#ad1f859a31b8952b06ef8b335aa5894fd", null
      ],
    [ "attach", "class_pr_param_triangulation.html#ace2c563aaa857b9b1157fad40dbf095f", null ],
    [ "findTriangleContainingPoint", "class_pr_param_triangulation.html#a597e6fbe8bbda983ce0abb0b0c8d2685",
       null ],
    [ "getCoarseMesh", "class_pr_param_triangulation.html#a636d5a0f9e0eb3b0d27d6807c88b86d6", null ],
    [ "getFineMesh", "class_pr_param_triangulation.html#a0d9bcba1959fa0ae2bc9f1dafc1def0f", null ],
    [ "getParamPoint", "class_pr_param_triangulation.html#ad43dcaf0a43c0775f7433d74a5445c0a", null ],
    [ "getSurfPoint", "class_pr_param_triangulation.html#a09a872a911f0f7c7dbaecec2dd042bd1", null ],
    [ "getUV", "class_pr_param_triangulation.html#abd7bd619debda92e3ed7f553885e8e31", null ],
    [ "makeCorrespondences", "class_pr_param_triangulation.html#a6840f62f964b2405c1af121ece03d6c4", null ],
    [ "open", "class_pr_param_triangulation.html#a6d33b52c43d63bdf26064db11bac5aba", null ],
    [ "printBaseTriangles", "class_pr_param_triangulation.html#a39e63cae865241283494337bcf532b8c", null ],
    [ "save", "class_pr_param_triangulation.html#a4357af63c58ab2d7ca2d1dcd1a9ac5e6", null ],
    [ "triangleContainsPoint", "class_pr_param_triangulation.html#a322daf0457b7f54f6c359549cfebda05", null
      ]
]
```

Definition at line 1 of file class_pr_param_triangulation.js.

30.565 doc/html/class_pr_parametrize_bdy.js File Reference

Variables

- var class_pr_parametrize_bdy

30.565.1 Variable Documentation

30.565.1.1 var class_pr_parametrize_bdy

Initial value:

```
=
[
    [ "PrParametrizeBdy", "class_pr_parametrize_bdy.html#af83d3a2afa9a786b69c49c6690f3289b", null ],
    [ "~PrParametrizeBdy", "class_pr_parametrize_bdy.html#a627f8fe265dc7ac62c79ac95101c660f", null ],
    [ "attach", "class_pr_parametrize_bdy.html#ab443522f631906821bac709deb346b36", null ],
    [ "boundaryLength", "class_pr_parametrize_bdy.html#a9caf971d4acabc686c9a375ac9780f5b", null ],
    [ "chord", "class_pr_parametrize_bdy.html#a09d84cf45677b66329f49cfc9961fb91", null ],
    [ "findBdyNode", "class_pr_parametrize_bdy.html#a76706ea5112df0c83b3ee94e3bba1d9c", null ],
    [ "findCornersFromUV", "class_pr_parametrize_bdy.html#ab681f78edcb2cd451699a35f65baff64", null ],
    [ "findCornersFromXYZ", "class_pr_parametrize_bdy.html#ad9174f05f6ed621e4bbc93e956e714f7", null ],
    [ "getNextBdyNode", "class_pr_parametrize_bdy.html#ad01b4c92b3008c7f114724c7a7d60d52", null ],
    [ "parametrize", "class_pr_parametrize_bdy.html#ad07b22a033ba09ee3c5cf17eeb1ed502", null ],
    [ "parametrize", "class_pr_parametrize_bdy.html#aa6c678f93bd412749362062e14c1789b", null ],
    [ "parametrizeSide", "class_pr_parametrize_bdy.html#a2f8f49ea0573e924c8cfc47ee91643f2", null ],
    [ "setParamKind", "class_pr_parametrize_bdy.html#ac3f08e8815786f179062e5dfcd6d2141", null ],
    [ "bdyparamtype_", "class_pr_parametrize_bdy.html#a0f10aae3995d2a4527fa4ac317e135c4", null ],
    [ "g_", "class_pr_parametrize_bdy.html#af1ee487b52611457d3a81147f130021a", null ],
    [ "neighbours_", "class_pr_parametrize_bdy.html#a103dac1fc0b6bb14b310072af50798aa", null ]
]
```

Definition at line 1 of file class_pr_parametrize_bdy.js.

30.566 doc/html/class_pr_parametrize_int.js File Reference

Variables

- var class_pr_parametrize_int

30.566.1 Variable Documentation

30.566.1.1 var class_pr_parametrize_int

Initial value:

```
=
[
    [ "PrParametrizeInt", "class_pr_parametrize_int.html#a24cf818aea74952ccf98d515f2e3065e", null ],
    [ "~PrParametrizeInt", "class_pr_parametrize_int.html#ab4e3043d2490cb8ad8c107d0f65a5687", null ],
    [ "attach", "class_pr_parametrize_int.html#a25381707496c9d61bf40b999902e3402", null ],
    [ "computeWeights", "class_pr_parametrize_int.html#a2d863f767eafcd7cfac417e763384f86", null ],
    [ "findBarycentre", "class_pr_parametrize_int.html#a0ba460868d49d4ffa0afe10444fff1dd", null ],
    [ "findFixedPntsFromXYZ", "class_pr_parametrize_int.html#ad89fb4b2331e39317a085ef62a8744f5", null ],
    [ "getAllNeighbours", "class_pr_parametrize_int.html#ac384e242d3d9581e9b3ec762be728c53", null ],
    [ "getAllWeights", "class_pr_parametrize_int.html#a97ebfeb2702480841edb7c1cceffe406", null ],
    [ "getNumInt2Nghrs", "class_pr_parametrize_int.html#a85909ba2abad18917f0fbe20222baed3", null ],
    [ "getNumIntNghrs", "class_pr_parametrize_int.html#ad70ea861d7d8e723bd0dbfaadcaaaa13", null ],
    [ "isFixed", "class_pr_parametrize_int.html#ab6e93adb91358c18bfbe2a9ab12c4485", null ],
    [ "makeWeights", "class_pr_parametrize_int.html#ae4aa3fd1290361879b3f8d1906ad8a81", null ],
    [ "new_parametrize3d", "class_pr_parametrize_int.html#ac6e89a09aba3bf0918ce57ed3a4d453a", null ],
    [ "parametrize", "class_pr_parametrize_int.html#ab3308ded36a9fb72da1110b5a4a897e1", null ],
    [ "parametrize3d", "class_pr_parametrize_int.html#ab234f339fb378fb20facf911f0bacfb0", null ],
    [ "setBiCGTolerance", "class_pr_parametrize_int.html#ab9e09db9a0bfa4e0d3d62051abce3b5e", null ],
    [ "setStartVectorKind", "class_pr_parametrize_int.html#a35d88cfb426318723e7256c7a3804b10", null ],
    [ "smooth", "class_pr_parametrize_int.html#a6a17ada738a6a503ea37201ad58ba149", null ],
    [ "allNeighbours_", "class_pr_parametrize_int.html#a376adea9f4931c23acf517e5d06bf7d7", null ],
    [ "allWeights_", "class_pr_parametrize_int.html#a3b24d5ea6f4c97b04aa17e197f425328", null ],
    [ "g_", "class_pr_parametrize_int.html#a36919da9715f5f1625e062c6e6b27176", null ],
    [ "neighbours_", "class_pr_parametrize_int.html#a5b263f48a8e23507920c2c374dee353a", null ],
    [ "startvectortype_", "class_pr_parametrize_int.html#a3995ebc67005b13192fc020b3d847ac7", null ],
    [ "tolerance_", "class_pr_parametrize_int.html#a987817e47bcf9c3d9edd20492b95b493", null ],
    [ "weights_", "class_pr_parametrize_int.html#ae212bbd37bc09f289a0dbe076dab9b77", null ]
]
```

Definition at line 1 of file class_pr_parametrize_int.js.

30.567 doc/html/class_pr_parametrize_mesh.js File Reference

Variables

- var class_pr_parametrize_mesh

30.567.1 Variable Documentation

30.567.1.1 var class_pr_parametrize_mesh

Initial value:

```
=
[
    [ "PrParametrizeMesh", "class_pr_parametrize_mesh.html#a3f70470d1231c4c93622b4a47ff719f5", null ],
    [ "~PrParametrizeMesh", "class_pr_parametrize_mesh.html#a0cab32c2ad55181a84da8541be25051d", null ],
    [ "attach", "class_pr_parametrize_mesh.html#a08c0b84e36568b0658e781276a935c9d", null ],
    [ "castRay", "class_pr_parametrize_mesh.html#a2777f2de0749ea44553f9364cb0d4fbf", null ],
    [ "edgeInPolygon", "class_pr_parametrize_mesh.html#a9bfb2ca8b0695348bc0efc623ee4b1ec", null ],
    [ "getConnectedNodes", "class_pr_parametrize_mesh.html#aa72b55874cac79c4f5f7881477fd884f", null ],
    [ "getInteriorNeighbours", "class_pr_parametrize_mesh.html#afff4c9666391c41b43622ce01d7a8909", null ],
    [ "getLeftNode", "class_pr_parametrize_mesh.html#a0b6949852805a6ba115bb24f3626d32b", null ],
    [ "getNextV", "class_pr_parametrize_mesh.html#a8766950e57fc6b06adc40db4277b9361", null ],
    [ "makePath", "class_pr_parametrize_mesh.html#afa59b8c11febe89f74455da50664e349", null ],
    [ "makePolygon", "class_pr_parametrize_mesh.html#aa347cedd501066bfbb3a368cc6bd8134", null ],
    [ "makeSubTriangulation", "class_pr_parametrize_mesh.html#a05e09c6448074f7296fe94e470f8ba16", null ],
    [ "makeSubTriangulationFromTriangle", "class_pr_parametrize_mesh.html#aadebefb84d2a41173383b1c244e7e9a7
      ", null ],
    [ "makeSubTriangulationInsidePolygon", "
      class_pr_parametrize_mesh.html#a05daf4e4f908667fe2c1ff8369e89a7b", null ],
    [ "parametrize", "class_pr_parametrize_mesh.html#a1892514375d679df356d416fc368637f", null ],
    [ "parametrizeSubTriangulation", "class_pr_parametrize_mesh.html#a0006fc40d52b533107e681efaee7b3a3",
      null ]
]
```

Definition at line 1 of file class_pr_parametrize_mesh.js.

30.568 doc/html/class_pr_planar_graph___o_p.js File Reference

Variables

- var class_pr_planar_graph___o_p

30.568.1 Variable Documentation

30.568.1.1 var class_pr_planar_graph___o_p

Initial value:

```
=
[
    [ "PrPlanarGraph_OP", "class_pr_planar_graph___o_p.html#acdd1ecf42cde4b5f6d050c376da9b4e4", null ],
    [ "PrPlanarGraph_OP", "class_pr_planar_graph___o_p.html#a4ef2049e2f56526f0eb003a0e52f9448", null ],
    [ "PrPlanarGraph_OP", "class_pr_planar_graph___o_p.html#ae832ec3a817be617fcef10421e7ae2f7", null ],
    [ "PrPlanarGraph_OP", "class_pr_planar_graph___o_p.html#aebdecc6e7bd1a4b9edc88bb6c1de711d", null ],
    [ "~PrPlanarGraph_OP", "class_pr_planar_graph___o_p.html#a399ecc526fb7260e9ee8893b212bc2dc", null ],
    [ "get3dNode", "class_pr_planar_graph___o_p.html#acece125574a3544bd0953b0dd9f30c8f", null ],
    [ "getNeighbours", "class_pr_planar_graph___o_p.html#ac3ba946d0f6544649f661bf70dfba187", null ],
    [ "getNumNodes", "class_pr_planar_graph___o_p.html#a3ecb2f22f125055704b0195db86229ba", null ],
    [ "getU", "class_pr_planar_graph___o_p.html#af0c9e3a090195b7c43c7efadd484f788", null ],
    [ "getV", "class_pr_planar_graph___o_p.html#a74d1e42a46193ab8f3750191a52f8732", null ],
    [ "isBoundary", "class_pr_planar_graph___o_p.html#ab6ab662d212b28b6c5c73708e5b5c92a", null ],
    [ "print", "class_pr_planar_graph___o_p.html#acc6cabed592875afc2b429207a8d9451", null ],
    [ "scan", "class_pr_planar_graph___o_p.html#a566ac1a6b7e23039f6484a94ec04dc16", null ],
    [ "scan2", "class_pr_planar_graph___o_p.html#a17f31d0d75eb90a6b1d8a7c3b791a719", null ],
    [ "set3dNode", "class_pr_planar_graph___o_p.html#af8c207c61a33753fe17b81487f736037", null ],
    [ "setU", "class_pr_planar_graph___o_p.html#a1beb13db1d9a2a4c26a590a17c666aad", null ],
    [ "setV", "class_pr_planar_graph___o_p.html#ac23c3ea9c628b7bc2e1b1c9da4c370b8", null ]
]
```

Definition at line 1 of file class_pr_planar_graph___o_p.js.

30.569 doc/html/class_pr_prewavelet___f.js File Reference

Variables

- var class_pr_prewavelet___f

30.569.1 Variable Documentation

30.569.1.1 var class_pr_prewavelet___f

Initial value:

```
=
[
    [ "PrPrewavelet_F", "class_pr_prewavelet___f.html#aa85a80c864f6ffc2a33702626b467f2c", null ],
    [ "~PrPrewavelet_F", "class_pr_prewavelet___f.html#a1b324392f12544892e36bc62de2374a1", null ],
    [ "compose", "class_pr_prewavelet___f.html#aaa1ed3fe48ff6033d93aded872e9aa3c", null ],
    [ "decompose", "class_pr_prewavelet___f.html#a245bb4614348a94405e9b9f4839fb18d", null ],
    [ "setCGTolerance", "class_pr_prewavelet___f.html#aaf21ff9f24fa97fa8fb1b670792d13ee", null ]
]
```

Definition at line 1 of file class_pr_prewavelet___f.js.

30.570 doc/html/class_pr_prm_e_d_d_h_l_s.js File Reference

Variables

- var class_pr_prm_e_d_d_h_l_s

30.570.1 Variable Documentation

30.570.1.1 var class_pr_prm_e_d_d_h_l_s

Initial value:

```
=
[
    [ "PrPrmEDDHLS", "class_pr_prm_e_d_d_h_l_s.html#a4aca895bc74e1869c633c543b21d5f56", null ],
    [ "~PrPrmEDDHLS", "class_pr_prm_e_d_d_h_l_s.html#ad8103707329ece41917b00bf0240e815", null ],
    [ "makeWeights", "class_pr_prm_e_d_d_h_l_s.html#a3d2b2dfa84fe08ed37ba3427f117519c", null ]
]
```

Definition at line 1 of file class_pr_prm_e_d_d_h_l_s.js.

30.571 doc/html/class_pr_prm_experimental.js File Reference

Variables

- var class_pr_prm_experimental

30.571.1 Variable Documentation

30.571.1.1 var class_pr_prm_experimental

Initial value:

```
=
[
    [ "PrPrmExperimental", "class_pr_prm_experimental.html#a17314ff9cdba3b8dae30b2ba6b3531d4", null ],
    [ "~PrPrmExperimental", "class_pr_prm_experimental.html#add1e25c2e5f4ae5ca319a2b58318d103", null ],
    [ "makeWeights", "class_pr_prm_experimental.html#a44da5f1f3af2f70a5e9c74e03cd75e3d", null ]
]
```

Definition at line 1 of file class_pr_prm_experimental.js.

30.572 doc/html/class_pr_prm_least_square.js File Reference

Variables

- var class_pr_prm_least_square

30.572.1 Variable Documentation

30.572.1.1 var class_pr_prm_least_square

Initial value:

```
=
[
    [ "PrPrmLeastSquare", "class_pr_prm_least_square.html#ad71809cbda773a57063cd4673551c07e", null ],
    [ "~PrPrmLeastSquare", "class_pr_prm_least_square.html#a8afbcac333705371b86a5e1ff72afb3a", null ],
    [ "makeWeights", "class_pr_prm_least_square.html#adae63a2fe8e0378cc03fce5d197f9493", null ]
]
```

Definition at line 1 of file class_pr_prm_least_square.js.

30.573 doc/html/class_pr_prm_mean_value.js File Reference

Variables

- var class_pr_prm_mean_value

30.573.1 Variable Documentation

30.573.1.1 var class_pr_prm_mean_value

Initial value:

```
=
[
    [ "PrPrmMeanValue", "class_pr_prm_mean_value.html#a84fb043277622730787d8cfed9b47fff", null ],
    [ "~PrPrmMeanValue", "class_pr_prm_mean_value.html#a95cbcc3e056f333d69d8e233bb6b235b", null ],
    [ "makeWeights", "class_pr_prm_mean_value.html#a7b036031623cdc0502b4b9872a826e6a", null ]
]
```

Definition at line 1 of file class_pr_prm_mean_value.js.

30.574 doc/html/class_pr_prm_shp_pres.js File Reference

Variables

- var class_pr_prm_shp_pres

30.574.1 Variable Documentation

30.574.1.1 var class_pr_prm_shp_pres

Initial value:

```
=
[
    [ "PrPrmShpPres", "class_pr_prm_shp_pres.html#ab858d1904f8ee36165c95e9492d9d307", null ],
    [ "~PrPrmShpPres", "class_pr_prm_shp_pres.html#afa71920b9b800b2c97f6ebd4354506c1", null ],
    [ "localParam", "class_pr_prm_shp_pres.html#ac623174dd58929231e2b9e24df4a51f9", null ],
    [ "makeWeights", "class_pr_prm_shp_pres.html#a663b1e47c88b2c7a979fd8cfcb659e44", null ],
    [ "alpha_", "class_pr_prm_shp_pres.html#a0d2c2caee95dc86a0d4e4a20daa6f407", null ],
    [ "len_", "class_pr_prm_shp_pres.html#a20fefbf6207938021d3a0fe033ac278a", null ],
    [ "u_", "class_pr_prm_shp_pres.html#ae67db719b7c94fed334b2d6711c224d7", null ],
    [ "v_", "class_pr_prm_shp_pres.html#a1b91934fd02891b562a62a7def09b645", null ]
]
```

Definition at line 1 of file class_pr_prm_shp_pres.js.

30.575 doc/html/class_pr_prm_surface.js File Reference

Variables

- var class_pr_prm_surface

30.575.1 Variable Documentation

30.575.1.1 var class_pr_prm_surface

Initial value:

```
=
[
    [ "PrPrmSurface", "class_pr_prm_surface.html#aff8bf946b045f35cb5397ffba54c418f", null ],
    [ "~PrPrmSurface", "class_pr_prm_surface.html#a2587ba04d6401f30727b05ca7eac67ae", null ]
]
```

Definition at line 1 of file class_pr_prm_surface.js.

30.576 doc/html/class_pr_prm_sym_mean_value.js File Reference

Variables

- var class_pr_prm_sym_mean_value

30.576.1 Variable Documentation

30.576.1.1 var class_pr_prm_sym_mean_value

Initial value:

```
=
[
    [ "PrPrmSymMeanValue", "class_pr_prm_sym_mean_value.html#a0941f6c5e0d3335d9b8ddeb8e6d1baad", null ],
    [ "~PrPrmSymMeanValue", "class_pr_prm_sym_mean_value.html#a246a6c28c070ff36c28196e95ec2ef31", null ],
    [ "makeWeights", "class_pr_prm_sym_mean_value.html#a5b7950ef23ff8c00baffd9e15a05fe33", null ],
    [ "tanThetaOverTwo", "class_pr_prm_sym_mean_value.html#a9f07830f6d01f9430204d6b090da8823", null ]
]
```

Definition at line 1 of file class_pr_prm_sym_mean_value.js.

30.577 doc/html/class_pr_prm_uniform.js File Reference

Variables

- var class_pr_prm_uniform

30.577.1 Variable Documentation

30.577.1.1 var class_pr_prm_uniform

Initial value:

```
=
[
    [ "PrPrmUniform", "class_pr_prm_uniform.html#a2e6c4bca0a0ec47428b4afad5d24ce33", null ],
    [ "~PrPrmUniform", "class_pr_prm_uniform.html#a783b707a6b0f3cc9b152f1b6ebba4a91", null ]
]
```

Definition at line 1 of file class_pr_prm_uniform.js.

30.578 doc/html/class_pr_prm_wachspress.js File Reference

Variables

- var class_pr_prm_wachspress

30.578.1 Variable Documentation

30.578.1.1 var class_pr_prm_wachspress

Initial value:

```
=
[
    [ "PrPrmWachspress", "class_pr_prm_wachspress.html#a3c710e3936980bbb8de34036dbeae394", null ],
    [ "~PrPrmWachspress", "class_pr_prm_wachspress.html#a130125112b132d41232d3f1b97148731", null ],
    [ "makeWeights", "class_pr_prm_wachspress.html#a4264c4ddfb0430c00cdadb4f873b48d5", null ],
    [ "tanThetaOverTwo", "class_pr_prm_wachspress.html#a3b09c67987bea5e0a6f2ac95755ca258", null ]
]
```

Definition at line 1 of file class_pr_prm_wachspress.js.

30.579 doc/html/class_pr_rectangular_grid___o_p.js File Reference

Variables

- var class_pr_rectangular_grid___o_p

30.579.1 Variable Documentation

30.579.1.1 var class_pr_rectangular_grid___o_p

Definition at line 1 of file class_pr_rectangular_grid___o_p.js.

30.580 doc/html/class_pr_sub_triangulation.js File Reference

Variables

- var class_pr_sub_triangulation

30.580.1 Variable Documentation

30.580.1.1 var class_pr_sub_triangulation

Initial value:

```
=
[
    [ "PrSubTriangulation", "class_pr_sub_triangulation.html#acae41fa48ebba273c83304a7fe2dffd5", null ],
    [ "PrSubTriangulation", "class_pr_sub_triangulation.html#ae1d252f0333ffdbfb942393efc3b40a0", null ],
    [ "~PrSubTriangulation", "class_pr_sub_triangulation.html#a2b2923c2714c7f28c15de4e04b8974ac", null ],
    [ "attach", "class_pr_sub_triangulation.html#a6a0f9f273be6eb137e79adea9a393298", null ],
    [ "findNumBdyNodes", "class_pr_sub_triangulation.html#ae65468c1c45af012950f0dc812983627", null ],
    [ "get3dNode", "class_pr_sub_triangulation.html#a19f7d1ec142380461fea4e6003e06829", null ],
    [ "getGlobalIndex", "class_pr_sub_triangulation.html#a7cd54dad5740c697d496b7912913368d", null ],
    [ "getLocalIndex", "class_pr_sub_triangulation.html#adb9f0ec2feb4a500dd8df9a0730e8ec4", null ],
    [ "getNeighbours", "class_pr_sub_triangulation.html#ad6530d164037d105410a2226c42aa46a", null ],
    [ "getNeighbourTriangles", "class_pr_sub_triangulation.html#a352f903c564f38e460efe48d17e5eca6", null ],
    [ "getNumNodes", "class_pr_sub_triangulation.html#a3b7e78ebb6858bc5483bf597c9115433", null ],
    [ "getTriangleIndices", "class_pr_sub_triangulation.html#a38d983c887a578d0526c0d447cb4ab99", null ],
    [ "getU", "class_pr_sub_triangulation.html#a4ae8edeca415b480b73ddec89d7cbae1", null ],
    [ "getV", "class_pr_sub_triangulation.html#a98aa8d4b33d168e73c6e544eea54154f", null ],
    [ "initialize", "class_pr_sub_triangulation.html#acb9317f32e5707d5609dd557f83e18c1", null ],
    [ "isBoundary", "class_pr_sub_triangulation.html#ac9264ba7e7c69f5d3eace29974a63d2f", null ],
    [ "set3dNode", "class_pr_sub_triangulation.html#ab50ffc1774c9ff1a118c0dc237bcc0e8", null ],
    [ "setU", "class_pr_sub_triangulation.html#ae98031d8c7f02e66591a3c43243697dd", null ],
    [ "setV", "class_pr_sub_triangulation.html#a62f00c16103a9c2a2933be4a400528ef", null ],
    [ "triangleInThis", "class_pr_sub_triangulation.html#a6cb4ec410f7622613c88c9d23f1e161d", null ]
]
```

Definition at line 1 of file class_pr_sub_triangulation.js.

30.581 doc/html/class_pr_thin.js File Reference

Variables

- var class_pr_thin

30.581.1 Variable Documentation

30.581.1.1 var class_pr_thin

Initial value:

```
=
[
    [ "PrThin", "class_pr_thin.html#a7d094956ec19027e5a0bd83bb8961bae", null ],
    [ "~PrThin", "class_pr_thin.html#a31c43bf3df499c37d4fe5cbf3cc844df", null ],
    [ "attach", "class_pr_thin.html#ab6d927ae13c78b834c8682ac378f8d45", null ],
    [ "findError", "class_pr_thin.html#a87454694b580dce6614277a29cd2ed8a", null ],
    [ "findNearestNeighbour", "class_pr_thin.html#a0255645d4dde7222c3994d0c721282b2", null ],
    [ "halfEdgeCollapse", "class_pr_thin.html#a8562782f8ebd8645b6ef5dee869f913e", null ],
    [ "makeHeap", "class_pr_thin.html#a34b5f6d53ab702f83680ef2a3063ac3e", null ],
    [ "printHeap", "class_pr_thin.html#ab747d680498fab1237c14a9e0bd5e154", null ],
    [ "removePoint", "class_pr_thin.html#a13252df15cbe0d681da674e4f273bb46", null ],
    [ "setError", "class_pr_thin.html#a29132e6d0c24ff6562772e10c8e52114", null ],
    [ "setStepNumber", "class_pr_thin.html#a22dd0842274c5d9c935d99cb069b2c24", null ],
    [ "thin", "class_pr_thin.html#aea4838b641ddc6727f51e43a03be1d5b", null ],
    [ "error_", "class_pr_thin.html#a1cc62841af30289e446e2d7b3ac0170a", null ],
    [ "heap_", "class_pr_thin.html#a6c903d183c116bcf9c8efde3a7e1d1d1", null ],
    [ "nlist_ptr", "class_pr_thin.html#ac9cc59553e50f6ebc73edcbd6cf9a55a", null ],
    [ "steps_", "class_pr_thin.html#a9ca72625ae44bb1cf6fe5ef07b502b1a", null ],
    [ "tlist_ptr", "class_pr_thin.html#a3a369157ba7218c70863f042afa1643c", null ],
    [ "trn_", "class_pr_thin.html#a61c134e572850c889c6e1ec67d879bf7", null ]
]
```

Definition at line 1 of file class_pr_thin.js.

30.582 doc/html/class_pr_threshold.js File Reference

Variables

- var class_pr_threshold

30.582.1 Variable Documentation

30.582.1.1 var class_pr_threshold

Initial value:

```
=
[
    [ "PrThreshold", "class_pr_threshold.html#ac492cec733aa0796b73d4f19e09b900e", null ],
    [ "~PrThreshold", "class_pr_threshold.html#adee2c54b802b8c7256d9300c0a6fbbf0", null ],
    [ "attach", "class_pr_threshold.html#afa9316864e4bae15474367f329bff1c5", null ],
    [ "averageAbsValue", "class_pr_threshold.html#a831eec1d2955d601036ce58a8af2112f", null ],
    [ "findThreshold", "class_pr_threshold.html#ad6c76d88dd579e7cfdb791cd444df958", null ],
    [ "leaveLevel", "class_pr_threshold.html#a816cdbad25faf259db527bf3c302bc5e", null ],
    [ "maxNorm", "class_pr_threshold.html#a693025401fd91e94a8dd94037b1dcb02", null ],
    [ "setThreshold", "class_pr_threshold.html#a1271a04eb09a374d158c0ec5e56aee94", null ],
    [ "threshold", "class_pr_threshold.html#a0670f0ae29c865b724e978e3d864c0fd", null ],
    [ "thresholdByCompRate", "class_pr_threshold.html#a5d7af83376ba54cbfbed5d3c501df406", null ],
    [ "triangleNorm", "class_pr_threshold.html#abc5b829433f418cf95e63026cc340293", null ],
    [ "truncateLevel", "class_pr_threshold.html#a012ab15d37653fcc76869cb5ac370de0", null ],
    [ "weightedL2Norm", "class_pr_threshold.html#a49faf4a4837b4986080824fe64df929c", null ],
    [ "t_", "class_pr_threshold.html#a569fc7ba663b6a439069fe47f3babd5c", null ],
    [ "threshold_", "class_pr_threshold.html#a684efc618a0e74f8d0ed3ac08a837db7", null ]
]
```

Definition at line 1 of file class_pr_threshold.js.

30.583 doc/html/class_pr_triangle.js File Reference

Variables

- var class_pr_triangle

30.583.1 Variable Documentation

30.583.1.1 var class_pr_triangle

Definition at line 1 of file class_pr_triangle.js.

30.584 doc/html/class_pr_triangulation___n_t.js File Reference

Variables

- var class_pr_triangulation___n_t

30.584.1 Variable Documentation

30.584.1.1 var class_pr_triangulation___n_t

Initial value:

```
=
[
    [ "PrTriangulation_NT", "class_pr_triangulation___n_t.html#af157aed886430f59184492833aafe4da", null ],
    [ "PrTriangulation_NT", "class_pr_triangulation___n_t.html#af9373ad1c5343f05d695003e4f2a48dd", null ],
    [ "~PrTriangulation_NT", "class_pr_triangulation___n_t.html#a525165ba2e98871226cfc9a0d3f6a5c5", null ],
    [ "getFinestLevel", "class_pr_triangulation___n_t.html#a49069a4eb0308c4590064b5f141019bc", null ],
    [ "getLevel", "class_pr_triangulation___n_t.html#a3d781299cb59ab6c4d081b784dd68f14", null ],
    [ "getNeighbours", "class_pr_triangulation___n_t.html#a0d82289eb370854b5ba1244092eb7ec4", null ],
    [ "getNumNodes", "class_pr_triangulation___n_t.html#a617b4f8515733a8db93133649bf68f6e", null ],
    [ "getTopLevel", "class_pr_triangulation___n_t.html#a98d7a7833e15fe6c3127e27f58ce332d", null ],
    [ "getX", "class_pr_triangulation___n_t.html#aef076938bde917aea39d89f192266eb6", null ],
    [ "getY", "class_pr_triangulation___n_t.html#ac63bcb7a301116a4898645f8cef0b78b", null ],
    [ "getZ", "class_pr_triangulation___n_t.html#ae13f8f97dc07538940d3240f643d14c5", null ],
    [ "isBoundary", "class_pr_triangulation___n_t.html#aeb1c6afe089af3c7c1708193a1e863dc", null ],
    [ "lift", "class_pr_triangulation___n_t.html#a3347c0d19b44b3b2e5ff1f420f17b466", null ],
    [ "refine", "class_pr_triangulation___n_t.html#a49dd5eb2bd50cd976c3bbe98638fc904", null ],
    [ "setX", "class_pr_triangulation___n_t.html#a5a7096a8b586e941217bbde751d09572", null ],
    [ "setY", "class_pr_triangulation___n_t.html#af4ceec67cc9bd0f8e512cec2054b589b", null ],
    [ "setZ", "class_pr_triangulation___n_t.html#ac436058e9e9849b298baecb66d38b43d", null ]
]
```

Definition at line 1 of file class_pr_triangulation___n_t.js.

30.585 doc/html/class_pr_triangulation___o_p.js File Reference

Variables

- var class_pr_triangulation___o_p

30.585.1 Variable Documentation

30.585.1.1 var class_pr_triangulation___o_p

Definition at line 1 of file class_pr_triangulation___o_p.js.

30.586 doc/html/class_pr_unorganized___o_p.js File Reference

Variables

- var class_pr_unorganized___o_p

30.586.1 Variable Documentation

30.586.1.1 var class_pr_unorganized___o_p

Initial value:

```
=
[
    [ "PrUnorganized_OP", "class_pr_unorganized___o_p.html#a6af54585405b6c3d0bc9a3887aa38476", null ],
    [ "PrUnorganized_OP", "class_pr_unorganized___o_p.html#a8d8886f223a6ddd397254ce560e4335b", null ],
    [ "~PrUnorganized_OP", "class_pr_unorganized___o_p.html#a4664ec62817650d35f49d0d6f435a2bb", null ],
    [ "get3dNode", "class_pr_unorganized___o_p.html#ae5dc1474062e533a55bc30a3b4698849", null ],
    [ "getNeighbours", "class_pr_unorganized___o_p.html#ac6cead07bb2a3df8d0220a442929f09c", null ],
    [ "getNumNodes", "class_pr_unorganized___o_p.html#a6f45913608f66000f774f73cd06295d3", null ],
    [ "getRadius", "class_pr_unorganized___o_p.html#af063ca3220ff5e5fa5623e3420589513", null ],
    [ "getU", "class_pr_unorganized___o_p.html#af2adc4bc1012c3571af302963be2141e", null ],
    [ "getV", "class_pr_unorganized___o_p.html#a905a2425d54e32398ff2b271a984fec6", null ],
    [ "isBoundary", "class_pr_unorganized___o_p.html#a5a3ecf644836e23f79c44b97b5818ae2", null ],
    [ "print", "class_pr_unorganized___o_p.html#a43d2fa9eb4188818bc9270cba6d7c159", null ],
    [ "printRawData", "class_pr_unorganized___o_p.html#ab334661004f656184cb4a37fc7ba83ed", null ],
    [ "scan", "class_pr_unorganized___o_p.html#ad76a888ca9b4f217835dba42053dae3d", null ],
    [ "scanRawData", "class_pr_unorganized___o_p.html#a0f09baa27e8cdcd4ed570f2df9203577", null ],
    [ "set3dNode", "class_pr_unorganized___o_p.html#a4de7406aa62ded74b619dcf0ffdb2d7a", null ],
    [ "setKNearest", "class_pr_unorganized___o_p.html#a19d9492977b44d34175d394c33c0f6d7", null ],
    [ "setRadius", "class_pr_unorganized___o_p.html#ad4e9cd1ae3a3079fa2bf2e0dafc24529", null ],
    [ "setU", "class_pr_unorganized___o_p.html#ac2ba839dad21aec851533314ed5fe802", null ],
    [ "setV", "class_pr_unorganized___o_p.html#afc98367785c160eaffdc6820e912c034", null ],
    [ "useK", "class_pr_unorganized___o_p.html#a762cb0156e940b783262ba5acedc3af4", null ],
    [ "useRadius", "class_pr_unorganized___o_p.html#a5458b764bede44fa0b1a1a032aef275f", null ]
]
```

Definition at line 1 of file class_pr_unorganized___o_p.js.

30.587 doc/html/class_pr_vec.js File Reference

Variables

- var class_pr_vec

30.587.1 Variable Documentation

30.587.1.1 var class_pr_vec

Initial value:

```
=
[
    [ "PrVec", "class_pr_vec.html#ac6139765e0a7a175aeda55405c3e0c38", null ],
    [ "PrVec", "class_pr_vec.html#abef46803bbe9c53b8328d74b52334757", null ],
    [ "PrVec", "class_pr_vec.html#a09e3eb5ce8a0f762a32014586af9aaf4", null ],
    [ "inner", "class_pr_vec.html#a4d14a8bb523f541ea4de6dcfe8565f8e", null ],
    [ "operator()", "class_pr_vec.html#ad55487ab0c699f7dd9a3657492bcc368", null ],
    [ "operator()", "class_pr_vec.html#ad65a3d6d217b30c65f1e57e5d959b9dd", null ],
    [ "operator[]", "class_pr_vec.html#ae5841830f8c7bdd95c684b61df8d614c", null ],
    [ "operator[]", "class_pr_vec.html#a528e2d56cda18a3f94d88597db6e84d4", null ],
    [ "print", "class_pr_vec.html#aa7204d6b00b252bc54e486ff3d209664", null ],
    [ "read", "class_pr_vec.html#a5bfbbe99e8a711b5d93908f4ce3255d8", null ],
    [ "redim", "class_pr_vec.html#a4ef99ea22a657f5fdee5e953605ca8de", null ],
    [ "size", "class_pr_vec.html#a6293878c1fe04ef3257fb83350495bd7", null ],
    [ "a_", "class_pr_vec.html#afda074f05b8bb9e81086ba29f31f2762", null ]
]
```

Definition at line 1 of file class_pr_vec.js.

30.588 doc/html/class_print_counter.js File Reference

Variables

- var class_print_counter

30.588.1 Variable Documentation

30.588.1.1 var class_print_counter

Initial value:

```
=
[
    [ "~PrintCounter", "class_print_counter.html#a44daffd64a249f3ca428087f17f4953d", null ],
    [ "PrintCounter", "class_print_counter.html#a0d3886579d29194cd6d82f677a927cf1", null ],
    [ "operator++", "class_print_counter.html#a5cde49b2daaa853c6e4bbf14001def95", null ]
]
```

Definition at line 1 of file class_print_counter.js.

30.589 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_bad__alloc.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_bad__alloc

30.589.1 Variable Documentation

30.589.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_bad__alloc

Initial value:

```
=
[
    [ "Bad_alloc", "class_r_b_d___c_o_m_m_o_n_1_1_bad__alloc.html#a696395534c332086b90ace212721ddd2", null
      ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_bad__alloc.js.

30.590 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_base_exception.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_base_exception

30.590.1 Variable Documentation

30.590.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_base_exception

Initial value:

```
=
[
    [ "BaseException", "class_r_b_d___c_o_m_m_o_n_1_1_base_exception.html#a275b7fc020a5786cdcafcb325b550426
      ", null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_base_exception.js.

30.591 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_domain__error.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_domain__error

30.591.1 Variable Documentation

30.591.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_domain__error

Initial value:

```
=
[
    [ "Domain_error", "class_r_b_d___c_o_m_m_o_n_1_1_domain__error.html#a95fa4017ebb608fee2527948419e087b",
      null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_domain__error.js.

30.592 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_invalid__argument.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_invalid__argument

30.592.1 Variable Documentation

30.592.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_invalid__argument

Initial value:

```
=
[
    [ "Invalid_argument", "
      class_r_b_d___c_o_m_m_o_n_1_1_invalid__argument.html#a3a3918a4ae0bf2f28cb3446f5f2c5103", null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_invalid__argument.js.

30.593 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_janitor.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_janitor

30.593.1 Variable Documentation

30.593.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_janitor

Initial value:

```
=
[
    [ "Janitor", "class_r_b_d___c_o_m_m_o_n_1_1_janitor.html#ace39d4394d9bfec39ef5a44eafc70f88", null ],
    [ "~Janitor", "class_r_b_d___c_o_m_m_o_n_1_1_janitor.html#a16a5acc6e8dbbf97cd97d8a0b2b3a880", null ],
    [ "CleanUp", "class_r_b_d___c_o_m_m_o_n_1_1_janitor.html#ad98693ba2eaf1ac688565a91d5307cb4", null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_janitor.js.

30.594 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_length__error.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_length__error

30.594.1 Variable Documentation

30.594.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_length__error

Initial value:

```
=
[
    [ "Length_error", "class_r_b_d___c_o_m_m_o_n_1_1_length__error.html#aaa6de69c775aee8e7fbf15521ffa5733",
      null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_length__error.js.

30.595 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_logic__error.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_logic__error

30.595.1 Variable Documentation

30.595.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_logic__error

Initial value:

```
=
[
    [ "Logic_error", "class_r_b_d___c_o_m_m_o_n_1_1_logic__error.html#a8ebe36bc99c7e80f23b5f1ef4d1510be",
      null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_logic__error.js.

30.596 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve

30.596.1 Variable Documentation

30.596.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve

Initial value:

```
=
[
    [ "OneDimSolve", "class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve.html#abcce09038399f61e0867e96cc1278980",
      null ],
    [ "Solve", "class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve.html#a1bfcad6abecc3935ce6f3dd6f03bf4fd", null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve.js.

30.597 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_out__of__range.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_out__of__range

30.597.1 Variable Documentation

30.597.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_out__of__range

Initial value:

```
=
[
    [ "Out_of_range", "class_r_b_d___c_o_m_m_o_n_1_1_out__of__range.html#a1016261ef3ac9d5eff1f38a95e02da79"
      , null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_out__of__range.js.

30.598 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_overflow__error.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_overflow__error

30.598.1 Variable Documentation

30.598.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_overflow__error

Initial value:

```
=
[
    [ "Overflow_error", "
      class_r_b_d___c_o_m_m_o_n_1_1_overflow__error.html#ae071d4588c5143776418c00d2ce93b8d", null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_overflow__error.js.

30.599 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_r1___r1

30.599.1 Variable Documentation

30.599.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_r1___r1

Initial value:

```
=
[
    [ "R1_R1", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a278e42bea46cadb3e7579f8357975e34", null ],
    [ "~R1_R1", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#abea87c3752ac41bc5454a550e7b3bbde", null ],
    [ "IsValid", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a27068635b33bce4ea9c3c3289b9e5348", null ],
    [ "operator Real", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#acff1830109f596a46700b4912dd37f66", null
      ],
    [ "operator()", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#ae745606ca696d139fde52cc6ae30196c", null ],
    [ "operator()", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a5d09b0f9772a83f9ad1931c26078355b", null ],
    [ "Set", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#aa464970d29a49718c732350474671d77", null ],
    [ "maxX", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a80d4dbe4d3a8b542eef0815e305c126d", null ],
    [ "maxXinf", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#af3ddf907eb8fe8b8d245ac42dadd1564", null ],
    [ "minX", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a0e21d76c982beca3b12e4887ded817c5", null ],
    [ "minXinf", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#addd2ebaafd948a822574b4d154501cfe", null ],
    [ "x", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a4812b378711ea5f78a5441b96134f569", null ],
    [ "xSet", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a9c4468e6a3619646aba36b92dd36b681", null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.js.

30.600 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_range__error.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_range__error

30.600.1 Variable Documentation

30.600.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_range__error

Initial value:

```
=
[
    [ "Range_error", "class_r_b_d___c_o_m_m_o_n_1_1_range__error.html#a8bc12b7074abb363df50ddbd82c1c9db",
      null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_range__error.js.

30.601 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_runtime__error.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_runtime__error

30.601.1 Variable Documentation

30.601.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_runtime__error

Initial value:

```
=
[
    [ "Runtime_error", "class_r_b_d___c_o_m_m_o_n_1_1_runtime__error.html#a8b242deab8e1b4a25d24bbfde345d8c2
      ", null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_runtime__error.js.

30.602 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_solution_exception.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_solution_exception

30.602.1 Variable Documentation

30.602.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_solution_exception

Initial value:

```
=
[
    [ "SolutionException", "
      class_r_b_d___c_o_m_m_o_n_1_1_solution_exception.html#a8f8e2990ffdaed96bf24083c6a16d2fe", null ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_solution_exception.js.

30.603 doc/html/class_r_b_d___c_o_m_m_o_n_1_1_tracer.js File Reference

Variables

- var class_r_b_d___c_o_m_m_o_n_1_1_tracer

30.603.1 Variable Documentation

30.603.1.1 var class_r_b_d___c_o_m_m_o_n_1_1_tracer

Initial value:

```
=
[
    [ "Tracer", "class_r_b_d___c_o_m_m_o_n_1_1_tracer.html#a19dca2902d689ed75b6dc96f5a5dc362", null ],
    [ "~Tracer", "class_r_b_d___c_o_m_m_o_n_1_1_tracer.html#ac2d6d4fb4949e941a49fb6a6afd15d60", null ],
    [ "ReName", "class_r_b_d___c_o_m_m_o_n_1_1_tracer.html#afb685530404bf08109ee2be8dc388f90", null ],
    [ "BaseException", "class_r_b_d___c_o_m_m_o_n_1_1_tracer.html#acc29c9a717ece42fb764f4a48a04b6cb", null
      ]
]
```

Definition at line 1 of file class_r_b_d___c_o_m_m_o_n_1_1_tracer.js.

30.604 doc/html/class_rect_matrix_col.js File Reference

Variables

- var class_rect_matrix_col

30.604.1 Variable Documentation

30.604.1.1 var class_rect_matrix_col

Initial value:

```
=
[
    [ "RectMatrixCol", "class_rect_matrix_col.html#af8b4292bc6eedae5bc641e860c5ccfc8", null ],
    [ "RectMatrixCol", "class_rect_matrix_col.html#aec39989b21bcd9a7e02332a17f42d49f", null ],
    [ "Down", "class_rect_matrix_col.html#ae47c1ddf71053f44b6a98fb9ecb5a192", null ],
    [ "Left", "class_rect_matrix_col.html#a749656e672061aca5b6be61cb2ce1f2d", null ],
    [ "Reset", "class_rect_matrix_col.html#a64a1b6471b2e8c1a9e8eb2495934df7f", null ],
    [ "Reset", "class_rect_matrix_col.html#ad12aac0a25f4a6d0130df853a4db67e6", null ],
    [ "Right", "class_rect_matrix_col.html#aed238ccd4b925b8ac753f8eca4b564c0", null ],
    [ "Up", "class_rect_matrix_col.html#a57b2bb743fb4fa46bfc887a335f5b338", null ],
    [ "ComplexScale", "class_rect_matrix_col.html#ae131888d49cb5f48944aa641f5998af5", null ],
    [ "Rotate", "class_rect_matrix_col.html#a23acf0c66955f76462c923517f1f64be", null ]
]
```

Definition at line 1 of file class_rect_matrix_col.js.

30.605 doc/html/class_rect_matrix_diag.js File Reference

Variables

- var class_rect_matrix_diag

30.605.1 Variable Documentation

30.605.1.1 var class_rect_matrix_diag

Initial value:

```
=
[
    [ "RectMatrixDiag", "class_rect_matrix_diag.html#a18b7d187dac91afcc43350b74a5b0810", null ],
    [ "DownDiag", "class_rect_matrix_diag.html#a418e6c0eb6f7f2f36de5772273275817", null ],
    [ "operator[]", "class_rect_matrix_diag.html#a81acf762fed3b7f4cecbf6c403058274", null ],
    [ "UpDiag", "class_rect_matrix_diag.html#aceb400b730818c6e77e83b2dd23750b3", null ]
]
```

Definition at line 1 of file class_rect_matrix_diag.js.

30.606 doc/html/class_rect_matrix_row.js File Reference

Variables

- var class_rect_matrix_row

30.606.1 Variable Documentation

30.606.1.1 var class_rect_matrix_row

Initial value:

```
=
[
    [ "RectMatrixRow", "class_rect_matrix_row.html#af401cf2eb90b93a094a2435af46340ce", null ],
    [ "RectMatrixRow", "class_rect_matrix_row.html#af149e9f46a2f7bf9ce845668d76462a6", null ],
    [ "Down", "class_rect_matrix_row.html#a4a7bf5ec50be2e769e1394aea3d39243", null ],
    [ "Left", "class_rect_matrix_row.html#a459e0abe296fe1d3dc3000eda2e5a8f4", null ],
    [ "operator[]", "class_rect_matrix_row.html#af5881bc072938d306183c43f5166deff", null ],
    [ "Reset", "class_rect_matrix_row.html#aaa395cb08fed4a807ca5525f5aa45e4d", null ],
    [ "Reset", "class_rect_matrix_row.html#a4a2d16927e55415837ee34af837bdf7e", null ],
    [ "Right", "class_rect_matrix_row.html#aea28d4fd921cbea791b7672ddea94c07", null ],
    [ "Up", "class_rect_matrix_row.html#a5ec8b50ff768dc4140566c76b20605c2", null ]
]
```

Definition at line 1 of file class_rect_matrix_row.js.

30.607 doc/html/class_rect_matrix_row_col.js File Reference

Variables

- var class_rect_matrix_row_col

30.607.1 Variable Documentation

30.607.1.1 var class_rect_matrix_row_col

Initial value:

```
=
[
    [ "RectMatrixRowCol", "class_rect_matrix_row_col.html#a0a1557801206f93c6d65fa35e6ef5c1b", null ],
    [ "AddScaled", "class_rect_matrix_row_col.html#a3d5a30a8f4a16f227745c8853e432292", null ],
    [ "Divide", "class_rect_matrix_row_col.html#af8a83ec516bf0e3e6c16df2eb0b79b7a", null ],
    [ "Divide", "class_rect_matrix_row_col.html#a7208776742fc69ed34bfb1f309b258db", null ],
    [ "DownDiag", "class_rect_matrix_row_col.html#a32dae8a5c17539b6ca2bc9adb48c6b0c", null ],
    [ "First", "class_rect_matrix_row_col.html#a86dff62cdf5b164af51438f2cd41b474", null ],
    [ "Negate", "class_rect_matrix_row_col.html#a5c6d68fb80759c68d09a0b5d12b84822", null ],
    [ "operator*", "class_rect_matrix_row_col.html#a387f09d14f7eb953a86c64be5edd8ac2", null ],
    [ "operator[]", "class_rect_matrix_row_col.html#a90021608c8ec2825325dd933b5d58e15", null ],
    [ "Reset", "class_rect_matrix_row_col.html#a7d8b0a570e37aeef12c548b47ac9e5bb", null ],
    [ "SumSquare", "class_rect_matrix_row_col.html#aaed10cc0174d1d8bdfc58829e97e2c57", null ],
    [ "UpDiag", "class_rect_matrix_row_col.html#a8e2a7a6d4cd227c1ea884b7d65585942", null ],
    [ "Zero", "class_rect_matrix_row_col.html#a935c0ec5f6ed575e62f2a52a3ce5ef12", null ],
    [ "ComplexScale", "class_rect_matrix_row_col.html#ae131888d49cb5f48944aa641f5998af5", null ],
    [ "Rotate", "class_rect_matrix_row_col.html#a23acf0c66955f76462c923517f1f64be", null ],
    [ "n", "class_rect_matrix_row_col.html#abaf49227eb2926f998c2630b93794ff6", null ],
    [ "shift", "class_rect_matrix_row_col.html#a4942d4ac243bd96cf3109fc0b966f28d", null ],
    [ "spacing", "class_rect_matrix_row_col.html#a7791524b848b624c08508bd2acd93d09", null ],
    [ "store", "class_rect_matrix_row_col.html#a11f41f07466d14f4a51e8556b677d11f", null ]
]
```

Definition at line 1 of file class_rect_matrix_row_col.js.

30.608 doc/html/class_rectangular_surface_property_sheet.js File Reference

Variables

- var class_rectangular_surface_property_sheet

30.608.1 Variable Documentation

30.608.1.1 var class_rectangular_surface_property_sheet

Initial value:

```
=
[
    [ "RectangularSurfacePropertySheet", "
      class_rectangular_surface_property_sheet.html#a0605650510f46099247cf545431ff2e9", null ],
    [ "~RectangularSurfacePropertySheet", "
      class_rectangular_surface_property_sheet.html#ad54201ab500dc9cb9d79f6e290414b58", null ],
    [ "apply", "class_rectangular_surface_property_sheet.html#a461dc5278bceebc3de5a1834746fa379", null ],
    [ "createSheet", "class_rectangular_surface_property_sheet.html#a40728d169b57c7b88c08124467a827de",
      null ]
]
```

Definition at line 1 of file class_rectangular_surface_property_sheet.js.

30.609 doc/html/class_rectangular_volume_property_sheet.js File Reference

Variables

- var class_rectangular_volume_property_sheet

30.609.1 Variable Documentation

30.609.1.1 var class_rectangular_volume_property_sheet

Initial value:

```
=
[
    [ "RectangularVolumePropertySheet", "
      class_rectangular_volume_property_sheet.html#aec20832a403f214753eee0886315a959", null ],
    [ "~RectangularVolumePropertySheet", "
      class_rectangular_volume_property_sheet.html#a6febaac17cb2df37b84d86af73c55401", null ],
    [ "apply", "class_rectangular_volume_property_sheet.html#a245e3f5088ee386f6dffaae3bfa98563", null ],
    [ "createSheet", "class_rectangular_volume_property_sheet.html#a045630f8482d58abc7b46d0e5f6f01ed", null
       ]
]
```

Definition at line 1 of file class_rectangular_volume_property_sheet.js.

30.610 doc/html/class_spline_curve_property_sheet.js File Reference

Variables

- var class_spline_curve_property_sheet

30.610.1 Variable Documentation

30.610.1.1 var class_spline_curve_property_sheet

Initial value:

```
=
[
    [ "SplineCurvePropertySheet", "class_spline_curve_property_sheet.html#a963427a253594aca33b1e463203ff18a
      ", null ],
    [ "apply", "class_spline_curve_property_sheet.html#a2cf173c21e74febd15828bcda200952c", null ],
    [ "createSheet", "class_spline_curve_property_sheet.html#a418643f8988530029bfcb03f8c9a0535", null ]
]
```

Definition at line 1 of file class_spline_curve_property_sheet.js.

30.611 doc/html/class_surface_resolution_sheet.js File Reference

Variables

- var class_surface_resolution_sheet

30.611.1 Variable Documentation

30.611.1.1 var class_surface_resolution_sheet

Initial value:

```
=
[
    [ "SurfaceResolutionSheet", "class_surface_resolution_sheet.html#a5c8fa0a9cf743a23ebabd704e7a8d4d7",
      null ],
    [ "createSheet", "class_surface_resolution_sheet.html#a098963d6e66d7de5ae59b1c5f061566f", null ],
    [ "ok", "class_surface_resolution_sheet.html#aae61ee8fb4c499ef66de2af38e69b532", null ],
    [ "return_value", "class_surface_resolution_sheet.html#a9ef93d4170e8ca385d7ed80fcbce4e02", null ]
]
```

Definition at line 1 of file class_surface_resolution_sheet.js.

30.612 doc/html/class_test_class.js File Reference

Variables

- var class_test_class

30.612.1 Variable Documentation

30.612.1.1 var class_test_class

Initial value:

```
=
[
    [ "TestClass", "class_test_class.html#a09903432ed60c7c38f1beccc4cf18987", null ],
    [ "Sum", "class_test_class.html#acc8678bdebaf258b6a56a320d58264e3", null ]
]
```

Definition at line 1 of file class_test_class.js.

30.613 doc/html/class_unf_node_type.js File Reference

Variables

- var class_unf_node_type

30.613.1 Variable Documentation

30.613.1.1 var class_unf_node_type

Initial value:

```
=
[
    [ "printNode", "class_unf_node_type.html#a4cace6758a4d5820a6b07b3f55ef1a42", null ],
    [ "n_", "class_unf_node_type.html#a37fde4efbecadca31c42c5ea266467e0", null ],
    [ "origine_", "class_unf_node_type.html#a6473043efe97dd34ceb497ee310efb63", null ]
]
```

Definition at line 1 of file class_unf_node_type.js.

30.614 doc/html/classbool.js File Reference

Variables

- var classbool

30.614.1 Variable Documentation

30.614.1.1 var classbool

Initial value:

```
=
[
    [ "bool", "classbool.html#ab73d34fbac668d5fbba277dd263df834", null ],
    [ "bool", "classbool.html#a8d55b7ccfa7efec5e42a83ba0affe101", null ],
    [ "bool", "classbool.html#aebef315d83f84ed5dfd02573fb6d741e", null ],
    [ "operator int", "classbool.html#a6949f0cf4f737e6e9344bdfe822ba520", null ],
    [ "operator!", "classbool.html#abca2cc3627077f5a54408861dd16a6b3", null ]
]
```

Definition at line 1 of file classbool.js.

30.615 doc/html/classgv_action_sheet.js File Reference

Variables

- var classgv_action_sheet

30.615.1 Variable Documentation

30.615.1.1 var classgv_action_sheet

Initial value:

```
=
[
    [ "~gvActionSheet", "classgv_action_sheet.html#a2bda238d086bf141576e75543d7f0864", null ],
    [ "showDialog", "classgv_action_sheet.html#ace90b4317a54b079acabfda0172b1634", null ],
    [ "form_", "classgv_action_sheet.html#aeaf5f0304b7c950f719f027fd6999792", null ]
]
```

Definition at line 1 of file classgv_action_sheet.js.

30.616 doc/html/classgv_application.js File Reference

Variables

- var classgv_application

30.616.1 Variable Documentation

30.616.1.1 var classgv_application

Definition at line 1 of file classgv_application.js.

30.617 doc/html/classgv_application_vol_and_l_r.js File Reference

Variables

- var classgv_application_vol_and_l_r

30.617.1 Variable Documentation

30.617.1.1 var classgv_application_vol_and_l_r

Initial value:

```
=
[
    [ "gvApplicationVolAndLR", "classgv_application_vol_and_l_r.html#acce6f6d76921b838e19af9cecfbc6df5",
      null ],
    [ "~gvApplicationVolAndLR", "classgv_application_vol_and_l_r.html#aaadf77b8d7d5c4bc060aac0a1731b37b",
      null ],
    [ "buildExtraGUI", "classgv_application_vol_and_l_r.html#af0efcf10aee68a8775b5695daea12945", null ],
    [ "move_vertices_to_origin", "classgv_application_vol_and_l_r.html#a4b986c08bff616b1adcdf05fba3d09e7",
      null ],
    [ "translate_to_origin", "classgv_application_vol_and_l_r.html#a376ed2331b131a9430b3a58e4dda0251", null
      ],
    [ "view_reset", "classgv_application_vol_and_l_r.html#a7a5210fcb605729a0a7027b27d47ffa3", null ]
]
```

Definition at line 1 of file classgv_application_vol_and_l_r.js.

30.618 doc/html/classgv_camera.js File Reference

Variables

- var classgv_camera

30.618.1 Variable Documentation

30.618.1.1 var classgv_camera

Definition at line 1 of file classgv_camera.js.

30.619 doc/html/classgv_curve_paintable.js File Reference

Variables

- var classgv_curve_paintable

30.619.1 Variable Documentation

30.619.1.1 var classgv_curve_paintable

Initial value:

```
=
[
    [ "gvCurvePaintable", "classgv_curve_paintable.html#a6c92732be34ff2592b7fc478a119ff87", null ],
    [ "gvCurvePaintable", "classgv_curve_paintable.html#a2b3d88dea2ba6b0b5d32cb9df0857289", null ],
    [ "~gvCurvePaintable", "classgv_curve_paintable.html#af5f8192a2455315140d1e5bdbd1e6765", null ],
    [ "drawPoints", "classgv_curve_paintable.html#a8e8f813fec18aeb861f1b5ca3767fe9c", null ],
    [ "paint", "classgv_curve_paintable.html#a48991e757dd23c3cc8198c6b5c06dd8a", null ],
    [ "setDrawPoints", "classgv_curve_paintable.html#aefebd027820715c892715cafd7de9b26", null ],
    [ "draw_pts_", "classgv_curve_paintable.html#aca14ac01e98cc0cb6b7403ddcaab6c19", null ],
    [ "line_", "classgv_curve_paintable.html#ab1899d9822ddf163d025ec8f22b4ff99", null ]
]
```

Definition at line 1 of file classgv_curve_paintable.js.

30.620 doc/html/classgv_data.js File Reference

Variables

- var classgv_data

30.620.1 Variable Documentation

30.620.1.1 var classgv_data

Definition at line 1 of file classgv_data.js.

30.621 doc/html/classgv_generic_tri_paintable.js File Reference

Variables

- var classgv_generic_tri_paintable

30.621.1 Variable Documentation

30.621.1.1 var classgv_generic_tri_paintable

Initial value:

```
=
[
    [ "gvGenericTriPaintable", "classgv_generic_tri_paintable.html#a8a92cf64e5e78aea9e154237048d3e3e", null
      ],
    [ "gvGenericTriPaintable", "classgv_generic_tri_paintable.html#aefa3555dc46d731727ff7002881306aa", null
      ],
    [ "~gvGenericTriPaintable", "classgv_generic_tri_paintable.html#a425348f0209058815c4e77d3840c9907",
      null ],
    [ "paint", "classgv_generic_tri_paintable.html#a16da12e7feb462445f72e4a6c77f9afa", null ],
    [ "tri_", "classgv_generic_tri_paintable.html#a81e5efc1bc3f50e26e31e33050de2658", null ]
]
```

Definition at line 1 of file classgv_generic_tri_paintable.js.

30.622 doc/html/classgv_generic_tri_quad_mesh.js File Reference

Variables

- var classgv_generic_tri_quad_mesh

30.622.1 Variable Documentation

30.622.1.1 var classgv_generic_tri_quad_mesh

Initial value:

```
=
[
    [ "gvGenericTriQuadMesh", "classgv_generic_tri_quad_mesh.html#a6f92d36a82eebdbd3ed80e96d5dda4cf", null
      ],
    [ "normalArray", "classgv_generic_tri_quad_mesh.html#a35d51765dc89258deaaaebbfa0418767", null ],
    [ "numQuads", "classgv_generic_tri_quad_mesh.html#a867e4c4f671a4829b2b51d753f3093cd", null ],
    [ "numTriangles", "classgv_generic_tri_quad_mesh.html#a4f42cd2dc2430832d5afeeee55ae8369", null ],
    [ "numVertices", "classgv_generic_tri_quad_mesh.html#ac047150f16fbcf016beef94b759c6745", null ],
    [ "quadIndexArray", "classgv_generic_tri_quad_mesh.html#a9b98121e98e22434a7977610ebf2e240", null ],
    [ "resize", "classgv_generic_tri_quad_mesh.html#a00a26ca803a923e94a64d18249340fa9", null ],
    [ "texcoordArray", "classgv_generic_tri_quad_mesh.html#afb502bc32f98646ddc1fb39fced5d0da", null ],
    [ "triangleIndexArray", "classgv_generic_tri_quad_mesh.html#a7f5a917fef1e914fbbdbb3011cf0a465", null ],
    [ "useNormals", "classgv_generic_tri_quad_mesh.html#a7aaf4c32dd58c096b8b1ca8f6f439252", null ],
    [ "useTexCoords", "classgv_generic_tri_quad_mesh.html#a8d182ec97fd8949b2a31b5e3bb07e110", null ],
    [ "vertexArray", "classgv_generic_tri_quad_mesh.html#aeab35227128abea55454bd79d4cb4ce6", null ]
]
```

Definition at line 1 of file classgv_generic_tri_quad_mesh.js.

30.623 doc/html/classgv_generic_tri_quad_paintable.js File Reference

Variables

- var classgv_generic_tri_quad_paintable

30.623.1 Variable Documentation

30.623.1.1 var classgv_generic_tri_quad_paintable

Initial value:

```
=
[
    [ "gvGenericTriQuadPaintable", "
      classgv_generic_tri_quad_paintable.html#a48b8f370ee4fdd61b1745b2342cc6414", null ],
    [ "gvGenericTriQuadPaintable", "
      classgv_generic_tri_quad_paintable.html#a9eb49aa90212ff7f8c30befc3a69ca04", null ],
    [ "~gvGenericTriQuadPaintable", "
      classgv_generic_tri_quad_paintable.html#aaa0bac5a08d07f054b9b1c7970fb8f99", null ],
    [ "paint", "classgv_generic_tri_quad_paintable.html#aa04334da96ae1551b788bc0fd08dcadb", null ],
    [ "mesh_", "classgv_generic_tri_quad_paintable.html#a49c8c5382467b36a654de0ed02b36b3a", null ]
]
```

Definition at line 1 of file classgv_generic_tri_quad_paintable.js.

30.624 doc/html/classgv_group.js File Reference

Variables

- var classgv_group

30.624.1 Variable Documentation

30.624.1.1 var classgv_group

Initial value:

```
=
[
    [ "gvGroup", "classgv_group.html#ae5a83bbc4371dd60b7dae860f31996d7", null ],
    [ "~gvGroup", "classgv_group.html#a6e21e0a155b4d655170d3206896346a9", null ],
    [ "name", "classgv_group.html#a6032ce853c50bb71260ecf96d90720cc", null ],
    [ "operator[]", "classgv_group.html#a8738f55bdbc90fe88e997a38a920f8e9", null ],
    [ "size", "classgv_group.html#a757a4bed030f67881f508cce6302d4eb", null ]
]
```

Definition at line 1 of file classgv_group.js.

30.625 doc/html/classgv_group_property_sheet.js File Reference

Variables

- var classgv_group_property_sheet

30.625.1 Variable Documentation

30.625.1.1 var classgv_group_property_sheet

Initial value:

```
=
[
    [ "gvGroupPropertySheet", "classgv_group_property_sheet.html#acf186d05304921b9d222c6c290822bd4", null ]
      ,
    [ "accept", "classgv_group_property_sheet.html#aa9f5d9d4ada94afa84cfb1d45f3c0568", null ],
    [ "createSheet", "classgv_group_property_sheet.html#a4284ec0e95ab2a67b2e66e27012a5731", null ],
    [ "getMembers", "classgv_group_property_sheet.html#a09abcf2cc6f11f0493299460875b3830", null ],
    [ "value_changed", "classgv_group_property_sheet.html#a11b1dc2efecd44ea4144b5b7e6093558", null ]
]
```

Definition at line 1 of file classgv_group_property_sheet.js.

30.626 doc/html/classgv_line_cloud_paintable.js File Reference

Variables

- var classgv_line_cloud_paintable

30.626.1 Variable Documentation

30.626.1.1 var classgv_line_cloud_paintable

Initial value:

```
=
[
    [ "gvLineCloudPaintable", "classgv_line_cloud_paintable.html#ae4d09aa070032eaa979f4e7d979b2d1c", null ]
      ,
    [ "gvLineCloudPaintable", "classgv_line_cloud_paintable.html#a57fe51aa347bc554f4c0a05b78d56ec6", null ]
      ,
    [ "~gvLineCloudPaintable", "classgv_line_cloud_paintable.html#a8c0888908c9c558a4f4f04203962ada3", null
      ],
    [ "fractionRendered", "classgv_line_cloud_paintable.html#ac639ff659a37d19ab19bd493c9e75d29", null ],
    [ "paint", "classgv_line_cloud_paintable.html#a48d2d8e9855a31c4d125fe629e1c089a", null ],
    [ "setFractionRendered", "classgv_line_cloud_paintable.html#abc46fa8094d7d434fef5e2185d0bde75", null ],
    [ "fractionrendered_", "classgv_line_cloud_paintable.html#a090b222902dd687ec00d31dda642327c", null ],
    [ "lc_", "classgv_line_cloud_paintable.html#a1b4d49f084bd47ec978735885ea95e32", null ]
]
```

Definition at line 1 of file classgv_line_cloud_paintable.js.

30.627 doc/html/classgv_noop_paintable.js File Reference

Variables

- var classgv_noop_paintable

30.627.1 Variable Documentation

30.627.1.1 var classgv_noop_paintable

Initial value:

```
=
[
    [ "gvNoopPaintable", "classgv_noop_paintable.html#a7718749f030a806b3ed6d2e38fc38dce", null ],
    [ "gvNoopPaintable", "classgv_noop_paintable.html#a0f29a8db1226c25088e427a9d30ff367", null ],
    [ "~gvNoopPaintable", "classgv_noop_paintable.html#a8336bbc9cdce68061c38ad57b832dbe1", null ],
    [ "paint", "classgv_noop_paintable.html#a253b35d9049d004240ca45759d31c050", null ]
]
```

Definition at line 1 of file classgv_noop_paintable.js.

30.628 doc/html/classgv_object_list.js File Reference

Variables

- var classgv_object_list

30.628.1 Variable Documentation

30.628.1.1 var classgv_object_list

Initial value:

```
=
[
    [ "gvObjectList", "classgv_object_list.html#a9e7a69c68c247398c1b481e3e6b553fc", null ],
    [ "~gvObjectList", "classgv_object_list.html#a730e36cc31b61babcb49ccbc70f2be06", null ],
    [ "buildGUI", "classgv_object_list.html#a396aa917a2bcf70c0c9aee7ea9ebd930", null ],
    [ "clicked", "classgv_object_list.html#aa925bed4363e8f463e2cad3b984c8171", null ],
    [ "observedChanged", "classgv_object_list.html#a0d97f6f2f1d506f2e143ee91f5b679ac", null ]
]
```

Definition at line 1 of file classgv_object_list.js.

30.629 doc/html/classgv_observer.js File Reference

Variables

- var classgv_observer

30.629.1 Variable Documentation

30.629.1.1 var classgv_observer

Initial value:

```
=
[
    [ "~gvObserver", "classgv_observer.html#aea825b41a2d01e9bfc03aaf1847b7f1b", null ],
    [ "observedChanged", "classgv_observer.html#ad965a9002fb8e250f4a364c2c994836c", null ]
]
```

Definition at line 1 of file classgv_observer.js.

30.630 doc/html/classgv_paintable.js File Reference

Variables

- var classgv_paintable

30.630.1 Variable Documentation

30.630.1.1 var classgv_paintable

Initial value:

```
=
[
    [ "gvPaintable", "classgv_paintable.html#a8df8126a8cb701340ee064aa42a3ec8c", null ],
    [ "gvPaintable", "classgv_paintable.html#a25e129d0a129024d9249083ce0d4b2d5", null ],
    [ "~gvPaintable", "classgv_paintable.html#a5aa5df86a5c1e322d812e3525c6644ed", null ],
    [ "getNormalColor", "classgv_paintable.html#af090ff10f14d137bea23c339730cb231", null ],
    [ "id", "classgv_paintable.html#a7a31121be20df12925c3aac0e838d598", null ],
    [ "paint", "classgv_paintable.html#aefcb86d3492c1c34ad2bf399dd6926d7", null ],
    [ "paintGL", "classgv_paintable.html#a79d06b44efa40fc9699ed915101295e3", null ],
    [ "selected", "classgv_paintable.html#a1aa50110d878509eccf158270f7240a7", null ],
    [ "setColor", "classgv_paintable.html#aa39bd4354c652188d8a1c107cd4a7c33", null ],
    [ "setColor", "classgv_paintable.html#acb76b57f883ec097bf86aa8e00fba27a", null ],
    [ "setId", "classgv_paintable.html#a14ec063f074e74c13e3f0d31469f4991", null ],
    [ "setSelected", "classgv_paintable.html#a4e186e429b430bcda2fac5fc4173504a", null ],
    [ "setVisible", "classgv_paintable.html#abdf058f399c59c72b5fe0b553475245c", null ],
    [ "visible", "classgv_paintable.html#abadf8d500aeba7e567fe9aa63f2a2dbd", null ],
    [ "id_", "classgv_paintable.html#abccdedd9ecd5d4ff8e6b0b20fbf573f7", null ],
    [ "normal_color_", "classgv_paintable.html#aae952db4fea5d902b81696c380dd3d8b", null ],
    [ "selected_", "classgv_paintable.html#a7690410c11d5b3e149221987dc59dbbc", null ],
    [ "selected_color_", "classgv_paintable.html#a693658ba4594dc9c79204ee0a9192853", null ],
    [ "visible_", "classgv_paintable.html#a629c8d39d5467e02154457ee1c7dde41", null ]
]
```

Definition at line 1 of file classgv_paintable.js.

30.631 doc/html/classgv_painter.js File Reference

Variables

- var classgv_painter

30.631.1 Variable Documentation

30.631.1.1 var classgv_painter

Initial value:

```
=
[
    [ "gvPainter", "classgv_painter.html#a1c306705688cded43e274e5f7185ef63", null ],
    [ "~gvPainter", "classgv_painter.html#acdaef69360467db79f5c5218254da7d7", null ],
    [ "addPaintable", "classgv_painter.html#a3f6bf2d0cd46b2404d65248640bd0c8e", null ],
    [ "drawScene", "classgv_painter.html#a9cc69acb664783ce268dccac1a404e3f", null ],
    [ "getPaintable", "classgv_painter.html#af91a029f96cf87589e56083d20f647a4", null ],
    [ "getTexture", "classgv_painter.html#ade39026bc5fdb5c5104dd3d78f3f98a0", null ],
    [ "removeAllPaintables", "classgv_painter.html#a63138449340e6ee2c609d573690a8a71", null ],
    [ "removeLastPaintable", "classgv_painter.html#a94daa42d484dae6f3598a221da835789", null ],
    [ "removePaintable", "classgv_painter.html#a5475cb8ad291cb3ee1d0f328a4c5bc6e", null ],
    [ "setTexture", "classgv_painter.html#af7feec222a64232f596f871f2ef47928", null ],
    [ "setTexture", "classgv_painter.html#a8b24f7720584050b3099f60593d87ae3", null ],
    [ "paintables_", "classgv_painter.html#a35c501b0cfdc0d5ec1730c25fbcf16da", null ],
    [ "textures_", "classgv_painter.html#a6819b4074c19021ce222adfe83f4d1aa", null ]
]
```

Definition at line 1 of file classgv_painter.js.

30.632 doc/html/classgv_parametric_surface_paintable.js File Reference

Variables

- var classgv_parametric_surface_paintable

30.632.1 Variable Documentation

30.632.1.1 var classgv_parametric_surface_paintable

Initial value:

```
=
[
    [ "gvParametricSurfacePaintable", "
      classgv_parametric_surface_paintable.html#a3cecaac8a83ec0d401434dede6e4ccd7", null ],
    [ "gvParametricSurfacePaintable", "
      classgv_parametric_surface_paintable.html#ac7e402ef62d65fabdb3b1ede7f72dd83", null ],
    [ "~gvParametricSurfacePaintable", "
      classgv_parametric_surface_paintable.html#a4b45806196622dd270231001832ee89f", null ],
    [ "createSurface", "classgv_parametric_surface_paintable.html#a756d38eda355bceff1c2a07b1ae01b3f", null
      ],
    [ "drawSurface", "classgv_parametric_surface_paintable.html#ab72a299bbe6a880f835180e05f556cf0", null ],
    [ "paint", "classgv_parametric_surface_paintable.html#a5fd844d4e71681fe07fec1971b7e495c", null ],
    [ "tri_", "classgv_parametric_surface_paintable.html#a6b708b7b2091f0a67a4f849d4f15922a", null ]
]
```

Definition at line 1 of file classgv_parametric_surface_paintable.js.

30.633 doc/html/classgv_point_cloud_paintable.js File Reference

Variables

- var classgv_point_cloud_paintable

30.633.1 Variable Documentation

30.633.1.1 var classgv_point_cloud_paintable

Initial value:

```
=
[
    [ "gvPointCloudPaintable", "classgv_point_cloud_paintable.html#ab21a8642a6b1a31fbdd75d9313526e33", null
      ],
    [ "gvPointCloudPaintable", "classgv_point_cloud_paintable.html#a71f1a1d5b7840803d9bb602a20783a98", null
      ],
    [ "~gvPointCloudPaintable", "classgv_point_cloud_paintable.html#a88930f8e37abbaccd60a78b94ed7993e",
      null ],
    [ "fractionRendered", "classgv_point_cloud_paintable.html#aa24e3954a55c104a875dd14294c5f75e", null ],
    [ "getPaintId", "classgv_point_cloud_paintable.html#a3071d123cea31b81c32d5462ac5f5723", null ],
    [ "paint", "classgv_point_cloud_paintable.html#a23fa7ad4a47c8335cceaf1d37d9a57c6", null ],
    [ "paintGL", "classgv_point_cloud_paintable.html#a0cad9ec6abc581b43eddecf50b772747", null ],
    [ "pointSize", "classgv_point_cloud_paintable.html#a34583ecf6a2dd48058ee86264854da73", null ],
    [ "setFractionRendered", "classgv_point_cloud_paintable.html#a5f7278ff6de4a61eff8aafa159b6dd77", null ]
      ,
    [ "setPaintId", "classgv_point_cloud_paintable.html#ab237b8b151dcc251271e9f80fd2f1bb6", null ],
    [ "setPointSize", "classgv_point_cloud_paintable.html#a722340833dff8bb9d3cc72850c12de17", null ],
    [ "translate", "classgv_point_cloud_paintable.html#aa53d3f733ff45208aaae0dead6e99b92", null ],
    [ "fractionrendered_", "classgv_point_cloud_paintable.html#a1a860092e7b53459ea85b06b3b605f49", null ],
    [ "paintId_", "classgv_point_cloud_paintable.html#a3b5df088f32941c3594f2bea134e0c39", null ],
    [ "pc_", "classgv_point_cloud_paintable.html#ac7f225401ac7b1cb5992de117751fa32", null ],
    [ "pointsize_", "classgv_point_cloud_paintable.html#ad0b4e484772f222b4e8b52ec4514bdde", null ],
    [ "vert_translation_", "classgv_point_cloud_paintable.html#a377d65530f2f4b7fb754d9b6232171a4", null ]
]
```

Definition at line 1 of file classgv_point_cloud_paintable.js.

30.634 doc/html/classgv_property_sheet.js File Reference

Variables

- var classgv_property_sheet

30.634.1 Variable Documentation

30.634.1.1 var classgv_property_sheet

Initial value:

```
=
[
    [ "~gvPropertySheet", "classgv_property_sheet.html#a16bd27bc9854d27f6541988ebccce52a", null ],
    [ "createSheet", "classgv_property_sheet.html#a1644a548b3e7b7716bbf2a99fd7fa4b8", null ]
]
```

Definition at line 1 of file classgv_property_sheet.js.

30.635 doc/html/classgv_quads_paintable.js File Reference

Variables

- var classgv_quads_paintable

30.635.1 Variable Documentation

30.635.1.1 var classgv_quads_paintable

Initial value:

```
=
[
    [ "gvQuadsPaintable", "classgv_quads_paintable.html#abb6db6f7ac6b7c8f73bb1f1a5081c2f5", null ],
    [ "gvQuadsPaintable", "classgv_quads_paintable.html#ae406eb43609fe834476ea1a82266fa32", null ],
    [ "~gvQuadsPaintable", "classgv_quads_paintable.html#af58ff384f9aea851a8e714feed4f7773", null ],
    [ "paint", "classgv_quads_paintable.html#a240f5343199e122e61a6a207bf14e5eb", null ],
    [ "quads_", "classgv_quads_paintable.html#a80b1bdf3b938aee5229b96ba7a5959b0", null ]
]
```

Definition at line 1 of file classgv_quads_paintable.js.

30.636 doc/html/classgv_rectangular_surface_paintable.js File Reference

Variables

- var classgv_rectangular_surface_paintable

30.636.1 Variable Documentation

30.636.1.1 var classgv_rectangular_surface_paintable

Initial value:

```
=
[
    [ "gvRectangularSurfacePaintable", "
      classgv_rectangular_surface_paintable.html#a2acbaa371b3b75bd3507c847f3bb3251", null ],
    [ "gvRectangularSurfacePaintable", "
      classgv_rectangular_surface_paintable.html#a06783fa9d80589c69f81eaa171016f75", null ],
    [ "~gvRectangularSurfacePaintable", "
      classgv_rectangular_surface_paintable.html#ad5aa8d77080d3a66decb282b1f54cddc", null ],
    [ "paint", "classgv_rectangular_surface_paintable.html#a1bd977bee27a43c358afae53bbfc0f05", null ],
    [ "tri_", "classgv_rectangular_surface_paintable.html#aa25fd874ae47ae3942aa08b23a223602", null ]
]
```

Definition at line 1 of file classgv_rectangular_surface_paintable.js.

30.637 doc/html/classgv_rectangular_volume_paintable.js File Reference

Variables

- var classgv_rectangular_volume_paintable

30.637.1 Variable Documentation

30.637.1.1 var classgv_rectangular_volume_paintable

Initial value:

```
=
[
    [ "gvRectangularVolumePaintable", "
      classgv_rectangular_volume_paintable.html#a927e3e9a95c78f037815cd31a7d6827d", null ],
    [ "gvRectangularVolumePaintable", "
      classgv_rectangular_volume_paintable.html#a88da42073d2bedb05ac14d7daf054622", null ],
    [ "~gvRectangularVolumePaintable", "
      classgv_rectangular_volume_paintable.html#a2f2771c05cf99a36954d85413ce48176", null ],
    [ "paint", "classgv_rectangular_volume_paintable.html#adac9a39d5da128fc7aa6e119d751ace7", null ],
    [ "tri_", "classgv_rectangular_volume_paintable.html#a25e42855a7f495c0d5f0acd03f7eaf65", null ]
]
```

Definition at line 1 of file classgv_rectangular_volume_paintable.js.

30.638 doc/html/classgv_resolution_dialog.js File Reference

Variables

- var classgv_resolution_dialog

30.638.1 Variable Documentation

30.638.1.1 var classgv_resolution_dialog

Initial value:

```
=
[
    [ "gvResolutionDialog", "classgv_resolution_dialog.html#a65ef3c997d5e774f3dbbb86140a75d08", null ],
    [ "~gvResolutionDialog", "classgv_resolution_dialog.html#a4011f5d8768f74900f66affccdc09e44", null ],
    [ "accept", "classgv_resolution_dialog.html#af0ad74ab49cc2771b1492ac6fe8fc257", null ],
    [ "apply", "classgv_resolution_dialog.html#a4a6f85c2cf416be678cdff0211a1e9ca", null ],
    [ "valuesChanged", "classgv_resolution_dialog.html#a274a1a67cb61adbae73297941c000800", null ],
    [ "ures_", "classgv_resolution_dialog.html#a80928c1c8369d3a57c58dc7c3f45b4e4", null ],
    [ "uslide_", "classgv_resolution_dialog.html#ad1d66a6de7b9177c1a871720cdeda823", null ],
    [ "vres_", "classgv_resolution_dialog.html#a09508da0c8d1c00b9da9493802a5be51", null ],
    [ "vslide_", "classgv_resolution_dialog.html#a967e9ab226b8ee2a6ed004306ef8d6e9", null ]
]
```

Definition at line 1 of file classgv_resolution_dialog.js.

30.639 doc/html/classgv_standard_mouse_handler.js File Reference

Variables

- var classgv_standard_mouse_handler

30.639.1 Variable Documentation

30.639.1.1 var classgv_standard_mouse_handler

Initial value:

```
=
[
    [ "gvStandardMouseHandler", "classgv_standard_mouse_handler.html#a3aad1205e51624a9e801b66b654ab7b7",
      null ],
    [ "~gvStandardMouseHandler", "classgv_standard_mouse_handler.html#afb27b6a1df7dc568a4869d9822dbbe44",
      null ]
]
```

Definition at line 1 of file classgv_standard_mouse_handler.js.

30.640 doc/html/classgv_texture.js File Reference

Variables

- var classgv_texture

30.640.1 Variable Documentation

30.640.1.1 var classgv_texture

Initial value:

```
=
[
    [ "gvTexture", "classgv_texture.html#a9bdbc3ec11abed50e4640779333da23e", null ],
    [ "gvTexture", "classgv_texture.html#afa0d609acaed1499af8fcf8d99e54c80", null ],
    [ "gvTexture", "classgv_texture.html#ae06d6508e876fe0d9e45381baecf2420", null ],
    [ "gvTexture", "classgv_texture.html#ac21d410a98136315714c503693300a73", null ],
    [ "~gvTexture", "classgv_texture.html#a1fbcca34e28da27a5616832316e4009d", null ],
    [ "bind", "classgv_texture.html#a51a170497dba9efb9c591b3d35c60604", null ],
    [ "genTexture", "classgv_texture.html#aba546d26953db4e862c4a9b786664a64", null ],
    [ "getEnvMode", "classgv_texture.html#a6b34ab48a07d548c6bef11e3c6a46b4a", null ],
    [ "getMagFilter", "classgv_texture.html#ae2b2ef88114a3e120ebfc4128d99fdc4", null ],
    [ "getMinFilter", "classgv_texture.html#a4436004b003c008026cb1ae694f9ee53", null ],
    [ "getQImage", "classgv_texture.html#a5e10844c6710261a16999aa4caa30c8d", null ],
    [ "height", "classgv_texture.html#a050bf69adedded794a353bb94e8badd4", null ],
    [ "operator=", "classgv_texture.html#a5fa3c3107691fb6cba6fe812196d5805", null ],
    [ "readFile", "classgv_texture.html#a7d8986529a3e53d2be2cb46b371253a3", null ],
    [ "setAlphaValue", "classgv_texture.html#a029d82579d1ea0216dd509493f081043", null ],
    [ "setCenterEdgeTexels", "classgv_texture.html#acb22b5e3b07ef4620bf115ef95d3886b", null ],
    [ "setEnvMode", "classgv_texture.html#a2e293c7eb659dd703a596975c2ed594a", null ],
    [ "setIdentMatrix", "classgv_texture.html#ad59b1840cc7484d0865659667a7866c6", null ],
    [ "setMagFilter", "classgv_texture.html#a8940ddc697502f7d1cd558b228345d85", null ],
    [ "setMinFilter", "classgv_texture.html#a1d6c6eb31d5bc74bf29c3186667f6561", null ],
    [ "setTextureMatrix", "classgv_texture.html#a28c94abfca75ba8623dc52f7a4d35b74", null ],
    [ "setWrapMode", "classgv_texture.html#a0161ef23ff0a881d08656f61f812388d", null ],
    [ "width", "classgv_texture.html#aa9078e4da5c899ca528cf48791788f71", null ]
]
```

Definition at line 1 of file classgv_texture.js.

30.641 doc/html/classgv_view.js File Reference

Variables

- var classgv_view

30.641.1 Variable Documentation

30.641.1.1 var classgv_view

Definition at line 1 of file classgv_view.js.

30.642 doc/html/classhed_1_1_dart.js File Reference

Variables

- var classhed_1_1_dart

30.642.1 Variable Documentation

30.642.1.1 var classhed_1_1_dart

Initial value:

```
=
[
    [ "Dart", "classhed_1_1_dart.html#a141548d2908ef5847fd81370d57c07a0", null ],
    [ "Dart", "classhed_1_1_dart.html#a40d2832ae9a9d61a1cc16c9b171a2d14", null ],
    [ "Dart", "classhed_1_1_dart.html#a75fe6236394e8e039a1b3ad44582bf4f", null ],
    [ "~Dart", "classhed_1_1_dart.html#a10f0f2b42173bda49c781fe56f1c0a8a", null ],
    [ "alpha0", "classhed_1_1_dart.html#aabce4f3568d0729332d583c4e130d815", null ],
    [ "alpha1", "classhed_1_1_dart.html#a18a7132ba7a19cd64a9614785db0f8bc", null ],
    [ "alpha2", "classhed_1_1_dart.html#a07596e714ce02057c6934ffab585458c", null ],
    [ "getEdge", "classhed_1_1_dart.html#a54be6f9667fd38f286c7532bc3b375cf", null ],
    [ "getNode", "classhed_1_1_dart.html#ad3e2a078d1cf035228e9d7707ebcc0d5", null ],
    [ "getOppositeNode", "classhed_1_1_dart.html#a26f9b2a8d611a8fbc9f150ed3f8a3ef1", null ],
    [ "init", "classhed_1_1_dart.html#a5d99a7eeb15b6099d66d69e6d38cdf08", null ],
    [ "isCounterClockWise", "classhed_1_1_dart.html#ac7db17ef56b3fe80b2fb6ba5acf1e3ed", null ],
    [ "operator!=", "classhed_1_1_dart.html#a1ceee38a5d1e74e32e423ec67fd5ede0", null ],
    [ "operator=", "classhed_1_1_dart.html#a35ab1ebaa3eaef59d566d8f6a6106fd6", null ],
    [ "operator==", "classhed_1_1_dart.html#aa593dd5d95f05237b0b175ec917d1e76", null ],
    [ "x", "classhed_1_1_dart.html#a39d20327f3eeaefbc53f06f79f53d840", null ],
    [ "y", "classhed_1_1_dart.html#a20849660f038888f05ba65daf0a99ae5", null ]
]
```

Definition at line 1 of file classhed_1_1_dart.js.

30.643 doc/html/classhed_1_1_edge.js File Reference

Variables

- var classhed_1_1_edge

30.643.1 Variable Documentation

30.643.1.1 var classhed_1_1_edge

Initial value:

```
=
[
    [ "Edge", "classhed_1_1_edge.html#afcf345e2e15a83e18dbf14dd2eaecad7", null ],
    [ "~Edge", "classhed_1_1_edge.html#a5fc895fb958290c3ad807139824de291", null ],
    [ "getNextEdgeInFace", "classhed_1_1_edge.html#a64a08a620e11cd3336ad0ff06aa13013", null ],
    [ "getSourceNode", "classhed_1_1_edge.html#a156eabe70e853a905bfb2e9a511a48d1", null ],
    [ "getTargetNode", "classhed_1_1_edge.html#a9d7d33ee335595bae685ae4a1428a484", null ],
    [ "getTwinEdge", "classhed_1_1_edge.html#ae1358d12578911b00084d40269569f56", null ],
    [ "isConstrained", "classhed_1_1_edge.html#a4f204d397b8502db9b15f571677d305c", null ],
    [ "isLeadingEdge", "classhed_1_1_edge.html#a56ee267c453135610c91a05a97ec3478", null ],
    [ "setAsLeadingEdge", "classhed_1_1_edge.html#ac2a34c4cc6d002696a73d6e814a11cb2", null ],
    [ "setConstrained", "classhed_1_1_edge.html#a3ffa453b77c2d6f8e01c3c673c2aca36", null ],
    [ "setNextEdgeInFace", "classhed_1_1_edge.html#a63e9f4ae2705fa6d52f2734e7635c053", null ],
    [ "setSourceNode", "classhed_1_1_edge.html#a4583f7d0e199c30e574c14b66f4ba539", null ],
    [ "setTwinEdge", "classhed_1_1_edge.html#a7505edb3562f36e6d08082b00f69d7b5", null ],
    [ "isConstrained_", "classhed_1_1_edge.html#ae285190503f792364ab699f77f4194d7", null ],
    [ "isLeadingEdge_", "classhed_1_1_edge.html#a19b8a593101978a592db9525f2100137", null ]
]
```

Definition at line 1 of file classhed_1_1_edge.js.

30.644 doc/html/classhed_1_1_node.js File Reference

Variables

- var classhed_1_1_node

30.644.1 Variable Documentation

30.644.1.1 var classhed_1_1_node

Initial value:

```
=
[
    [ "Node", "classhed_1_1_node.html#a12967fb66dbbfb30869ce45216ee12e8", null ],
    [ "Node", "classhed_1_1_node.html#ad829f17633a0b6cf4dda8f73d4f13358", null ],
    [ "~Node", "classhed_1_1_node.html#a44bd6321beeb49833957f79bc36832d3", null ],
    [ "getFlag", "classhed_1_1_node.html#aa5026220174e1a840860e32982ec0e82", null ],
    [ "id", "classhed_1_1_node.html#ae0ae30c021c0e665b409db77bf604afa", null ],
    [ "init", "classhed_1_1_node.html#aecf4e4b054c363b753812c28f5c00a21", null ],
    [ "setFlag", "classhed_1_1_node.html#a43d9a3a9079143034b370be7551d1492", null ],
    [ "x", "classhed_1_1_node.html#ae5240e90452911b4635f8668f2d4129c", null ],
    [ "y", "classhed_1_1_node.html#ab71715188f02759f2b2a632adf9dd4cb", null ],
    [ "z", "classhed_1_1_node.html#a812130c3e029cdecbc9bc9a47a1e53a7", null ]
]
```

Definition at line 1 of file classhed_1_1_node.js.

30.645 doc/html/classhed_1_1_triangulation.js File Reference

Variables

- var classhed_1_1_triangulation

30.645.1 Variable Documentation

30.645.1.1 var classhed_1_1_triangulation

Initial value:

```
=
[
    [ "Triangulation", "classhed_1_1_triangulation.html#a66c7768aa1fb45e26e2ecdaf3c61c73e", null ],
    [ "Triangulation", "classhed_1_1_triangulation.html#a3ca85712664a867caa4f5ce945890f78", null ],
    [ "~Triangulation", "classhed_1_1_triangulation.html#a1a66db896d007b1a57cc2ffd0b3c3b6a", null ],
    [ "addLeadingEdge", "classhed_1_1_triangulation.html#a431ff0642c094a073ac78b45dd83c416", null ],
    [ "checkDelaunay", "classhed_1_1_triangulation.html#ae55e6f576e7d892bc1aaa00f831c514a", null ],
    [ "cleanAll", "classhed_1_1_triangulation.html#a6880897ae6a171379671880f76bee1fa", null ],
    [ "createDart", "classhed_1_1_triangulation.html#ae6f30af09e8be13c3d21eef7b42c8e99", null ],
    [ "createDelaunay", "classhed_1_1_triangulation.html#acc1c7ee89bf8d5e5a39d0cb3219ca8d7", null ],
    [ "flagNodes", "classhed_1_1_triangulation.html#a47f1f095a8d48536d91a0315f8fde1bc", null ],
    [ "getBoundaryEdge", "classhed_1_1_triangulation.html#a5ad0ba9b943eeedc8b57dfc8ff0e84a1", null ],
    [ "getEdges", "classhed_1_1_triangulation.html#aca48dd9df4dda24cac14e231397f6727", null ],
    [ "getInteriorNode", "classhed_1_1_triangulation.html#a671e04032ce039a909d8343ab98aa863", null ],
    [ "getLeadingEdges", "classhed_1_1_triangulation.html#a8b4faaa7ca0a7cdccc49f2dbe86e65bd", null ],
    [ "getNodes", "classhed_1_1_triangulation.html#a57f48cb368376503174bef523d5c54ea", null ],
    [ "initTwoEnclosingTriangles", "classhed_1_1_triangulation.html#a0cc9befb4f0f65144188d174fd4355d1",
      null ],
    [ "noTriangles", "classhed_1_1_triangulation.html#a685e36e668bfe3781486134b4fc1e97a", null ],
    [ "optimizeDelaunay", "classhed_1_1_triangulation.html#ac416bb53882ddb732c27ba2a9fecdb63", null ],
    [ "printEdges", "classhed_1_1_triangulation.html#ac67f9b08a01bc956088fee34615d4bc1", null ],
    [ "removeLeadingEdgeFromList", "classhed_1_1_triangulation.html#a0dca1788bdf9f99b9a0707827cb2edd6",
      null ],
    [ "removeTriangle", "classhed_1_1_triangulation.html#aeff0c075bc2a4e5b33fa03e3406ce2ed", null ],
    [ "reverse_splitTriangle", "classhed_1_1_triangulation.html#a064a6ae468a82186a66cb076eedd575e", null ],
    [ "splitTriangle", "classhed_1_1_triangulation.html#a720e4b0e8ec20650bef7537b5b5606c6", null ],
    [ "swapEdge", "classhed_1_1_triangulation.html#a74cbc329d1f7dfac664d6a821d491f31", null ],
    [ "leadingEdges_", "classhed_1_1_triangulation.html#a36ac06b34d61da338e01d448ea588e40", null ]
]
```

Definition at line 1 of file classhed_1_1_triangulation.js.

30.646 doc/html/classhetriang_1_1_dart.js File Reference

Variables

- var classhetriang_1_1_dart

30.646.1 Variable Documentation

30.646.1.1 var classhetriang_1_1_dart

Initial value:

```
=
[
    [ "Dart", "classhetriang_1_1_dart.html#ab39198f2792ee004668b8fc7f6a2d54f", null ],
    [ "Dart", "classhetriang_1_1_dart.html#ad19d89b2aed2b3a8d928be1625c41522", null ],
    [ "Dart", "classhetriang_1_1_dart.html#a38272a3789a247be3b18bd270c7f7e0e", null ],
    [ "~Dart", "classhetriang_1_1_dart.html#ae08502655542ccd2b3cbfbe603ef73dc", null ],
    [ "alpha0", "classhetriang_1_1_dart.html#a6d878ddfd8a31ba8e4b23698e100872b", null ],
    [ "alpha1", "classhetriang_1_1_dart.html#a95db6d9a41551204844e02a8575d44bc", null ],
    [ "alpha2", "classhetriang_1_1_dart.html#a192635c8ff9df52bfa6c390e2f4d5536", null ],
    [ "controllConstDart", "classhetriang_1_1_dart.html#a8d6797ceec27b9e48d57205950aa44fc", null ],
    [ "getEdge", "classhetriang_1_1_dart.html#ab94fb992ea3a3c45e343d0dd84dd48ab", null ],
    [ "getNode", "classhetriang_1_1_dart.html#aae77ac412e6b22956aaa7c6b1d3a1c78", null ],
    [ "getOppositeNode", "classhetriang_1_1_dart.html#a1862f77e025467e122c1218367ee4676", null ],
    [ "init", "classhetriang_1_1_dart.html#a8f631b0ed26c011717753efc84994138", null ],
    [ "isCounterClockWise", "classhetriang_1_1_dart.html#a50d9018f82a02e6cca7704d9bd5c88b5", null ],
    [ "makeCopy", "classhetriang_1_1_dart.html#a2c8a3fee654f5b5e2ca9fc308541beb1", null ],
    [ "operator!=", "classhetriang_1_1_dart.html#ae338fecbf1cb8f7085a7bde60440fe2b", null ],
    [ "operator=", "classhetriang_1_1_dart.html#aa0e9f7916775b8b8315b6b551b2458ce", null ],
    [ "operator==", "classhetriang_1_1_dart.html#a077ef450040dc0299b860502c092b6db", null ],
    [ "printDart", "classhetriang_1_1_dart.html#a0ca6545f0936282a42d2877e74c8d409", null ],
    [ "x", "classhetriang_1_1_dart.html#a54e0bbd87448ac2b3e9bddc8db856c59", null ],
    [ "y", "classhetriang_1_1_dart.html#af210f3f33a71b195c745e54cd7165070", null ]
]
```

Definition at line 1 of file classhetriang_1_1_dart.js.

30.647 doc/html/classhetriang_1_1_edge.js File Reference

Variables

- var classhetriang_1_1_edge

30.647.1 Variable Documentation

30.647.1.1 var classhetriang_1_1_edge

Initial value:

```
=
[
    [ "Edge", "classhetriang_1_1_edge.html#ac66aa8601c31b0f664fb020e02d5e0bc", null ],
    [ "~Edge", "classhetriang_1_1_edge.html#a895709f6162fcd9d1fe4fb7b9d216f00", null ],
    [ "getNextEdgeInFace", "classhetriang_1_1_edge.html#a7d67ecaf416f2bdf5fa860c1c945008b", null ],
    [ "getSourceNode", "classhetriang_1_1_edge.html#a58f01f66e0c0d09dfcbe5f139ba5de13", null ],
    [ "getTargetNode", "classhetriang_1_1_edge.html#a575cc2013925af2a64c1d8c0889fa008", null ],
    [ "getTwinEdge", "classhetriang_1_1_edge.html#af05da617f77eae7847bc7c62a9f953c5", null ],
    [ "isLeadingEdge", "classhetriang_1_1_edge.html#ae9768c5a551c1c1d0f4bcae4aeb61210", null ],
    [ "setAsLeadingEdge", "classhetriang_1_1_edge.html#aed73071cf0278c599fb4907852b98870", null ],
    [ "setNextEdgeInFace", "classhetriang_1_1_edge.html#a16b6f10e7931ea9fa76dbc5fc8697e19", null ],
    [ "setSourceNode", "classhetriang_1_1_edge.html#a013164a18ec0fecaea5bc3569749c010", null ],
    [ "setTwinEdge", "classhetriang_1_1_edge.html#aae96f3d2686c6a0f2f0722af3071d695", null ]
]
```

Definition at line 1 of file classhetriang_1_1_edge.js.

30.648 doc/html/classhetriang_1_1_node.js File Reference

Variables

- var classhetriang_1_1_node

30.648.1 Variable Documentation

30.648.1.1 var classhetriang_1_1_node

Initial value:

```
=
[
    [ "Node", "classhetriang_1_1_node.html#af180c24bc79338e59137679f0bd2bb41", null ],
    [ "Node", "classhetriang_1_1_node.html#ad2662e20a591a4e5508c52665a0c7d4f", null ],
    [ "Node", "classhetriang_1_1_node.html#ad2820a0242e6196055b28af4c7b05532", null ],
    [ "~Node", "classhetriang_1_1_node.html#a23aefd4c8c46c97814295553cbc8e84c", null ],
    [ "init", "classhetriang_1_1_node.html#aeb2bfc6f53bb23084f84b28ab60b01fa", null ],
    [ "pointIter", "classhetriang_1_1_node.html#a37efc562994a0f62b05ed6d2cc3f4deb", null ],
    [ "x", "classhetriang_1_1_node.html#a6d6619cfedeafeeaf9e468da7670da5f", null ],
    [ "y", "classhetriang_1_1_node.html#a9e14e02fa7d2ec93a21f26108a6d1b36", null ],
    [ "z", "classhetriang_1_1_node.html#a3a3e75bffc96f2230699b7ec641afa70", null ]
]
```

Definition at line 1 of file classhetriang_1_1_node.js.

30.649 doc/html/classhetriang_1_1_triangulation.js File Reference

Variables

- var classhetriang_1_1_triangulation

30.649.1 Variable Documentation

30.649.1.1 var classhetriang_1_1_triangulation

Initial value:

```
=
[
    [ "Triangulation", "classhetriang_1_1_triangulation.html#a5c275e8328957704b33555ad911ab587", null ],
    [ "~Triangulation", "classhetriang_1_1_triangulation.html#a99de211fd9c7e1e58dc4bd4ea3297b7f", null ],
    [ "addLeadingEdge", "classhetriang_1_1_triangulation.html#ae2794933e5e468b4056014e6cfc0f9a9", null ],
    [ "checkDelaunay", "classhetriang_1_1_triangulation.html#a45f97dc5781fe6ee0bbb95925e5460f3", null ],
    [ "cleanAll", "classhetriang_1_1_triangulation.html#a9455e4c7acfac72abe55d9aa81fcc512", null ],
    [ "createDart", "classhetriang_1_1_triangulation.html#a19be33d3b6a558aa7ef24e9408f15642", null ],
    [ "createDelaunay", "classhetriang_1_1_triangulation.html#ae1af06802fa3c3589b47c3e4273d2967", null ],
    [ "getBoundaryEdge", "classhetriang_1_1_triangulation.html#a768422ebc4abaf0d2464357d4a526a9c", null ],
    [ "getConstrainedEdges", "classhetriang_1_1_triangulation.html#ad54febf9b746624dcdc05ecc1ccdd752", null
      ],
    [ "getEdges", "classhetriang_1_1_triangulation.html#af704386eda232efcd59cdd65ee4117df", null ],
    [ "getInteriorNode", "classhetriang_1_1_triangulation.html#a2681b074818dd30161ba59432c0299b7", null ],
    [ "getLeadingEdges", "classhetriang_1_1_triangulation.html#ae582df5cb14aaac6a5634cd6308475c1", null ],
    [ "initTwoEnclosingTriangles", "classhetriang_1_1_triangulation.html#ac41010f48023ee255e3ea8fd4cccd154"
      , null ],
    [ "noTriangles", "classhetriang_1_1_triangulation.html#aad57852ccbac4206356f81c5e831eeaf", null ],
    [ "optimizeDelaunay", "classhetriang_1_1_triangulation.html#a06ee88d2a74dcd6bcfcc9036764fa483", null ],
    [ "printEdges", "classhetriang_1_1_triangulation.html#a801c6425f24252708e8ae83afe3f8810", null ],
    [ "removeLeadingEdgeFromList", "classhetriang_1_1_triangulation.html#a8ea06774eae80bc636dbd17a84551427"
      , null ],
    [ "removeTriangle", "classhetriang_1_1_triangulation.html#a3358efc08b5d7aec9ee3025d94221a84", null ],
    [ "reverse_splitTriangle", "classhetriang_1_1_triangulation.html#a3e504982c51a506486900654b85d5c74",
      null ],
    [ "splitTriangle", "classhetriang_1_1_triangulation.html#a100090e62f19ca59a9db7913b33ba477", null ],
    [ "swapEdge", "classhetriang_1_1_triangulation.html#ab1f108065d213e088f65a3516bab8830", null ],
    [ "leadingEdges_", "classhetriang_1_1_triangulation.html#a94625eec7008e84a98fe7e5e55d572e4", null ]
]
```

Definition at line 1 of file classhetriang_1_1_triangulation.js.

30.650 doc/html/classmaterial__appearance.js File Reference

Variables

- var classmaterial__appearance

30.650.1 Variable Documentation

30.650.1.1 var classmaterial__appearance

Initial value:

```
=
[
    [ "material_appearance", "classmaterial__appearance.html#a8466b0b1fc034232d439d7836247eb2a", null ],
    [ "col_scheme_select", "classmaterial__appearance.html#a9b42c9958f67223ed59b7957e5460ccd", null ],
    [ "col_scheme_selected", "classmaterial__appearance.html#a6e3e961804250b37fb94fd4f8d9b91d4", null ],
    [ "Key", "classmaterial__appearance.html#a74882356eb34bffa5a8683cccbee97bc", null ],
    [ "redefine_material_f", "classmaterial__appearance.html#a7dc96d53ef17ed996f1a440f6401affe", null ],
    [ "set_material", "classmaterial__appearance.html#a4dcb592c91edfd83bf8071a93ae825e1", null ],
    [ "ztrans_delta", "classmaterial__appearance.html#ad623f36c5f08deffe334ddebdc713213", null ]
]
```

Definition at line 1 of file classmaterial__appearance.js.

30.651 doc/html/classtime__lapse.js File Reference

Variables

- var classtime__lapse

30.651.1 Variable Documentation

30.651.1.1 var classtime__lapse

Initial value:

```
=
[
    [ "time_lapse", "classtime__lapse.html#a5d9d61b9c4788939518d2ba53134c7db", null ],
    [ "~time_lapse", "classtime__lapse.html#a4e009ca3428fea87ec471fd8928ecec5", null ]
]
```

Definition at line 1 of file classtime__lapse.js.

30.652 doc/html/classvector3t.js File Reference

Variables

- var classvector3t

30.652.1 Variable Documentation

30.652.1.1 var classvector3t

Definition at line 1 of file classvector3t.js.

30.653 doc/html/cm_utils_8h.js File Reference

Variables

- var cm_utils_8h

30.653.1 Variable Documentation

30.653.1.1 var cm_utils_8h

Initial value:

```
=
[
    [ "RotationInfo", "struct_go_1_1_rotation_info.html", "struct_go_1_1_rotation_info" ],
    [ "abovePlane", "cm_utils_8h.html#a26e0f32f6d3a0730cab21ab3f6f5b2d7", null ],
    [ "ccwAngle", "cm_utils_8h.html#a01ec874c95173e8dd46783ba680f6cef", null ],
    [ "cwOrientation", "cm_utils_8h.html#a0e8d24cd5737086fc3e72524d818d2d6", null ],
    [ "cwOrientation2", "cm_utils_8h.html#a08a484efc37055f021aa7673e9e751c6", null ],
    [ "estimatedCurveLength", "cm_utils_8h.html#a8e9fb0320366e2f460d75b94516c9fb9", null ],
    [ "extendWithDegBd", "cm_utils_8h.html#a545c0187155c2c9eaf902c750e147bed", null ],
    [ "geometricParamDomain", "cm_utils_8h.html#ac2652cdc78ac020412157fd7a00dfb35", null ],
    [ "getG1FaceCurves", "cm_utils_8h.html#ac2b99ce2e93099cdd1b2c57f52f0badc", null ],
    [ "insideBdTrain", "cm_utils_8h.html#af9162aba2837232e3417036177 72f70f", null ],
    [ "removeInnerCorners", "cm_utils_8h.html#a8cf4e6373645963f9ca720691179845d", null ],
    [ "reparametrizeBdCvs", "cm_utils_8h.html#ad8dcc777e87bfb4635a08d64ffb6a8c5", null ],
    [ "reparametrizeBdCvs2", "cm_utils_8h.html#abdf559c1cd0036c494c2fa46fd513e00", null ],
    [ "splitEdgesInCorners", "cm_utils_8h.html#acf2000d3cda91fa89a0aa605160bb52e", null ],
    [ "updateWithNewCorners", "cm_utils_8h.html#a49a6b9a1873b425e7b4d58aa45676936", null ]
]
```

Definition at line 1 of file cm_utils_8h.js.

30.654 doc/html/config_8h.js File Reference

Variables

- var config_8h

30.654.1 Variable Documentation

30.654.1.1 var config_8h

Initial value:

```
=
[
    [ "GO_API", "config_8h.html#aa9fe0b1a0029021ae339602cdfc4d8dd", null ]
]
```

Definition at line 1 of file config_8h.js.

30.655 doc/html/construct_8c.js File Reference

Variables

- var construct_8c

30.655.1 Variable Documentation

30.655.1.1 var construct_8c

Initial value:

```
=
[
    [ "CONSTRUCT", "construct_8c.html#a158cc7b98afd3caa1f2cf9c39be593b5", null ],
    [ "copyCurve", "construct_8c.html#aa3001587ca8d75c55a0cfdab5b00cdb0", null ],
    [ "copyIntpt", "construct_8c.html#aa7064efc6725011c38239accdafe31c8", null ],
    [ "copySurface", "construct_8c.html#aad0f7067335e41a2661cfdad0af2a3aa", null ],
    [ "hp_copyIntpt", "construct_8c.html#ace471e941e47cb4e67a1092f0f24332f", null ],
    [ "hp_newIntpt", "construct_8c.html#a4103bb7dd12c92e34a011792650d03c1", null ],
    [ "newbox", "construct_8c.html#aa43a378c821800eb747e91656ee4025f", null ],
    [ "newCurve", "construct_8c.html#a7bdc93268907b69b88098c5aeb2c4cd9", null ],
    [ "newdir", "construct_8c.html#a12f510a1d7f0ceda11ddc34dd746e9c7", null ],
    [ "newEdge", "construct_8c.html#af3c3222a7a78c75358f1eb0e4d31a11f", null ],
    [ "newIntcurve", "construct_8c.html#a809278570971cee58e55e46c740d39eb", null ],
    [ "newIntdat", "construct_8c.html#a9fa9789d8486e935781121bf46477d07", null ],
    [ "newIntlist", "construct_8c.html#ab32c3a857ac6220e6313e86f16136423", null ],
    [ "newIntpt", "construct_8c.html#af6f2e968a7128a48bdbb0f08110bb591", null ],
    [ "newIntsurf", "construct_8c.html#ac9b1e743272484ca8ee89b5c39b668e8", null ],
    [ "newObject", "construct_8c.html#a5b46207bedb046db4cb153dd3296b9f3", null ],
    [ "newPoint", "construct_8c.html#aeea6e5cb7fb2d4e10f2f49ba51efe64f", null ],
    [ "newPtedge", "construct_8c.html#a5b193661893ad8eba9c64ccc4a1cb8ea", null ],
    [ "newSurf", "construct_8c.html#a8602c3c5b4facb0920af3f4ba76998e4", null ],
    [ "newTrack", "construct_8c.html#a6bf58012098fddafd7c58599ecf3313a", null ],
    [ "newTrimpar", "construct_8c.html#a6cb323fc23f259cc85ccbcaec5da613a", null ]
]
```

Definition at line 1 of file construct_8c.js.

30.656 doc/html/controlw_8h.js File Reference

Variables

- var controlw_8h

30.656.1 Variable Documentation

30.656.1.1 var controlw_8h

Initial value:

```
=
[
    [ "ControlWord", "class_control_word.html", "class_control_word" ],
    [ "CONTROL_WORD_LIB", "controlw_8h.html#ac3f4cc42dfc44a8de07e00956f1f192e", null ]
]
```

Definition at line 1 of file controlw_8h.js.

30.657 doc/html/crvarctang_8c.js File Reference

Variables

- var crvarctang_8c

30.657.1 Variable Documentation

30.657.1.1 var crvarctang_8c

Initial value:

```
=
[
    [ "CRV_ARC_TANG", "crvarctang_8c.html#a17200ba2d085d7b9c14b679c3da87cbe", null ],
    [ "crv_arc_tang", "crvarctang_8c.html#a7adfd2ca3966585e5529e6ca32d4a81e", null ]
]
```

Definition at line 1 of file crvarctang_8c.js.

30.658 doc/html/crvcrvtang_8c.js File Reference

Variables

- var crvcrvtang_8c

30.658.1 Variable Documentation

30.658.1.1 var crvcrvtang_8c

Initial value:

```
=
[
    [ "CRV_CRV_TANG", "crvcrvtang_8c.html#a9487b21dbbf1d4857d4ed51fcc0e8db1", null ],
    [ "crv_crv_tang", "crvcrvtang_8c.html#a72743885abdacd2d0cf39ddd07514f71", null ]
]
```

Definition at line 1 of file crvcrvtang_8c.js.

30.659 doc/html/crvlintang_8c.js File Reference

Variables

- var crvlintang_8c

30.659.1 Variable Documentation

30.659.1.1 var crvlintang_8c

Initial value:

```
=
[
    [ "CRV_LIN_TANG", "crvlintang_8c.html#a1e18059c1583f19c55dd5e69c0314906", null ],
    [ "crv_lin_tang", "crvlintang_8c.html#a83d7f10b2e18d02eba8ab8ec634b48e6", null ]
]
```

Definition at line 1 of file crvlintang_8c.js.

30.660 doc/html/destruct_8c.js File Reference

Variables

- var destruct_8c

30.660.1 Variable Documentation

30.660.1.1 var destruct_8c

Initial value:

```
=
[
    [ "DESTRUCT", "destruct_8c.html#a9512e89b4c1c559e674c9903198452eb", null ],
    [ "freeCurve", "destruct_8c.html#a81fad8c55f6f41ef2e21849beeb8791a", null ],
    [ "freeEdge", "destruct_8c.html#a104289e6cd925030b80dd28e7ccb8aaa", null ],
    [ "freeIntcrvlist", "destruct_8c.html#a67efa13cf2156e880d13ffd31c1d32c4", null ],
    [ "freeIntcurve", "destruct_8c.html#aae3c8b6b942b0944dfb8a92bc3ce2e78", null ],
    [ "freeIntdat", "destruct_8c.html#ac6fe5785f75f0009a29fcdaaf2084322", null ],
    [ "freeIntlist", "destruct_8c.html#ab8527ad1c7a1b02c15c6d6682aee47a8", null ],
    [ "freeIntpt", "destruct_8c.html#a2ecde8800945071536e77a0878c0f44c", null ],
    [ "freeIntsurf", "destruct_8c.html#a0af6ad02906a7101ec91a6cf658e0903", null ],
    [ "freeObject", "destruct_8c.html#a39971c3e7bc50f706a83c7202e7b1822", null ],
    [ "freePoint", "destruct_8c.html#aabbfe0b8406369039c17f5d3214765d9", null ],
    [ "freePtedge", "destruct_8c.html#a7665f3a185f509fb5a86465716cce656", null ],
    [ "freeSurf", "destruct_8c.html#acbf603611b685b194721e1aaedb217f2", null ],
    [ "freeTrack", "destruct_8c.html#af0068b3a230501f40ba8f8a4cb956fc9", null ],
    [ "freeTrimpar", "destruct_8c.html#ae86eb459eeb4221d7514132bf3f6b33d", null ]
]
```

Definition at line 1 of file destruct_8c.js.

30.661 doc/html/dir_0015c891e2eac5fd9e489e846b834700.js File Reference

Variables

- var dir_0015c891e2eac5fd9e489e846b834700

30.661.1 Variable Documentation

30.661.1.1 var dir_0015c891e2eac5fd9e489e846b834700

Initial value:

```
=
[
    [ "topology", "dir_3a8e8a1c81bc0d4ea45d413753d6b9d6.html", "dir_3a8e8a1c81bc0d4ea45d413753d6b9d6" ]
]
```

Definition at line 1 of file dir_0015c891e2eac5fd9e489e846b834700.js.

30.662 doc/html/dir_038b4c324d5349c9475465ffee024b1c.js File Reference

Variables

- var dir_038b4c324d5349c9475465ffee024b1c

30.662.1 Variable Documentation

30.662.1.1 var dir_038b4c324d5349c9475465ffee024b1c

Definition at line 1 of file dir_038b4c324d5349c9475465ffee024b1c.js.

30.663 doc/html/dir_04f3dbfb06d4e757244c31fc16142d05.js File Reference

Variables

- var dir_04f3dbfb06d4e757244c31fc16142d05

30.663.1 Variable Documentation

30.663.1.1 var dir_04f3dbfb06d4e757244c31fc16142d05

Initial value:

```
=
[
    [ "halfedge", "dir_787e29cc9b8f49ef343dc9ff9fbda368.html", "dir_787e29cc9b8f49ef343dc9ff9fbda368" ],
    [ "utils", "dir_4dc6ea3c21164f9c4718441280129d09.html", "dir_4dc6ea3c21164f9c4718441280129d09" ],
    [ "api.h", "api_8h.html", null ],
    [ "mainpage_ttl.h", "mainpage__ttl_8h.html", null ],
    [ "ttl.h", "ttl_8h.html", "ttl_8h" ],
    [ "ttl_constr.h", "ttl__constr_8h.html", "ttl__constr_8h" ],
    [ "ttl_util.h", "ttl__util_8h.html", "ttl__util_8h" ]
]
```

Definition at line 1 of file dir_04f3dbfb06d4e757244c31fc16142d05.js.

30.664 doc/html/dir_0a492bd6eb1e5e04630449d6b6b92955.js File Reference

Variables

- var dir_0a492bd6eb1e5e04630449d6b6b92955

30.664.1 Variable Documentation

30.664.1.1 var dir_0a492bd6eb1e5e04630449d6b6b92955

Initial value:

```
=
[
    [ "GoTools", "dir_27047e9e82ebbd34bcfea6195a1d237f.html", "dir_27047e9e82ebbd34bcfea6195a1d237f" ]
]
```

Definition at line 1 of file dir_0a492bd6eb1e5e04630449d6b6b92955.js.

30.665 doc/html/dir_0df052b1ef5b53594ca9be5a6074277d.js File Reference

Variables

- var dir_0df052b1ef5b53594ca9be5a6074277d

30.665.1 Variable Documentation

30.665.1.1 var dir_0df052b1ef5b53594ca9be5a6074277d

Initial value:

```
=
[
    [ "include", "dir_0a492bd6eb1e5e04630449d6b6b92955.html", "dir_0a492bd6eb1e5e04630449d6b6b92955" ]
]
```

Definition at line 1 of file dir_0df052b1ef5b53594ca9be5a6074277d.js.

30.666 doc/html/dir_15757c9e0b20f079697e78f9f294c1ee.js File Reference

Variables

- var dir_15757c9e0b20f079697e78f9f294c1ee

30.666.1 Variable Documentation

30.666.1.1 var dir_15757c9e0b20f079697e78f9f294c1ee

Definition at line 1 of file dir_15757c9e0b20f079697e78f9f294c1ee.js.

30.667 doc/html/dir_1c9e4414cb2b8eb9526a3aa2069941f8.js File Reference

Variables

- var dir_1c9e4414cb2b8eb9526a3aa2069941f8

30.667.1 Variable Documentation

30.667.1.1 var dir_1c9e4414cb2b8eb9526a3aa2069941f8

Initial value:

```
=
[
    [ "GoReadWrite.h", "_go_read_write_8h.html", "_go_read_write_8h" ]
]
```

Definition at line 1 of file dir_1c9e4414cb2b8eb9526a3aa2069941f8.js.

30.668 doc/html/dir_1ce88f9178ec82ce3d3b5366984a4a76.js File Reference

Variables

- var dir_1ce88f9178ec82ce3d3b5366984a4a76

30.668.1 Variable Documentation

30.668.1.1 var dir_1ce88f9178ec82ce3d3b5366984a4a76

Initial value:

```
=
[
    [ "doc", "dir_8946de0dbd7af8713b300be94ace6b21.html", "dir_8946de0dbd7af8713b300be94ace6b21" ],
    [ "include", "dir_61f4d2722e3a1702decd4dcefd169ded.html", "dir_61f4d2722e3a1702decd4dcefd169ded" ]
]
```

Definition at line 1 of file dir_1ce88f9178ec82ce3d3b5366984a4a76.js.

30.669 doc/html/dir_26434c1759c56a49292c328c033e76d7.js File Reference

Variables

- var dir_26434c1759c56a49292c328c033e76d7

30.669.1 Variable Documentation

30.669.1.1 var dir_26434c1759c56a49292c328c033e76d7

Definition at line 1 of file dir_26434c1759c56a49292c328c033e76d7.js.

30.670 doc/html/dir_27047e9e82ebbd34bcfea6195a1d237f.js File Reference

Variables

- var dir_27047e9e82ebbd34bcfea6195a1d237f

30.670.1 Variable Documentation

30.670.1.1 var dir_27047e9e82ebbd34bcfea6195a1d237f

Initial value:

```
=
[
    [ "viewlib", "dir_038b4c324d5349c9475465ffee024b1c.html", "dir_038b4c324d5349c9475465ffee024b1c" ]
]
```

Definition at line 1 of file dir_27047e9e82ebbd34bcfea6195a1d237f.js.

30.671 doc/html/dir_287d50cea2dbd2d342307d58f17ae566.js File Reference

Variables

- var dir_287d50cea2dbd2d342307d58f17ae566

30.671.1 Variable Documentation

30.671.1.1 var dir_287d50cea2dbd2d342307d58f17ae566

Initial value:

```
=
[
    [ "ftGroupGeom.h", "ft_group_geom_8h.html", [
      [ "ftGroupGeom", "class_go_1_1ft_group_geom.html", "class_go_1_1ft_group_geom" ]
    ] ],
    [ "ftTangPriority.h", "ft_tang_priority_8h.html", "ft_tang_priority_8h" ],
    [ "IGESconverter.h", "_i_g_e_sconverter_8h.html", "_i_g_e_sconverter_8h" ],
    [ "igeslib_doxymain.h", "igeslib__doxymain_8h.html", "igeslib__doxymain_8h" ]
]
```

Definition at line 1 of file dir_287d50cea2dbd2d342307d58f17ae566.js.

30.672 doc/html/dir_28d725a1074140e3875acd99df863a9a.js File Reference

Variables

- var dir_28d725a1074140e3875acd99df863a9a

30.672.1 Variable Documentation

30.672.1.1 var dir_28d725a1074140e3875acd99df863a9a

Definition at line 1 of file dir_28d725a1074140e3875acd99df863a9a.js.

30.673 doc/html/dir_2e9f58fed2f8cb33783712134eca6f54.js File Reference

Variables

- var dir_2e9f58fed2f8cb33783712134eca6f54

30.673.1 Variable Documentation

30.673.1.1 var dir_2e9f58fed2f8cb33783712134eca6f54

Definition at line 1 of file dir_2e9f58fed2f8cb33783712134eca6f54.js.

30.674 doc/html/dir_2ea40cee675de4bd87b06c9233dde18b.js File Reference

Variables

- var dir_2ea40cee675de4bd87b06c9233dde18b

30.674.1 Variable Documentation

30.674.1.1 var dir_2ea40cee675de4bd87b06c9233dde18b

Initial value:

```
=
[
    [ "intersections", "dir_90fbe926ef93e71fdbf5723e062c9da4.html", "dir_90fbe926ef93e71fdbf5723e062c9da4"
      ]
]
```

Definition at line 1 of file dir_2ea40cee675de4bd87b06c9233dde18b.js.

30.675 doc/html/dir_34a54fc55cc4c76e2db47ca198785905.js File Reference

Variables

- var dir_34a54fc55cc4c76e2db47ca198785905

30.675.1 Variable Documentation

30.675.1.1 var dir_34a54fc55cc4c76e2db47ca198785905

Initial value:

```
=
[
    [ "GoTools", "dir_ab08e349df88865f421593b417138732.html", "dir_ab08e349df88865f421593b417138732" ]
]
```

Definition at line 1 of file dir_34a54fc55cc4c76e2db47ca198785905.js.

30.676 doc/html/dir_34a7c6eb6b0d9060dd547ea008608408.js File Reference

Variables

- var dir_34a7c6eb6b0d9060dd547ea008608408

30.676.1 Variable Documentation

30.676.1.1 var dir_34a7c6eb6b0d9060dd547ea008608408

Initial value:

```
=
[
    [ "GoTools", "dir_b28ca551f00416d098dfb2d5d86cb85e.html", "dir_b28ca551f00416d098dfb2d5d86cb85e" ]
]
```

Definition at line 1 of file dir_34a7c6eb6b0d9060dd547ea008608408.js.

30.677 doc/html/dir_3706bca45f06e8690f2585ec746205ce.js File Reference

Variables

- var dir_3706bca45f06e8690f2585ec746205ce

30.677.1 Variable Documentation

30.677.1.1 var dir_3706bca45f06e8690f2585ec746205ce

Initial value:

```
=
[
    [ "igeslib", "dir_287d50cea2dbd2d342307d58f17ae566.html", "dir_287d50cea2dbd2d342307d58f17ae566" ]
]
```

Definition at line 1 of file dir_3706bca45f06e8690f2585ec746205ce.js.

30.678 doc/html/dir_37bdf26acb6f0e99095c72f4b261057d.js File Reference

Variables

- var dir_37bdf26acb6f0e99095c72f4b261057d

30.678.1 Variable Documentation

30.678.1.1 var dir_37bdf26acb6f0e99095c72f4b261057d

Initial value:

```
=
[
    [ "include", "dir_eb531be94dc3f2da4c4acbfa84e0e7dc.html", "dir_eb531be94dc3f2da4c4acbfa84e0e7dc" ]
]
```

Definition at line 1 of file dir_37bdf26acb6f0e99095c72f4b261057d.js.

30.679 doc/html/dir_3a8e8a1c81bc0d4ea45d413753d6b9d6.js File Reference

Variables

- var dir_3a8e8a1c81bc0d4ea45d413753d6b9d6

30.679.1 Variable Documentation

30.679.1.1 var dir_3a8e8a1c81bc0d4ea45d413753d6b9d6

Definition at line 1 of file dir_3a8e8a1c81bc0d4ea45d413753d6b9d6.js.

30.680 doc/html/dir_3b29025e4f1a16d99c0ac7281d29a749.js File Reference

Variables

- var dir_3b29025e4f1a16d99c0ac7281d29a749

30.680.1 Variable Documentation

30.680.1.1 var dir_3b29025e4f1a16d99c0ac7281d29a749

Initial value:

```
=
[
    [ "include", "dir_34a7c6eb6b0d9060dd547ea008608408.html", "dir_34a7c6eb6b0d9060dd547ea008608408" ]
]
```

Definition at line 1 of file dir_3b29025e4f1a16d99c0ac7281d29a749.js.

30.681 doc/html/dir_3cd14e887b3be1bb0699a0f4b9d7471b.js File Reference

Variables

- var dir_3cd14e887b3be1bb0699a0f4b9d7471b

30.681.1 Variable Documentation

30.681.1.1 var dir_3cd14e887b3be1bb0699a0f4b9d7471b

Definition at line 1 of file dir_3cd14e887b3be1bb0699a0f4b9d7471b.js.

30.682 doc/html/dir_442358e1b75f159df2b4b10f68cb6669.js File Reference

Variables

- var dir_442358e1b75f159df2b4b10f68cb6669

30.682.1 Variable Documentation

30.682.1.1 var dir_442358e1b75f159df2b4b10f68cb6669

Initial value:

```
=
[
    [ "aux2.h", "aux2_8h.html", "aux2_8h" ],
    [ "gl_aux.h", "gl__aux_8h.html", "gl__aux_8h" ],
    [ "glutils.h", "glutils_8h.html", "glutils_8h" ],
    [ "jonvec.h", "jonvec_8h.html", [
      [ "vector3t", "classvector3t.html", "classvector3t" ]
    ] ],
    [ "mouse.h", "mouse_8h.html", "mouse_8h" ],
    [ "sisl_aux.h", "sisl__aux_8h.html", "sisl__aux_8h" ],
    [ "transfutils.h", "transfutils_8h.html", "transfutils_8h" ]
]
```

Definition at line 1 of file dir_442358e1b75f159df2b4b10f68cb6669.js.

30.683 doc/html/dir_44eb60e2f3e103c46810fc3a6f6f0b38.js File Reference

Variables

- var dir_44eb60e2f3e103c46810fc3a6f6f0b38

30.683.1 Variable Documentation

30.683.1.1 var dir_44eb60e2f3e103c46810fc3a6f6f0b38

Initial value:

```
=
[
    [ "include", "dir_46fb2897033f53c047d4860af5672505.html", "dir_46fb2897033f53c047d4860af5672505" ]
]
```

Definition at line 1 of file dir_44eb60e2f3e103c46810fc3a6f6f0b38.js.

30.684 doc/html/dir_46fb2897033f53c047d4860af5672505.js File Reference

Variables

- var dir_46fb2897033f53c047d4860af5672505

30.684.1 Variable Documentation

30.684.1.1 var dir_46fb2897033f53c047d4860af5672505

Initial value:

```
=
[
    [ "GoTools", "dir_a702eb1d615fc8e494327e00bfd64e2d.html", "dir_a702eb1d615fc8e494327e00bfd64e2d" ]
]
```

Definition at line 1 of file dir_46fb2897033f53c047d4860af5672505.js.

30.685 doc/html/dir_4dc6ea3c21164f9c4718441280129d09.js File Reference

Variables

- var dir_4dc6ea3c21164f9c4718441280129d09

30.685.1 Variable Documentation

30.685.1.1 var dir_4dc6ea3c21164f9c4718441280129d09

Initial value:

```
=
[
    [ "Handle.h", "_handle_8h.html", [
      [ "Handle", "class_handle.html", "class_handle" ]
    ] ],
    [ "HandleId.h", "_handle_id_8h.html", [
      [ "HandleId", "class_handle_id.html", "class_handle_id" ]
    ] ]
]
```

Definition at line 1 of file dir_4dc6ea3c21164f9c4718441280129d09.js.

30.686 doc/html/dir_4ed957b398f8a342f35e202c6dbeff82.js File Reference

Variables

- var dir_4ed957b398f8a342f35e202c6dbeff82

30.686.1 Variable Documentation

30.686.1.1 var dir_4ed957b398f8a342f35e202c6dbeff82

Initial value:

```
=
[
    [ "trivariatemodel", "dir_4f584829c2589cd0dd901c7bd8d4b8ca.html", "dir_4f584829c2589cd0dd901c7bd8d4b8ca
      " ]
]
```

Definition at line 1 of file dir_4ed957b398f8a342f35e202c6dbeff82.js.

30.687 doc/html/dir_4f584829c2589cd0dd901c7bd8d4b8ca.js File Reference

Variables

- var dir_4f584829c2589cd0dd901c7bd8d4b8ca

30.687.1 Variable Documentation

30.687.1.1 var dir_4f584829c2589cd0dd901c7bd8d4b8ca

Initial value:

```
=
[
    [ "examples_trivariatemodel_doxymain.h", "examples__trivariatemodel__doxymain_8h.html", null ],
    [ "ftVolume.h", "ft_volume_8h.html", [
      [ "VolumeAdjacencyInfo", "struct_go_1_1_volume_adjacency_info.html", "
      struct_go_1_1_volume_adjacency_info" ],
      [ "ftVolume", "class_go_1_1ft_volume.html", "class_go_1_1ft_volume" ]
    ] ],
    [ "ftVolumeTools.h", "ft_volume_tools_8h.html", "ft_volume_tools_8h" ],
    [ "trivariatemodel_doxymain.h", "trivariatemodel__doxymain_8h.html", null ],
    [ "VolumeAdjacency.h", "_volume_adjacency_8h.html", [
      [ "VolumeAdjacency", "class_go_1_1_volume_adjacency.html", "class_go_1_1_volume_adjacency" ]
    ] ],
    [ "VolumeModel.h", "_volume_model_8h.html", [
      [ "VolumeModel", "class_go_1_1_volume_model.html", "class_go_1_1_volume_model" ]
    ] ],
    [ "VolumeModelCreator.h", "_volume_model_creator_8h.html", "_volume_model_creator_8h" ],
    [ "VolumeModelFileHandler.h", "_volume_model_file_handler_8h.html", "_volume_model_file_handler_8h" ]
]
```

Definition at line 1 of file dir_4f584829c2589cd0dd901c7bd8d4b8ca.js.

30.688 doc/html/dir_54c0807dc9dc58401cdf98175b301107.js File Reference

Variables

- var dir_54c0807dc9dc58401cdf98175b301107

30.688.1 Variable Documentation

30.688.1.1 var dir_54c0807dc9dc58401cdf98175b301107

Definition at line 1 of file dir_54c0807dc9dc58401cdf98175b301107.js.

30.689 doc/html/dir_5eaf107a44af8927c3e88d7693acb3ec.js File Reference

Variables

- var dir_5eaf107a44af8927c3e88d7693acb3ec

30.689.1 Variable Documentation

30.689.1.1 var dir_5eaf107a44af8927c3e88d7693acb3ec

Initial value:

```
=
[
    [ "jquery.js", "jquery_8js.html", "jquery_8js" ]
]
```

Definition at line 1 of file dir_5eaf107a44af8927c3e88d7693acb3ec.js.

30.690 doc/html/dir_61c47cbd77726dc04327162bb82f2acf.js File Reference

Variables

- var dir_61c47cbd77726dc04327162bb82f2acf

30.690.1 Variable Documentation

30.690.1.1 var dir_61c47cbd77726dc04327162bb82f2acf

Initial value:

```
=
[
    [ "include", "dir_7efa0b394c677aa9d932dff09cb14a2d.html", "dir_7efa0b394c677aa9d932dff09cb14a2d" ]
]
```

Definition at line 1 of file dir_61c47cbd77726dc04327162bb82f2acf.js.

30.691 doc/html/dir_61f4d2722e3a1702decd4dcefd169ded.js File Reference

Variables

- var dir_61f4d2722e3a1702decd4dcefd169ded

30.691.1 Variable Documentation

30.691.1.1 var dir_61f4d2722e3a1702decd4dcefd169ded

Initial value:

```
=
[
    [ "GoTools", "dir_ffa09c8575bbfbed340eb641d2e0178f.html", "dir_ffa09c8575bbfbed340eb641d2e0178f" ]
]
```

Definition at line 1 of file dir_61f4d2722e3a1702decd4dcefd169ded.js.

30.692 doc/html/dir_662c58e926d5c8a2e92c3a0efd184e27.js File Reference

Variables

- var dir_662c58e926d5c8a2e92c3a0efd184e27

30.692.1 Variable Documentation

30.692.1.1 var dir_662c58e926d5c8a2e92c3a0efd184e27

Initial value:

```
=
[
    [ "include", "dir_9e7f8af3df212ec4d479463341bb72a6.html", "dir_9e7f8af3df212ec4d479463341bb72a6" ]
]
```

Definition at line 1 of file dir_662c58e926d5c8a2e92c3a0efd184e27.js.

30.693 doc/html/dir_69009d91722e8158a6e1821a3d198fd0.js File Reference

Variables

- var dir_69009d91722e8158a6e1821a3d198fd0

30.693.1 Variable Documentation

30.693.1.1 var dir_69009d91722e8158a6e1821a3d198fd0

Definition at line 1 of file dir_69009d91722e8158a6e1821a3d198fd0.js.

30.694 doc/html/dir_6917c6a4538152e6852497b387e02df2.js File Reference

Variables

- var dir_6917c6a4538152e6852497b387e02df2

30.694.1 Variable Documentation

30.694.1.1 var dir_6917c6a4538152e6852497b387e02df2

Initial value:

```
=
[
    [ "main.cpp", "main_8cpp.html", "main_8cpp" ]
]
```

Definition at line 1 of file dir_6917c6a4538152e6852497b387e02df2.js.

30.695 doc/html/dir_6958061072da6881959e38b0a737a4c6.js File Reference

Variables

- var dir_6958061072da6881959e38b0a737a4c6

30.695.1 Variable Documentation

30.695.1.1 var dir_6958061072da6881959e38b0a737a4c6

Initial value:

```
=
[
    [ "halfedge", "dir_8dcf46dfbb2e2ca3d570ad71ab7f5984.html", "dir_8dcf46dfbb2e2ca3d570ad71ab7f5984" ],
    [ "utils", "dir_e846bdbb82b84d132cb98df96cb07bf0.html", "dir_e846bdbb82b84d132cb98df96cb07bf0" ]
]
```

Definition at line 1 of file dir_6958061072da6881959e38b0a737a4c6.js.

30.696 doc/html/dir_6a9f218ac24eb7b754dc250ffd508dae.js File Reference

Variables

- var dir_6a9f218ac24eb7b754dc250ffd508dae

30.696.1 Variable Documentation

30.696.1.1 var dir_6a9f218ac24eb7b754dc250ffd508dae

Initial value:

```
=
[
    [ "GoTools", "dir_ce2be4821eafb03cec507f192e45eceb.html", "dir_ce2be4821eafb03cec507f192e45eceb" ]
]
```

Definition at line 1 of file dir_6a9f218ac24eb7b754dc250ffd508dae.js.

30.697 doc/html/dir_764e20a7fa93cafa3199ac45b6e6b986.js File Reference

Variables

- var dir_764e20a7fa93cafa3199ac45b6e6b986

30.697.1 Variable Documentation

30.697.1.1 var dir_764e20a7fa93cafa3199ac45b6e6b986

Initial value:

```
=
[
    [ "ttl", "dir_04f3dbfb06d4e757244c31fc16142d05.html", "dir_04f3dbfb06d4e757244c31fc16142d05" ]
]
```

Definition at line 1 of file dir_764e20a7fa93cafa3199ac45b6e6b986.js.

30.698 doc/html/dir_787e29cc9b8f49ef343dc9ff9fbda368.js File Reference

Variables

- var dir_787e29cc9b8f49ef343dc9ff9fbda368

30.698.1 Variable Documentation

30.698.1.1 var dir_787e29cc9b8f49ef343dc9ff9fbda368

Initial value:

```
=
[
    [ "HeDart.h", "_he_dart_8h.html", [
      [ "Dart", "classhed_1_1_dart.html", "classhed_1_1_dart" ]
    ] ],
    [ "HeTraits.h", "_he_traits_8h.html", [
      [ "TTLtraits", "structhed_1_1_t_t_ltraits.html", "structhed_1_1_t_t_ltraits" ]
    ] ],
    [ "HeTriang.h", "_he_triang_8h.html", "_he_triang_8h" ],
    [ "main_he_ref.h", "main__he__ref_8h.html", null ],
    [ "mainpage_hed.h", "mainpage__hed_8h.html", null ]
]
```

Definition at line 1 of file dir_787e29cc9b8f49ef343dc9ff9fbda368.js.

30.699 doc/html/dir_79b3003bf1bdb319185970350806bf23.js File Reference

Variables

- var dir_79b3003bf1bdb319185970350806bf23

30.699.1 Variable Documentation

30.699.1.1 var dir_79b3003bf1bdb319185970350806bf23

Initial value:

```
=
[
    [ "app", "dir_15757c9e0b20f079697e78f9f294c1ee.html", "dir_15757c9e0b20f079697e78f9f294c1ee" ],
    [ "include", "dir_7f10ec973083a3eaca908361800e49c7.html", "dir_7f10ec973083a3eaca908361800e49c7" ],
    [ "src", "dir_892cdac2bffabe6fa625049467eefe0a.html", "dir_892cdac2bffabe6fa625049467eefe0a" ]
]
```

Definition at line 1 of file dir_79b3003bf1bdb319185970350806bf23.js.

30.700 doc/html/dir_7b91ef4997e28bdb148c447548446353.js File Reference

Variables

- var dir_7b91ef4997e28bdb148c447548446353

30.700.1 Variable Documentation

30.700.1.1 var dir_7b91ef4997e28bdb148c447548446353

Initial value:

```
=
[
    [ "include", "dir_34a54fc55cc4c76e2db47ca198785905.html", "dir_34a54fc55cc4c76e2db47ca198785905" ]
]
```

Definition at line 1 of file dir_7b91ef4997e28bdb148c447548446353.js.

30.701 doc/html/dir_7c72f061721a5863212d64c180702103.js File Reference

Variables

- var dir_7c72f061721a5863212d64c180702103

30.701.1 Variable Documentation

30.701.1.1 var dir_7c72f061721a5863212d64c180702103

Initial value:

```
=
[
    [ "FaceSetQuality.h", "_face_set_quality_8h.html", [
      [ "FaceSetQuality", "class_go_1_1_face_set_quality.html", "class_go_1_1_face_set_quality" ]
    ] ],
    [ "FaceSetRepair.h", "_face_set_repair_8h.html", [
      [ "FaceSetRepair", "class_go_1_1_face_set_repair.html", "class_go_1_1_face_set_repair" ]
    ] ],
    [ "ModelQuality.h", "_model_quality_8h.html", [
      [ "ModelQuality", "class_go_1_1_model_quality.html", "class_go_1_1_model_quality" ]
    ] ],
    [ "ModelRepair.h", "_model_repair_8h.html", [
      [ "ModelRepair", "class_go_1_1_model_repair.html", "class_go_1_1_model_repair" ]
    ] ],
    [ "qualitymodule-doxymain.h", "qualitymodule-doxymain_8h.html", null ],
    [ "QualityResults.h", "_quality_results_8h.html", [
      [ "QualityResults", "class_go_1_1_quality_results.html", "class_go_1_1_quality_results" ]
    ] ],
    [ "QualityUtils.h", "_quality_utils_8h.html", "_quality_utils_8h" ],
    [ "testSuite.h", "test_suite_8h.html", "test_suite_8h" ]
]
```

Definition at line 1 of file dir_7c72f061721a5863212d64c180702103.js.

30.702 doc/html/dir_7efa0b394c677aa9d932dff09cb14a2d.js File Reference

Variables

- var dir_7efa0b394c677aa9d932dff09cb14a2d

30.702.1 Variable Documentation

30.702.1.1 var dir_7efa0b394c677aa9d932dff09cb14a2d

Initial value:

```
=
[
    [ "GoTools", "dir_3706bca45f06e8690f2585ec746205ce.html", "dir_3706bca45f06e8690f2585ec746205ce" ]
]
```

Definition at line 1 of file dir_7efa0b394c677aa9d932dff09cb14a2d.js.

30.703 doc/html/dir_7f10ec973083a3eaca908361800e49c7.js File Reference

Variables

- var dir_7f10ec973083a3eaca908361800e49c7

30.703.1 Variable Documentation

30.703.1.1 var dir_7f10ec973083a3eaca908361800e49c7

Initial value:

```
=
[
    [ "boolean.h", "boolean_8h.html", "boolean_8h" ],
    [ "controlw.h", "controlw_8h.html", "controlw_8h" ],
    [ "include.h", "include_8h.html", "include_8h" ],
    [ "myexcept.h", "myexcept_8h.html", "myexcept_8h" ],
    [ "newmat.h", "newmat_8h.html", "newmat_8h" ],
    [ "newmatap.h", "newmatap_8h.html", "newmatap_8h" ],
    [ "newmatio.h", "newmatio_8h.html", "newmatio_8h" ],
    [ "newmatnl.h", "newmatnl_8h.html", "newmatnl_8h" ],
    [ "newmatrc.h", "newmatrc_8h.html", "newmatrc_8h" ],
    [ "newmatrm.h", "newmatrm_8h.html", "newmatrm_8h" ],
    [ "precisio.h", "precisio_8h.html", "precisio_8h" ],
    [ "solution.h", "solution_8h.html", [
      [ "R1_R1", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1" ],
      [ "SolutionException", "class_r_b_d___c_o_m_m_o_n_1_1_solution_exception.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_solution_exception" ],
      [ "OneDimSolve", "class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve" ]
    ] ],
    [ "tmt.h", "tmt_8h.html", "tmt_8h" ]
]
```

Definition at line 1 of file dir_7f10ec973083a3eaca908361800e49c7.js.

30.704 doc/html/dir_84497794bb37d283dbd68163bed8ef05.js File Reference

Variables

- var dir_84497794bb37d283dbd68163bed8ef05

30.704.1 Variable Documentation

30.704.1.1 var dir_84497794bb37d283dbd68163bed8ef05

Initial value:

```
=
[
    [ "include", "dir_a537b1e5a645cb4471f6768545d20c2b.html", "dir_a537b1e5a645cb4471f6768545d20c2b" ]
]
```

Definition at line 1 of file dir_84497794bb37d283dbd68163bed8ef05.js.

30.705 doc/html/dir_85c45df6158cba585b9d394ec2ca8ba6.js File Reference

Variables

- var dir_85c45df6158cba585b9d394ec2ca8ba6

30.705.1 Variable Documentation

30.705.1.1 var dir_85c45df6158cba585b9d394ec2ca8ba6

Initial value:

```
=
[
    [ "qualitymodule", "dir_7c72f061721a5863212d64c180702103.html", "dir_7c72f061721a5863212d64c180702103"
      ]
]
```

Definition at line 1 of file dir_85c45df6158cba585b9d394ec2ca8ba6.js.

30.706 doc/html/dir_892cdac2bffabe6fa625049467eefe0a.js File Reference

Variables

- var dir_892cdac2bffabe6fa625049467eefe0a

30.706.1 Variable Documentation

30.706.1.1 var dir_892cdac2bffabe6fa625049467eefe0a

Initial value:

```
=
[
    [ "bandmat.cpp", "bandmat_8cpp.html", "bandmat_8cpp" ],
    [ "cholesky.cpp", "cholesky_8cpp.html", "cholesky_8cpp" ],
    [ "evalue.cpp", "evalue_8cpp.html", "evalue_8cpp" ],
    [ "fft.cpp", "fft_8cpp.html", "fft_8cpp" ],
    [ "hholder.cpp", "hholder_8cpp.html", "hholder_8cpp" ],
    [ "jacobi.cpp", "jacobi_8cpp.html", "jacobi_8cpp" ],
    [ "myexcept.cpp", "myexcept_8cpp.html", "myexcept_8cpp" ],
    [ "newfft.cpp", "newfft_8cpp.html", "newfft_8cpp" ],
    [ "newmat1.cpp", "newmat1_8cpp.html", "newmat1_8cpp" ],
    [ "newmat2.cpp", "newmat2_8cpp.html", "newmat2_8cpp" ],
    [ "newmat3.cpp", "newmat3_8cpp.html", "newmat3_8cpp" ],
    [ "newmat4.cpp", "newmat4_8cpp.html", "newmat4_8cpp" ],
    [ "newmat5.cpp", "newmat5_8cpp.html", "newmat5_8cpp" ],
    [ "newmat6.cpp", "newmat6_8cpp.html", "newmat6_8cpp" ],
    [ "newmat7.cpp", "newmat7_8cpp.html", "newmat7_8cpp" ],
    [ "newmat8.cpp", "newmat8_8cpp.html", "newmat8_8cpp" ],
    [ "newmat9.cpp", "newmat9_8cpp.html", "newmat9_8cpp" ],
    [ "newmatex.cpp", "newmatex_8cpp.html", "newmatex_8cpp" ],
    [ "newmatnl.cpp", "newmatnl_8cpp.html", "newmatnl_8cpp" ],
    [ "newmatrm.cpp", "newmatrm_8cpp.html", "newmatrm_8cpp" ],
    [ "solution.cpp", "solution_8cpp.html", "solution_8cpp" ],
    [ "sort.cpp", "sort_8cpp.html", "sort_8cpp" ],
    [ "submat.cpp", "submat_8cpp.html", "submat_8cpp" ],
    [ "svd.cpp", "svd_8cpp.html", "svd_8cpp" ]
]
```

Definition at line 1 of file dir_892cdac2bffabe6fa625049467eefe0a.js.

30.707 doc/html/dir_8946de0dbd7af8713b300be94ace6b21.js File Reference

Variables

- var dir_8946de0dbd7af8713b300be94ace6b21

30.707.1 Variable Documentation

30.707.1.1 var dir_8946de0dbd7af8713b300be94ace6b21

Initial value:

```
=
[
    [ "html", "dir_5eaf107a44af8927c3e88d7693acb3ec.html", "dir_5eaf107a44af8927c3e88d7693acb3ec" ]
]
```

Definition at line 1 of file dir_8946de0dbd7af8713b300be94ace6b21.js.

30.708 doc/html/dir_8c65b503da15ddfa217ea827bbddedc7.js File Reference

Variables

- var dir_8c65b503da15ddfa217ea827bbddedc7

30.708.1 Variable Documentation

30.708.1.1 var dir_8c65b503da15ddfa217ea827bbddedc7

Initial value:

```
=
[
    [ "include", "dir_b3f8b92e7ea1946157ca7a805e4d2267.html", "dir_b3f8b92e7ea1946157ca7a805e4d2267" ]
]
```

Definition at line 1 of file dir_8c65b503da15ddfa217ea827bbddedc7.js.

30.709 doc/html/dir_8dcf46dfbb2e2ca3d570ad71ab7f5984.js File Reference

Variables

- var dir_8dcf46dfbb2e2ca3d570ad71ab7f5984

30.709.1 Variable Documentation

30.709.1.1 var dir_8dcf46dfbb2e2ca3d570ad71ab7f5984

Initial value:

```
=
[
    [ "HeTriang.cpp", "_he_triang_8cpp.html", null ]
]
```

Definition at line 1 of file dir_8dcf46dfbb2e2ca3d570ad71ab7f5984.js.

30.710 doc/html/dir_90fbe926ef93e71fdbf5723e062c9da4.js File Reference

Variables

- var dir_90fbe926ef93e71fdbf5723e062c9da4

30.710.1 Variable Documentation

30.710.1.1 var dir_90fbe926ef93e71fdbf5723e062c9da4

Definition at line 1 of file dir_90fbe926ef93e71fdbf5723e062c9da4.js.

30.711 doc/html/dir_981871de7611ee7a54f2d0f3790a0f82.js File Reference

Variables

- var dir_981871de7611ee7a54f2d0f3790a0f82

30.711.1 Variable Documentation

30.711.1.1 var dir_981871de7611ee7a54f2d0f3790a0f82

Initial value:

```
=
[
    [ "GoTools", "dir_85c45df6158cba585b9d394ec2ca8ba6.html", "dir_85c45df6158cba585b9d394ec2ca8ba6" ]
]
```

Definition at line 1 of file dir_981871de7611ee7a54f2d0f3790a0f82.js.

30.712 doc/html/dir_99c721c896ff1c980c5b18b3dcbaff94.js File Reference

Variables

- var dir_99c721c896ff1c980c5b18b3dcbaff94

30.712.1 Variable Documentation

30.712.1.1 var dir_99c721c896ff1c980c5b18b3dcbaff94

Initial value:

```
=
[
    [ "GoReadWrite.cpp", "_go_read_write_8cpp.html", "_go_read_write_8cpp" ]
]
```

Definition at line 1 of file dir_99c721c896ff1c980c5b18b3dcbaff94.js.

30.713 doc/html/dir_9df88d95c92a16255dc1e6f9b3433e60.js File Reference

Variables

- var dir_9df88d95c92a16255dc1e6f9b3433e60

30.713.1 Variable Documentation

30.713.1.1 var dir_9df88d95c92a16255dc1e6f9b3433e60

Definition at line 1 of file dir_9df88d95c92a16255dc1e6f9b3433e60.js.

30.714 doc/html/dir_9e6bb4020941d0be38bb0d27bbe7cccb.js File Reference

Variables

- var dir_9e6bb4020941d0be38bb0d27bbe7cccb

30.714.1 Variable Documentation

30.714.1.1 var dir_9e6bb4020941d0be38bb0d27bbe7cccb

Initial value:

```
=
[
    [ "aux2.cpp", "aux2_8cpp.html", "aux2_8cpp" ],
    [ "gl_aux.cpp", "gl__aux_8cpp.html", "gl__aux_8cpp" ],
    [ "glutils.cpp", "glutils_8cpp.html", "glutils_8cpp" ],
    [ "mouse.cpp", "mouse_8cpp.html", "mouse_8cpp" ],
    [ "sisl_aux.cpp", "sisl__aux_8cpp.html", "sisl__aux_8cpp" ],
    [ "transfutils.cpp", "transfutils_8cpp.html", "transfutils_8cpp" ]
]
```

Definition at line 1 of file dir_9e6bb4020941d0be38bb0d27bbe7cccb.js.

30.715 doc/html/dir_9e7f8af3df212ec4d479463341bb72a6.js File Reference

Variables

- var dir_9e7f8af3df212ec4d479463341bb72a6

30.715.1 Variable Documentation

30.715.1.1 var dir_9e7f8af3df212ec4d479463341bb72a6

Initial value:

```
=
[
    [ "GoTools", "dir_b07f39590aec0282ad5866778d6f956e.html", "dir_b07f39590aec0282ad5866778d6f956e" ]
]
```

Definition at line 1 of file dir_9e7f8af3df212ec4d479463341bb72a6.js.

30.716 doc/html/dir_a0fa69fab3be50a1b4c8c4ebaca5098c.js File Reference

Variables

- var dir_a0fa69fab3be50a1b4c8c4ebaca5098c

30.716.1 Variable Documentation

30.716.1.1 var dir_a0fa69fab3be50a1b4c8c4ebaca5098c

Initial value:

```
=
[
    [ "include", "dir_442358e1b75f159df2b4b10f68cb6669.html", "dir_442358e1b75f159df2b4b10f68cb6669" ],
    [ "src", "dir_9e6bb4020941d0be38bb0d27bbe7cccb.html", "dir_9e6bb4020941d0be38bb0d27bbe7cccb" ],
    [ "sisl_view_demo.cpp", "sisl__view__demo_8cpp.html", "sisl__view__demo_8cpp" ]
]
```

Definition at line 1 of file dir_a0fa69fab3be50a1b4c8c4ebaca5098c.js.

30.717 doc/html/dir_a39cd4dcd495fe456e1f661046bd5530.js File Reference

Variables

- var dir_a39cd4dcd495fe456e1f661046bd5530

30.717.1 Variable Documentation

30.717.1.1 var dir_a39cd4dcd495fe456e1f661046bd5530

Definition at line 1 of file dir_a39cd4dcd495fe456e1f661046bd5530.js.

30.718 doc/html/dir_a537b1e5a645cb4471f6768545d20c2b.js File Reference

Variables

- var dir_a537b1e5a645cb4471f6768545d20c2b

30.718.1 Variable Documentation

30.718.1.1 var dir_a537b1e5a645cb4471f6768545d20c2b

Initial value:

```
=
[
    [ "GoTools", "dir_0015c891e2eac5fd9e489e846b834700.html", "dir_0015c891e2eac5fd9e489e846b834700" ]
]
```

Definition at line 1 of file dir_a537b1e5a645cb4471f6768545d20c2b.js.

30.719 doc/html/dir_a6eceec081e9e6ebaf06ff4a52c078f1.js File Reference

Variables

- var dir_a6eceec081e9e6ebaf06ff4a52c078f1

30.719.1 Variable Documentation

30.719.1.1 var dir_a6eceec081e9e6ebaf06ff4a52c078f1

Initial value:

```
=
[
    [ "DataHandlerVolAndLR.h", "_data_handler_vol_and_l_r_8h.html", [
      [ "DataHandlerVolAndLR", "class_data_handler_vol_and_l_r.html", "class_data_handler_vol_and_l_r" ]
    ] ],
    [ "gvApplicationVolAndLR.h", "gv_application_vol_and_l_r_8h.html", [
      [ "gvApplicationVolAndLR", "classgv_application_vol_and_l_r.html", "classgv_application_vol_and_l_r"
      ]
    ] ],
    [ "gvRectangularVolumePaintable.h", "gv_rectangular_volume_paintable_8h.html", [
      [ "gvRectangularVolumePaintable", "classgv_rectangular_volume_paintable.html", "
      classgv_rectangular_volume_paintable" ]
    ] ],
    [ "RectangularVolumePropertySheet.h", "_rectangular_volume_property_sheet_8h.html", [
      [ "RectangularVolumePropertySheet", "class_rectangular_volume_property_sheet.html", "
      class_rectangular_volume_property_sheet" ]
    ] ]
]
```

Definition at line 1 of file dir_a6eceec081e9e6ebaf06ff4a52c078f1.js.

30.720 doc/html/dir_a702eb1d615fc8e494327e00bfd64e2d.js File Reference

Variables

- var dir_a702eb1d615fc8e494327e00bfd64e2d

30.720.1 Variable Documentation

30.720.1.1 var dir_a702eb1d615fc8e494327e00bfd64e2d

Initial value:

```
=
[
    [ "trivariate", "dir_26434c1759c56a49292c328c033e76d7.html", "dir_26434c1759c56a49292c328c033e76d7" ]
]
```

Definition at line 1 of file dir_a702eb1d615fc8e494327e00bfd64e2d.js.

30.721 doc/html/dir_ab08e349df88865f421593b417138732.js File Reference

Variables

- var dir_ab08e349df88865f421593b417138732

30.721.1 Variable Documentation

30.721.1.1 var dir_ab08e349df88865f421593b417138732

Initial value:

```
=
[
    [ "parametrization", "dir_3cd14e887b3be1bb0699a0f4b9d7471b.html", "dir_3cd14e887b3be1bb0699a0f4b9d7471b
      " ]
]
```

Definition at line 1 of file dir_ab08e349df88865f421593b417138732.js.

30.722 doc/html/dir_b07f39590aec0282ad5866778d6f956e.js File Reference

Variables

- var dir_b07f39590aec0282ad5866778d6f956e

30.722.1 Variable Documentation

30.722.1.1 var dir_b07f39590aec0282ad5866778d6f956e

Initial value:

```
=
[
    [ "isogeometric_model", "dir_e98c7b4edc7740dfc859667cd423ef3f.html", "
      dir_e98c7b4edc7740dfc859667cd423ef3f" ]
]
```

Definition at line 1 of file dir_b07f39590aec0282ad5866778d6f956e.js.

30.723 doc/html/dir_b168ed9c8c05331b63ad454a11f635f2.js File Reference

Variables

- var dir_b168ed9c8c05331b63ad454a11f635f2

30.723.1 Variable Documentation

30.723.1.1 var dir_b168ed9c8c05331b63ad454a11f635f2

Initial value:

```
=
[
    [ "examples", "dir_cfbe617369797e2c088f7718a7b296e4.html", "dir_cfbe617369797e2c088f7718a7b296e4" ],
    [ "include", "dir_e3e0722e0dd9c71678af19110aeec8f8.html", "dir_e3e0722e0dd9c71678af19110aeec8f8" ],
    [ "src", "dir_54c0807dc9dc58401cdf98175b301107.html", "dir_54c0807dc9dc58401cdf98175b301107" ]
]
```

Definition at line 1 of file dir_b168ed9c8c05331b63ad454a11f635f2.js.

30.724 doc/html/dir_b28ca551f00416d098dfb2d5d86cb85e.js File Reference

Variables

- var dir_b28ca551f00416d098dfb2d5d86cb85e

30.724.1 Variable Documentation

30.724.1.1 var dir_b28ca551f00416d098dfb2d5d86cb85e

Initial value:

```
=
[
    [ "lrsplines2D", "dir_9df88d95c92a16255dc1e6f9b3433e60.html", "dir_9df88d95c92a16255dc1e6f9b3433e60" ]
]
```

Definition at line 1 of file dir_b28ca551f00416d098dfb2d5d86cb85e.js.

30.725 doc/html/dir_b3f8b92e7ea1946157ca7a805e4d2267.js File Reference

Variables

- var dir_b3f8b92e7ea1946157ca7a805e4d2267

30.725.1 Variable Documentation

30.725.1.1 var dir_b3f8b92e7ea1946157ca7a805e4d2267

Initial value:

```
=
[
    [ "GoTools", "dir_2ea40cee675de4bd87b06c9233dde18b.html", "dir_2ea40cee675de4bd87b06c9233dde18b" ]
]
```

Definition at line 1 of file dir_b3f8b92e7ea1946157ca7a805e4d2267.js.

30.726 doc/html/dir_bf6a253d933d2fc523d4a21708f60d86.js File Reference

Variables

- var dir_bf6a253d933d2fc523d4a21708f60d86

30.726.1 Variable Documentation

30.726.1.1 var dir_bf6a253d933d2fc523d4a21708f60d86

Initial value:

```
=
[
    [ "compositemodel", "dir_28d725a1074140e3875acd99df863a9a.html", "dir_28d725a1074140e3875acd99df863a9a"
       ]
]
```

Definition at line 1 of file dir_bf6a253d933d2fc523d4a21708f60d86.js.

30.727 doc/html/dir_ce2be4821eafb03cec507f192e45eceb.js File Reference

Variables

- var dir_ce2be4821eafb03cec507f192e45eceb

30.727.1 Variable Documentation

30.727.1.1 var dir_ce2be4821eafb03cec507f192e45eceb

Initial value:

```
=
[
    [ "implicitization", "dir_f2bf6ebad7a5cab5a643ce43ec016ae9.html", "dir_f2bf6ebad7a5cab5a643ce43ec016ae9
      " ]
]
```

Definition at line 1 of file dir_ce2be4821eafb03cec507f192e45eceb.js.

30.728 doc/html/dir_ceb2d94ff415c9faa44cf694ce53cd4a.js File Reference

Variables

- var dir_ceb2d94ff415c9faa44cf694ce53cd4a

30.728.1 Variable Documentation

30.728.1.1 var dir_ceb2d94ff415c9faa44cf694ce53cd4a

Initial value:

```
=
[
    [ "GoTools", "dir_bf6a253d933d2fc523d4a21708f60d86.html", "dir_bf6a253d933d2fc523d4a21708f60d86" ]
]
```

Definition at line 1 of file dir_ceb2d94ff415c9faa44cf694ce53cd4a.js.

30.729 doc/html/dir_cfbe617369797e2c088f7718a7b296e4.js File Reference

Variables

- var dir_cfbe617369797e2c088f7718a7b296e4

30.729.1 Variable Documentation

30.729.1.1 var dir_cfbe617369797e2c088f7718a7b296e4

Initial value:

```
=
[
    [ "streaming", "dir_dcc2523c85224d60248ee4ee7462cfa8.html", "dir_dcc2523c85224d60248ee4ee7462cfa8" ],
    [ "viewer", "dir_a0fa69fab3be50a1b4c8c4ebaca5098c.html", "dir_a0fa69fab3be50a1b4c8c4ebaca5098c" ],
    [ "example01.cpp", "example01_8cpp.html", "example01_8cpp" ],
    [ "example02.cpp", "example02_8cpp.html", "example02_8cpp" ],
    [ "example03.cpp", "example03_8cpp.html", "example03_8cpp" ],
    [ "example04.cpp", "example04_8cpp.html", "example04_8cpp" ],
    [ "example05.cpp", "example05_8cpp.html", "example05_8cpp" ],
    [ "example06.cpp", "example06_8cpp.html", "example06_8cpp" ],
    [ "example07.cpp", "example07_8cpp.html", "example07_8cpp" ],
    [ "example08.cpp", "example08_8cpp.html", "example08_8cpp" ],
    [ "example09.cpp", "example09_8cpp.html", "example09_8cpp" ],
    [ "example10.cpp", "example10_8cpp.html", "example10_8cpp" ],
    [ "example11.cpp", "example11_8cpp.html", "example11_8cpp" ],
    [ "example12.cpp", "example12_8cpp.html", "example12_8cpp" ],
    [ "example13.cpp", "example13_8cpp.html", "example13_8cpp" ],
    [ "example14.cpp", "example14_8cpp.html", "example14_8cpp" ],
    [ "example15.cpp", "example15_8cpp.html", "example15_8cpp" ]
]
```

Definition at line 1 of file dir_cfbe617369797e2c088f7718a7b296e4.js.

30.730 doc/html/dir_d3b744872420378775da279872820ed2.js File Reference

Variables

- var dir_d3b744872420378775da279872820ed2

30.730.1 Variable Documentation

30.730.1.1 var dir_d3b744872420378775da279872820ed2

Initial value:

```
=
[
    [ "include", "dir_981871de7611ee7a54f2d0f3790a0f82.html", "dir_981871de7611ee7a54f2d0f3790a0f82" ]
]
```

Definition at line 1 of file dir_d3b744872420378775da279872820ed2.js.

30.731 doc/html/dir_d3d5f8ee42e1e2dc7017f3f7157ca5bc.js File Reference

Variables

- var dir_d3d5f8ee42e1e2dc7017f3f7157ca5bc

30.731.1 Variable Documentation

30.731.1.1 var dir_d3d5f8ee42e1e2dc7017f3f7157ca5bc

Definition at line 1 of file dir_d3d5f8ee42e1e2dc7017f3f7157ca5bc.js.

30.732 doc/html/dir_dcc2523c85224d60248ee4ee7462cfa8.js File Reference

Variables

- var dir_dcc2523c85224d60248ee4ee7462cfa8

30.732.1 Variable Documentation

30.732.1.1 var dir_dcc2523c85224d60248ee4ee7462cfa8

Initial value:

```
=
[
    [ "include", "dir_1c9e4414cb2b8eb9526a3aa2069941f8.html", "dir_1c9e4414cb2b8eb9526a3aa2069941f8" ],
    [ "src", "dir_99c721c896ff1c980c5b18b3dcbaff94.html", "dir_99c721c896ff1c980c5b18b3dcbaff94" ]
]
```

Definition at line 1 of file dir_dcc2523c85224d60248ee4ee7462cfa8.js.

30.733 doc/html/dir_e2ef5fb48cb01c9435f4dadc81bf7eab.js File Reference

Variables

- var dir_e2ef5fb48cb01c9435f4dadc81bf7eab

30.733.1 Variable Documentation

30.733.1.1 var dir_e2ef5fb48cb01c9435f4dadc81bf7eab

Initial value:

```
=
[
    [ "include", "dir_6a9f218ac24eb7b754dc250ffd508dae.html", "dir_6a9f218ac24eb7b754dc250ffd508dae" ]
]
```

Definition at line 1 of file dir_e2ef5fb48cb01c9435f4dadc81bf7eab.js.

30.734 doc/html/dir_e3e0722e0dd9c71678af19110aeec8f8.js File Reference

Variables

- var dir_e3e0722e0dd9c71678af19110aeec8f8

30.734.1 Variable Documentation

30.734.1.1 var dir_e3e0722e0dd9c71678af19110aeec8f8

Initial value:

```
=
[
    [ "sisl-copyright.h", "sisl-copyright_8h.html", null ],
    [ "sisl.h", "sisl_8h.html", "sisl_8h" ],
    [ "sislP.h", "sisl_p_8h.html", "sisl_p_8h" ]
]
```

Definition at line 1 of file dir_e3e0722e0dd9c71678af19110aeec8f8.js.

30.735 doc/html/dir_e66b996f8b4be0681f8e9eb9869a3079.js File Reference

Variables

- var dir_e66b996f8b4be0681f8e9eb9869a3079

30.735.1 Variable Documentation

30.735.1.1 var dir_e66b996f8b4be0681f8e9eb9869a3079

Initial value:

```
=
[
    [ "hesimplest", "dir_6917c6a4538152e6852497b387e02df2.html", "dir_6917c6a4538152e6852497b387e02df2" ]
]
```

Definition at line 1 of file dir_e66b996f8b4be0681f8e9eb9869a3079.js.

30.736 doc/html/dir_e846bdbb82b84d132cb98df96cb07bf0.js File Reference

Variables

- var dir_e846bdbb82b84d132cb98df96cb07bf0

30.736.1 Variable Documentation

30.736.1.1 var dir_e846bdbb82b84d132cb98df96cb07bf0

Initial value:

```
=
[
    [ "HandleId.cpp", "_handle_id_8cpp.html", null ]
]
```

Definition at line 1 of file dir_e846bdbb82b84d132cb98df96cb07bf0.js.

30.737 doc/html/dir_e98c7b4edc7740dfc859667cd423ef3f.js File Reference

Variables

- var dir_e98c7b4edc7740dfc859667cd423ef3f

30.737.1 Variable Documentation

30.737.1.1 var dir_e98c7b4edc7740dfc859667cd423ef3f

Definition at line 1 of file dir_e98c7b4edc7740dfc859667cd423ef3f.js.

30.738 doc/html/dir_eb531be94dc3f2da4c4acbfa84e0e7dc.js File Reference

Variables

- var dir_eb531be94dc3f2da4c4acbfa84e0e7dc

30.738.1 Variable Documentation

30.738.1.1 var dir_eb531be94dc3f2da4c4acbfa84e0e7dc

Initial value:

```
=
[
    [ "GoTools", "dir_4ed957b398f8a342f35e202c6dbeff82.html", "dir_4ed957b398f8a342f35e202c6dbeff82" ]
]
```

Definition at line 1 of file dir_eb531be94dc3f2da4c4acbfa84e0e7dc.js.

30.739 doc/html/dir_f2117bb2bb20a60155ae701cb86e7351.js File Reference

Variables

- var dir_f2117bb2bb20a60155ae701cb86e7351

30.739.1 Variable Documentation

30.739.1.1 var dir_f2117bb2bb20a60155ae701cb86e7351

Initial value:

```
=
[
    [ "examples", "dir_e66b996f8b4be0681f8e9eb9869a3079.html", "dir_e66b996f8b4be0681f8e9eb9869a3079" ],
    [ "include", "dir_764e20a7fa93cafa3199ac45b6e6b986.html", "dir_764e20a7fa93cafa3199ac45b6e6b986" ],
    [ "src", "dir_6958061072da6881959e38b0a737a4c6.html", "dir_6958061072da6881959e38b0a737a4c6" ]
]
```

Definition at line 1 of file dir_f2117bb2bb20a60155ae701cb86e7351.js.

30.740 doc/html/dir_f2bf6ebad7a5cab5a643ce43ec016ae9.js File Reference

Variables

- var dir_f2bf6ebad7a5cab5a643ce43ec016ae9

30.740.1 Variable Documentation

30.740.1.1 var dir_f2bf6ebad7a5cab5a643ce43ec016ae9

Initial value:

```
=
[
    [ "BernsteinMulti.h", "_bernstein_multi_8h.html", "_bernstein_multi_8h" ],
    [ "BernsteinPoly.h", "_bernstein_poly_8h.html", "_bernstein_poly_8h" ],
    [ "BernsteinTetrahedralPoly.h", "_bernstein_tetrahedral_poly_8h.html", "_bernstein_tetrahedral_poly_8h"
      ],
    [ "BernsteinTriangularPoly.h", "_bernstein_triangular_poly_8h.html", "_bernstein_triangular_poly_8h" ],
    [ "BernsteinUtils.h", "_bernstein_utils_8h.html", "_bernstein_utils_8h" ],
    [ "BezierTriangle.h", "_bezier_triangle_8h.html", "_bezier_triangle_8h" ],
    [ "Binomial.h", "_binomial_8h.html", [
      [ "Binomial", "class_go_1_1_binomial.html", "class_go_1_1_binomial" ]
    ] ],
    [ "GpuMatrix.hpp", "_gpu_matrix_8hpp.html", [
      [ "GpuMatrix", "class_go_1_1_gpu_matrix.html", "class_go_1_1_gpu_matrix" ]
    ] ],
    [ "implicitization-doxymain.h", "implicitization-doxymain_8h.html", null ],
    [ "ImplicitizeCurveAlgo.h", "_implicitize_curve_algo_8h.html", [
      [ "ImplicitizeCurveAlgo", "class_go_1_1_implicitize_curve_algo.html", "
      class_go_1_1_implicitize_curve_algo" ]
    ] ],
    [ "ImplicitizeCurveAndVectorAlgo.h", "_implicitize_curve_and_vector_algo_8h.html", [
      [ "ImplicitizeCurveAndVectorAlgo", "class_go_1_1_implicitize_curve_and_vector_algo.html", "
      class_go_1_1_implicitize_curve_and_vector_algo" ]
    ] ],
    [ "ImplicitizePointCloudAlgo.h", "_implicitize_point_cloud_algo_8h.html", [
      [ "ImplicitizePointCloudAlgo", "class_go_1_1_implicitize_point_cloud_algo.html", "
      class_go_1_1_implicitize_point_cloud_algo" ]
    ] ],
    [ "ImplicitizeSurfaceAlgo.h", "_implicitize_surface_algo_8h.html", [
      [ "ImplicitizeSurfaceAlgo", "class_go_1_1_implicitize_surface_algo.html", "
      class_go_1_1_implicitize_surface_algo" ]
    ] ],
    [ "ImplicitUtils.h", "_implicit_utils_8h.html", "_implicit_utils_8h" ]
]
```

Definition at line 1 of file dir_f2bf6ebad7a5cab5a643ce43ec016ae9.js.

30.741 doc/html/dir_f30d67bf21cfa80c94c2f56f2c05062d.js File Reference

Variables

- var dir_f30d67bf21cfa80c94c2f56f2c05062d

30.741.1 Variable Documentation

30.741.1.1 var dir_f30d67bf21cfa80c94c2f56f2c05062d

Initial value:

```
=
[
    [ "include", "dir_ceb2d94ff415c9faa44cf694ce53cd4a.html", "dir_ceb2d94ff415c9faa44cf694ce53cd4a" ]
]
```

Definition at line 1 of file dir_f30d67bf21cfa80c94c2f56f2c05062d.js.

30.742 doc/html/dir_ffa09c8575bbfbed340eb641d2e0178f.js File Reference

Variables

- var dir_ffa09c8575bbfbed340eb641d2e0178f

30.742.1 Variable Documentation

30.742.1.1 var dir_ffa09c8575bbfbed340eb641d2e0178f

Initial value:

```
=
[
    [ "creators", "dir_d3d5f8ee42e1e2dc7017f3f7157ca5bc.html", "dir_d3d5f8ee42e1e2dc7017f3f7157ca5bc" ],
    [ "geometry", "dir_2e9f58fed2f8cb33783712134eca6f54.html", "dir_2e9f58fed2f8cb33783712134eca6f54" ],
    [ "tesselator", "dir_a39cd4dcd495fe456e1f661046bd5530.html", "dir_a39cd4dcd495fe456e1f661046bd5530" ],
    [ "utils", "dir_69009d91722e8158a6e1821a3d198fd0.html", "dir_69009d91722e8158a6e1821a3d198fd0" ]
]
```

Definition at line 1 of file dir_ffa09c8575bbfbed340eb641d2e0178f.js.

30.743 doc/html/dynsections.js File Reference

Functions

- function toggleVisibility (linkObj)
- function updateStripes ()
- function toggleLevel (level)
- function toggleFolder (id)
- function toggleInherit (id)

30.743.1 Function Documentation

30.743.1.1 function toggleFolder (*id*)

Definition at line 49 of file dynsections.js.

30.743.1.2 function toggleInherit (*id*)

Definition at line 84 of file dynsections.js.

30.743.1.3 function toggleLevel (*level*)

Definition at line 28 of file dynsections.js.

30.743.1.4 function toggleVisibility (*linkObj*)

Definition at line 1 of file dynsections.js.

30.743.1.5 function updateStripes ( )

Definition at line 22 of file dynsections.js.

30.744 doc/html/errormacros_8h.js File Reference

Variables

- var errormacros_8h

30.744.1 Variable Documentation

30.744.1.1 var errormacros_8h

Initial value:

```
=
[
    [ "ALWAYS_ERROR_IF", "errormacros_8h.html#a86611c37e530eb06c9b077fed130b2dc", null ],
    [ "ASSERT", "errormacros_8h.html#a0966b817b229d48e5ffc7feab19a0be6", null ],
    [ "ASSERT2", "errormacros_8h.html#ad81384ed0233964bf967b981016d2081", null ],
    [ "DEBUG_ERROR_IF", "errormacros_8h.html#ad369e2a5e24adc64ecb0e600750372f5", null ],
    [ "GO_NO_CHECKS", "errormacros_8h.html#a827eef1c7aa36edd20c48299b46e9fce", null ],
    [ "MESSAGE", "errormacros_8h.html#a73d1a3db252b0e93921262ab0cb92210", null ],
    [ "MESSAGE_IF", "errormacros_8h.html#ad17bdc9b890075ed493b6707fd3d4916", null ],
    [ "REPORT", "errormacros_8h.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "THROW", "errormacros_8h.html#a27264efd631c4f584ddcb2f5888ae6ed", null ]
]
```

Definition at line 1 of file errormacros_8h.js.

30.745 doc/html/ev__cv__off_8c.js File Reference

Variables

- var ev__cv__off_8c

30.745.1 Variable Documentation

30.745.1.1 var ev__cv__off_8c

Initial value:

```
=
[
    [ "EV_CV_OFF", "ev__cv__off_8c.html#af570ffd133e823ba65e4594bbba6e69a", null ],
    [ "ev_cv_off", "ev__cv__off_8c.html#a917a316dd26a3899e617cf7974927fd6", null ]
]
```

Definition at line 1 of file ev__cv__off_8c.js.

30.746 doc/html/eval__2__crv_8c.js File Reference

Variables

- var eval__2__crv_8c

30.746.1 Variable Documentation

30.746.1.1 var eval__2__crv_8c

Initial value:

```
=
[
    [ "EVAL_2_CRV", "eval__2__crv_8c.html#ae21399dc6a70f8168d0e3926598430cc", null ],
    [ "eval_2_crv", "eval__2__crv_8c.html#ace3f80122e830126d213152daaf589e2", null ]
]
```

Definition at line 1 of file eval__2__crv_8c.js.

30.747 doc/html/evalcrvarc_8c.js File Reference

Variables

- var evalcrvarc_8c

30.747.1 Variable Documentation

30.747.1.1 var evalcrvarc_8c

Initial value:

```
=
[
    [ "EVAL_CRV_ARC", "evalcrvarc_8c.html#a8c6fa6c95e08223f26bb7f9a6ba8eecc", null ],
    [ "eval_crv_arc", "evalcrvarc_8c.html#a8aeb4956698363bcde3e6f4d94164bd8", null ]
]
```

Definition at line 1 of file evalcrvarc_8c.js.

30.748 doc/html/evalue_8cpp.js File Reference

Variables

- var evalue_8cpp

30.748.1 Variable Documentation

30.748.1.1 var evalue_8cpp

Initial value:

```
=
[
    [ "REPORT", "evalue_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "evalue_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "EigenValues", "evalue_8cpp.html#a95ab9a4434fa780d21f7710c569fe0a2", null ],
    [ "EigenValues", "evalue_8cpp.html#a29e2963671b3510e0b5018d79f06e049", null ],
    [ "EigenValues", "evalue_8cpp.html#abe74f036daba16f89e0e75bf18542f6a", null ]
]
```

Definition at line 1 of file evalue_8cpp.js.

30.749 doc/html/example01_8cpp.js File Reference

Variables

- var example01_8cpp

30.749.1 Variable Documentation

30.749.1.1 var example01_8cpp

Initial value:

```
=
[
    [ "main", "example01_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example01_8cpp.js.

30.750 doc/html/example02_8cpp.js File Reference

Variables

- var example02_8cpp

30.750.1 Variable Documentation

30.750.1.1 var example02_8cpp

Initial value:

```
=
[
    [ "main", "example02_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example02_8cpp.js.

30.751 doc/html/example03_8cpp.js File Reference

Variables

- var example03_8cpp

30.751.1 Variable Documentation

30.751.1.1 var example03_8cpp

Initial value:

```
=
[
    [ "main", "example03_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example03_8cpp.js.

30.752 doc/html/example04_8cpp.js File Reference

Variables

- var example04_8cpp

30.752.1 Variable Documentation

30.752.1.1 var example04_8cpp

Initial value:

```
=
[
    [ "main", "example04_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example04_8cpp.js.

30.753 doc/html/example05_8cpp.js File Reference

Variables

- var example05_8cpp

30.753.1 Variable Documentation

30.753.1.1 var example05_8cpp

Initial value:

```
=
[
    [ "main", "example05_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example05_8cpp.js.

30.754 doc/html/example06_8cpp.js File Reference

Variables

- var example06_8cpp

30.754.1 Variable Documentation

30.754.1.1 var example06_8cpp

Initial value:

```
=
[
    [ "main", "example06_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example06_8cpp.js.

30.755 doc/html/example07_8cpp.js File Reference

Variables

- var example07_8cpp

30.755.1 Variable Documentation

30.755.1.1 var example07_8cpp

Initial value:

```
=
[
    [ "main", "example07_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example07_8cpp.js.

30.756 doc/html/example08_8cpp.js File Reference

Variables

- var example08_8cpp

30.756.1 Variable Documentation

30.756.1.1 var example08_8cpp

Initial value:

```
=
[
    [ "main", "example08_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example08_8cpp.js.

30.757 doc/html/example09_8cpp.js File Reference

Variables

- var example09_8cpp

30.757.1 Variable Documentation

30.757.1.1 var example09_8cpp

Initial value:

```
=
[
    [ "main", "example09_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example09_8cpp.js.

30.758 doc/html/example10_8cpp.js File Reference

Variables

- var example10_8cpp

30.758.1 Variable Documentation

30.758.1.1 var example10_8cpp

Initial value:

```
=
[
    [ "main", "example10_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example10_8cpp.js.

30.759 doc/html/example11_8cpp.js File Reference

Variables

- var example11_8cpp

30.759.1 Variable Documentation

30.759.1.1 var example11_8cpp

Initial value:

```
=
[
    [ "main", "example11_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example11_8cpp.js.

30.760 doc/html/example12_8cpp.js File Reference

Variables

- var example12_8cpp

30.760.1 Variable Documentation

30.760.1.1 var example12_8cpp

Initial value:

```
=
[
    [ "main", "example12_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example12_8cpp.js.

30.761 doc/html/example13_8cpp.js File Reference

Variables

- var example13_8cpp

30.761.1 Variable Documentation

30.761.1.1 var example13_8cpp

Initial value:

```
=
[
    [ "main", "example13_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example13_8cpp.js.

30.762 doc/html/example14_8cpp.js File Reference

Variables

- var example14_8cpp

30.762.1 Variable Documentation

30.762.1.1 var example14_8cpp

Initial value:

```
=
[
    [ "main", "example14_8cpp.html#a8a6028caf5642454245a766ab66990f7", null ]
]
```

Definition at line 1 of file example14_8cpp.js.

30.763 doc/html/example15_8cpp.js File Reference

Variables

- var example15_8cpp

30.763.1 Variable Documentation

30.763.1.1 var example15_8cpp

Initial value:

```
=
[
    [ "main", "example15_8cpp.html#adb598a5dc855499911128c370ce738bf", null ]
]
```

Definition at line 1 of file example15_8cpp.js.

30.764 doc/html/example_8cpp.js File Reference

Variables

- var example_8cpp

30.764.1 Variable Documentation

30.764.1.1 var example_8cpp

Initial value:

```
=
[
    [ "WANT_MATH", "example_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "WANT_STREAM", "example_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "main", "example_8cpp.html#ae66f6b31b5ad750f1fe042a706a4e3d4", null ],
    [ "test1", "example_8cpp.html#ac0697ad85fb379446222fcc2df02c778", null ],
    [ "test2", "example_8cpp.html#ac7865afb3b9f6d710b1df18e501c94d6", null ],
    [ "test3", "example_8cpp.html#a727a32bdd7e2491824ca4acd62be9b1a", null ],
    [ "test4", "example_8cpp.html#acd897830273f9673b3894e831ceb3423", null ],
    [ "test5", "example_8cpp.html#aad4ba83ae697b892cf4711aa7170c1f3", null ]
]
```

Definition at line 1 of file example_8cpp.js.

30.765 doc/html/examples.js File Reference

Variables

- var examples

30.765.1 Variable Documentation

30.765.1.1 var examples

Definition at line 1 of file examples.js.

30.766 doc/html/extremal_pt_surf_surf_8h.js File Reference

Variables

- var extremal_pt_surf_surf_8h

30.766.1 Variable Documentation

30.766.1.1 var extremal_pt_surf_surf_8h

Initial value:

```
=
[
    [ "extremalPtSurfSurf", "extremal_pt_surf_surf_8h.html#af3dc8bb230bbfc10dbb46175d10f1923", null ]
]
```

Definition at line 1 of file extremal_pt_surf_surf_8h.js.

30.767 doc/html/fft_8cpp.js File Reference

Variables

- var fft_8cpp

30.767.1 Variable Documentation

30.767.1.1 var fft_8cpp

Initial value:

```
=
[
    [ "REPORT", "fft_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "fft_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "DCT", "fft_8cpp.html#a924dff49d847f7fc827760a9adad7f75", null ],
    [ "DCT_II", "fft_8cpp.html#a51ac1b5cbac7a28127244a633cf77a76", null ],
    [ "DCT_II_inverse", "fft_8cpp.html#a9ebdbefe2d3e834b8961236e19393ecf", null ],
    [ "DCT_inverse", "fft_8cpp.html#aea0007d2d616102dc268a5e232e561a2", null ],
    [ "DST", "fft_8cpp.html#aef32720ef2218fd3bb3490a495a6bcf1", null ],
    [ "DST_II", "fft_8cpp.html#aa95d1a1c29ea05fa5e92337428741e33", null ],
    [ "DST_II_inverse", "fft_8cpp.html#a981f7302c951d712b9f43a1ec329ec88", null ],
    [ "DST_inverse", "fft_8cpp.html#a41f17823e96fff24b8d786ab9bfcb010", null ],
    [ "FFT", "fft_8cpp.html#a52ecc4818418779fbd2d2e134625ec7d", null ],
    [ "FFTI", "fft_8cpp.html#a5ea0edd00363abc20801d57f602fd2ec", null ],
    [ "RealFFT", "fft_8cpp.html#a361917bfded54fc546c81866013fea1f", null ],
    [ "RealFFTI", "fft_8cpp.html#a8dbcb6ee1b476fd11097415fa7cdab8b", null ]
]
```

Definition at line 1 of file fft_8cpp.js.

30.768 doc/html/files.js File Reference

Variables

- var files

30.768.1 Variable Documentation

30.768.1.1 var files

Initial value:

```
=
[
    [ "compositemodel", "dir_f30d67bf21cfa80c94c2f56f2c05062d.html", "dir_f30d67bf21cfa80c94c2f56f2c05062d"
      ],
    [ "gotools-core", "dir_1ce88f9178ec82ce3d3b5366984a4a76.html", "dir_1ce88f9178ec82ce3d3b5366984a4a76" ]
    ,
    [ "igeslib", "dir_61c47cbd77726dc04327162bb82f2acf.html", "dir_61c47cbd77726dc04327162bb82f2acf" ],
    [ "implicitization", "dir_e2ef5fb48cb01c9435f4dadc81bf7eab.html", "dir_e2ef5fb48cb01c9435f4dadc81bf7eab
    " ],
    [ "intersections", "dir_8c65b503da15ddfa217ea827bbddedc7.html", "dir_8c65b503da15ddfa217ea827bbddedc7"
    ],
    [ "isogeometric_model", "dir_662c58e926d5c8a2e92c3a0efd184e27.html", "
    dir_662c58e926d5c8a2e92c3a0efd184e27" ],
    [ "lrsplines2D", "dir_3b29025e4f1a16d99c0ac7281d29a749.html", "dir_3b29025e4f1a16d99c0ac7281d29a749" ],
```

```
    [ "newmat", "dir_79b3003bf1bdb319185970350806bf23.html", "dir_79b3003bf1bdb319185970350806bf23" ],
    [ "parametrization", "dir_7b91ef4997e28bdb148c447548446353.html", "dir_7b91ef4997e28bdb148c447548446353
      " ],
    [ "qualitymodule", "dir_d3b744872420378775da279872820ed2.html", "dir_d3b744872420378775da279872820ed2"
      ],
    [ "sisl", "dir_b168ed9c8c05331b63ad454a11f635f2.html", "dir_b168ed9c8c05331b63ad454a11f635f2" ],
    [ "topology", "dir_84497794bb37d283dbd68163bed8ef05.html", "dir_84497794bb37d283dbd68163bed8ef05" ],
    [ "trivariate", "dir_44eb60e2f3e103c46810fc3a6f6f0b38.html", "dir_44eb60e2f3e103c46810fc3a6f6f0b38" ],
    [ "trivariatemodel", "dir_37bdf26acb6f0e99095c72f4b261057d.html", "dir_37bdf26acb6f0e99095c72f4b261057d
      " ],
    [ "ttl", "dir_f2117bb2bb20a60155ae701cb86e7351.html", "dir_f2117bb2bb20a60155ae701cb86e7351" ],
    [ "viewlib", "dir_0df052b1ef5b53594ca9be5a6074277d.html", "dir_0df052b1ef5b53594ca9be5a6074277d" ]
]
```

Definition at line 1 of file files.js.

30.769 doc/html/ft_curve_8h.js File Reference

Variables

- var ft_curve_8h

30.769.1 Variable Documentation

30.769.1.1 var ft_curve_8h

Initial value:

```
=
[
    [ "ftCurveSegment", "class_go_1_1ft_curve_segment.html", "class_go_1_1ft_curve_segment" ],
    [ "ftCurve", "class_go_1_1ft_curve.html", "class_go_1_1ft_curve" ],
    [ "ftCurveType", "ft_curve_8h.html#ad80c2d41480925fa1892bb443097b4ae", [
      [ "CURVE_NOTYPE", "
      ft_curve_8h.html#ad80c2d41480925fa1892bb443097b4aea4850f0595a3d416eb47b55ba12e986e4", null ],
      [ "CURVE_INTERSECTION", "
      ft_curve_8h.html#ad80c2d41480925fa1892bb443097b4aea94ea0bee5fcf96f724ff261c3cdc4ccb", null ],
      [ "CURVE_EDGE", "ft_curve_8h.html#ad80c2d41480925fa1892bb443097b4aea28b19a1936ae927688022ac26774ddff"
      , null ],
      [ "CURVE_KINK", "ft_curve_8h.html#ad80c2d41480925fa1892bb443097b4aea4773147fa5a7f77b4e4a250df95c06ae"
      , null ],
      [ "CURVE_CORNER", "
      ft_curve_8h.html#ad80c2d41480925fa1892bb443097b4aea011c2d5cf25aad8b7744dcff45ac6b91", null ],
      [ "CURVE_GAP", "ft_curve_8h.html#ad80c2d41480925fa1892bb443097b4aeaa5907ce2e3b120df73671542a0fe02e4",
       null ],
      [ "CURVE_SINGULAR", "
      ft_curve_8h.html#ad80c2d41480925fa1892bb443097b4aea4af8e9b72a6a995ed4727f54d8527482", null ]
    ] ]
]
```

Definition at line 1 of file ft_curve_8h.js.

30.770 doc/html/ft_message_8h.js File Reference

Variables

- var ft_message_8h

30.770.1 Variable Documentation

30.770.1.1 var ft_message_8h

Definition at line 1 of file ft_message_8h.js.

30.771 doc/html/ft_planar_graph_8h.js File Reference

Variables

- var ft_planar_graph_8h

30.771.1 Variable Documentation

30.771.1.1 var ft_planar_graph_8h

Initial value:

```
=
[
    [ "ftGraphEdge", "class_go_1_1ft_graph_edge.html", "class_go_1_1ft_graph_edge" ],
    [ "ftSearchNode", "class_go_1_1ft_search_node.html", "class_go_1_1ft_search_node" ],
    [ "ftPlanarGraph", "class_go_1_1ft_planar_graph.html", "class_go_1_1ft_planar_graph" ],
    [ "GraphIter", "ft_planar_graph_8h.html#a428f052620c22896093395bb8d6ddcae", null ],
    [ "areaTriangle", "ft_planar_graph_8h.html#aff2c4a14aaf8dd923abf7d70102acbaf", null ]
]
```

Definition at line 1 of file ft_planar_graph_8h.js.

30.772 doc/html/ft_point_set_8h.js File Reference

Variables

- var ft_point_set_8h

30.772.1 Variable Documentation

30.772.1.1 var ft_point_set_8h

Initial value:

```
=
[
    [ "ftSamplePoint", "class_go_1_1ft_sample_point.html", "class_go_1_1ft_sample_point" ],
    [ "ftPointSet", "class_go_1_1ft_point_set.html", "class_go_1_1ft_point_set" ],
    [ "PointIter", "ft_point_set_8h.html#a7f84dc87fe8867d883bf99185910011b", null ],
    [ "PointList", "ft_point_set_8h.html#aa8698132dc8666f88d17eb50e8458d17", null ]
]
```

Definition at line 1 of file ft_point_set_8h.js.

30.773 doc/html/ft_surface_set_8h.js File Reference

Variables

- var ft_surface_set_8h

30.773.1 Variable Documentation

30.773.1.1 var ft_surface_set_8h

Initial value:

```
=
[
    [ "ftSurfaceSet", "class_go_1_1ft_surface_set.html", "class_go_1_1ft_surface_set" ],
    [ "BoundaryPiece", "ft_surface_set_8h.html#a5ffb8f679caa5a03117315a175a828b5", null ]
]
```

Definition at line 1 of file ft_surface_set_8h.js.

30.774 doc/html/ft_tang_priority_8h.js File Reference

Variables

- var ft_tang_priority_8h

30.774.1 Variable Documentation

30.774.1.1 var ft_tang_priority_8h

Initial value:

```
=
[
    [ "ftTangPriority", "ft_tang_priority_8h.html#ab182c80bd5555f4f7adee434150ede71", [
      [ "ftNoType", "
      ft_tang_priority_8h.html#ab182c80bd5555f4f7adee434150ede71a2b7e041553fb5fe69125d28c24f4a9b0", null ],
      [ "ftMaster", "
      ft_tang_priority_8h.html#ab182c80bd5555f4f7adee434150ede71ad68002a44b2c93dc9d1381ff22e13b46", null ],
      [ "ftSlave", "
      ft_tang_priority_8h.html#ab182c80bd5555f4f7adee434150ede71a0bd29cf0d5cfaff4ab70c8afbbc85f08", null ]
    ] ]
]
```

Definition at line 1 of file ft_tang_priority_8h.js.

30.775 doc/html/ft_volume_tools_8h.js File Reference

Variables

- var ft_volume_tools_8h

30.775.1 Variable Documentation

30.775.1.1 var ft_volume_tools_8h

Initial value:

```
=
[
    [ "boundaryStatus", "ft_volume_tools_8h.html#ac4c77cfdf11a0139070fa0c274ac2479", null ],
    [ "splitVolumes", "ft_volume_tools_8h.html#a1150e611f3e4cbbf1db852a6b8269cb9", null ],
    [ "splitVolumes", "ft_volume_tools_8h.html#a54a673f3473edb627a41ce607b668580", null ],
    [ "updateWithSplitFaces", "ft_volume_tools_8h.html#a193f33a893de6a1b26896a18d890579a", null ]
]
```

Definition at line 1 of file ft_volume_tools_8h.js.

30.776 doc/html/functions_dup.js File Reference

Variables

- var functions_dup

30.776.1 Variable Documentation

30.776.1.1 var functions_dup

Initial value:

```
=
[
    [ "a", "functions.html", null ],
    [ "b", "functions_b.html", null ],
    [ "c", "functions_c.html", null ],
    [ "d", "functions_d.html", null ],
    [ "e", "functions_e.html", null ],
    [ "f", "functions_f.html", null ],
    [ "g", "functions_g.html", null ],
    [ "h", "functions_h.html", null ],
    [ "i", "functions_i.html", null ],
    [ "j", "functions_j.html", null ],
    [ "k", "functions_k.html", null ],
    [ "l", "functions_l.html", null ],
    [ "m", "functions_m.html", null ],
    [ "n", "functions_n.html", null ],
    [ "o", "functions_o.html", null ],
    [ "p", "functions_p.html", null ],
    [ "q", "functions_q.html", null ],
    [ "r", "functions_r.html", null ],
    [ "s", "functions_s.html", null ],
    [ "t", "functions_t.html", null ],
    [ "u", "functions_u.html", null ],
    [ "v", "functions_v.html", null ],
    [ "w", "functions_w.html", null ],
    [ "x", "functions_x.html", null ],
    [ "y", "functions_y.html", null ],
    [ "z", "functions_z.html", null ],
    [ "~", "functions_0x7e.html", null ]
]
```

Definition at line 1 of file functions_dup.js.

30.777 doc/html/functions_func.js File Reference

Variables

- var functions_func

30.777.1 Variable Documentation

30.777.1.1 var functions_func

Initial value:

```
=
[
    [ "a", "functions_func.html", null ],
    [ "b", "functions_func_b.html", null ],
    [ "c", "functions_func_c.html", null ],
    [ "d", "functions_func_d.html", null ],
    [ "e", "functions_func_e.html", null ],
    [ "f", "functions_func_f.html", null ],
    [ "g", "functions_func_g.html", null ],
    [ "h", "functions_func_h.html", null ],
    [ "i", "functions_func_i.html", null ],
    [ "j", "functions_func_j.html", null ],
    [ "k", "functions_func_k.html", null ],
    [ "l", "functions_func_l.html", null ],
    [ "m", "functions_func_m.html", null ],
    [ "n", "functions_func_n.html", null ],
    [ "o", "functions_func_o.html", null ],
    [ "p", "functions_func_p.html", null ],
    [ "q", "functions_func_q.html", null ],
    [ "r", "functions_func_r.html", null ],
    [ "s", "functions_func_s.html", null ],
    [ "t", "functions_func_t.html", null ],
    [ "u", "functions_func_u.html", null ],
    [ "v", "functions_func_v.html", null ],
    [ "w", "functions_func_w.html", null ],
    [ "x", "functions_func_x.html", null ],
    [ "y", "functions_func_y.html", null ],
    [ "z", "functions_func_z.html", null ],
    [ "~", "functions_func_0x7e.html", null ]
]
```

Definition at line 1 of file functions_func.js.

30.778 doc/html/functions_vars.js File Reference

Variables

- var functions_vars

30.778.1 Variable Documentation

30.778.1.1 var functions_vars

Initial value:

```
=
[
    [ "a", "functions_vars.html", null ],
    [ "b", "functions_vars_b.html", null ],
    [ "c", "functions_vars_c.html", null ],
    [ "d", "functions_vars_d.html", null ],
    [ "e", "functions_vars_e.html", null ],
    [ "f", "functions_vars_f.html", null ],
    [ "g", "functions_vars_g.html", null ],
    [ "h", "functions_vars_h.html", null ],
    [ "i", "functions_vars_i.html", null ],
    [ "j", "functions_vars_j.html", null ],
    [ "k", "functions_vars_k.html", null ],
    [ "l", "functions_vars_l.html", null ],
    [ "m", "functions_vars_m.html", null ],
    [ "n", "functions_vars_n.html", null ],
    [ "o", "functions_vars_o.html", null ],
    [ "p", "functions_vars_p.html", null ],
    [ "q", "functions_vars_q.html", null ],
    [ "r", "functions_vars_r.html", null ],
    [ "s", "functions_vars_s.html", null ],
    [ "t", "functions_vars_t.html", null ],
    [ "u", "functions_vars_u.html", null ],
    [ "v", "functions_vars_v.html", null ],
    [ "w", "functions_vars_w.html", null ],
    [ "x", "functions_vars_x.html", null ],
    [ "y", "functions_vars_y.html", null ],
    [ "z", "functions_vars_z.html", null ]
]
```

Definition at line 1 of file functions_vars.js.

30.779 doc/html/garch_8cpp.js File Reference

Variables

- var garch_8cpp

30.779.1 Variable Documentation

30.779.1.1 var garch_8cpp

Initial value:

```
=
[
    [ "GARCH11_LL", "class_g_a_r_c_h11___l_l.html", "class_g_a_r_c_h11___l_l" ],
    [ "WANT_FSTREAM", "garch_8cpp.html#a37d625862c54954e237886ad4bb5e75f", null ],
    [ "WANT_MATH", "garch_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "WANT_STREAM", "garch_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "main", "garch_8cpp.html#ae66f6b31b5ad750f1fe042a706a4e3d4", null ],
    [ "square", "garch_8cpp.html#ae0c42a7620957500708a95cbb31e4260", null ]
]
```

Definition at line 1 of file garch_8cpp.js.

30.780 doc/html/generic__graph__algorithms_8h.js File Reference

Variables

- var generic__graph__algorithms_8h

30.780.1 Variable Documentation

30.780.1.1 var generic__graph__algorithms_8h

Initial value:

```
=
[
    [ "get_fundamental_cycle_set", "generic__graph__algorithms_8h.html#a00083edbeaa34fef2850f154badedf51",
      null ],
    [ "get_fundamental_cycle_set", "generic__graph__algorithms_8h.html#ad67d17b9bad9725acf6c310416d333b2",
      null ],
    [ "get_individual_paths", "generic__graph__algorithms_8h.html#a40855b300f757c224478a917bb94d658", null
      ],
    [ "is_path_connected", "generic__graph__algorithms_8h.html#ac110501fae3c10bf52cc0d51cfffb248", null ]
]
```

Definition at line 1 of file generic__graph__algorithms_8h.js.

30.781 doc/html/generic__graph__algorithms__implementation_8h.js File Reference

Variables

- var generic__graph__algorithms__implementation_8h

30.781.1 Variable Documentation

30.781.1.1 var generic__graph__algorithms__implementation_8h

Initial value:

```
=
[
    [ "NodeStatus", "generic__graph__algorithms__implementation_8h.html#a8c61272fccb797a8d283bb4ac2d86cdd",
       null ],
    [ "get_fundamental_cycle_set", "
      generic__graph__algorithms__implementation_8h.html#a00083edbeaa34fef2850f154badedf51", null ],
    [ "get_fundamental_cycle_set", "
      generic__graph__algorithms__implementation_8h.html#ad67d17b9bad9725acf6c310416d333b2", null ],
    [ "get_individual_paths", "
      generic__graph__algorithms__implementation_8h.html#a40855b300f757c224478a917bb94d658", null ],
    [ "is_path_connected", "
      generic__graph__algorithms__implementation_8h.html#ac110501fae3c10bf52cc0d51cfffb248", null ]
]
```

Definition at line 1 of file generic__graph__algorithms__implementation_8h.js.

30.782 doc/html/gl__aux_8cpp.js File Reference

Variables

- var gl__aux_8cpp

30.782.1 Variable Documentation

30.782.1.1 var gl__aux_8cpp

Initial value:

```
=
[
    [ "PI", "gl__aux_8cpp.html#a598a3330b3c21701223ee0ca14316eca", null ],
    [ "draw_cylinder", "gl__aux_8cpp.html#abf07a538d2deb9fa6232d6b9d5391754", null ],
    [ "draw_gl_axes_old", "gl__aux_8cpp.html#a4336edca7a1084abe30270885cfac6e1", null ],
    [ "draw_grid", "gl__aux_8cpp.html#acacfc5a44871d8cd00cd16d5cb4be51e", null ],
    [ "draw_grid_planes", "gl__aux_8cpp.html#a526dbe1b746c6923dde13931872950f5", null ],
    [ "gl_init", "gl__aux_8cpp.html#ab8f4b1a1bce1b460a5185c8e50f7c24e", null ],
    [ "print_gl_matrix", "gl__aux_8cpp.html#a95a6dbe79fb7644dc0deebd1ede245a5", null ],
    [ "read_gl_matrices", "gl__aux_8cpp.html#aabb2eae1c53cf1b829442db5524cd900", null ],
    [ "reshape_window", "gl__aux_8cpp.html#a73b6df8ac67794cf1ad91f18c71c4a87", null ],
    [ "transpose_matrix", "gl__aux_8cpp.html#a7528be4278105e7567474f17bb263734", null ],
    [ "write_gl_matrices", "gl__aux_8cpp.html#a9f517cb0717bfbc7c4374fb1fad9a450", null ],
    [ "predef_col_table", "gl__aux_8cpp.html#ad52c28cb5bb2182ef58d64f931b81ca3", null ],
    [ "predefined_colours", "gl__aux_8cpp.html#a26c538147e66a3fb949847b33ee2d816", null ]
]
```

Definition at line 1 of file gl__aux_8cpp.js.

30.783 doc/html/gl__aux_8h.js File Reference

Variables

- var gl__aux_8h

30.783.1 Variable Documentation

30.783.1.1 var gl__aux_8h

Initial value:

```
=
[
    [ "material_appearance", "classmaterial__appearance.html", "classmaterial__appearance" ],
    [ "draw_cylinder", "gl__aux_8h.html#abf07a538d2deb9fa6232d6b9d5391754", null ],
    [ "draw_gl_axes_old", "gl__aux_8h.html#ad53e20c22f9b7f20514b852b10f7f51e", null ],
    [ "draw_grid", "gl__aux_8h.html#acacfc5a44871d8cd00cd16d5cb4be51e", null ],
    [ "draw_grid_planes", "gl__aux_8h.html#a526dbe1b746c6923dde13931872950f5", null ],
    [ "gl_init", "gl__aux_8h.html#af380a369c4aff5af718acdcf16159c72", null ],
    [ "print_gl_matrix", "gl__aux_8h.html#a95a6dbe79fb7644dc0deebd1ede245a5", null ],
    [ "read_gl_matrices", "gl__aux_8h.html#aabb2eae1c53cf1b829442db5524cd900", null ],
    [ "reshape_window", "gl__aux_8h.html#a73b6df8ac67794cf1ad91f18c71c4a87", null ],
    [ "write_gl_matrices", "gl__aux_8h.html#a9f517cb0717bfbc7c4374fb1fad9a450", null ],
    [ "col_setting_back", "gl__aux_8h.html#a431343a72dcf7229c56c2caaaa5df39b", null ],
    [ "col_setting_back_old", "gl__aux_8h.html#aca5809b494e89c6e481127d73239df96", null ],
    [ "predef_col_table", "gl__aux_8h.html#a65f053d21104a990cb14d130bb91a033", null ],
    [ "predefined_colours", "gl__aux_8h.html#a26c538147e66a3fb949847b33ee2d816", null ]
]
```

Definition at line 1 of file gl__aux_8h.js.

30.784 doc/html/globals_defs.js File Reference

Variables

- var globals_defs

30.784.1 Variable Documentation

30.784.1.1 var globals_defs

Initial value:

```
=
[
    [ "_", "globals_defs.html", null ],
    [ "a", "globals_defs_a.html", null ],
    [ "b", "globals_defs_b.html", null ],
    [ "c", "globals_defs_c.html", null ],
    [ "d", "globals_defs_d.html", null ],
    [ "e", "globals_defs_e.html", null ],
    [ "f", "globals_defs_f.html", null ],
    [ "g", "globals_defs_g.html", null ],
    [ "h", "globals_defs_h.html", null ],
    [ "i", "globals_defs_i.html", null ],
    [ "m", "globals_defs_m.html", null ],
    [ "n", "globals_defs_n.html", null ],
    [ "p", "globals_defs_p.html", null ],
    [ "r", "globals_defs_r.html", null ],
    [ "s", "globals_defs_s.html", null ],
    [ "t", "globals_defs_t.html", null ],
    [ "u", "globals_defs_u.html", null ],
    [ "v", "globals_defs_v.html", null ],
    [ "w", "globals_defs_w.html", null ]
]
```

Definition at line 1 of file globals_defs.js.

30.785 doc/html/globals_dup.js File Reference

Variables

- var globals_dup

30.785.1 Variable Documentation

30.785.1.1 var globals_dup

Initial value:

```
=
[
    [ "_", "globals.html", null ],
    [ "a", "globals_a.html", null ],
    [ "b", "globals_b.html", null ],
    [ "c", "globals_c.html", null ],
    [ "d", "globals_d.html", null ],
    [ "e", "globals_e.html", null ],
    [ "f", "globals_f.html", null ],
    [ "g", "globals_g.html", null ],
    [ "h", "globals_h.html", null ],
    [ "i", "globals_i.html", null ],
    [ "j", "globals_j.html", null ],
    [ "k", "globals_k.html", null ],
    [ "l", "globals_l.html", null ],
    [ "m", "globals_m.html", null ],
    [ "n", "globals_n.html", null ],
    [ "o", "globals_o.html", null ],
    [ "p", "globals_p.html", null ],
    [ "q", "globals_q.html", null ],
    [ "r", "globals_r.html", null ],
    [ "s", "globals_s.html", null ],
    [ "t", "globals_t.html", null ],
    [ "u", "globals_u.html", null ],
    [ "v", "globals_v.html", null ],
    [ "w", "globals_w.html", null ],
    [ "x", "globals_x.html", null ],
    [ "y", "globals_y.html", null ],
    [ "z", "globals_z.html", null ]
]
```

Definition at line 1 of file globals_dup.js.

30.786 doc/html/globals_func.js File Reference

Variables

- var globals_func

30.786.1 Variable Documentation

30.786.1.1 var globals_func

Initial value:

```
=
[
    [ "a", "globals_func.html", null ],
    [ "b", "globals_func_b.html", null ],
    [ "c", "globals_func_c.html", null ],
    [ "d", "globals_func_d.html", null ],
    [ "e", "globals_func_e.html", null ],
    [ "f", "globals_func_f.html", null ],
    [ "g", "globals_func_g.html", null ],
    [ "h", "globals_func_h.html", null ],
    [ "i", "globals_func_i.html", null ],
    [ "j", "globals_func_j.html", null ],
    [ "k", "globals_func_k.html", null ],
    [ "l", "globals_func_l.html", null ],
    [ "m", "globals_func_m.html", null ],
    [ "n", "globals_func_n.html", null ],
    [ "o", "globals_func_o.html", null ],
    [ "p", "globals_func_p.html", null ],
    [ "q", "globals_func_q.html", null ],
    [ "r", "globals_func_r.html", null ],
    [ "s", "globals_func_s.html", null ],
    [ "t", "globals_func_t.html", null ],
    [ "u", "globals_func_u.html", null ],
    [ "v", "globals_func_v.html", null ],
    [ "w", "globals_func_w.html", null ]
]
```

Definition at line 1 of file globals_func.js.

30.787 doc/html/glutils_8cpp.js File Reference

Variables

- var glutils_8cpp

30.787.1 Variable Documentation

30.787.1.1 var glutils_8cpp

Initial value:

```
=
[
    [ "M_PI", "glutils_8cpp.html#ae71449b1cc6e6250b91f539153a7a0d3", null ],
    [ "assert_gl_dummy_and_empty", "glutils_8cpp.html#a225fee730085969bbcf7799558a3deb6", null ],
    [ "assert_gl_m", "glutils_8cpp.html#a44ecc72ec49de6cf300fe76038fae5a6", null ],
    [ "draw_sphere", "glutils_8cpp.html#acf2f32d904c8fe28c46e5eaeaf13fb34", null ],
    [ "list_FBConfigs", "glutils_8cpp.html#af42ffe9d015401a84178981a9f99e18b", null ]
]
```

Definition at line 1 of file glutils_8cpp.js.

30.788 doc/html/glutils_8h.js File Reference

Variables

- var glutils_8h

30.788.1 Variable Documentation

30.788.1.1 var glutils_8h

Initial value:

```
=
[
    [ "ASSERT_GL", "glutils_8h.html#a9d7b8f8cdfadc51ff6f6207aeac37cc3", null ],
    [ "assert_gl", "glutils_8h.html#aa2089f5fc7da3d61a5780540796158d1", null ],
    [ "ASSERT_GL_DONT_EXIT", "glutils_8h.html#ac39bf0e6af8e87a0f9c6d202a81ea522", null ],
    [ "GLUTILS_H_INCLUDED", "glutils_8h.html#acd507b0c3c98dc8199ba953051d907ff", null ],
    [ "assert_gl_dummy_and_empty", "glutils_8h.html#a225fee730085969bbcf7799558a3deb6", null ],
    [ "assert_gl_m", "glutils_8h.html#a253d1e974110dd84bd9b73a5344253a8", null ],
    [ "draw_sphere", "glutils_8h.html#acf2f32d904c8fe28c46e5eaeaf13fb34", null ],
    [ "list_FBConfigs", "glutils_8h.html#af42ffe9d015401a84178981a9f99e18b", null ]
]
```

Definition at line 1 of file glutils_8h.js.

30.789 doc/html/gotools-core_2include_2_go_tools_2geometry_2copyright_8h.js File Reference

Variables

- var gotools_core_2include_2_go_tools_2geometry_2copyright_8h

30.789.1 Variable Documentation

30.789.1.1 var gotools_core_2include_2_go_tools_2geometry_2copyright_8h

Initial value:

```
=
[
    [ "_COPYRIGHT_H", "
      gotools-core_2include_2_go_tools_2geometry_2copyright_8h.html#abdfb6b142e6341a6d5e35b87ccbfab07", null ]
]
```

Definition at line 1 of file gotools-core_2include_2_go_tools_2geometry_2copyright_8h.js.

30.790 doc/html/group__rbd__common.js File Reference

Variables

- var group__rbd__common

30.790.1 Variable Documentation

30.790.1.1 var group__rbd__common

Initial value:

```
=
[
    [ "include.h", "include_8h.html", null ],
    [ "myexcept.h", "myexcept_8h.html", null ],
    [ "myexcept.cpp", "myexcept_8cpp.html", null ],
    [ "RBD_COMMON", "namespace_r_b_d___c_o_m_m_o_n.html", null ],
    [ "RBD_LIBRARIES", "namespace_r_b_d___l_i_b_r_a_r_i_e_s.html", null ],
    [ "ATandT", "group__rbd__common.html#gad1d2a32306b125d9045bbd215c45950e", null ],
    [ "bool_LIB", "group__rbd__common.html#gae034ee292f37bf7f1a5488c0afe12cfd", null ],
    [ "DEFAULT_HEADER", "group__rbd__common.html#ga17256595f49d7ecb94970a6f6113da0e", null ],
    [ "TypeDefException", "group__rbd__common.html#ga38f7e78dddca5ba5093f9e0b0a4051e5", null ],
    [ "use_namespace", "group__rbd__common.html#gac108aaae7094c39fa1cb4412c5c5369c", null ],
    [ "UseExceptions", "group__rbd__common.html#ga120be4c0912bac8cbefc71604f25a418", null ],
    [ "USING_DOUBLE", "group__rbd__common.html#ga70bcbf72f842cb5298e720110eb7b7e7", null ]
]
```

Definition at line 1 of file group__rbd__common.js.

30.791 doc/html/gv_application_8h.js File Reference

Variables

- var gv_application_8h

30.791.1 Variable Documentation

30.791.1.1 var gv_application_8h

Initial value:

```
=
[
    [ "gvApplication", "classgv_application.html", "classgv_application" ],
    [ "ColContainer", "gv_application_8h.html#a4fb71c3010e59d6637a56f27a1d9d57d", null ],
    [ "ObjContainer", "gv_application_8h.html#a930ed0f609554d54ba43b401b20d1f37", null ]
]
```

Definition at line 1 of file gv_application_8h.js.

30.792 doc/html/gv_parametric_surface_paintable_8h.js File Reference

Variables

- var gv_parametric_surface_paintable_8h

30.792.1 Variable Documentation

30.792.1.1 var gv_parametric_surface_paintable_8h

Initial value:

```
=
[
    [ "gvParametricSurfacePaintable", "classgv_parametric_surface_paintable.html", "
      classgv_parametric_surface_paintable" ],
    [ "genMesh", "gv_parametric_surface_paintable_8h.html#a97b8df4fe8839d115decc99c9eda4a35", null ]
]
```

Definition at line 1 of file gv_parametric_surface_paintable_8h.js.

30.793 doc/html/gv_standard_mouse_handler_8h.js File Reference

Variables

- var gv_standard_mouse_handler_8h

30.793.1 Variable Documentation

30.793.1.1 var gv_standard_mouse_handler_8h

Initial value:

```
=
[
    [ "gvStandardMouseHandler", "classgv_standard_mouse_handler.html", "classgv_standard_mouse_handler" ],
    [ "GV_STANDARD_MOUSEHANDLER_H_INCLUDED", "
      gv_standard_mouse_handler_8h.html#aa5025f5c2d9844b0d7b5775954a0b9a3", null ]
]
```

Definition at line 1 of file gv_standard_mouse_handler_8h.js.

30.794 doc/html/gv_texture_8h.js File Reference

Variables

- var gv_texture_8h

30.794.1 Variable Documentation

30.794.1.1 var gv_texture_8h

Initial value:

```
=
[
    [ "gvTexture", "classgv_texture.html", "classgv_texture" ],
    [ "EnvModeSet", "gv_texture_8h.html#abfb34fc206cb7e7d2ede80704c1fcc86", [
      [ "envDecal", "gv_texture_8h.html#abfb34fc206cb7e7d2ede80704c1fcc86ae9b27fa588bfa1b339103a8f9cd7d92d"
      , null ],
      [ "envReplace", "
      gv_texture_8h.html#abfb34fc206cb7e7d2ede80704c1fcc86a74718d64656d27245ca720852575e124", null ],
      [ "envModulate", "
      gv_texture_8h.html#abfb34fc206cb7e7d2ede80704c1fcc86a76402e7f3a9c65225ad37d3cd49ce1f3", null ],
      [ "envBlend", "gv_texture_8h.html#abfb34fc206cb7e7d2ede80704c1fcc86a66850f3a790c942c59dc2567c41cfebf"
      , null ]
    ] ],
    [ "MagFilterSet", "gv_texture_8h.html#abbb19582793c79e4ec8fe451f9e236e6", [
      [ "magNearest", "
      gv_texture_8h.html#abbb19582793c79e4ec8fe451f9e236e6a656ed1cddd73643821e62a1fdedc48b8", null ],
      [ "magLinear", "gv_texture_8h.html#abbb19582793c79e4ec8fe451f9e236e6abe6738841e17db775ec39e0479af16b8
      ", null ]
    ] ],
    [ "MinFilterSet", "gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2f", [
      [ "minNearest", "
      gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fa529132446a8de28d302618413fd64095", null ],
      [ "minLinear", "gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fa34564aeb9a54aec0ae6daa30d0ca5965
      ", null ],
      [ "minNearestMipmapNearest", "
      gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fa51d5f598d2c42800336631f9ca5d6b1f", null ],
      [ "minNearestMipmapLinear", "
      gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fae65a99cf93d997f52b3d3244e7e9e7a7", null ],
      [ "minLinearMipmapNearest", "
      gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fa8579243951c8b2cd902ef07b1c94f84c", null ],
      [ "minLinearMipmapLinear", "
      gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fa5bf26bc6347132e8118dc0eda75dd2c9", null ]
    ] ],
    [ "WrapModeSet", "gv_texture_8h.html#adee2e25c021585161c4cab1b6751d90d", [
      [ "wrapClamp", "gv_texture_8h.html#adee2e25c021585161c4cab1b6751d90da81991e50cc3280139282b93608fa871d
      ", null ],
      [ "wrapRepeat", "
      gv_texture_8h.html#adee2e25c021585161c4cab1b6751d90da0004245ea176bc058284f0652a8416e9", null ]
    ] ]
]
```

Definition at line 1 of file gv_texture_8h.js.

30.795 doc/html/gv_utilities_8h.js File Reference

Variables

- var gv_utilities_8h

30.795.1 Variable Documentation

30.795.1.1 var gv_utilities_8h

Initial value:

```
=
[
    [ "FLOAT_TYPE", "gv_utilities_8h.html#aa8546893c54ec8a7ec036925e52edee0", null ],
    [ "MATRIX3", "gv_utilities_8h.html#a5277c85f00358938e80963e1f28bd448", null ],
    [ "MATRIX4", "gv_utilities_8h.html#a17ca4103175777d99816160c68b070fc7", null ],
    [ "draw_cylinder", "gv_utilities_8h.html#abf07a538d2deb9fa6232d6b9d5391754", null ],
    [ "draw_gl_axes", "gv_utilities_8h.html#ad3e05c2e1ba69a3e8314f1ab819c114a", null ],
    [ "draw_gl_axes", "gv_utilities_8h.html#a5fc0d3129255fc8f9a14161e2d20d59b", null ],
    [ "m3_det", "gv_utilities_8h.html#a15f8dd61e74e6e8637e610a774df9607", null ],
    [ "m3_identity", "gv_utilities_8h.html#a6091a5b9ab587c9a4b692565e6e1d6c6", null ],
    [ "m3_inverse", "gv_utilities_8h.html#a3347b853ddaa80d8f92360e764b433e8", null ],
    [ "m4_det", "gv_utilities_8h.html#acdaa244d22eb4f9c9c0bda4b5d94e5b3", null ],
    [ "m4_inverse", "gv_utilities_8h.html#a708f7916c5b2c579c1096435f8f481f4", null ],
    [ "m4_submat", "gv_utilities_8h.html#a94b4064202801e77aa5bd9b975b37d0c", null ]
]
```

Definition at line 1 of file gv_utilities_8h.js.

30.796 doc/html/hholder_8cpp.js File Reference

Variables

- var hholder_8cpp

30.796.1 Variable Documentation

30.796.1.1 var hholder_8cpp

Initial value:

```
=
[
    [ "REPORT", "hholder_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "hholder_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "QRZ", "hholder_8cpp.html#abf43bc890b60a01fda0c7db9631bcf64", null ],
    [ "QRZ", "hholder_8cpp.html#a57d85feed3907075c9ad5d179793d7a9", null ],
    [ "QRZT", "hholder_8cpp.html#a259bc631fd14f593e155517ac22c4bf0", null ],
    [ "QRZT", "hholder_8cpp.html#a223f34bc8e3e034d4679388e0d57447f", null ],
    [ "square", "hholder_8cpp.html#ae0c42a7620957500708a95cbb31e4260", null ]
]
```

Definition at line 1 of file hholder_8cpp.js.

30.797 doc/html/hierarchy.js File Reference

Variables

- var hierarchy

30.797.1 Variable Documentation

30.797.1.1 var hierarchy

Definition at line 1 of file hierarchy.js.

30.798 doc/html/hp__s1880_8c.js File Reference

Variables

- var hp__s1880_8c

30.798.1 Variable Documentation

30.798.1.1 var hp__s1880_8c

Initial value:

```
=
[
    [ "HP_S1880", "hp__s1880_8c.html#ae6033f654b8655d58b42ee58d81bce23", null ],
    [ "hp_s1880", "hp__s1880_8c.html#afb95e042012b5d2b20a97b88fc8c53cb", null ]
]
```

Definition at line 1 of file hp__s1880_8c.js.

30.799 doc/html/igeslib__doxymain_8h.js File Reference

Variables

- var igeslib__doxymain_8h

30.799.1 Variable Documentation

30.799.1.1 var igeslib__doxymain_8h

Initial value:

```
=
[
    [ "_IGESLIB", "igeslib__doxymain_8h.html#aa60f7acaa57d814a1403f7bb16981c1d", null ]
]
```

Definition at line 1 of file igeslib__doxymain_8h.js.

30.800 doc/html/include_8h.js File Reference

Variables

- var include_8h

30.800.1 Variable Documentation

30.800.1.1 var include_8h

Initial value:

```
=
[
    [ "ATandT", "group__rbd__common.html#gad1d2a32306b125d9045bbd215c45950e", null ],
    [ "bool_LIB", "group__rbd__common.html#gae034ee292f37bf7f1a5488c0afe12cfd", null ],
    [ "DEFAULT_HEADER", "group__rbd__common.html#ga17256595f49d7ecb94970a6f6113da0e", null ],
    [ "TypeDefException", "group__rbd__common.html#ga38f7e78dddca5ba5093f9e0b0a4051e5", null ],
    [ "use_namespace", "group__rbd__common.html#gac108aaae7094c39fa1cb4412c5c5369c", null ],
    [ "UseExceptions", "group__rbd__common.html#ga120be4c0912bac8cbefc71604f25a418", null ],
    [ "USING_DOUBLE", "group__rbd__common.html#ga70bcbf72f842cb5298e720110eb7b7e7", null ],
    [ "long_Real", "include_8h.html#ab577ec287616d0a76ae90f9b579f43c1", null ],
    [ "Real", "include_8h.html#a221583c51910bd7c44613484867d36be", null ]
]
```

Definition at line 1 of file include_8h.js.

30.801 doc/html/intjoinper_8c.js File Reference

Variables

- var intjoinper_8c

30.801.1 Variable Documentation

30.801.1.1 var intjoinper_8c

Initial value:

```
=
[
    [ "INT_JOIN_PER", "intjoinper_8c.html#a029faabe83b1750e5eff0ca8c7005ae1", null ],
    [ "int_join_per", "intjoinper_8c.html#ab4e5654f7ea3cab7e1fddaa009fb0992", null ]
]
```

Definition at line 1 of file intjoinper_8c.js.

30.802 doc/html/jacobi_8cpp.js File Reference

Variables

- var jacobi_8cpp

30.802.1 Variable Documentation

30.802.1.1 var jacobi_8cpp

Initial value:

```
=
[
    [ "REPORT", "jacobi_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "jacobi_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "Jacobi", "jacobi_8cpp.html#ad370e3456b419cfe2eae25f2300fd5b1", null ],
    [ "Jacobi", "jacobi_8cpp.html#ac6a0bb5dfe7a0d639ce053deab66b033", null ],
    [ "Jacobi", "jacobi_8cpp.html#ac0814314484221101aa36eb519164b07", null ],
    [ "Jacobi", "jacobi_8cpp.html#a72a2a2c9c0238ab873dc056026fec97f", null ]
]
```

Definition at line 1 of file jacobi_8cpp.js.

30.803 doc/html/jquery.js File Reference

Functions

- b extend ({cssHooks:{opacity:{get:function(bw, bv){if(bv){var e=Z(bw,"opacity","opacity");return e===""?"1"↩ :e}else{return bw.style.opacity}}}}, cssNumber:{fillOpacity:true, fontWeight:true, lineHeight:true, opacity↩ :true, orphans:true, widows:true, zIndex:true, zoom:true}, cssProps:{"float":b.support.cssFloat?"css↩ Float":"styleFloat"}, style:function(bx, bw, bD, by){if(!bx||bx.nodeType===3||bx.nodeType===8||!bx.↩ style){return}var bB, bC, bz=b.camelCase(bw), bv=bx.style, bE=b.cssHooks[bz];bw=b.cssProps[bz]||bz;if(b↩ D!==L){bC=typeof bD;if(bC==="string"&&(bB=I.exec(bD))){bD=(+(bB[1]+1)*+bB[2])+parseFloat(b.css(bx, bw));bC="number"}if(bD==null||bC==="number"&&isNaN(bD)){return}if(bC==="number"&&!b.cssNumber[bz]){bD+="px"}if(!bE|| bE)||(bD=bE.set(bx, bD))!==L){try{bv[bw]=bD}catch(bA){}}}else{if(bE &&"get"in bE &&(bB=bE.get(bx, false, by))!==L){return bB}return bv[bw]}}, css:function(by, bx, bv){var bw, e;bx=b.camelCase(bx);e=b.css↩ Hooks[bx];bx=b.cssProps[bx]||bx;if(bx==="cssFloat"){bx="float"}if(e &&"get"in e &&(bw=e.get(by, true, bv))!==L){return bw}else{if(Z){return Z(by, bx)}}}, swap:function(bx, bw, by){var e={};for(var bv in bw){e[bv]=bx.style[bv];bx.style[bv]=bw[bv]}by.call(bx);for(bv in bw){bx.style[bv]=e[bv]}}})
- b each (["height","width"], function(bv, e){b.cssHooks[e]={get:function(by, bx, bw){var bz;if(bx){if(by.offset↩ Width!==0){return p(by, e, bw)}else{b.swap(by, a7, function(){bz=p(by, e, bw)})}return bz}}, set:function(bw, bx){if(bc.test(bx)){bx=parseFloat(bx);if(bx >=0){return bx+"px"}}else{return bx}}}})
- if (!b.support.opacity)
- b (function(){if(!b.support.reliableMarginRight){b.cssHooks.marginRight={get:function(bw, bv){var e;b.↩ swap(bw,{display:"inline-block"}, function(){if(bv){e=Z(bw,"margin-right","marginRight")}else{e=bw.style.↩ marginRight}});return e}}})
- if (av.defaultView &&av.defaultView.getComputedStyle)
- if (av.documentElement.currentStyle)
- function p (by, bw, bv)
- if (b.expr &&b.expr.filters)

Variables

- function bb
- function L {var av=bb.document,bu=bb.navigator,bl=bb.location
- var b
- var au =/opacity=([^)]*)/,z=/([A-Z]|^ms)/g,bc=/^-?\d+(?:px)?$/i,bn=/^-?\d/,l=/^([\-+])=([\-+.\de]+)/,a7={position:"absolute",visibility:"hidden",display:"block"},an=["Left","Right"],a1=["Top","Bottom"],Z,aI,aX
- b fn css =function(e,bv){if(arguments.length===2&&bv===L){return this}return b.access(this,e,bv,true,function(bx,bw,by){return by!==L?b.style(bx,bw,by):b.css(bx,bw)})}
- b curCSS =b.css
- Z =aI||aX
- var k =/%20/g
- var ap =/\[\]$/
- var bs =/\r?\n/g
- var bq =/#.*$/
- var aD =/^(.*?):[\t]*([^\r\n]*)\r?$/mg
- var aZ =/^(?:color|date|datetime|datetime-local|email|hidden|month|number|password|range|search|tel|text|time|url|week)$/i
- var aM =/^(?:about|app|app\-storage|.+\-extension|file|res|widget):$/
- var aQ =/^(?:GET|HEAD)$/
- var c

30.803.1 Function Documentation

30.803.1.1 b (function(){if(!b.support.reliableMarginRight){b.cssHooks.marginRight={get:function(bw, bv){var e;b.swap(bw,{display:"inline-block"}, function(){if(bv){e=Z(bw,"margin-right","marginRight")}else{e=bw.style.marginRight}});return e}}})

30.803.1.2 b each (function(bv, e){b.cssHooks[e]={get:function(by, bx, bw){var bz;if(bx){if(by.offsetWidth!==0){return p(by, e, bw)}else{b.swap(by, a7, function(){bz=p(by, e, bw)})}return bz}}, set:function(bw, bx){if(bc.test(bx)){bx=parseFloat(bx);if(bx >=0){return bx+"px"}}else{return bx}}})

30.803.1.3 b extend ({cssHooks:{opacity:{get:function(bw, bv){if(bv){var e=Z(bw,"opacity","opacity");return e===""?"1":e}else{return bw.style.opacity}}}}, cssNumber:{fillOpacity:true, fontWeight:true, lineHeight:true, opacity:true, orphans:true, widows:true, zIndex:true, zoom:true}, cssProps:{"float":b.support.cssFloat?"cssFloat":"styleFloat"}, style:function(bx, bw, bD, by){if(!bx||bx.nodeType===3||bx.nodeType===8||!bx.style){return}var bB, bC, bz=b.camelCase(bw), bv=bx.style, bE=b.cssHooks[bz];bw=b.cssProps[bz]||bz;if(bD!==L){bC=typeof bD;if(bC==="string"&&(bB=l.exec(bD))){bD=(+(bB[1]+1)*+bB[2])+parseFloat(b.css(bx, bw));bC="number"}if(bD==null||bC==="number"&&isNaN(bD)){return}if(bC==="number"&&!b.cssNumber[bz]){bD+="px"}if(!bE||!("set"in bE)||(bD=bE.set(bx, bD))!==L){try{bv[bw]=bD}catch(bA){}}}else{if(bE &&"get"in bE &&(bB=bE.get(bx, false, by))!==L){return bB}return bv[bw]}}, css:function(by, bx, bv){var bw, e;bx=b.camelCase(bx);e=b.cssHooks[bx];bx=b.cssProps[bx]||bx;if(bx==="cssFloat"){bx="float"}if(e &&"get"in e &&(bw=e.get(by, true, bv))!==L){return bw}else{if(Z){return Z(by, bx)}}}, swap:function(bx, bw, by){var e={};for(var bv in bw){e[bv]=bx.style[bv];bx.style[bv]=bw[bv]}by.call(bx);for(bv in bw){bx.style[bv]=e[bv]}}})

30.803.1.4 if (av.documentElement. *currentStyle*)

Definition at line 23 of file jquery.js.

30.803.1.5 if (av.defaultView &&av.defaultView. *getComputedStyle*)

Definition at line 23 of file jquery.js.

30.803.1.6 if (b.expr &&b.expr. *filters*)

Definition at line 23 of file jquery.js.

30.803.1.7 if (!b.support. *opacity*)

Definition at line 23 of file jquery.js.

30.803.1.8 function p (*by, bw, bv*)

Definition at line 23 of file jquery.js.

30.803.2 Variable Documentation

30.803.2.1 var aD =/^(.*?):[\t]*([^\r\n]*)\r?$/mg

Definition at line 23 of file jquery.js.

30.803.2.2 var aM =/^(?:about|app|app\-storage|.+\-extension|file|res|widget):$/

Definition at line 23 of file jquery.js.

30.803.2.3 var ap =/\[\]$/

Definition at line 23 of file jquery.js.

30.803.2.4 var aQ =/^(?:GET|HEAD)$/

Definition at line 23 of file jquery.js.

30.803.2.5 var au =/opacity=([^)]*)/,z=/([A-Z]|^ms)/g,bc=/^-?\d+(?:px)?$/i,bn=/^-?\d/,l=/^([\-+])=([\-+.\de]+)/,a7={position↩ :"absolute",visibility:"hidden",display:"block"},an=["Left","Right"],a1=["Top","Bottom"],Z,al,aX

Definition at line 23 of file jquery.js.

30.803.2.6 var aZ =/^(?:color|date|datetime|datetime-local|email|hidden|month|number|password|range|search|tel|text|time|url|week)$/i

Definition at line 23 of file jquery.js.

30.803.2.7 var b

Initial value:

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=(function(){var bF=function(b0,b1){return new bF.fn.init(b0,b1,bD)},bU=bb.jQuery,bH=
bb.$,bD,bY=/^(?:[^#<]*(<[\w\W]+>)[^>]*$|#([\w\-]*)$)/,bM=/\S/,bI=/^\s+/,bE=/\s+$/,bA=/^<(\w+)\s*\/?>(?:<
\/\1>)?$/,bN=/^[\],:{}\s]*$/,bW=/\\(?:["\\\/bfnrt]|u[0-9a-fA-F]{4})/g,bP=/"[^"\\\n\r]*"|true|false|null|-?\d
+(?:\.\d*)?(?:[eE][+\-]?\d+)?/g,bJ=/(?:^|:|,)(?:\s*\[)+/g,by=/(webkit)[ \/]([\w.]+)/,bR=/(opera)(?:.*version
)?[ \/]([\w.]+)/,bQ=/(msie) ([\w.]+)/,bS=/(mozilla)(?:.*? rv:([\w.]+))?/,bB=/-([a-z]|[0-9])/ig,bZ=/^-ms-/,bT
=function(b0,b1){return(b1+"").toUpperCase()},bX=bu.userAgent,bV,bC,e,bL=Object.prototype.toString,bG=Object
.prototype.hasOwnProperty,bz=Array.prototype.push,bK=Array.prototype.slice,bO=String.prototype.trim,bv=Array
.prototype.indexOf,bx={};bF.fn=bF.prototype={constructor:bF,init:function(b0,b4,b3){var b2,b5,b1,b6;if(!b0){
return this}if(b0.nodeType){this.context=this[0]=b0;this.length=1;return this}if(b0==="body"&&!b4&&av.body){
this.context=av;this[0]=av.body;this.selector=b0;this.length=1;return this}if(typeof b0==="string"){if(b0.
charAt(0)==="<"&&b0.charAt(b0.length-1)===">"&&b0.length>=3){b2=[null,b0,null]}else{b2=bY.exec(b0)}if(b2&&(b2[
1]||!b4)){if(b2[1]){b4=b4 instanceof bF?b4[0]:b4;b6=(b4?b4.ownerDocument||b4:av);b1=bA.exec(b0);if(b1){if(bF
.isPlainObject(b4)){b0=[av.createElement(b1[1])];bF.fn.attr.call(b0,b4,true)}else{b0=[b6.createElement(b1[1]
)]}}else{b1=bF.buildFragment([b2[1]],[b6]);b0=(b1.cacheable?bF.clone(b1.fragment):b1.fragment).childNodes}
return bF.merge(this,b0)}else{b5=av.getElementById(b2[2]);if(b5&&b5.parentNode){if(b5.id!==b2[2]){return b3.
find(b0)}this.length=1;this[0]=b5}this.context=av;this.selector=b0;return this}}else{if(!b4||b4.jquery){return
(b4||b3).find(b0)}else{return this.constructor(b4).find(b0)}}}else{if(bF.isFunction(b0)){return b3.ready(b0)
}}if(b0.selector!==L){this.selector=b0.selector;this.context=b0.context}return bF.makeArray(b0,this)},
selector:"",jquery:"1.7.1",length:0,size:function(){return this.length},toArray:function(){return bK.call(this,0)
},get:function(b0){return b0==null?this.toArray():(b0<0?this[this.length+b0]:this[b0])},pushStack:function(
b1,b3,b0){var b2=this.constructor();if(bF.isArray(b1)){bz.apply(b2,b1)}else{bF.merge(b2,b1)}b2.prevObject=
this;b2.context=this.context;if(b3==="find"){b2.selector=this.selector+(this.selector?" ":"")+b0}else{if(b3){b2
.selector=this.selector+"."+b3+"("+b0+")"}}return b2},each:function(b1,b0){return bF.each(this,b1,b0)},
ready:function(b0){bF.bindReady();bC.add(b0);return this},eq:function(b0){b0=+b0;return b0===-1?this.slice(b0
):this.slice(b0,b0+1)},first:function(){return this.eq(0)},last:function(){return this.eq(-1)},slice:
function(){return this.pushStack(bK.apply(this,arguments),"slice",bK.call(arguments).join(","))},map:function(b0){
return this.pushStack(bF.map(this,function(b2,b1){return b0.call(b2,b1,b2)}))},end:function(){return this.
prevObject||this.constructor(null)},push:bz,sort:[].sort,splice:[].splice};bF.fn.init.prototype=bF.fn;bF.extend
=bF.fn.extend=function(){var b9,b2,b0,b1,b6,b7,b5=arguments[0]||{},b4=1,b3=arguments.length,b8=false;if(
typeof b5==="boolean"){b8=b5;b5=arguments[1]||{};b4=2}if(typeof b5!=="object"&&!bF.isFunction(b5)){b5={}}if(b3==
=b4){b5=this;--b4}for(;b4<b3;b4++){if((b9=arguments[b4])!=null){for(b2 in b9){b0=b5[b2];b1=b9[b2];if(b5===b1
){continue}if(b8&&b1&&(bF.isPlainObject(b1)||(b6=bF.isArray(b1)))){if(b6){b6=false;b7=b0&&bF.isArray(b0)?b0:
[]}else{b7=b0&&bF.isPlainObject(b0)?b0:{}}b5[b2]=bF.extend(b8,b7,b1)}else{if(b1!==
L){b5[b2]=b1}}}}}return b5};bF.extend({noConflict:function(b0){if(bb.$===bF){
bb.$=bH}if(b0&&bb.jQuery===bF){bb.jQuery=bU}return bF},isReady:false,readyWait:1,holdReady:function(
b0){if(b0){bF.readyWait++}else{bF.ready(true)}},ready:function(b0){if((b0===true&&!--bF.readyWait)||(b0!==
true&&!bF.isReady)){if(!av.body){return setTimeout(bF.ready,1)}bF.isReady=true;if(b0!==true&&--bF.readyWait>0){
return}bC.fireWith(av,[bF]);if(bF.fn.trigger){bF(av).trigger("ready").off("ready")}}},bindReady:function(){
if(bC){return}bC=bF.Callbacks("once memory");if(av.readyState==="complete"){return setTimeout(bF.ready,1)}if(
av.addEventListener){av.addEventListener("DOMContentLoaded",e,false);bb.addEventListener("load",bF.ready,
false)}else{if(av.attachEvent){av.attachEvent("onreadystatechange",e);bb.attachEvent("onload",bF.ready);var
 b0=false;try{b0=bb.frameElement==null}catch(b1){}if(av.documentElement.doScroll&&b0){bw()}}}},isFunction:
function(b0){return bF.type(b0)==="function"},isArray:Array.isArray||function(b0){return bF.type(b0)==="
array"},isWindow:function(b0){return b0&&typeof b0==="object"&&"setInterval" in b0},isNumeric:function(b0){
return !isNaN(parseFloat(b0))&&isFinite(b0)},type:function(b0){return b0==null?String(b0):bx[bL.call(b0)]||"
object"},isPlainObject:function(b2){if(!b2||bF.type(b2)!=="object"||b2.nodeType||bF.isWindow(b2)){return false}
try{if(b2.constructor&&!bG.call(b2,"constructor")&&!bG.call(b2.constructor.prototype,"isPrototypeOf")){return
false}}catch(b1){return false}var b0;for(b0 in b2){}return b0===L||bG.call(b2,b0)},isEmptyObject:function(
b1){for(var b0 in b1){return false}return true},error:function(b0){throw new Error(b0)},parseJSON:function(b0
){if(typeof b0!=="string"||!b0){return null}b0=bF.trim(b0);if(bb.JSON&&bb.JSON.parse){return
bb.JSON.parse(b0)}if(bN.test(b0.replace(bW,"@").replace(bP,"]").replace(bJ,""))){return(new Function("
return "+b0))()}bF.error("Invalid JSON: "+b0)},parseXML:function(b2){var b0,b1;try{if(
bb.DOMParser){b1=new DOMParser();b0=b1.parseFromString(b2,"text/xml")}else{b0=new ActiveXObject("
Microsoft.XMLDOM");b0.async="false";b0.loadXML(b2)}}catch(b3){b0=L}if(!b0||!b0.documentElement||b0.
getElementsByTagName("parsererror").length){bF.error("Invalid XML: "+b2)}return b0},noop:function(){},globalEval:functi
){if(b0&&bM.test(b0)){(bb.execScript||function(b1){bb["eval"].call(bb,b1)})(b0)}},camelCase:function(
b0){return b0.replace(bZ,"ms-").replace(bB,bT)},nodeName:function(b1,b0){return b1.nodeName&&b1.nodeName.
toUpperCase()===b0.toUpperCase()},each:function(b3,b6,b2){var b1,b4=0,b5=b3.length,b0=b5===
L||bF.isFunction(b3);if(b2){if(b0){for(b1 in b3){if(b6.apply(b3[b1],b2)===false){break}}}else{for(;b4<b5;)
{if(b6.apply(b3[b4++],b2)===false){break}}}}else{if(b0){for(b1 in b3){if(b6.call(b3[b1],b1,b3[b1])===false){
break}}}else{for(;b4<b5;){if(b6.call(b3[b4],b4,b3[b4++])===false){break}}}}return b3},trim:bO?function(b0){
return b0==null?"":bO.call(b0)}:function(b0){return b0==null?"":b0.toString().replace(bI,"").replace(bE,"")},
makeArray:function(b3,b1){var b0=b1||[];if(b3!=null){var b2=bF.type(b3);if(b3.length==null||b2==="string"||
b2==="function"||b2==="regexp"||bF.isWindow(b3)){bz.call(b0,b3)}else{bF.merge(b0,b3)}}return b0},inArray:
function(b2,b3,b1){var b0;if(b3){if(bv){return bv.call(b3,b2,b1)}b0=b3.length;b1=b1?b1<0?Math.max(0,b0+b1):b1:0;
for(;b1<b0;b1++){if(b1 in b3&&b3[b1]===b2){return b1}}}return -1},merge:function(b4,b2){var b3=b4.length,b1=
0;if(typeof b2.length==="number"){for(var b0=b2.length;b1<b0;b1++){b4[b3++]=b2[b1]}}else{while(b2[b1]!==
L){b4[b3++]=b2[b1++]}}b4.length=b3;return b4},grep:function(b1,b6,b0){var b2=[],b5;b0=!!b0;for(var b3=0,b4
=b1.length;b3<b4;b3++){b5=!!b6(b1[b3],b3);if(b0!==b5){b2.push(b1[b3])}}return b2},map:function(b0,b7,b8){var
 b5,b6,b4=[],b2=0,b1=b0.length,b3=b0 instanceof bF||b1!==L&&typeof b1==="number"&&((b1>0&&b0[0]&&b0[b1-1])
||b1===0||bF.isArray(b0));if(b3){for(;b2<b1;b2++){b5=b7(b0[b2],b2,b8);if(b5!=null){b4[b4.length]=b5}}}else{
for(b6 in b0){b5=b7(b0[b6],b6,b8);if(b5!=null){b4[b4.length]=b5}}}return b4.concat.apply([],b4)},guid:1,proxy:
function(b4,b3){if(typeof b3==="string"){var b2=b4[b3];b3=b4;b4=b2}if(!bF.isFunction(b4)){return
L}var b0=bK.call(arguments,2),b1=function(){return b4.apply(b3,b0.concat(bK.call(arguments)))};b1.guid=b4.
guid=b4.guid||b1.guid||bF.guid++;return b1},access:function(b0,b8,b6,b2,b5,b7){var b1=b0.length;if(typeof b8
==="object"){for(var b3 in b8){bF.access(b0,b3,b8[b3],b2,b5,b6)}return b0}if(b6!==
L){b2=!b7&&b2&&bF.isFunction(b6);for(var b4=0;b4<b1;b4++){b5(b0[b4],b8,b2?b6.call(b0[b4],b4,b5(b0[b4],b8))
:b6,b7)}return b0}return b1?b5(b0[0],b8):L},now:function(){return(new Date()).getTime()},uaMatch:function(
b1){b1=b1.toLowerCase();var b0=by.exec(b1)||bR.exec(b1)||bQ.exec(b1)||b1.indexOf("compatible")<0&&bS.exec(b1)
||[];return{browser:b0[1]||"",version:b0[2]||"0"}},sub:function(){function b0(b3,b4){return new b0.fn.init(
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b3,b4)}bF.extend(true,b0,this);b0.superclass=this;b0.fn=b0.prototype=this();b0.fn.constructor=b0;b0.sub=this.
sub;b0.fn.init=function b2(b3,b4){if(b4&&b4 instanceof bF&&!(b4 instanceof b0)){b4=b0(b4)}return bF.fn.init.
call(this,b3,b4,b1)};b0.fn.init.prototype=b0.fn;var b1=b0(av);return b0},browser:{}});bF.each("Boolean
 Number String Function Array Date RegExp Object".split(" "),function(b1,b0){bx["[object "+b0+"]"]=b0.toLowerCase(
)});bV=bF.uaMatch(bX);if(bV.browser){bF.browser[bV.browser]=true;bF.browser.version=bV.version}if(bF.browser
.webkit){bF.browser.safari=true}if(bM.test("\xA0")){bI=/^[\s\xA0]+/;bE=/[\s\xA0]+$/}bD=bF(av);if(av.
addEventListener){e=function(){av.removeEventListener("DOMContentLoaded",e,false);bF.ready()}}else{if(av.attachEvent
){e=function(){if(av.readyState==="complete"){av.detachEvent("onreadystatechange",e);bF.ready()}}}}function
bw(){if(bF.isReady){return}try{av.documentElement.doScroll("left")}catch(b0){setTimeout(bw,1);return}bF.
ready()}return bF})();var a2={};function X(e){var bv=a2[e]={},bw,bx;e=e.split(/\s+/);for(bw=0,bx=e.length;bw<bx;
bw++){bv[e[bw]]=true}return bv}b.Callbacks=function(bw){bw=bw?(a2[bw]||X(bw)):{};var bB=[],bC=[],bx,by,bv,
bz,bA,bE=function(bF){var bG,bJ,bI,bH,bK;for(bG=0,bJ=bF.length;bG<bJ;bG++){bI=bF[bG];bH=
b.type(bI);if(bH==="array"){bE(bI)}else{if(bH==="function"){if(!bw.unique||!bD.has(bI)){bB.push(bI)}}}},e
=function(bG,bF){bF=bF||[];bx=!bw.memory||[bG,bF];by=true;bA=bv||0;bv=0;bz=bB.length;for(;bB&&bA<bz;bA++){if
(bB[bA].apply(bG,bF)===false&&bw.stopOnFalse){bx=true;break}}by=false;if(bB){if(!bw.once){if(bC&&bC.length){
bx=bC.shift();bD.fireWith(bx[0],bx[1])}}else{if(bx===true){bD.disable()}else{bB=[]}}},bD={add:function(){if
(bB){var bF=bB.length;bE(arguments);if(by){bz=bB.length}else{if(bx&&bx!==true){bv=bF;e(bx[0],bx[1])}}}return
 this},remove:function(){if(bB){var bF=arguments,bH=0,bI=bF.length;for(;bH<bI;bH++){for(var bG=0;bG<bB.
length;bG++){if(bF[bH]===bB[bG]){if(by){if(bG<=bz){bz--;if(bG<=bA){bA--}}}bB.splice(bG--,1);if(bw.unique){break}}
}}}return this},has:function(bG){if(bB){var bF=0,bH=bB.length;for(;bF<bH;bF++){if(bG===bB[bF]){return true}}
}return false},empty:function(){bB=[];return this},disable:function(){bB=bC=bx=L;return this},disabled:
function(){return !bB},lock:function(){bC=L;if(!bx||bx===true){bD.disable()}return this},locked:function(){
return !bC},fireWith:function(bG,bF){if(bC){if(by){if(!bw.once){bC.push([bG,bF])}}else{if(!(bw.once&&bx)){e(bG,
bF)}}}return this},fire:function(){bD.fireWith(this,arguments);return this},fired:function(){return !!bx}};
return bD};var aJ=[].slice;b.extend({Deferred:function(by){var bx=b.Callbacks("once memory"),bw=
b.Callbacks("once memory"),bv=b.Callbacks("memory"),e="pending",bA={resolve:bx,reject:bw,notify:bv},bC={
done:bx.add,fail:bw.add,progress:bv.add,state:function(){return e},isResolved:bx.fired,isRejected:bw.fired,
then:function(bE,bD,bF){bB.done(bE).fail(bD).progress(bF);return this},always:function(){bB.done.apply(bB,
arguments).fail.apply(bB,arguments);return this},pipe:function(bF,bE,bD){return b.Deferred(function(bG){
b.each({done:[bF,"resolve"],fail:[bE,"reject"],progress:[bD,"notify"]},function(bI,bL){var bH=bL[0],bK=bL[
1],bJ;if(b.isFunction(bH)){bB[bI](function(){bJ=bH.apply(this,arguments);if(bJ&&
b.isFunction(bJ.promise)){bJ.promise().then(bG.resolve,bG.reject,bG.notify)}else{bG[bK+"With"](this===bB?
bG:this,[bJ])}})}else{bB[bI](bG[bK])}})}).promise()},promise:function(bE){if(bE==null){bE=bC}else{for(var bD
in bC){bE[bD]=bC[bD]}}return bE}},bB=bC.promise({}),bz;for(bz in bA){bB[bz]=bA[bz].fire;bB[bz+"With"]=bA[bz]
.fireWith}bB.done(function(){e="resolved"},bw.disable,bv.lock).fail(function(){e="rejected"},bx.disable,bv.
lock);if(by){by.call(bB,bB)}return bB},when:function(bA){var bx=aJ.call(arguments,0),bv=0,e=bx.length,bB=new
Array(e),bw=e,by=e,bC=e<=1&&bA&&b.isFunction(bA.promise)?bA:b.Deferred(),bE=bC.promise();function bD(bF){
return function(bG){bx[bF]=arguments.length>1?aJ.call(arguments,0):bG;if(!(--bw)){bC.resolveWith(bC,bx)}}}
function bz(bF){return function(bG){bB[bF]=arguments.length>1?aJ.call(arguments,0):bG;bC.notifyWith(bE,bB)}}if(
e>1){for(;bv<e;bv++){if(bx[bv]&&bx[bv].promise&&b.isFunction(bx[bv].promise)){bx[bv].promise().then(bD(bv),
bC.reject,bz(bv))}else{--bw}}if(!bw){bC.resolveWith(bC,bx)}}else{if(bC!==bA){bC.resolveWith(bC,e?[bA]:[])}}
return bE}});b.support=(function(){var bJ,bI,bF,bG,bx,bE,bA,bD,bz,bK,bB,by,bw,bv=av.createElement("div"),bH=
av.documentElement;bv.setAttribute("className","t");bv.innerHTML="   <link/><table></table><a href='/a'
 style='top:1px;float:left;opacity:.55;'>a</a><input type='checkbox'/>";bI=bv.getElementsByTagName("*");bF=bv.
getElementsByTagName("a")[0];if(!bI||!bI.length||!bF){return{}}bG=av.createElement("select");bx=bG.appendChild(
av.createElement("option"));bE=bv.getElementsByTagName("input")[0];bJ={leadingWhitespace:(bv.firstChild.
nodeType===3),tbody:!bv.getElementsByTagName("tbody").length,htmlSerialize:!!bv.getElementsByTagName("link").
length,style:/top/.test(bF.getAttribute("style")),hrefNormalized:(bF.getAttribute("href")==="/a"),opacity:/^0.5
5/.test(bF.style.opacity),cssFloat:!!bF.style.cssFloat,checkOn:(bE.value==="on"),optSelected:bx.selected,
getSetAttribute:bv.className!=="t",enctype:!!av.createElement("form").enctype,html5Clone:av.createElement("nav"
).cloneNode(true).outerHTML!=="<:nav></:nav>",submitBubbles:true,changeBubbles:true,focusinBubbles:false,
deleteExpando:true,noCloneEvent:true,inlineBlockNeedsLayout:false,shrinkWrapBlocks:false,reliableMarginRight:
true};bE.checked=true;bJ.noCloneChecked=bE.cloneNode(true).checked;bG.disabled=true;bJ.optDisabled=!bx.
disabled;try{delete bv.test}catch(bC){bJ.deleteExpando=false}if(!bv.addEventListener&&bv.attachEvent&&bv.fireEvent)
{bv.attachEvent("onclick",function(){bJ.noCloneEvent=false});bv.cloneNode(true).fireEvent("onclick")}bE=av.
createElement("input");bE.value="t";bE.setAttribute("type","radio");bJ.radioValue=bE.value==="t";bE.
setAttribute("checked","checked");bv.appendChild(bE);bD=av.createDocumentFragment();bD.appendChild(bv.lastChild);bJ.
checkClone=bD.cloneNode(true).cloneNode(true).lastChild.checked;bJ.appendChecked=bE.checked;bD.removeChild(bE
);bD.appendChild(bv);bv.innerHTML="";if(bb.getComputedStyle){bA=av.createElement("div");bA.style.width="0"
;bA.style.marginRight="0";bv.style.width="2px";bv.appendChild(bA);bJ.reliableMarginRight=(parseInt((
bb.getComputedStyle(bA,null)||{marginRight:0}).marginRight,10)||0)===0}if(bv.attachEvent){for(by in {
submit:1,change:1,focusin:1}){bB="on"+by;bw=(bB in bv);if(!bw){bv.setAttribute(bB,"return;");bw=(typeof bv[bB]==
="function")}bJ[by+"Bubbles"]=bw}}bD.removeChild(bv);bD=bG=bx=bA=bv=bE=null;b(function(){var bM,bU,bV,bT,bN
,bO,bL,bS,bR,e,bP,bQ=av.getElementsByTagName("body")[0];if(!bQ){return}bL=1;bS="
position:absolute;top:0;left:0;width:1px;height:1px;margin:0;";bR="visibility:hidden;border:0;";e="style='"+bS+"border:5
 #000;padding:0;'";bP="<div "+e+"><div></div></div><table "+e+" cellpadding='0'
 cellspacing='0'><tr><td></td></tr></table>";bM=av.createElement("div");bM.style.cssText=bR+"width:0;height:0;position:s
bL+"px";bQ.insertBefore(bM,bQ.firstChild);bv=av.createElement("div");bM.appendChild(bv);bv.innerHTML="
<table><tr><td style='padding:0;border:0;display:none'></td><td>t</td></tr></table>";bz=bv.getElementsByTagName("
td");bw=(bz[0].offsetHeight===0);bz[0].style.display="";bz[1].style.display="none";bJ.reliableHiddenOffsets=
bw&&(bz[0].offsetHeight===0);bv.innerHTML="";bv.style.width=bv.style.paddingLeft="1px";
b.boxModel=bJ.boxModel=bv.offsetWidth===2;if(typeof bv.style.zoom!=="undefined"){bv.style.display="inline"
;bv.style.zoom=1;bJ.inlineBlockNeedsLayout=(bv.offsetWidth===2);bv.style.display="";bv.innerHTML="<div
 style='width:4px;'></div>";bJ.shrinkWrapBlocks=(bv.offsetWidth!==2)}bv.style.cssText=bS+bR;bv.innerHTML=bP;bU=bv.
firstChild;bV=bU.firstChild;bN=bU.nextSibling.firstChild.firstChild;bO={doesNotAddBorder:(bV.offsetTop!==5),
doesAddBorderForTableAndCells:(bN.offsetTop===5)};bV.style.position="fixed";bV.style.top="20px";bO.
fixedPosition=(bV.offsetTop===20||bV.offsetTop===15);bV.style.position=bV.style.top="";bU.style.overflow="hidden";bU.
style.position="relative";bO.subtractsBorderForOverflowNotVisible=(bV.offsetTop===-5);bO.
doesNotIncludeMarginInBodyOffset=(bQ.offsetTop!==bL);bQ.removeChild(bM);bv=bM=null;b.extend(bJ,bO)});return bJ})();var a
:\{.*\}|\[.*\])$/,aA=/([A-Z])/g;b.extend({cache:{},uuid:0,expando:"jQuery"+(b.fn.jquery+Math.random()).
replace(/\D/g,""),noData:{embed:true,object:"clsid:D27CDB6E-AE6D-11cf-96B8-444553540000",applet:true},hasData
:function(e){e=e.nodeType?b.cache[e[b.expando]]:e[b.expando];return !!e&&!S(e)},data:function(bx,bv,bz,
by){if(!b.acceptData(bx)){return}var bG,bA,bD,bE=b.expando,bC=typeof bv==="string",bF=bx.nodeType,e=bF?
b.cache:bx,bw=bF?bx[bE]:bx[bE]&&bE,bB=bv==="events";if((!bw||!e[bw]||(!bB&&!by&&!e[bw].data))&&bC&&bz===
L){return}if(!bw){if(bF){bx[bE]=bw=++b.uuid}else{bw=bE}}if(!e[bw]){e[bw]={};if(!bF){e[bw].toJSON=
b.noop}}if(typeof bv==="object"||typeof bv==="function"){if(by){e[bw]=b.extend(e[bw],bv)}else{e[bw].data=
b.extend(e[bw].data,bv)}}bG=bA=e[bw];if(!by){if(!bA.data){bA.data={}}bA=bA.data}if(bz!==
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L){bA[b.camelCase(bv)]=bz}if(bB&&!bA[bv]){return bG.events}if(bC){bD=bA[bv];if(bD==null){bD=bA[
b.camelCase(bv)]}}else{bD=bA}return bD},removeData:function(bx,bv,by){if(!b.acceptData(bx)){return}var bB
,bA,bz,bC=b.expando,bD=bx.nodeType,e=bD?b.cache:bx,bw=bD?bx[bC]:bC;if(!e[bw]){return}if(bv){bB=by?e[bw]:e[
bw].data;if(bB){if(!b.isArray(bv)){if(bv in bB){bv=[bv]}else{bv=b.camelCase(bv);if(bv in bB){bv=[bv]}else{
bv=bv.split(" ")}}}for(bA=0,bz=bv.length;bA<bz;bA++){delete bB[bv[bA]]}if(!(by?S:
b.isEmptyObject)(bB)){return}}if(!by){delete e[bw].data;if(!S(e[bw])){return}}if(
b.support.deleteExpando||!e.setInterval){delete e[bw]}else{e[bw]=null}if(bD){if(
b.support.deleteExpando){delete bx[bC]}else{if(bx.removeAttribute){bx.removeAttribute(bC)}else{bx[bC]=null
}}}},_data:function(bv,e,bw){return b.data(bv,e,bw,true)},acceptData:function(bv){if(bv.nodeName){var e=
b.noData[bv.nodeName.toLowerCase()];if(e){return !(e===true||bv.getAttribute("classid")!==e)}}return true}
});b.fn.extend({data:function(by,bA){var bB,e,bw,bz=null;if(typeof by==="undefined"){if(this.length){bz=
b.data(this[0]);if(this[0].nodeType===1&&!b._data(this[0],"parsedAttrs")){e=this[0].attributes;for(var bx
=0,bv=e.length;bx<bv;bx++){bw=e[bx].name;if(bw.indexOf("data-")===0){bw=b.camelCase(bw.substring(5));a5(
this[0],bw,bz[bw])}}b._data(this[0],"parsedAttrs",true)}}return bz}else{if(typeof by==="object"){return this.
each(function(){b.data(this,by)})}bB=by.split(".");bB[1]=bB[1]?"."+bB[1]:"";if(bA===
L){bz=this.triggerHandler("getData"+bB[1]+"!",[bB[0]]);if(bz===L&&this.length){bz=
b.data(this[0],by);bz=a5(this[0],by,bz)}return bz===L&&bB[1]?this.data(bB[0]):bz}else{return this.
each(function(){var bC=b(this),bD=[bB[0],bA];bC.triggerHandler("setData"+bB[1]+"!",bD);
b.data(this,by,bA);bC.triggerHandler("changeData"+bB[1]+"!",bD)})}},removeData:function(e){return this.
each(function(){b.removeData(this,e)})}});function a5(bx,bw,by){if(by===L&&bx.nodeType===1){var bv="
data-"+bw.replace(aA,"-$1").toLowerCase();by=bx.getAttribute(bv);if(typeof by==="string"){try{by=by==="true"?
true:by==="false"?false:by==="null"?null:b.isNumeric(by)?parseFloat(by):aS.test(by)?
b.parseJSON(by):by}catch(bz){}b.data(bx,bw,by)}else{by=L}}return by}function
S(bv){for(var e in bv){if(e==="data"&&b.isEmptyObject(bv[e])){continue}if(e!=="toJSON"){return false}}
return true}function bi(by,bx,bA){var bw=bx+"defer",bv=bx+"queue",e=bx+"mark",bz=b._data(by,bw);if(bz&&(bA==="
queue"||!b._data(by,bv))&&(bA==="mark"||!b._data(by,e))){setTimeout(function(){if(!
b._data(by,bv)&&!b._data(by,e)){b.removeData(by,bw,true);bz.fire()}},0)}}b.extend({_mark:function(bv,e)
{if(bv){e=(e||"fx")+"mark";b._data(bv,e,(b._data(bv,e)||0)+1)}},_unmark:function(by,bx,bv){if(by!==true){bv=
bx;bx=by;by=false}if(bx){bv=bv||"fx";var e=bv+"mark",bw=by?0:((b._data(bx,e)||1)-1);if(bw){b._data(bx,e,bw)}
else{b.removeData(bx,e,true);bi(bx,bv,"mark")}}},queue:function(bv,e,bx){var bw;if(bv){e=(e||"fx")+"queue";
bw=b._data(bv,e);if(bx){if(!bw||b.isArray(bx)){bw=b._data(bv,e,b.makeArray(bx))}else{bw.push(bx)}}return
bw||[]}},dequeue:function(by,bx){bx=bx||"fx";var bv=b.queue(by,bx),bw=bv.shift(),e={};if(bw==="inprogress")
{bw=bv.shift()}if(bw){if(bx==="fx"){bv.unshift("inprogress")}b._data(by,bx+".run",e);bw.call(by,function(){
b.dequeue(by,bx)},e)}if(!bv.length){b.removeData(by,bx+"queue "+bx+".run",true);bi(by,bx,"queue")}}});
b.fn.extend({queue:function(e,bv){if(typeof e!=="string"){bv=e;e="fx"}if(bv===L){return
b.queue(this[0],e)}return this.each(function(){var bw=b.queue(this,e,bv);if(e==="fx"&&bw[0]!==
inprogress"){b.dequeue(this,e)}})},dequeue:function(e){return this.each(function(){
b.dequeue(this,e)})},delay:function(bv,e){bv=b.fx?b.fx.speeds[bv]||bv:bv;e=e||"fx";return this.queue(e,
function(bx,bw){var by=setTimeout(bx,bv);bw.stop=function(){clearTimeout(by)}})},clearQueue:function(e){
return this.queue(e||"fx",[])},promise:function(bD,bw){if(typeof bD!=="string"){bw=bD;bD=
L}bD=bD||"fx";var e=b.Deferred(),bv=this,by=bv.length,bB=1,bz=bD+"defer",bA=bD+"queue",bC=bD+"mark",bx;
function bE(){if(!(--bB)){e.resolveWith(bv,[bv])}}while(by--){if((bx=b.data(bv[by],bz,
L,true)||(b.data(bv[by],bA,L,true)||b.data(bv[by],bC,L,true))&&b.data(bv[by],bz,
b.Callbacks("once memory"),true))){bB++;bx.add(bE)}}bE();return e.promise()}});var aP=/[\n\t\r]/g,af=/\s+/
,aU=/\r/g,g=/^(?:button|input)$/i,D=/^(?:button|input|object|select|textarea)$/
i,l=/^a(?:rea)?$/i,ao=/^(?:autofocus|autoplay|async|checked|controls|defer|disabled|hidden|loop|multiple|
open|readonly|required|scoped|selected)$/i,F=b.support.getSetAttribute,be,aY,aF;
b.fn.extend({attr:function(e,bv){return b.access(this,e,bv,true,b.attr)},removeAttr:function(e){return thi
s.each(function(){b.removeAttr(this,e)})},prop:function(e,bv){return b.access(this,e,bv,true,
b.prop)},removeProp:function(e){e=b.propFix[e]||e;return this.each(function(){try{this[e]=
L;delete this[e]}catch(bv){}})},addClass:function(by){var bA,bw,bv,bx,bz,bB,e;if(
b.isFunction(by)){return this.each(function(bC){b(this).addClass(by.call(this,bC,this.className))})}
if(by&&typeof by==="string"){bA=by.split(af);for(bw=0,bv=this.length;bw<bv;bw++){bx=this[bw];if(bx.nodeType==
=1){if(!bx.className&&bA.length===1){bx.className=by}else{bz=" "+bx.className+" ";for(bB=0,e=bA.length;bB<e;
bB++){if(!~bz.indexOf(" "+bA[bB]+" ")){bz+=bA[bB]+" "}}bx.className=b.trim(bz)}}}}return this},removeClass:
function(bz){var bA,bw,bv,by,bx,bB,e;if(b.isFunction(bz)){return this.each(function(bC){
b(this).removeClass(bz.call(this,bC,this.className))})}if((bz&&typeof bz==="string")||bz===
L){bA=(bz||"").split(af);for(bw=0,bv=this.length;bw<bv;bw++){by=this[bw];if(by.nodeType===1&&by.className)
{if(bz){bx=(" "+by.className+" ").replace(aP," ");for(bB=0,e=bA.length;bB<e;bB++){bx=bx.replace(" "+bA[bB]+"
 "," ")}by.className=b.trim(bx)}else{by.className=""}}}}return this},toggleClass:function(bx,bv){var bw=
typeof bx,e=typeof bv==="boolean";if(b.isFunction(bx)){return this.each(function(by){
b(this).toggleClass(bx.call(this,by,this.className,bv),bv)})}return this.each(function(){if(bw===
string"){var bA,bz=0,by=b(this),bB=bv,bC=bx.split(af);while((bA=bC[bz++])){bB=e?bB:!by.hasClass(bA);by[bB?"
addClass":"removeClass"](bA)}}else{if(bw==="undefined"||bw==="boolean"){if(this.className){
b._data(this,"__className__",this.className)}this.className=this.className||bx===false?"":
b._data(this,"__className__")||""}}})},hasClass:function(e){var bx=" "+e+" ",bw=0,bv=this.length;for(;bw<
bv;bw++){if(this[bw].nodeType===1&&(" "+this[bw].className+" ").replace(aP," ").indexOf(bx)>-1){return true}}
return false},val:function(bx){var e,bv,by,bw=this[0];if(!arguments.length){if(bw){e=
b.valHooks[bw.nodeName.toLowerCase()]||b.valHooks[bw.type];if(e&&"get" in e&&(bv=e.get(bw,"value"))!==
L){return bv}bv=bw.value;return typeof bv==="string"?bv.replace(aU,""):bv==null?"":bv}return}by=
b.isFunction(bx);return this.each(function(bA){var bz=b(this),bB;if(this.nodeType!==1){return}if(by){
bB=bx.call(this,bA,bz.val())}else{bB=bx}if(bB==null){bB=""}else{if(typeof bB==="number"){bB+=""}else{if(
b.isArray(bB)){bB=b.map(bB,function(bC){return bC==null?"":bC+""})}}e=b.valHooks[this.nodeName.
toLowerCase()]||b.valHooks[this.type];if(!e||!("set" in e)||e.set(this,bB,"value")===L){this.value=bB}})}});
b.extend({valHooks:{option:{get:function(e){var bv=e.attributes.value;return !bv||bv.specified?e.value:e.
text}},select:{get:function(e){var bA,bv,bz,bx,by=e.selectedIndex,bB=[],bC=e.options,bw=e.type==="select-one"
;if(by<0){return null}bv=bw?by:0;bz=bw?by+1:bC.length;for(;bv<bz;bv++){bx=bC[bv];if(bx.selected&&(
b.support.optDisabled?!bx.disabled:bx.getAttribute("disabled")===null)&&(!bx.parentNode.disabled||!
b.nodeName(bx.parentNode,"optgroup"))){bA=b(bx).val();if(bw){return bA}bB.push(bA)}if(bw&&!bB.length&&bC
.length){return b(bC[by]).val()}return bB},set:function(bv,bw){var e=b.makeArray(bw);
b(bv).find("option").each(function(){this.selected=b.inArray(b(this).val(),e)>=0});if(!e.length){bv.
selectedIndex=-1}return e}}},attrFn:{val:true,css:true,html:true,text:true,data:true,width:true,height:true,
offset:true},attr:function(bA,bx,bB,bz){var bw,e,by,bv=bA.nodeType;if(!bA||bv===3||bv===8||bv===2){return}if(
bz&&bx in b.attrFn){return b(bA)[bx](bB)}if(typeof bA.getAttribute==="undefined"){return
b.prop(bA,bx,bB)}by=bv!==1||!b.isXMLDoc(bA);if(by){bx=bx.toLowerCase();e=b.attrHooks[bx]||(ao.test(bx)?
aY:be)}if(bB!==L){if(bB===null){b.removeAttr(bA,bx);return}else{if(e&&"set" in e&&by&&(bw=e.set(bA,bB,bx))
!==L){return bw}else{bA.setAttribute(bx,""+bB);return bB}}}else{if(e&&"get" in e&&by&&(bw=e.get(bA,bx))!==
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null){return bw}else{bw=bA.getAttribute(bx);return bw===null?L:bw}},removeAttr:function(bx,bz){var by,bA,bv,
e,bw=0;if(bz&&bx.nodeType===1){bA=bz.toLowerCase().split(af);e=bA.length;for(;bw<e;bw++){bv=bA[bw];if(bv){by
=b.propFix[bv]||bv;b.attr(bx,bv,"");bx.removeAttribute(F?bv:by);if(ao.test(bv)&&by in bx){bx[by]=false}}}}
},attrHooks:{type:{set:function(e,bv){if(g.test(e.nodeName)&&e.parentNode){b.error("type property can't be
 changed")}else{if(!b.support.radioValue&&bv==="radio"&&b.nodeName(e,"input")){var bw=e.value;e.
setAttribute("type",bv);if(bw){e.value=bw}return bv}}}},value:{get:function(bv,e){if(be&&b.nodeName(bv,"button")){
return be.get(bv,e)}return e in bv?bv.value:null},set:function(bv,bw,e){if(be&&b.nodeName(bv,"button")){return
be.set(bv,bw,e)}bv.value=bw}}},propFix:{tabindex:"tabIndex",readonly:"readOnly","for":"htmlFor","class":"
className",maxlength:"maxLength",cellspacing:"cellSpacing",cellpadding:"cellPadding",rowspan:"rowSpan",colspan:
"colSpan",usemap:"useMap",frameborder:"frameBorder",contenteditable:"contentEditable"},prop:function(bz,bx,
bA){var bw,e,by,bv=bz.nodeType;if(!bz||bv===3||bv===8||bv===2){return}by=bv!==1||!
b.isXMLDoc(bz);if(by){bx=b.propFix[bx]||bx;e=b.propHooks[bx]}if(bA!==L){if(e&&"set" in e&&(bw=e.set(bz,
bA,bx))!==L){return bw}else{return(bz[bx]=bA)}}else{if(e&&"get" in e&&(bw=e.get(bz,bx))!==null){return bw}
else{return bz[bx]}}},propHooks:{tabIndex:{get:function(bv){var e=bv.getAttributeNode("tabindex");return e&&e
.specified?parseInt(e.value,10):D.test(bv.nodeName)||l.test(bv.nodeName)&&bv.href?0:
L}}}});b.attrHooks.tabindex=b.propHooks.tabIndex;aY={get:function(bv,e){var bx,bw=
b.prop(bv,e);return bw===true||typeof bw!=="boolean"&&(bx=bv.getAttributeNode(e))&&bx.nodeValue!==false?e.
toLowerCase():L},set:function(bv,bx,e){var bw;if(bx===false){b.removeAttr(bv,e)}else{bw=
b.propFix[e]||e;if(bw in bv){bv[bw]=true}bv.setAttribute(e,e.toLowerCase())}return e}};if(!F){aF={name:
true,id:true};be=b.valHooks.button={get:function(bw,bv){var e;e=bw.getAttributeNode(bv);return e&&(aF[bv]?e.
nodeValue!==""":e.specified)?e.nodeValue:L},set:function(bw,bx,bv){var e=bw.getAttributeNode(bv);if(!e){e=av.
createAttribute(bv);bw.setAttributeNode(e)}return(e.nodeValue=bx+"")}};b.attrHooks.tabindex.set=be.set;
b.each(["width","height"],function(bv,e){b.attrHooks[e]=b.extend(b.attrHooks[e],{set:function(bw,bx){if
(bx===""){bw.setAttribute(e,"auto");return bx}}})});b.attrHooks.contenteditable={get:be.get,set:function(bv
,bw,e){if(bw===""){bw="false"}be.set(bv,bw,e)}}if(!b.support.hrefNormalized){b.each(["href","src","width"
,"height"],function(bv,e){b.attrHooks[e]=b.extend(b.attrHooks[e],{get:function(bx){var bw=bx.getAttribute
(e,2);return bw===null?L:bw}})})}if(!b.support.style){b.attrHooks.style={get:function(e){return e.style.
cssText.toLowerCase()||L},set:function(e,bv){return(e.style.cssText=""+bv)}}}if(!b.support.optSelected){
b.propHooks.selected=b.extend(b.propHooks.selected,{get:function(bv){var e=bv.parentNode;if(e){e.selecte
dIndex;if(e.parentNode){e.parentNode.selectedIndex}}return null}})}if(!b.support.enctype){
b.propFix.enctype="encoding"}if(!b.support.checkOn){b.each(["radio","checkbox"],function(){
b.valHooks[this]={get:function(e){return e.getAttribute("value")===null?"on":e.value}}})}
b.each(["radio","checkbox"],function(){b.valHooks[this]=b.extend(b.valHooks[this],{set:function(e,bv){if(b
.isArray(bv)){return(e.checked=b.inArray(b(e).val(),bv)>=0)}})});var bd=/^(?:textarea|input|select)$/
i,n=/^([^\.]*)?(?:\.(.+))?$/,J=/\bhover(\.\S+)?\b/,aO=/^key/,bf=/^(?:mouse|contextmenu)|click/,
T=/^(?:focusinfocus|focusoutblur)$/,U=/^(\w*)(?:#([\w\-]+))?(?:\.([\w\-]+))?$/,Y=function(e){var bv=U.exec
(e);if(bv){bv[1]=(bv[1]||"").toLowerCase();bv[3]=bv[3]&&new RegExp("(?:^|\\s)"+bv[3]+"(?:\\s|$)")}return bv}
,j=function(bw,e){var bv=bw.attributes||{};return((!e[1]||bw.nodeName.toLowerCase()===e[1])&&(!e[2]||(bv.id
||{}).value===e[2])&&(!e[3]||e[3].test((bv["class"]||{}).value)))},bt=function(e){return
b.event.special.hover?e:e.replace(J,"mouseenter$1 mouseleave$1")};b.event={add:function(bx,bC,bJ,bA,by){
var bD,bB,bK,bI,bH,bF,e,bG,bv,bz,bw,bE;if(bx.nodeType===3||bx.nodeType===8||!bC||!bJ||!(bD=
b._data(bx))){return}if(bJ.handler){bv=bJ;bJ=bv.handler}if(!bJ.guid){bJ.guid=b.guid++}bK=bD.events;if(!bK
){bD.events=bK={}}bB=bD.handle;if(!bB){bD.handle=bB=function(bL){return typeof b!=="undefined"&&(!bL||
b.event.triggered!==bL.type)?b.event.dispatch.apply(bB.elem,arguments):L};bB.elem=bx}bC=
b.trim(bt(bC)).split(" ");for(bI=0;bI<bC.length;bI++){bH=n.exec(bC[bI])||[];bF=bH[1];e=(bH[2]||"").split(
".").sort();bE=b.event.special[bF]||{};bF=(by?bE.delegateType:bE.bindType)||bF;bE=
b.event.special[bF]||{};bG=b.extend({type:bF,origType:bH[1],data:bA,handler:bJ,guid:bJ.guid,selector:by,
quick:Y(by),namespace:e.join(".")},bv);bw=bK[bF];if(!bw){bw=bK[bF]=[];bw.delegateCount=0;if(!bE.setup||bE.
setup.call(bx,bA,e,bB)===false){if(bx.addEventListener){bx.addEventListener(bF,bB,false)}else{if(bx.attachEvent
){bx.attachEvent("on"+bF,bB)}}}if(bE.add){bE.add.call(bx,bG);if(!bG.handler.guid){bG.handler.guid=bJ.guid}}
if(by){bw.splice(bw.delegateCount++,0,bG)}else{bw.push(bG)}b.event.global[bF]=true}bx=null},global:{},
remove:function(bJ,bE,bv,bH,bB){var bI=b.hasData(bJ)&&b._data(bJ),bF,bx,bz,bL,bC,bA,bG,bw,by,bK,bD,e;if(!bI||!(
bw=bI.events)){return}bE=b.trim(bt(bE||"")).split(" ");for(bF=0;bF<bE.length;bF++){bx=
n.exec(bE[bF])||[];bz=bL=bx[1];bC=bx[2];if(!bz){for(bz in bw){b.event.remove(bJ,bz+bE[bF],bv,bH,true)}
continue}by=b.event.special[bz]||{};bz=(bH?by.delegateType:by.bindType)||bz;bD=bw[bz]||[];bA=bD.length;bC=bC?
new RegExp("(^|\\.)"+bC.split(".").sort().join("\\.(?:.*\\.)?")+"(\\.|$)"):null;for(bG=0;bG<bD.length;bG++){e
=bD[bG];if((bB||bL===e.origType)&&(!bv||bv.guid===e.guid)&&(!bC||bC.test(e.namespace))&&(!bH||bH===e.
selector||bH==="**"&&e.selector)){bD.splice(bG--,1);if(e.selector){bD.delegateCount--}if(by.remove){by.remove.call(
bJ,e)}}}if(bD.length===0&&bA!==bD.length){if(!by.teardown||by.teardown.call(bJ,bC)===false){
b.removeEvent(bJ,bz,bI.handle)}delete bw[bz]}if(b.isEmptyObject(bw)){bK=bI.handle;if(bK){bK.elem=null}
b.removeData(bJ,["events","handle"],true)}},customEvent:{getData:true,setData:true,changeData:true}
,trigger:function(bv,bD,bA,bJ){if(bA&&(bA.nodeType===3||bA.nodeType===8)){return}var bG=bv.type||bv,bx=[],e,
bw,bC,bH,bz,by,bF,bE,bB,bI;if(T.test(bG+b.event.triggered)){return}if(bG.indexOf("!")>=0){bG=bG.slice(0,-1
);bw=true}if(bG.indexOf(".")>=0){bx=bG.split(".");bG=bx.shift();bx.sort()}if((!bA||
b.event.customEvent[bG])&&!b.event.global[bG]){return}bv=typeof bv==="object"?bv[
b.expando]?bv:new b.Event(bG,bv):new b.Event(bG);bv.type=bG;bv.isTrigger=true;bv.exclusive=bw;bv.
namespace=bx.join(".");bv.namespace_re=bv.namespace?new RegExp("(^|\\.)"+bx.join("\\.(?:.*\\.)?")+"(\\.|$)"):null;
by=bG.indexOf(":")<0?"on"+bG:"";if(!bA){e=b.cache;for(bC in e){if(e[bC].events&&e[bC].events[bG]){
b.event.trigger(bv,bD,e[bC].handle.elem,true)}}return}bv.result=L;if(!bv.target){bv.target=bA}bD=bD!=null
?b.makeArray(bD):[];bD.unshift(bv);bF=b.event.special[bG]||{};if(bF.trigger&&bF.trigger.apply(bA,bD)===
false){return}bB=[[bA,bF.bindType||bG]];if(!bJ&&!bF.noBubble&&!b.isWindow(bA)){bI=bF.delegateType||bG;bH=
T.test(bI+bG)?bA:bA.parentNode;bz=null;for(;bH;bH=bH.parentNode){bB.push([bH,bI]);bz=bH}if(bz&&bz===bA.
ownerDocument){bB.push([bz.defaultView||bz.parentWindow||bb,bI])}}for(bC=0;bC<bB.length&&!bv.
isPropagationStopped();bC++){bH=bB[bC][0];bv.type=bB[bC][1];bE=(b._data(bH,"events")||{})[bv.type]&&
b._data(bH,"handle");if(bE){bE.apply(bH,bD)}bE=by&&bH[by];if(bE&&b.acceptData(bH)&&bE.apply(bH,bD)===
false){bv.preventDefault()}}bv.type=bG;if(!bJ&&!bv.isDefaultPrevented()){if((!bF._default||bF._default.apply(bA.
ownerDocument,bD)===false)&&!(bG==="click"&&b.nodeName(bA,"a"))&&b.acceptData(bA)){if(by&&bA[bG]&&((bG!=="
focus"&&bG!=="blur")||bv.target.offsetWidth!==0)&&!b.isWindow(bA)){bz=bA[by];if(bz){bA[by]=null}
b.event.triggered=bG;bA[bG]();b.event.triggered=L;if(bz){bA[by]=bz}}}}return bv.result},dispatch:
function(e){e=b.event.fix(e||bb.event);var bz=((b._data(this,"events")||{})[e.type]||[]),bA=bz.delegateCount,bG
=[].slice.call(arguments,0),by=!e.exclusive&&!e.namespace,bH=[],bC,bB,bK,bx,bF,bE,bv,bD,bI,bw,bJ;bG[0]=e;e.
delegateTarget=this;if(bA&&!e.target.disabled&&!(e.button&&e.type==="click")){bx=b(this);bx.context=this.
ownerDocument||this;for(bK=e.target;bK!=this;bK=bK.parentNode||this){bE={};bD=[];bx[0]=bK;for(bC=0;bC<bA;bC++){
bI=bz[bC];bw=bI.selector;if(bE[bw]===L){bE[bw]=(bI.quick?j(bK,bI.quick):bx.is(bw))}
if(bE[bw]){bD.push(bI)}}if(bD.length){bH.push({elem:bK,matches:bD})}}}if(bz.length>bA){bH.push({elem:this
,matches:bz.slice(bA)})}for(bC=0;bC<bH.length&&!e.isPropagationStopped();bC++){bv=bH[bC];e.currentTarget=bv.
elem;for(bB=0;bB<bv.matches.length&&!e.isImmediatePropagationStopped();bB++){bI=bv.matches[bB];if(by||(!e.
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namespace&&!bI.namespace)||e.namespace_re&&e.namespace_re.test(bI.namespace)){e.data=bI.data;e.handleObj=bI;bF
=((b.event.special[bI.origType]||{}).handle||bI.handler).apply(bv.elem,bG);if(bF!==
L){e.result=bF;if(bF===false){e.preventDefault();e.stopPropagation()}}}}}return e.result},props:"
attrChange attrName relatedNode srcElement altKey bubbles cancelable ctrlKey currentTarget eventPhase metaKey
 relatedTarget shiftKey target timeStamp view which".split(" "),fixHooks:{},keyHooks:{props:"char charCode key
 keyCode".split(" "),filter:function(bv,e){if(bv.which==null){bv.which=e.charCode!=null?e.charCode:e.keyCode}
return bv}},mouseHooks:{props:"button buttons clientX clientY fromElement offsetX offsetY pageX pageY screenX
 screenY toElement".split(" "),filter:function(bx,bw){var by,bz,e,bv=bw.button,bA=bw.fromElement;if(bx.pageX==
null&&bw.clientX!=null){by=bx.target.ownerDocument||av;bz=by.documentElement;e=by.body;bx.pageX=bw.clientX+(bz
&&bz.scrollLeft||e&&e.scrollLeft||0)-(bz&&bz.clientLeft||e&&e.clientLeft||0);bx.pageY=bw.clientY+(bz&&bz.
scrollTop||e&&e.scrollTop||0)-(bz&&bz.clientTop||e&&e.clientTop||0)}if(!bx.relatedTarget&&bA){bx.relatedTarget=
bA===bx.target?bw.toElement:bA}if(!bx.which&&bv!==L){bx.which=(bv&1?1:(bv&2?3:(bv&4?2:0)))}return bx}},fix:
function(bw){if(bw[b.expando]){return bw}var bv,bz,e=bw,bx=b.event.fixHooks[bw.type]||{},by=bx.props?this.
props.concat(bx.props):this.props;bw=b.Event(e);for(bv=by.length;bv;){bz=by[--bv];bw[bz]=e[bz]}if(!bw.
target){bw.target=e.srcElement||av}if(bw.target.nodeType===3){bw.target=bw.target.parentNode}if(bw.metaKey===
L){bw.metaKey=bw.ctrlKey}return bx.filter?bx.filter(bw,e):bw},special:{ready:{setup:
b.bindReady},load:{noBubble:true},focus:{delegateType:"focusin"},blur:{delegateType:"focusout"},
beforeunload:{setup:function(bw,bv,e){if(b.isWindow(this)){this.onbeforeunload=e}},teardown:function(bv,e){if(this.
onbeforeunload===e){this.onbeforeunload=null}}}},simulate:function(bw,by,bx,bv){var bz=
b.extend(new b.Event(),bx,{type:bw,isSimulated:true,originalEvent:{}});if(bv){
b.event.trigger(bz,null,by)}else{b.event.dispatch.call(by,bz)}if(bz.isDefaultPrevented()){bx.
preventDefault()}};b.event.handle=b.event.dispatch;b.removeEvent=av.removeEventListener?function(bv,e,bw){if(bv.
removeEventListener){bv.removeEventListener(e,bw,false)}}:function(bv,e,bw){if(bv.detachEvent){bv.detachEvent("
on"+e,bw)}};b.Event=function(bv,e){if(!(this instanceof b.Event)){return new b.Event(bv,e)}if(bv&&bv.type)
{this.originalEvent=bv;this.type=bv.type;this.isDefaultPrevented=(bv.defaultPrevented||bv.returnValue===
false||bv.getPreventDefault&&bv.getPreventDefault())?i:bk}else{this.type=bv}if(e){b.extend(this,e)}this.
timeStamp=bv&&bv.timeStamp||b.now();this[b.expando]=true};function bk(){return false}function
i(){return true}b.Event.prototype={preventDefault:function(){this.isDefaultPrevented=
i;var bv=this.originalEvent;if(!bv){return}if(bv.preventDefault){bv.preventDefault()}else{bv.returnValue=
false}},stopPropagation:function(){this.isPropagationStopped=i;var bv=this.originalEvent;if(!bv){return}if(
bv.stopPropagation){bv.stopPropagation()}bv.cancelBubble=true},stopImmediatePropagation:function(){this.
isImmediatePropagationStopped=i;this.stopPropagation()},isDefaultPrevented:bk,isPropagationStopped:bk,
isImmediatePropagationStopped:bk};b.each({mouseenter:"mouseover",mouseleave:"mouseout"},function(bv,e){
b.event.special[bv]={delegateType:e,bindType:e,handle:function(bz){var bB=this,bA=bz.relatedTarget,by=bz.
handleObj,bw=by.selector,bx;if(!bA||(bA!==bB&&!b.contains(bB,bA))){bz.type=by.origType;bx=by.handler.apply(
this,arguments);bz.type=e}return bx}}});if(!b.support.submitBubbles){b.event.special.submit={setup:function
(){if(b.nodeName(this,"form")){return false}b.event.add(this,"click._submit keypress._submit",function(bx)
{var bw=bx.target,bv=b.nodeName(bw,"input")||b.nodeName(bw,"button")?bw.form:L;if(bv&&!bv.
_submit_attached){b.event.add(bv,"submit._submit",function(e){if(this.parentNode&&!e.isTrigger){b.event.simulate("submit
this.parentNode,e,true)}});bv._submit_attached=true}})},teardown:function(){if(b.nodeName(this,"form")){
return false}b.event.remove(this,"._submit")}}}if(!b.support.changeBubbles){b.event.special.change={setup:
function(){if(bd.test(this.nodeName)){if(this.type==="checkbox"||this.type==="radio"){
b.event.add(this,"propertychange._change",function(e){if(e.originalEvent.propertyName==="checked"){this._j
ust_changed=true}});b.event.add(this,"click._change",function(e){if(this._just_changed&&!e.isTrigger){this.
_just_changed=false;b.event.simulate("change",this,e,true)}})}return false}b.event.add(this,"
beforeactivate._change",function(bw){var bv=bw.target;if(bd.test(bv.nodeName)&&!bv._change_attached){b.event.add(bv,"
change._change",function(e){if(this.parentNode&&!e.isSimulated&&!e.isTrigger){b.event.simulate("change",this.pare
ntNode,e,true)}});bv._change_attached=true}})},handle:function(bv){var e=bv.target;if(this!==e||bv.
isSimulated||bv.isTrigger||(e.type!=="radio"&&e.type!=="checkbox")){return bv.handleObj.handler.apply(this,arguments)
}},teardown:function(){b.event.remove(this,"._change");return bd.test(this.nodeName)}}}if(!
b.support.focusinBubbles){b.each({focus:"focusin",blur:"focusout"},function(bx,e){var bv=0,bw=function(by
){b.event.simulate(e,by.target,b.event.fix(by),true)};b.event.special[e]={setup:function(){if(bv++===0){
av.addEventListener(bx,bw,true)}},teardown:function(){if(--bv===0){av.removeEventListener(bx,bw,true)}}}})}
b.fn.extend({on:function(bw,e,bz,by,bv){var bA,bx;if(typeof bw==="object"){if(typeof e!=="string"){bz=e;e=
L}for(bx in bw){this.on(bx,e,bz,bw[bx],bv)}return this}if(bz==null&&by==null){by=e;bz=e=L}else{if(by==null){
if(typeof e==="string"){by=bz;bz=L}else{by=bz;bz=e;e=L}}if(by===false){by=bk}else{if(!by){return this}}if(b
v===1){bA=by;by=function(bB){b().off(bB);return bA.apply(this,arguments)};by.guid=bA.guid||(bA.guid=b.guid++
)}return this.each(function(){b.event.add(this,bw,by,bz,e)})},one:function(bv,e,bx,bw){return this.on.call(t
his,bv,e,bx,bw,1)},off:function(bw,e,by){if(bw&&bw.preventDefault&&bw.handleObj){var bv=bw.handleObj;b(bw.de
legateTarget).off(bv.namespace?bv.type+"."+bv.namespace:bv.type,bv.selector,bv.handler);return this}if(
typeof bw==="object"){for(var bx in bw){this.off(bx,e,bw[bx])}return this}if(e===false||typeof e==="function"){by
=e;e=L}if(by===false){by=bk}return this.each(function(){b.event.remove(this,bw,by,e)})},bind:function(
e,bw,bv){return this.on(e,null,bw,bv)},unbind:function(e,bv){return this.off(e,null,bv)},live:function(e,bw,
bv){b(this.context).on(e,this.selector,bw,bv);return this},die:function(e,bv){b(this.context).off(e,this.
selector||"**",bv);return this},delegate:function(e,bv,bx,bw){return this.on(bv,e,bx,bw)},undelegate:function
(e,bv,bw){return arguments.length==1?this.off(e,"**"):this.off(bv,e,bw)},trigger:function(e,bv){return this.
each(function(){b.event.trigger(e,bv,this)})},triggerHandler:function(e,bv){if(this[0]){return
b.event.trigger(e,bv,this[0],true)}},toggle:function(bx){var bv=arguments,e=bx.guid||
b.guid++,bw=0,by=function(bz){var bA=(b._data(this,"lastToggle"+bx.guid)||0)%bw;
b._data(this,"lastToggle"+bx.guid,bA+1);bz.preventDefault();return bv[bA].apply(this,arguments)||false};by
.guid=e;while(bw<bv.length){bv[bw++].guid=e}return this.click(by)},hover:function(e,bv){return this.
mouseenter(e).mouseleave(bv||e)}});b.each(("blur focus focusin focusout load resize scroll unload click dblclick
 mousedown mouseup mousemove mouseover mouseout mouseenter mouseleave change select submit keydown keypress
 keyup error contextmenu").split(" "),function(bv,e){b.fn[e]=function(bx,bw){if(bw==null){bw=bx;bx=null}return
arguments.length>0?this.on(e,null,bx,bw):this.trigger(e)};if(b.attrFn){b.attrFn[e]=true}if(aO.test(e)){
b.event.fixHooks[e]=b.event.keyHooks}if(bf.test(e)){b.event.fixHooks[e]=b.event.mouseHooks}});

(function(){var bH=/((?:\((?:\([^()]+\)|[^()]+)+\)|\[(?:\[[^\[\]]*\]|['"][^'"]*['"]|[^\[\]'"]+)+\]|\\.|[^
 >+~,(\[\\]+)+|[>+~])(\s*,\s*)?((?:.|\r|\n
)*)/g,bC="sizcache"+(Math.random()+"").replace(".",""),bI=0,bL=Object.prototype.toString,bB=false,bA=true,bK=/\\/g,bO=/\
 0});var by=function(bV,e,bY,bZ){bY=bY||[];e=e||av;var
 b1=e;if(e.nodeType!==1&&e.nodeType!==9){return[]}if(!bV||typeof bV!=="string"){return bY}var
 bS,b3,b6,bR,b2,b5,b4,bX,bU=true,bT=by.isXML(e),bW=[],b0=bV;do{bH.exec("");
bS=bH.exec(b0);if(bS){b0=bS[3];bW.push(bS[1]);if(bS[2]){bR=bS[3];break}}}while(bS);if(bW.length>1&&bD.exec(b
V)){if(bW.length===2&&bE.relative[bW[0]]){b3=bM(bW[0]+bW[1],e,bZ)}else{b3=bE.relative[bW[0]]?[e]:by(bW.shift
(),e);while(bW.length){bV=bW.shift();if(bE.relative[bV]){bV+=bW.shift()}b3=bM(bV,b3,bZ)}}}else{if(!bZ&&bW.le
ngth>1&&e.nodeType===9&&!bT&&bE.match.ID.test(bW[0])&&!bE.match.ID.test(bW[bW.length-1])){b2=by.find(bW.shif
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t(),e,bT);e=b2.expr?by.filter(b2.expr,b2.set)[0]:b2.set[0]}if(e){b2=bZ?{expr:bW.pop(),set:bF(bZ)}:by.find(bW
.pop(),bW.length===1&&(bW[0]==="~"||bW[0]==="+")&&e.parentNode?e.parentNode:e,bT);b3=b2.expr?by.filter(b2.ex
pr,b2.set):b2.set;if(bW.length>0){b6=bF(b3)}else{bU=false}while(bW.length){b5=bW.pop();b4=b5;if(!bE.relative
[b5]){b5=""}else{b4=bW.pop()}if(b4==null){b4=e}bE.relative[b5](b6,b4,bT)}}else{b6=bW=[]}}if(!b6){b6=b3}if(!b6){by.error
 Array]"){if(!bU){bY.push.apply(bY,b6)}else{if(e&&e.nodeType===
1){for(bX=0;b6[bX]!=null;bX++){if(b6[bX]&&(b6[bX]===true||b6[bX].nodeType===1&&by.contains(e,b6[bX]))){bY.pu
sh(b3[bX])}}}else{for(bX=0;b6[bX]!=null;bX++){if(b6[bX]&&b6[bX].nodeType===1){bY.push(b3[bX])}}}}}else{bF(b6,bY)}if(bR)
 bY};by.uniqueSort=function(bR){if(bJ){bB=bA;bR.sort(bJ);if(bB){for(var e=1;e<bR.length;e++){if(bR[e]===bR[e-1]){bR.spli
 bR};by.matches=function(e,bR){return by(e,null,null,bR)};by.matchesSelector=function(e,bR){return
 by(bR,null,null,[e]).length>0};by.find=function(bX,e,bY){var
 bW,bS,bU,bT,bV,bR;if(!bX){return[]}for(bS=0,bU=bE.order.length;bS<bU;bS++){bV=bE.order[bS];if((bT=bE.leftMatch[bV].exec
"){bT[1]
=(bT[1]||"").replace(bK,"");bW=bE.find[bV](bT,e,bY);if(bW!=null){bX=bX.replace(bE.match[bV],"");break}}}if(!bW){bW=type
 e.getElementsByTagName!=="undefined"?e.getElementsByTagName("*"):[]}return{set:bW,expr:bX}};by.filter=function(b1,b0,b
 bW,e,bZ,b6,b3,bR,bT,bV,b2,bS=b1,b5=[],bY=b0,bX=b0&&b0[0].ownerDocument&&by.isXML(b0[0]);while(b1&&b0.length){for(bZ in
 bE.filter){if((bW=bE.leftMatch[bZ].exec(b1))!=null&&bW[2]){bR=bE.filter[bZ];bT=bW[1];e=false;bW.splice(1,1);if(bT.subst
"){continue}if(bY===b5){b5=[]}if(bE.preFilter
[bZ]){bW=bE.preFilter[bZ](bW,bY,b4,b5,bU,bX);if(!bW){e=b6=true}else{if(bW===true){continue}}}if(bW){for(bV=0
;(b3=bY[bV])!=null;bV++){if(b3){b6=bR(b3,bW,bV,bY);b2=bU^b6;if(b4&&b6!=null){if(b2){e=true}else{bY[bV]=false
}}else{if(b2){b5.push(b3);e=true}}}}}if(b6!==L){if(!b4){bY=b5}b1=b1.replace(bE.match[bZ],"");if(!e){return[]}break}}}if
 Error("Syntax error, unrecognized expression: "+e)};var bw=by.getText=function(bU){var
 bS,bT,e=bU.nodeType,bR="";if(e){if(e===1||e===9){if(typeof bU.textContent==="string"){return bU.textContent}else{if(ty
 bU.innerText==="string"){return
 bU.innerText.replace(bO,"")}else{for(bU=bU.firstChild;bU;bU=bU.nextSibling){bR+=bw(bU)}}}}else{if(e===3||e===4){return
 bU.nodeValue)}}else{for(bS=0;(bT=bU[bS]);bS++){if(bT.nodeType!==8){bR+=bw(bT)}}}return bR};var bE=by.selectors={order:
.)+)/,CLASS:/\.((?:[\w\u00c0-\uFFFF\-]|\\.)+)/,NAME:/\[name=['"]*((?:[\w\u00c0-\uFFFF\-]|\\.)+)['"]*\]/,ATTR:/\[
\s*((?:[\w\u00c0-\uFFFF\-]|\\.)+)\s*(?:(\S?=)\s*(?:(['"])(.*?)\3|(#?(?:[\w\u00c0-\uFFFF\-]|\\.)*)|)|)\s*\]
/,TAG:/^((?:[\w\u00c0-\uFFFF\*\-]|\\.)+)/,CHILD:/:(only|nth|last|first)-child(?:\(\s*(even|odd|(?:[+\-]?\d
+|(?:[+\-]?\d*)?n\s*(?:[+\-]\s*\d+)?))\s*\))?/,POS:/:(nth|eq|gt|lt|first|last|even|odd)(?:\((\d*)\))?(?=[^\-
]|$)/,PSEUDO:/:((?:[\w\u00c0-\uFFFF\-]|\\.)+)(?:\((['"]?)((?:\([^\)]+\)|[^\(\)]*)+)\2\)
)?/},leftMatch:{},attrMap:{"class":"className","for":"htmlFor"},attrHandle:{href:function(e){return e.getAttribute("hre
)},type:function(e){return e.getAttribute("type")}},relative:{"+":function(bW,bR){var bT=typeof bR==="string"
,bV=bT&&!bQ.test(bR),bX=bT&&!bV;if(bV){bR=bR.toLowerCase()}for(var
 bS=0,e=bW.length,bU;bS<e;bS++){if((bU=bW[bS])){while
((bU=bU.previousSibling)&&bU.nodeType!==1){}bW[bS]=bX||bU&&bU.nodeName.toLowerCase()===bR?bU||false:bU===bR}}if(bX){by.
,bS=0,e=bW.length;if(bU&&!bQ.test(bR)){bR=bR.toLowerCase();for(;bS<e;bS++){bV=bW[bS];if(bV){var
 bT=bV.parentNode;bW[bS]=bT.nodeName.to
LowerCase()===bR?bT:false}}}else{for(;bS<e;bS++){bV=bW[bS];if(bV){bW[bS]=bU?bV.parentNode:bV.parentNode===bR}}if(bU){by
&&!bQ.test(bR)){bR=bR.toLowerCase();bU=bR;e=bv}e("parentNode",bR,bS,bT,bU,bV)},"~":function(bT,bR,bV){var
 bU,bS=bI++,e=bN;if(typeof bR==="string"&&!bQ.test(bR)){bR=bR.toLowerCase();bU=bR;e=bv}e("previousSibling"
,bR,bS,bT,bU,bV)}},find:{ID:function(bR,bS,bT){if(typeof bS.getElementById!=="undefined"&&!bT){var
 e=bS.getElementById(bR[1]);return e&&e.parentNode?[e]:[]}},NAME:function(bS,bV){if(typeof bV.getElementsByName!=="unde
 bR=[],bU=bV.getElementsByName(bS[1]);for(var bT=0,e=bU.length;bT<e;bT++){if(bU[bT].getAttribute("name"
)===bS[1]){bR.push(bU[bT])}}return bR.length===0?null:bR}},TAG:function(e,bR){if(typeof bR.getElementsByTagName!==
"undefined"){return bR.getElementsByTagName(e[1])}}},preFilter:{CLASS:function(bT,bR,bS,e,bW,bX){bT=" "
+bT[1].replace(bK,"")+" ";if(bX){return bT}for(var bU=0,bV;(bV=bR[bU])!=null;bU++){if(bV){if(bW^(bV.className&&("
 "+bV.className+" ").replace(/[\t\n\r]/g," "
).indexOf(bT)>=0)){if(!bS){e.push(bV)}}else{if(bS){bR[bU]=false}}}}return false},ID:function(e){return e[1].replace(bK,"
).toLowerCase()},CHILD:function(e){if(e[1]==="nth"){if(!e[2]){by.error(e[0])}e[2]=e[2].replace(/^\+|\s*/g,""
);var bR=/(-?)(\d*)(?:n([+\-]?\d*))?/.exec(e[2]==="even"&&"2n"||e[2]==="odd"&&"2n+1"||!/\D/.test(e[2])&&"0
n+"+e[2]||e[2]);e[2]=(bR[1]+(bR[2]||1))-0;e[3]=bR[3]-0}else{if(e[2]){by.error(e[0])}}e[0]=bI++;return
 e},ATTR:function(bU,bR,bS,e,bV,bW){var bT=bU[1]=bU[1].replace(bK,""
);if(!bW&&bE.attrMap[bT]){bU[1]=bE.attrMap[bT]}bU[4]=(bU[4]||bU[5]||"").replace(bK,"");if(bU[2]==="~="){bU[4]=" "+bU[4]
 bU},PSEUDO:function(bU,bR,bS,e,bV){if(bU[1]==="not"){if((bH.exec(bU[3])||"").length>1||/^\w
/.test(bU[3])){bU[3]=by(bU[3],null,null,bR)}else{var bT=by.filter(bU[3],bR,bS,true^bV);if(!bS){e.push.apply(e,bT)}return
 false}}else{if(bE.match.POS.test(bU[0])||bE.match.CHILD.test(bU[0])){return true}return bU},POS:function(e){e.unshift
 e}},filters:{enabled:function(e){return e.disabled===false&&e.type!=="hidden"},disabled:function(e){return
 e.disabled===true},checked:function(e){return
 e.checked===true},selected:function(e){if(e.parentNode){e.parentNode.selectedIndex}return e.selected===true},parent:fu
 !!e.firstChild},empty:function(e){return !e.firstChild},has:function(bS,bR,e){return !!by(e[3],bS).length},header:funct
/i).test(e.nodeName)},text:function(bS){var e=bS.getAttribute("type"),bR=bS.type;return bS.nodeName.toLowerCase()==="
input"&&"text"===bR&&(e===bR||e===null)},radio:function(e){return e.nodeName.toLowerCase()==="input"&&"radio
"===e.type},checkbox:function(e){return e.nodeName.toLowerCase()==="input"&&"checkbox"
===e.type},file:function(e){return e.nodeName.toLowerCase()==="input"&&"file"===e.type},password:function(e){return
 e.nodeName.toLowerCase()==="input"&&"password"===e.type},submit:function(bR){var e=bR.nodeName.toLowerCase();return(e==
input"||e==="button")&&"submit"===bR.type},image:function(e){return e.nodeName.toLowerCase()==="input"&&"
image"===e.type},reset:function(bR){var e=bR.nodeName.toLowerCase();return(e==="input"||e==="button")&&"reset"
===bR.type},button:function(bR){var e=bR.nodeName.toLowerCase();return e==="input"&&"button"===bR.type||e==="
button"},input:function(e){return(/input|select|textarea|button/i).test(e.nodeName)},focus:function(e){return
 e===e.ownerDocument.activeElement}},setFilters:{first:function(bR,e){return
 e===0},last:function(bS,bR,e,bT){return bR===bT.length-1},even:function(bR,e){return e%2===0},odd:function(bR,e){return
 e%2===1},lt:function(bS,bR,e){return bR<e[3]-0},gt:function(bS,bR,e){return bR>e[3]-0},nth:function(bS,bR,e){return
 e[3]-0===bR},eq:function(bS,bR,e){return e[3]-0===bR}},filter:{PSEUDO:function(bS,bX,bW,bY){var
 e=bX[1],bR=bE.filters[e];if(bR){return bR(bS,bW,bX,bY)}else{if(e==="contains"){return(bS.textContent||bS.innerText||bw
).indexOf(bX[3])>=0}else{if(e==="not"){var bT=bX[3];for(var
 bV=0,bU=bT.length;bV<bU;bV++){if(bT[bV]===bS){return false}}return true}else{by.error(e)}}}},CHILD:function(bS,bU){var
 bT,b0,bW,bZ,e,bV,bY,bX=bU[1],bR=bS;switch(bX){case"only":case"first":while((bR=bR.previousSibling)){if(bR.nodeType===1)
"){return true}bR=bS;case"last":while((bR=bR.nextSibling)){if(bR.nodeType===1){return false}}return
 true;case"nth":bT=bU[2];b0=bU[3];if(bT===1&&b0===0){return
 true}bW=bU[0];bZ=bS.parentNode;if(bZ&&(bZ[bC]!==bW||!bS.no
deIndex)){bV=0;for(bR=bZ.firstChild;bR;bR=bR.nextSibling){if(bR.nodeType===1){bR.nodeIndex=++bV}}bZ[bC]=bW}bY=bS.nodeInd
 bR.nodeType===1&&bR.getAttribute("id")===e},TAG:function(bR,e){return(e==="*"
&&bR.nodeType===1)||!!bR.nodeName&&bR.nodeName.toLowerCase()===e},CLASS:function(bR,e){return(" "+(bR.className||bR.getA
).indexOf(e)>-1},ATTR:function(bV,bT){var
 bS=bT[1],e=by.attr?by.attr(bV,bS):bE.attrHandle[bS]?bE.attrHandle[bS](bV):bV[bS]!=null?bV[bS]:bV.getAttribute(bS),bW=e+
:!bU&&by.attr?e!=null:bU==="="?bW===bR:bU==="*="?bW.indexOf(bR)>=0:bU==="~="?(" "+bW+" "
).indexOf(bR)>=0:!bR?bW&&e!==false:bU==="!="?bW!==bR:bU==="^="?bW.indexOf(bR)===0:bU==="$="?bW.substr(bW.length-bR.lengt
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?bW===bR||bW.substr(0,bR.length+1)===bR+"-":false},POS:function(bU,bR,bS,bV){var
 e=bR[2],bT=bE.setFilters[e];if(bT){return bT(bU,bS,bR,bV)}}};var bD=bE.match.POS,bx=function(bR,e){return"\\"+(e-0+1)
 bE.match){bE.match[bz]=new RegExp(bE.match[bz].source+(/(?![^\[]*\])(?![^\(]*\)
)/.source));bE.leftMatch[bz]=new RegExp(/(^(?:.|\r|\n)*?)/.source+bE.match[bz].source.replace(/\\(\d+)/g,bx))}var
 bF=function(bR,e){bR=Array.prototype.slice.call(bR,0);if(e){e.push.apply(e,bR);return e}return
 bR};try{Array.prototype.slice.call(av.documentElement.childNodes,0)[0].nodeType}catch(bP){bF=function(bU,bT){var bS=0,
[object Array]"){Array.prototype.push.apply(bR,bU)}else{if(typeof bU.length==="number"){for(var
 e=bU.length;bS<e;bS++){bR.push(bU[bS])}}else{for(;bU[bS];bS++){bR.push(bU[bS])}}}return bR}}var
 bJ,bG;if(av.documentElement.compareDocumentPosition){bJ=function(bR,e){if(bR===e){bB=true;return
 0}if(!bR.compareDocumentPosition||!e.compareDocumentPosition){return bR.compareDocumentPosition?-1:1}return
 bR.compareDocumentPosition(e)&4?-1:1}}else{bJ=function(bY,bX){if(bY===bX){bB=true;return 0}else{if(bY.sourceIndex&&bX.s
 bY.sourceIndex-bX.sourceIndex}}var bV,bR,bS=[],e=[],bU=bY.parentNode,bW=bX.parentNode,bZ=bU;if(bU===bW){return
 bG(bY,bX)}else{if(!bU){return -1}else{if(!bW){return
 1}}}while(bZ){bS.unshift(bZ);bZ=bZ.parentNode}bZ=bW;while(bZ){e.unshift(bZ);bZ=bZ.parentNode}bV=bS.length;bR=e.length;
 bT=0;bT<bV&&bT<bR;bT++){if(bS[bT]!==e[bT]){return bG(bS[bT],e[bT])}}return
 bT===bV?bG(bY,e[bT],-1):bG(bS[bT],bX,1)};bG=function(bR,e,bS){if(bR===e){return bS}var bT=bR.nextSibling;while(bT){if(
 bR=av.createElement("div"),bS="script"+(new Date()).getTime(),e=av.documentElement;bR.innerHTML="<a name='
"+bS+"'/>";e.insertBefore(bR,e.firstChild);if(av.getElementById(bS)){bE.find.ID=function(bU,bV,bW){if(typeof
 bV.getElementById!=="undefined"&&!bW){var bT=bV.getElementById(bU[1]);return bT?bT.id===bU[1]||typeof
 bT.getAttributeNode!=="undefined"&&bT.getAttributeNode("id"
).nodeValue===bU[1]?[bT]:L:[]}};bE.filter.ID=function(bV,bT){var bU=typeof bV.getAttributeNode!=="undefined"&&bV.getAtt
 bV.nodeType===1&&bU&&bU.nodeValue===bT}}e.removeChild(bR);e=bR=null})();(function(){var e=av.createElement("div"
);e.appendChild(av.createComment(""));if(e.getElementsByTagName("*").length>0){bE.find.TAG=function(bR,bV){var
 bU=bV.getElementsByTagName(bR[1]);if(bR[1]==="*"){var bT=[];for(var
 bS=0;bU[bS];bS++){if(bU[bS].nodeType===1){bT.push(bU[bS])}}bU=bT}return bU}}e.innerHTML="<a href='#'></a>";if(e.firstCh
undefined"&&e.firstChild.getAttribute("href")!=="#"){bE.attrHandle.href=function(bR){return bR.getAttribute("
href",2)}}e=null})();if(av.querySelectorAll){(function(){var e=by,bT=av.createElement("div"),bS="__sizzle__"
;bT.innerHTML="<p class='TEST'></p>";if(bT.querySelectorAll&&bT.querySelectorAll(".TEST"
).length===0){return}by=function(b4,bV,bZ,b3){bV=bV||av;if(!b3&&!by.isXML(bV)){var b2=/^(\w+$)|^\.([\w\-]+$)|^#([\w\-
]+$)/.exec(b4);if(b2&&(bV.nodeType===1||bV.nodeType===9)){if(b2[1]){return
 bF(bV.getElementsByTagName(b4),bZ)}else{if(b2[2]&&bE.find.CLASS&&bV.getElementsByClassName){return
 bF(bV.getElementsByClassName(b2[2]),bZ)}}}if(bV.nodeType===9){if(b4==="body"&&bV.body){return bF([bV.body],bZ)}else{if
 bY=bV.getElementById(b2[3]);if(bY&&bY.parentNode){if(bY.id===b2[3]){return bF([bY],bZ)}}else{return bF([],bZ)}}}try{ret
 bF(bV.querySelectorAll(b4),bZ)}catch(b0){}}else{if(bV.nodeType===1&&bV.nodeName.toLowerCase()!=="object"){var
 bW=bV,bX=bV.getAttribute("id"),bU=bX||bS,b6=bV.parentNode,b5=/^\s*[+~]/.test(b4);if(!bX){bV.setAttribute("id"
,bU)}else{bU=bU.replace(/'/g,"\\$&")}if(b5&&b6){bV=bV.parentNode}try{if(!b5||b6){return bF(bV.querySelectorAll("[id='
"+bU+"'] "+b4),bZ)}}catch(b1){}finally{if(!bX){bW.removeAttribute("id")}}}}}return e(b4,bV,bZ,b3)};for(var
 bR in e){by[bR]=e[bR]}bT=null})()}(function(){var
 e=av.documentElement,bS=e.matchesSelector||e.mozMatchesSelector||e.webkitMatchesSelector||e.msMatchesSelector;if(bS){va
),bR=false;try{bS.call(av.documentElement,"[test!='']:sizzle"
)}catch(bT){bR=true}by.matchesSelector=function(bW,bY){bY=bY.replace(/\=\s*([^'"\]]*)\s*\]/g,"='$1']");if(!by.isXML(bW))
/!=/.test(bY)){var bV=bS.call(bW,bY);if(bV||!bU||bW.document&&bW.document.nodeType!==11){return bV}}catch(
bX){}}return by(bY,null,null,[bW]).length>0}}})();(function(){var e=av.createElement("div");e.innerHTML="<div
 class='test e'></div><div class='test'></div>";if(!e.getElementsByClassName||e.getElementsByClassName("e").
length===0){return}e.lastChild.className="e";if(e.getElementsByClassName("e").length===1){return}bE.order.
splice(1,0,"CLASS");bE.find.CLASS=function(bR,bS,bT){if(typeof bS.getElementsByClassName!=="undefined"&&!bT){
return bS.getElementsByClassName(bR[1])}};e=null})();function bv(bR,bW,bV,bZ,bX,bY){for(var bT=0,bS=bZ.length
;bT<bS;bT++){var e=bZ[bT];if(e){var bU=false;e=e[bR];while(e){if(e[bC]===bV){bU=bZ[e.sizset];break}if(e.
nodeType===1&&!bY){e[bC]=bV;e.sizset=bT}if(e.nodeName.toLowerCase()===bW){bU=e;break}e=e[bR]}bZ[bT]=bU}}}
function bN(bR,bW,bV,bZ,bX,bY){for(var bT=0,bS=bZ.length;bT<bS;bT++){var e=bZ[bT];if(e){var bU=false;e=e[bR];while(
e){if(e[bC]===bV){bU=bZ[e.sizset];break}if(e.nodeType===1){if(!bY){e[bC]=bV;e.sizset=bT}if(typeof bW!==
string"){if(e===bW){bU=true;break}}else{if(by.filter(bW,[e]).length>0){bU=e;break}}}e=e[bR]}bZ[bT]=bU}}}if(av.
documentElement.contains){by.contains=function(bR,e){return bR!==e&&(bR.contains?bR.contains(e):true)}}else{if
(av.documentElement.compareDocumentPosition){by.contains=function(bR,e){return !!(bR.compareDocumentPosition
(e)&16)}}else{by.contains=function(){return false}}}by.isXML=function(e){var bR=(e?e.ownerDocument||e:0).
documentElement;return bR?bR.nodeName!=="HTML":false};var bM=function(bS,e,bW){var bV,bX=[],bU="",bY=e.nodeType
?[e]:e;while((bV=bE.match.PSEUDO.exec(bS))){bU+=bV[0];bS=bS.replace(bE.match.PSEUDO,"")}bS=bE.relative[bS]?
bS+"*":bS;for(var bT=0,bR=bY.length;bT<bR;bT++){by(bS,bY[bT],bX,bW)}return by.filter(bU,bX)};by.attr=
b.attr;by.selectors.attrMap={};b.find=by;b.expr=by.selectors;b.expr[":"]=b.expr.filters;
b.unique=by.uniqueSort;b.text=by.getText;b.isXMLDoc=by.isXML;b.contains=by.contains})();var ab=/Until$/
,aq=/^(?:parents|prevUntil|prevAll)/,a9=/,/,bp=/^.[^:#\[\.,]*$/,P=Array.prototype.slice,H=
b.expr.match.POS,ay={children:true,contents:true,next:true,prev:true};b.fn.extend({find:function(e){var
bw=this,by,bv;if(typeof e!=="string"){return b(e).filter(function(){for(by=0,bv=bw.length;by<bv;by++){if(b.c
ontains(bw[by],this)){return true}}})}var bx=this.pushStack("","find",e),bA,bB,bz;for(by=0,bv=this.length;by
<bv;by++){bA=bx.length;b.find(e,this[by],bx);if(by>0){for(bB=bA;bB<bx.length;bB++){for(bz=0;bz<bA;bz++){if(
bx[bz]===bx[bB]){bx.splice(bB--,1);break}}}}}return bx},has:function(bv){var e=b(bv);return this.filter(
function(){for(var bx=0,bw=e.length;bx<bw;bx++){if(b.contains(this,e[bx])){return true}}})},not:function(e){
return this.pushStack(aG(this,e,false),"not",e)},filter:function(e){return this.pushStack(aG(this,e,true),"
filter",e)},is:function(e){return !!e&&(typeof e==="string"?H.test(e)?b(e,this.context).index(this[0])>=0:
b.filter(e,this).length>0:this.filter(e).length>0)},closest:function(by,bx){var bv=[],bw,e,bz=this[0];if(
b.isArray(by)){var bB=1;while(bz&&bz.ownerDocument&&bz!==bx){for(bw=0;bw<by.length;bw++){if(
b(bz).is(by[bw])){bv.push({selector:by[bw],elem:bz,level:bB})}}bz=bz.parentNode;bB++}return bv}var bA=H.
test(by)||typeof by!=="string"?b(by,bx||this.context):0;for(bw=0,e=this.length;bw<e;bw++){bz=this[bw];while(
bz){if(bA?bA.index(bz)>-1:b.find.matchesSelector(bz,by)){bv.push(bz);break}else{bz=bz.parentNode;if(!bz||!bz
.ownerDocument||bz===bx||bz.nodeType===11){break}}}}bv=bv.length>1?b.unique(bv):bv;return this.pushStack(bv
,"closest",by)},index:function(e){if(!e){return(this[0]&&this[0].parentNode)?this.prevAll().length:-1}if(
typeof e==="string"){return b.inArray(this[0],b(e))}return b.inArray(e.jquery?e[0]:e,this)},add:function(e,
bv){var bx=typeof e==="string"?b(e,bv):b.makeArray(e&&e.nodeType?[e]:e),bw=b.merge(this.get(),bx);return
this.pushStack(C(bx[0])||C(bw[0])?bw:b.unique(bw))},andSelf:function(){return this.add(this.prevObject)}});
function C(e){return !e||!e.parentNode||e.parentNode.nodeType===11}b.each({parent:function(bv){var e=bv.
parentNode;return e&&e.nodeType!==11?e:null},parents:function(e){return b.dir(e,"parentNode")},parentsUntil:
function(bv,e,bw){return b.dir(bv,"parentNode",bw)},next:function(e){return b.nth(e,2,"nextSibling")},prev:
function(e){return b.nth(e,2,"previousSibling")},nextAll:function(e){return b.dir(e,"nextSibling")},prevAll:
function(e){return b.dir(e,"previousSibling")},nextUntil:function(bv,e,bw){return
b.dir(bv,"nextSibling",bw)},prevUntil:function(bv,e,bw){return b.dir(bv,"previousSibling",bw)},siblings:
function(e){return b.sibling(e.parentNode.firstChild,e)},children:function(e){return
b.sibling(e.firstChild)},contents:function(e){return b.nodeName(e,"iframe")?e.contentDocument||e.
```

```
contentWindow.document:b.makeArray(e.childNodes)}},function(e,bv){b.fn[e]=function(by,bw){var bx=
b.map(this,bv,by);if(!ab.test(e)){bw=by}if(bw&&typeof bw==="string"){bx=b.filter(bw,bx)}bx=this.length>1&
&!ay[e]?b.unique(bx):bx;if((this.length>1||a9.test(bw))&&aq.test(e)){bx=bx.reverse()}return this.pushStack(
bx,e,P.call(arguments).join(","))})};b.extend({filter:function(bw,e,bv){if(bv){bw=":not("+bw+")"}return e.
length===1?b.find.matchesSelector(e[0],bw)?[e[0]]:[]:b.find.matches(bw,e)},dir:function(bw,bv,by){var e=[]
,bx=bw[bv];while(bx&&bx.nodeType!==9&&(by===L||bx.nodeType!==1||!b(bx).is(by))){if(bx.nodeType===1){e.push
(bx)}bx=bx[bv]}return e},nth:function(by,e,bw,bx){e=e||1;var bv=0;for(;by;by=by[bw]){if(by.nodeType===1&&++
bv===e){break}}return by},sibling:function(bw,bv){var e=[];for(;bw;bw=bw.nextSibling){if(bw.nodeType===1&&bw
!==bv){e.push(bw)}}return e}});function aG(bx,bw,e){bw=bw||0;if(b.isFunction(bw)){return
b.grep(bx,function(bz,by){var bA=!!bw.call(bz,by,bz);return bA===e})}else{if(bw.nodeType){return
b.grep(bx,function(bz,by){return(bz===bw)===e})}else{if(typeof bw==="string"){var bv=
b.grep(bx,function(by){return by.nodeType===1});if(bp.test(bw)){return b.filter(bw,bv,!e)}else{bw=
b.filter(bw,bv)}}}}return b.grep(bx,function(bz,by){return(b.inArray(bz,bw)>=0)===e})}function a(e){var
bw=aR.split("|"),bv=e.createDocumentFragment();if(bv.createElement){while(bw.length){bv.createElement(bw.pop
())}}return bv}var aR="
abbr|article|aside|audio|canvas|datalist|details|figcaption|figure|footer|header|hgroup|mark|meter|nav|output|progress|s
(?!area|br|col|embed|hr|img|input|link|meta|param)(([\w:]+)[^>]*)\/>/ig,d=/<([\w:]+)/,w=/<tbody/
i,W=/<|&#?\w+;/,ae=/<(?:script|style)/i,O=/<(?:script|object|embed|option|style)/
i,ah=new RegExp("<(?:"+aR+")","i"),o=/checked\s*(?:[^=]|=\s*.checked.)/i,bm=/\/(java|ecma)script/
i,aN=/^\s*<!(?:\[CDATA\[|\-\-)/,ax={option:[1,"<select multiple='multiple'>","</select>"],legend:[1,"
<fieldset>","</fieldset>"],thead:[1,"<table>","</table>"],tr:[2,"<table><tbody>","</tbody></table>"],td:[3,"
<table><tbody><tr>","</tr></tbody></table>"],col:[2,"<table><tbody></tbody><colgroup>","</colgroup></table>"],
area:[1,"<map>","</map>"],_default:[0,"",""]},ac=a(av);ax.optgroup=ax.option;ax.tbody=ax.tfoot=ax.
colgroup=ax.caption=ax.thead;ax.th=ax.td;if(!b.support.htmlSerialize){ax._default=[1,"div<div>","</div>"]}
b.fn.extend({text:function(e){if(b.isFunction(e)){return this.each(function(bw){var bv=
b(this);bv.text(e.call(this,bw,bv.text()))})}if(typeof e!=="object"&&e!==L){return this.empty().append((
this[0]&&this[0].ownerDocument||av).createTextNode(e))}return b.text(this)},wrapAll:function(e){if(
b.isFunction(e)){return this.each(function(bw){b(this).wrapAll(e.call(this,bw))})}if(this[0]){var bv=
b(e,this[0].ownerDocument).eq(0).clone(true);if(this[0].parentNode){bv.insertBefore(this[0])}bv.map(
function(){var bw=this;while(bw.firstChild&&bw.firstChild.nodeType===1){bw=bw.firstChild}return bw}).append(this)}
return this},wrapInner:function(e){if(b.isFunction(e)){return this.each(function(bv){
b(this).wrapInner(e.call(this,bv))})}return this.each(function(){var bv=b(this),bw=bv.contents();if(
bw.length){bw.wrapAll(e)}else{bv.append(e)}})},wrap:function(e){var bv=b.isFunction(e);return this.
each(function(bw){b(this).wrapAll(bv?e.call(this,bw):e)})},unwrap:function(){return this.parent().each
(function(){if(!b.nodeName(this,"body")){b(this).replaceWith(this.childNodes)}}).end()},append:function(){
return this.domManip(arguments,true,function(e){if(this.nodeType===1){this.appendChild(e)}})},prepend:
function(){return this.domManip(arguments,true,function(e){if(this.nodeType===1){this.insertBefore(e,this.
firstChild)}})},before:function(){if(this[0]&&this[0].parentNode){return this.domManip(arguments,false,function(bv){
this.parentNode.insertBefore(bv,this)})}else{if(arguments.length){var e=b.clean(arguments);e.push.apply(e,
this.toArray());return this.pushStack(e,"before",arguments)}}},after:function(){if(this[0]&&this[0].
parentNode){return this.domManip(arguments,false,function(bv){this.parentNode.insertBefore(bv,this.nextSibling)})}
else{if(arguments.length){var e=this.pushStack(this,"after",arguments);e.push.apply(e,
b.clean(arguments));return e}}},remove:function(e,bx){for(var bv=0,bw;(bw=this[bv])!=null;bv++){if(!e||
b.filter(e,[bw]).length){if(!bx&&bw.nodeType===1){b.cleanData(bw.getElementsByTagName("*"));
b.cleanData([bw])}if(bw.parentNode){bw.parentNode.removeChild(bw)}}}return this},empty:function(){for(var
e=0,bv;(bv=this[e])!=null;e++){if(bv.nodeType===1){b.cleanData(bv.getElementsByTagName("*"))}while(bv.
firstChild){bv.removeChild(bv.firstChild)}}return this},clone:function(bv,e){bv=bv==null?false:bv;e=e==null?bv:e;
return this.map(function(){return b.clone(this,bv,e)})},html:function(bx){if(bx===
L){return this[0]&&this[0].nodeType===1?this[0].innerHTML.replace(ag,""):null}else{if(typeof bx==="string"
&&!ae.test(bx)&&(b.support.leadingWhitespace||!ar.test(bx))&&!ax[(d.exec(bx)||["",""])[1].toLowerCase()]){
bx=bx.replace(R,"<$1></$2>");try{for(var bw=0,bv=this.length;bw<bv;bw++){if(this[bw].nodeType===1){
b.cleanData(this[bw].getElementsByTagName("*"));this[bw].innerHTML=bx}}}catch(by){this.empty().append(bx)}
}else{if(b.isFunction(bx)){this.each(function(bz){var e=b(this);e.html(bx.call(this,bz,e.html()))})}
else{this.empty().append(bx)}}}return this},replaceWith:function(e){if(this[0]&&this[0].parentNode){if(
b.isFunction(e)){return this.each(function(bx){var bw=b(this),bv=bw.html();bw.replaceWith(e.call(this
,bx,bv))})}if(typeof e!=="string"){e=b(e).detach()}return this.each(function(){var bw=this.nextSibling,
bv=this.parentNode;b(this).remove();if(bw){b(bw).before(e)}else{b(bv).append(e)}})}else{return this.
length?this.pushStack(b(b.isFunction(e)?e():e),"replaceWith",e):this}},detach:function(e){return this.remove(e,
true)},domManip:function(bB,bF,bE){var bx,by,bA,bD,bC=bB[0],bv=[];if(!b.support.checkClone&&arguments.
length===3&&typeof bC==="string"&&o.test(bC)){return this.each(function(){b(this).domManip(bB,bF,bE,true)})}
if(b.isFunction(bC)){return this.each(function(bH){var bG=b(this);bB[0]=bC.call(this,bH,bF?bG.html():
L);bG.domManip(bB,bF,bE)})}if(this[0]){bD=bC&&bC.parentNode;if(b.support.parentNode&&bD&&bD.nodeType===11
&&bD.childNodes.length===this.length){bx={fragment:bD}}else{bx=b.buildFragment(bB,this,bv)}bA=bx.fragment;
if(bA.childNodes.length===1){by=bA=bA.firstChild}else{by=bA.firstChild}if(by){bF=bF&&
b.nodeName(by,"tr");for(var bw=0,e=this.length,bz=e-1;bw<e;bw++){bE.call(bF?ba(this[bw],by):this[bw],bx.
cacheable||(e>1&&bw<bz)?b.clone(bA,true,true):bA)}}if(bv.length){b.each(bv,bo)}}return this}});function ba(e
,bv){return b.nodeName(e,"table")?(e.getElementsByTagName("tbody")[0]||e.appendChild(e.ownerDocument.
createElement("tbody"))):e}function t(bB,bv){if(bv.nodeType!==1||!b.hasData(bB)){return}var by,bx,e,bA=
b._data(bB),bz=b._data(bv,bA),bw=bA.events;if(bw){delete bz.handle;bz.events={};for(by in bw){for(bx=0,e=
bw[by].length;bx<e;bx++){b.event.add(bv,by+(bw[by][bx].namespace?".":"")+bw[by][bx].namespace,bw[by][bx],bw
[by][bx].data)}}}if(bz.data){bz.data=b.extend({},bz.data)}}function ai(bv,e){var bw;if(e.nodeType!==1){
return}if(e.clearAttributes){e.clearAttributes()}if(e.mergeAttributes){e.mergeAttributes(bv)}bw=e.nodeName.
toLowerCase();if(bw==="object"){e.outerHTML=bv.outerHTML}else{if(bw==="input"&&(bv.type==="checkbox"||bv.type==="
radio")){if(bv.checked){e.defaultChecked=e.checked=bv.checked}if(e.value!==bv.value){e.value=bv.value}}else{
if(bw==="option"){e.selected=bv.defaultSelected}else{if(bw==="input"||bw==="textarea"){e.defaultValue=bv.
defaultValue}}}e.removeAttribute(b.expando)}b.buildFragment=function(bz,bx,bv){var by,e,bw,bA,bB=bz[0];if(bx
&&bx[0]){bA=bx[0].ownerDocument||bx[0]}if(!bA.createDocumentFragment){bA=av}if(bz.length===1&&typeof bB==="
string"&&bB.length<512&&bA===av&&bB.charAt(0)==="<"&&!O.test(bB)&&(b.support.checkClone||!o.test(bB))&&(
b.support.html5Clone||!ah.test(bB))){e=true;bw=b.fragments[bB];if(bw&&bw!==1){by=bw}if(!by){by=bA.
createDocumentFragment();b.clean(bz,bA,by,bv)}if(e){b.fragments[bB]=bw?by:1}return{fragment:by,cacheable:e}};
b.fragments={};b.each({appendTo:"append",prependTo:"prepend",insertBefore:"before",insertAfter:"after",
replaceAll:"replaceWith"},function(e,bv){b.fn[e]=function(bw){var bz=[],bC=b(bw),bB=this.length===1&&this[0]
.parentNode;if(bB&&bB.nodeType===11&&bB.childNodes.length===1&&bC.length===1){bC[bv](this[0]);return this}
else{for(var bA=0,bx=bC.length;bA<bx;bA++){var by=(bA>0?this.clone(true):this).get();
b(bC[bA])[bv](by);bz=bz.concat(by)}return this.pushStack(bz,e,bC.selector)}}});function bg(e){if(typeof e.
getElementsByTagName!=="undefined"){return e.getElementsByTagName("*")}else{if(typeof e.querySelectorAll!=="
undefined"){return e.querySelectorAll("*")}else{return[]}}}function az(e){if(e.type==="checkbox"||e.type==="
```

```
radio"){e.defaultChecked=e.checked}}function E(e){var bv=(e.nodeName||"").toLowerCase();if(bv==="input"){az
(e)}else{if(bv!=="script"&&typeof e.getElementsByTagName!=="undefined"){b.grep(e.getElementsByTagName("
input"),az)}}}function al(e){var bv=av.createElement("div");ac.appendChild(bv);bv.innerHTML=e.outerHTML;return
bv.firstChild}b.extend({clone:function(by,bA,bw){var e,bv,bx,bz=b.support.html5Clone||!ah.test("<"+by.
nodeName)?by.cloneNode(true):al(by);if((!b.support.noCloneEvent||!b.support.noCloneChecked)&&(by.nodeType===1||
by.nodeType===11)&&!b.isXMLDoc(by)){ai(by,bz);e=bg(by);bv=bg(bz);for(bx=0;e[bx];++bx){if(bv[bx]){ai(e[bx],
bv[bx])}}}if(bA){t(by,bz);if(bw){e=bg(by);bv=bg(bz);for(bx=0;e[bx];++bx){t(e[bx],bv[bx])}}}e=bv=null;return
bz},clean:function(bw,by,bH,bA){var bF;by=by||av;if(typeof by.createElement==="undefined"){by=by.
ownerDocument||by[0]&&by[0].ownerDocument||av}var bI=[],bB;for(var bE=0,bz;(bz=bw[bE])!=null;bE++){if(typeof bz==="
number"){bz+=""}if(!bz){continue}if(typeof bz==="string"){if(!W.test(bz)){bz=by.createTextNode(bz)}else{bz=bz.
replace(R,"<$1></$2>");var bK=(d.exec(bz)||["",""])[1].toLowerCase(),bx=ax[bK]||ax._default,bD=bx[0],bv=by.
createElement("div");if(by===av){ac.appendChild(bv)}else{a(by).appendChild(bv)}bv.innerHTML=bx[1]+bz+bx[2];while
(bD--){bv=bv.lastChild}if(!b.support.tbody){var e=w.test(bz),bC=bK==="table"&&!e?bv.firstChild&&bv.
firstChild.childNodes:bx[1]==="<table>"&&!e?bv.childNodes:[];for(bB=bC.length-1;bB>=0;--bB){if(
b.nodeName(bC[bB],"tbody")&&!bC[bB].childNodes.length){bC[bB].parentNode.removeChild(bC[bB])}}}if(!
b.support.leadingWhitespace&&ar.test(bz)){bv.insertBefore(by.createTextNode(ar.exec(bz)[0]),bv.firstChild)
}bz=bv.childNodes}}var bG;if(!b.support.appendChecked){if(bz[0]&&typeof(bG=bz.length)==="number"){for(bB=0;
bB<bG;bB++){E(bz[bB])}}else{E(bz)}}if(bz.nodeType){bI.push(bz)}else{bI=b.merge(bI,bz)}}if(bH){bF=function
(bL){return !bL.type||bm.test(bL.type)};for(bE=0;bI[bE];bE++){if(bA&&b.nodeName(bI[bE],"script")&&(!bI[bE].
type||bI[bE].type.toLowerCase()==="text/javascript")){bA.push(bI[bE].parentNode?bI[bE].parentNode.
removeChild(bI[bE]):bI[bE])}else{if(bI[bE].nodeType===1){var bJ=b.grep(bI[bE].getElementsByTagName("script"),bF);bI.
splice.apply(bI,[bE+1,0].concat(bJ))}bH.appendChild(bI[bE])}}}return bI},cleanData:function(bv){var by,bw,e=
b.cache,bB=b.event.special,bA=b.support.deleteExpando;for(var bz=0,bx;(bx=bv[bz])!=null;bz++){if(bx.
nodeName&&b.noData[bx.nodeName.toLowerCase()]){continue}bw=bx[b.expando];if(bw){by=e[bw];if(by&&by.events){for
(var bC in by.events){if(bB[bC]){b.event.remove(bx,bC)}else{b.removeEvent(bx,bC,by.handle)}}if(by.handle){
by.handle.elem=null}}if(bA){delete bx[b.expando]}else{if(bx.removeAttribute){bx.removeAttribute(
b.expando)}}delete e[bw]}}});function bo(e,bv){if(bv.src){b.ajax({url:bv.src,async:false,dataType:"
script"})}else{b.globalEval((bv.text||bv.textContent||bv.innerHTML||"").replace(aN,"/*$0*/"))}if(bv.parentNode){
bv.parentNode.removeChild(bv)}}var ak=/alpha\([^)]*\)/i
```

Definition at line 16 of file jquery.js.

30.803.2.8 function bb

Definition at line 16 of file jquery.js.

30.803.2.9 var bq =/#.∗$/

Definition at line 23 of file jquery.js.

30.803.2.10 var bs =/\r?\n/g

Definition at line 23 of file jquery.js.

30.803.2.11 var c

Initial value:

```
=/^\/\
 * jQuery UI 1.8.18
 *
 * Copyright 2011
```

Definition at line 23 of file jquery.js.

30.803.2.12 b fn css =function(e,bv){if(arguments.length===2&&bv===L){return this}return b.access(this,e,bv,true,function(bx,bw,by){return by!==L?b.style(bx,bw,by):b.css(bx,bw)})}

Definition at line 23 of file jquery.js.

30.803.2.13 b curCSS =b.css

Definition at line 23 of file jquery.js.

30.803.2.14 var k =/%20/g

Definition at line 23 of file jquery.js.

30.803.2.15 function L {var av=bb.document,bu=bb.navigator,bl=bb.location

Definition at line 16 of file jquery.js.

30.803.2.16 Z =al||aX

Definition at line 23 of file jquery.js.

30.804 gotools-core/doc/html/jquery.js File Reference

Functions

- b extend ({cssHooks:{opacity:{get:function(bw, bv){if(bv){var e=Z(bw,"opacity","opacity");return e===""?"1"↩ :e}else{return bw.style.opacity}}}}, cssNumber:{fillOpacity:true, fontWeight:true, lineHeight:true, opacity↩ :true, orphans:true, widows:true, zIndex:true, zoom:true}, cssProps:{"float":b.support.cssFloat?"css↩ Float":"styleFloat"}, style:function(bx, bw, bD, by){if(!bx||bx.nodeType===3||bx.nodeType===8||!bx.↩ style){return}var bB, bC, bz=b.camelCase(bw), bv=bx.style, bE=b.cssHooks[bz];bw=b.cssProps[bz]||bz;if(b↩ D!==L){bC=typeof bD;if(bC==="string"&&(bB=I.exec(bD))){bD=(+(bB[1]+1)∗+bB[2])+parseFloat(b.css(bx, bw));bC="number"}if(bD==null||bC==="number"&&isNaN(bD)){return}if(bC==="number"&&!b.cssNumber[bz]){bD+="px"}if(!bE|| bE)||(bD=bE.set(bx, bD))!==L){try{bv[bw]=bD}catch(bA){}}}else{if(bE &&"get"in bE &&(bB=bE.get(bx, false, by))!==L){return bB}return bv[bw]}}, css:function(by, bx, bv){var bw, e;bx=b.camelCase(bx);e=b.css↩ Hooks[bx];bx=b.cssProps[bx]||bx;if(bx==="cssFloat"){bx="float"}if(e &&"get"in e &&(bw=e.get(by, true, bv))!==L){return bw}else{if(Z){return Z(by, bx)}}}, swap:function(bx, bw, by){var e={};for(var bv in bw){e[bv]=bx.style[bv];bx.style[bv]=bw[bv]}by.call(bx);for(bv in bw){bx.style[bv]=e[bv]}}})
- b each (["height","width"], function(bv, e){b.cssHooks[e]={get:function(by, bx, bw){var bz;if(bx){if(by.offset↩ Width!==0){return p(by, e, bw)}else{b.swap(by, a7, function(){bz=p(by, e, bw)})}return bz}}, set:function(bw, bx){if(bc.test(bx)){bx=parseFloat(bx);if(bx >=0){return bx+"px"}}else{return bx}}}})
- if (!b.support.opacity)
- b (function(){if(!b.support.reliableMarginRight){b.cssHooks.marginRight={get:function(bw, bv){var e;b.↩ swap(bw,{display:"inline-block"}, function(){if(bv){e=Z(bw,"margin-right","marginRight")}else{e=bw.style.↩ marginRight}});return e}}})
- if (av.defaultView &&av.defaultView.getComputedStyle)
- if (av.documentElement.currentStyle)
- function p (by, bw, bv)
- if (b.expr &&b.expr.filters)

Variables

- function bb
- function L {var av=bb.document,bu=bb.navigator,bl=bb.location
- var b
- var au =/opacity=([^)]*)/,z=/([A-Z]|^ms)/g,bc=/^-?\d+(?:px)?$/i,bn=/^-?\d/,l=/^([\-+])=([\-+.\de]+)/,a7={position:"absolute",visibility:"hidden",display:"block"},an=["Left","Right"],a1=["Top","Bottom"],Z,aI,aX
- b fn css =function(e,bv){if(arguments.length===2&&bv===L){return this}return b.access(this,e,bv,true,function(bx,bw,by){return by!==L?b.style(bx,bw,by):b.css(bx,bw)})}
- b curCSS =b.css
- Z =aI||aX
- var k =/%20/g
- var ap =/\[\]$/
- var bs =/\r?\n/g
- var bq =/#.*$/
- var aD =/^(.*?):[\t]*([^\r\n]*)\r?$/mg
- var aZ =/^(?:color|date|datetime|datetime-local|email|hidden|month|number|password|range|search|tel|text|time|url|week)$/i
- var aM =/^(?:about|app|app\-storage|.+\-extension|file|res|widget):$/
- var aQ =/^(?:GET|HEAD)$/
- var c

30.804.1 Function Documentation

30.804.1.1 b (function(){if(!b.support.reliableMarginRight){b.cssHooks.marginRight={get:function(bw, bv){var e;b.swap(bw,{display:"inline-block"}, function(){if(bv){e=Z(bw,"margin-right","marginRight")}else{e=bw.style.marginRight}});return e}}})

30.804.1.2 b each (function(bv, e){b.cssHooks[e]={get:function(by, bx, bw){var bz;if(bx){if(by.offsetWidth!==0){return p(by, e, bw)}else{b.swap(by, a7, function(){bz=p(by, e, bw)})}return bz}}, set:function(bw, bx){if(bc.test(bx)){bx=parseFloat(bx);if(bx >=0){return bx+"px"}}else{return bx}}})

30.804.1.3 b extend ({cssHooks:{opacity:{get:function(bw, bv){if(bv){var e=Z(bw,"opacity","opacity");return e===""?"1":e}else{return bw.style.opacity}}}}, cssNumber:{fillOpacity:true, fontWeight:true, lineHeight:true, opacity:true, orphans:true, widows:true, zIndex:true, zoom:true}, cssProps:{"float":b.support.cssFloat?"cssFloat":"styleFloat"}, style:function(bx, bw, bD, by){if(!bx||bx.nodeType===3||bx.nodeType===8||!bx.style){return}var bB, bC, bz=b.camelCase(bw), bv=bx.style, bE=b.cssHooks[bz];bw=b.cssProps[bz]||bz;if(bD!==L){bC=typeof bD;if(bC==="string"&&(bB=l.exec(bD))){bD=(+(bB[1]+1)*+bB[2])+parseFloat(b.css(bx, bw));bC="number"}if(bD==null||bC==="number"&&isNaN(bD)){return}if(bC==="number"&&!b.cssNumber[bz]){bD+="px"}if(!bE||!("set"in bE)||(bD=bE.set(bx, bD))!==L){try{bv[bw]=bD}catch(bA){}}}else{if(bE &&"get"in bE &&(bB=bE.get(bx, false, by))!==L){return bB}return bv[bw]}}, css:function(by, bx, bv){var bw, e;bx=b.camelCase(bx);e=b.cssHooks[bx];bx=b.cssProps[bx]||bx;if(bx==="cssFloat"){bx="float"}if(e &&"get"in e &&(bw=e.get(by, true, bv))!==L){return bw}else{if(Z){return Z(by, bx)}}}, swap:function(bx, bw, by){var e={};for(var bv in bw){e[bv]=bx.style[bv];bx.style[bv]=bw[bv]}by.call(bx);for(bv in bw){bx.style[bv]=e[bv]}}})

30.804.1.4 if (av.documentElement. *currentStyle*)

Definition at line 23 of file jquery.js.

30.804.1.5 if (av.defaultView &&av.defaultView. *getComputedStyle*)

Definition at line 23 of file jquery.js.

30.804.1.6 if (b.expr &&b.expr. *filters*)

Definition at line 23 of file jquery.js.

30.804.1.7 if (!b.support. *opacity*)

Definition at line 23 of file jquery.js.

30.804.1.8 function p (*by, bw, bv*)

Definition at line 23 of file jquery.js.

30.804.2 Variable Documentation

30.804.2.1 var aD =/^(.*?):[\t]*([^\r\n]*)\r?$/mg

Definition at line 23 of file jquery.js.

30.804.2.2 var aM =/^(?:about|app|app\-storage|.+\-extension|file|res|widget):$/

Definition at line 23 of file jquery.js.

30.804.2.3 var ap =/\[\]$/

Definition at line 23 of file jquery.js.

30.804.2.4 var aQ =/^(?:GET|HEAD)$/

Definition at line 23 of file jquery.js.

30.804.2.5 var au =/opacity=([^)]*)/,z=/([A-Z]|^ms)/g,bc=/^-?\d+(?:px)?$/i,bn=/^-?\d/,l=/^([\-+])=([\-+.\de]+)/,a7={position↩ :"absolute",visibility:"hidden",display:"block"},an=["Left","Right"],a1=["Top","Bottom"],Z,al,aX

Definition at line 23 of file jquery.js.

30.804.2.6 var aZ =/^(?:color|date|datetime|datetime-local|email|hidden|month|number|password|range|search|tel|text|time|url|week)$/i

Definition at line 23 of file jquery.js.

30.804.2.7 var b

Initial value:

```
=(function(){var bF=function(b0,b1){return new bF.fn.init(b0,b1,bD)},bU=bb.jQuery,bH=
      bb.$,bD,bY=/^(?:[^#<]*(<[\w\W]+>)[^>]*$|#([\w\-]*)$)/,bM=/\S/,bI=/^\s+/,bE=/\s+$/,bA=/^<(\w+)\s*\/?>(?:<
      \/\1>)?$/,bN=/^[\],:{}\s]*$/,bW=/\\(?:["\\\/bfnrt]|u[0-9a-fA-F]{4})/g,bP=/"[^"\\\n\r]*"|true|false|null|-?\d
      +(?:\.\d*)?(?:[eE][+\-]?\d+)?/g,bJ=/(?:^|:|,)(?:\s*\[)+/g,by=/(webkit)[ \/]([\w.]+)/,bR=/(opera)(?:.*version
      )?[ \/]([\w.]+)/,bQ=/(msie) ([\w.]+)/,bS=/(mozilla)(?:.*? rv:([\w.]+))?/,bB=/-([a-z]|[0-9])/ig,bZ=/^-ms-/,bT
      =function(b0,b1){return(b1+"").toUpperCase()},bX=bu.userAgent,bV,bC,e,bL=Object.prototype.toString,bG=Object
      .prototype.hasOwnProperty,bz=Array.prototype.push,bK=Array.prototype.slice,bO=String.prototype.trim,bv=Array
      .prototype.indexOf,bx={};bF.fn=bF.prototype={constructor:bF,init:function(b0,b4,b3){var b2,b5,b1,b6;if(!b0){
      return this}if(b0.nodeType){this.context=this[0]=b0;this.length=1;return this}if(b0==="body"&&!b4&&av.body){
      this.context=av;this[0]=av.body;this.selector=b0;this.length=1;return this}if(typeof b0==="string"){if(b0.
      charAt(0)==="<"&&b0.charAt(b0.length-1)===">"&&b0.length>=3){b2=[null,b0,null]}else{b2=bY.exec(b0)}if(b2&&(b2[
      1]||!b4)){if(b2[1]){b4=b4 instanceof bF?b4[0]:b4;b6=(b4?b4.ownerDocument||b4:av);b1=bA.exec(b0);if(b1){if(bF
      .isPlainObject(b4)){b0=[av.createElement(b1[1])];bF.fn.attr.call(b0,b4,true)}else{b0=[b6.createElement(b1[1]
      )]}}else{b1=bF.buildFragment([b2[1]],[b6]);b0=(b1.cacheable?bF.clone(b1.fragment):b1.fragment).childNodes}
      return bF.merge(this,b0)}else{b5=av.getElementById(b2[2]);if(b5&&b5.parentNode){if(b5.id!==b2[2]){return b3.
      find(b0)}this.length=1;this[0]=b5}this.context=av;this.selector=b0;return this}}else{if(!b4||b4.jquery){return
      (b4||b3).find(b0)}else{return this.constructor(b4).find(b0)}}}else{if(bF.isFunction(b0)){return b3.ready(b0)
      }}if(b0.selector!==L){this.selector=b0.selector;this.context=b0.context}return bF.makeArray(b0,this)},
      selector:"",jquery:"1.7.1",length:0,size:function(){return this.length},toArray:function(){return bK.call(this,0)
      },get:function(b0){return b0==null?this.toArray():(b0<0?this[this.length+b0]:this[b0])},pushStack:function(
      b1,b3,b0){var b2=this.constructor();if(bF.isArray(b1)){bz.apply(b2,b1)}else{bF.merge(b2,b1)}b2.prevObject=
      this;b2.context=this.context;if(b3==="find"){b2.selector=this.selector+(this.selector?" ":"")+b0}else{if(b3){b2
      .selector=this.selector+"."+b3+"("+b0+")"}}return b2},each:function(b1,b0){return bF.each(this,b1,b0)},
      ready:function(b0){bF.bindReady();bC.add(b0);return this},eq:function(b0){b0=+b0;return b0===-1?this.slice(b0
      ):this.slice(b0,b0+1)},first:function(){return this.eq(0)},last:function(){return this.eq(-1)},slice:
      function(){return this.pushStack(bK.apply(this,arguments),"slice",bK.call(arguments).join(","))},map:function(b0){
      return this.pushStack(bF.map(this,function(b2,b1){return b0.call(b2,b1,b2)}))},end:function(){return this.
      prevObject||this.constructor(null)},push:bz,sort:[].sort,splice:[].splice};bF.fn.init.prototype=bF.fn;bF.extend
      =bF.fn.extend=function(){var b9,b2,b0,b1,b6,b7,b5=arguments[0]||{},b4=1,b3=arguments.length,b8=false;if(
      typeof b5==="boolean"){b8=b5;b5=arguments[1]||{};b4=2}if(typeof b5!=="object"&&!bF.isFunction(b5)){b5={}}if(b3==
      =b4){b5=this;--b4}for(;b4<b3;b4++){if((b9=arguments[b4])!=null){for(b2 in b9){b0=b5[b2];b1=b9[b2];if(b5===b1
      ){continue}if(b8&&b1&&(bF.isPlainObject(b1)||(b6=bF.isArray(b1)))){if(b6){b6=false;b7=b0&&bF.isArray(b0)?b0:
      []}else{b7=b0&&bF.isPlainObject(b0)?b0:{}}b5[b2]=bF.extend(b8,b7,b1)}else{if(b1!==
      L){b5[b2]=b1}}}}}return b5};bF.extend({noConflict:function(b0){if(bb.$===bF){
      bb.$=bH}if(b0&&bb.jQuery===bF){bb.jQuery=bU}return bF},isReady:false,readyWait:1,holdReady:function(
      b0){if(b0){bF.readyWait++}else{bF.ready(true)}},ready:function(b0){if((b0===true&&!--bF.readyWait)||(b0!==
      true&&!bF.isReady)){if(!av.body){return setTimeout(bF.ready,1)}bF.isReady=true;if(b0!==true&&--bF.readyWait>0){
      return}bC.fireWith(av,[bF]);if(bF.fn.trigger){bF(av).trigger("ready").off("ready")}}},bindReady:function(){
      if(bC){return}bC=bF.Callbacks("once memory");if(av.readyState==="complete"){return setTimeout(bF.ready,1)}if(
      av.addEventListener){av.addEventListener("DOMContentLoaded",e,false);bb.addEventListener("load",bF.ready,
      false)}else{if(av.attachEvent){av.attachEvent("onreadystatechange",e);bb.attachEvent("onload",bF.ready);var
       b0=false;try{b0=bb.frameElement==null}catch(b1){}if(av.documentElement.doScroll&&b0){bw()}}}},isFunction:
      function(b0){return bF.type(b0)==="function"},isArray:Array.isArray||function(b0){return bF.type(b0)===
      "array"},isWindow:function(b0){return b0&&typeof b0==="object"&&"setInterval" in b0},isNumeric:function(b0){
      return !isNaN(parseFloat(b0))&&isFinite(b0)},type:function(b0){return b0==null?String(b0):bx[bL.call(b0)]||"
      object"},isPlainObject:function(b2){if(!b2||bF.type(b2)!=="object"||b2.nodeType||bF.isWindow(b2)){return false}
      try{if(b2.constructor&&!bG.call(b2,"constructor")&&!bG.call(b2.constructor.prototype,"isPrototypeOf")){return
      false}}catch(b1){return false}var b0;for(b0 in b2){}return b0===L||bG.call(b2,b0)},isEmptyObject:function(
      b1){for(var b0 in b1){return false}return true},error:function(b0){throw new Error(b0)},parseJSON:function(b0
      ){if(typeof b0!=="string"||!b0){return null}b0=bF.trim(b0);if(bb.JSON&&bb.JSON.parse){return
      bb.JSON.parse(b0)}if(bN.test(b0.replace(bW,"@").replace(bP,"]").replace(bJ,""))){return(new Function("
      return "+b0))()}bF.error("Invalid JSON: "+b0)},parseXML:function(b2){var b0,b1;try{if(
      bb.DOMParser){b1=new DOMParser();b0=b1.parseFromString(b2,"text/xml")}else{b0=new ActiveXObject("
      Microsoft.XMLDOM");b0.async="false";b0.loadXML(b2)}}catch(b3){b0=L}if(!b0||!b0.documentElement||b0.
      getElementsByTagName("parsererror").length){bF.error("Invalid XML: "+b2)}return b0},noop:function(){},globalEval:functi
      ){if(b0&&bM.test(b0)){(bb.execScript||function(b1){bb["eval"].call(bb,b1)})(b0)}},camelCase:function(
      b0){return b0.replace(bZ,"ms-").replace(bB,bT)},nodeName:function(b1,b0){return b1.nodeName&&b1.nodeName.
      toUpperCase()===b0.toUpperCase()},each:function(b3,b6,b2){var b1,b4=0,b5=b3.length,b0=b5===
      L||bF.isFunction(b3);if(b2){if(b0){for(b1 in b3){if(b6.apply(b3[b1],b2)===false){break}}}else{for(;b4<b5;)
      {if(b6.apply(b3[b4++],b2)===false){break}}}}else{if(b0){for(b1 in b3){if(b6.call(b3[b1],b1,b3[b1])===false){
      break}}}else{for(;b4<b5;){if(b6.call(b3[b4],b4,b3[b4++])===false){break}}}}return b3},trim:bO?function(b0){
      return b0==null?"":bO.call(b0)}:function(b0){return b0==null?"":b0.toString().replace(bI,"").replace(bE,"")},
      makeArray:function(b3,b1){var b0=b1||[];if(b3!=null){var b2=bF.type(b3);if(b3.length==null||b2==="string"||
      b2==="function"||b2==="regexp"||bF.isWindow(b3)){bz.call(b0,b3)}else{bF.merge(b0,b3)}}return b0},inArray:
      function(b2,b3,b1){var b0;if(b3){if(bv){return bv.call(b3,b2,b1)}b0=b3.length;b1=b1?b1<0?Math.max(0,b0+b1):b1:0;
      for(;b1<b0;b1++){if(b1 in b3&&b3[b1]===b2){return b1}}}return -1},merge:function(b4,b2){var b3=b4.length,b1=
      0;if(typeof b2.length==="number"){for(var b0=b2.length;b1<b0;b1++){b4[b3++]=b2[b1]}}else{while(b2[b1]!==
      L){b4[b3++]=b2[b1++]}}b4.length=b3;return b4},grep:function(b1,b6,b0){var b2=[],b5;b0=!!b0;for(var b3=0,b4
      =b1.length;b3<b4;b3++){b5=!!b6(b1[b3],b3);if(b0!==b5){b2.push(b1[b3])}}return b2},map:function(b0,b7,b8){var
       b5,b6,b4=[],b2=0,b1=b0.length,b3=b0 instanceof bF||b1!==L&&typeof b1==="number"&&((b1>0&&b0[0]&&b0[b1-1])
      ||b1===0||bF.isArray(b0));if(b3){for(;b2<b1;b2++){b5=b7(b0[b2],b2,b8);if(b5!=null){b4[b4.length]=b5}}}else{
      for(b6 in b0){b5=b7(b0[b6],b6,b8);if(b5!=null){b4[b4.length]=b5}}}return b4.concat.apply([],b4)},guid:1,proxy:
      function(b4,b3){if(typeof b3==="string"){var b2=b4[b3];b3=b4;b4=b2}if(!bF.isFunction(b4)){return
      L}var b0=bK.call(arguments,2),b1=function(){return b4.apply(b3,b0.concat(bK.call(arguments)))};b1.guid=b4.
      guid=b4.guid||b1.guid||bF.guid++;return b1},access:function(b0,b8,b6,b2,b5,b7){var b1=b0.length;if(typeof b8
      ==="object"){for(var b3 in b8){bF.access(b0,b3,b8[b3],b2,b5,b6)}return b0}if(b6!==
      L){b2=!b7&&b2&&bF.isFunction(b6);for(var b4=0;b4<b1;b4++){b5(b0[b4],b8,b2?b6.call(b0[b4],b4,b5(b0[b4],b8))
      :b6,b7)}return b0}return b1?b5(b0[0],b8):L},now:function(){return(new Date()).getTime()},uaMatch:function(
      b1){b1=b1.toLowerCase();var b0=by.exec(b1)||bR.exec(b1)||bQ.exec(b1)||b1.indexOf("compatible")<0&&bS.exec(b1)
      ||[];return{browser:b0[1]||"",version:b0[2]||"0"}},sub:function(){function b0(b3,b4){return new b0.fn.init(
```

```
b3,b4)}bF.extend(true,b0,this);b0.superclass=this;b0.fn=b0.prototype=this();b0.fn.constructor=b0;b0.sub=this.
sub;b0.fn.init=function b2(b3,b4){if(b4&&b4 instanceof bF&&!(b4 instanceof b0)){b4=b0(b4)}return bF.fn.init.
call(this,b3,b4,b1)};b0.fn.init.prototype=b0.fn;var b1=b0(av);return b0},browser:{}});bF.each("Boolean
 Number String Function Array Date RegExp Object".split(" "),function(b1,b0){bx["[object "+b0+"]"]=b0.toLowerCase(
)});bV=bF.uaMatch(bX);if(bV.browser){bF.browser[bV.browser]=true;bF.browser.version=bV.version}if(bF.browser
.webkit){bF.browser.safari=true}if(bM.test("\xA0")){bI=/^[\s\xA0]+/;bE=/[\s\xA0]+$/}bD=bF(av);if(av.
addEventListener){e=function(){av.removeEventListener("DOMContentLoaded",e,false);bF.ready()}}else{if(av.attachEvent
){e=function(){if(av.readyState==="complete"){av.detachEvent("onreadystatechange",e);bF.ready()}}}}function
bw(){if(bF.isReady){return}try{av.documentElement.doScroll("left")}catch(b0){setTimeout(bw,1);return}bF.
ready()}return bF})();var a2={};function X(e){var bv=a2[e]={},bw,bx;e=e.split(/\s+/);for(bw=0,bx=e.length;bw<bx;
bw++){bv[e[bw]]=true}return bv}b.Callbacks=function(bw){bw=bw?(a2[bw]||X(bw)):{};var bB=[],bC=[],bx,by,bv,
bz,bA,bE=function(bF){var bG,bJ,bI,bH,bK;for(bG=0,bJ=bF.length;bG<bJ;bG++){bI=bF[bG];bH=
b.type(bI);if(bH==="array"){bE(bI)}else{if(bH==="function"){if(!bw.unique||!bD.has(bI)){bB.push(bI)}}}},e
=function(bG,bF){bF=bF||[];bx=!bw.memory||[bG,bF];by=true;bA=bv||0;bv=0;bz=bB.length;for(;bB&&bA<bz;bA++){if
(bB[bA].apply(bG,bF)===false&&bw.stopOnFalse){bx=true;break}}by=false;if(bB){if(!bw.once){if(bC&&bC.length){
bx=bC.shift();bD.fireWith(bx[0],bx[1])}}else{if(bx===true){bD.disable()}else{bB=[]}}},bD={add:function(){if
(bB){var bF=bB.length;bE(arguments);if(by){bz=bB.length}else{if(bx&&bx!==true){bv=bF;e(bx[0],bx[1])}}}return
 this},remove:function(){if(bB){var bF=arguments,bH=0,bI=bF.length;for(;bH<bI;bH++){for(var bG=0;bG<bB.
length;bG++){if(bF[bH]===bB[bG]){if(by){if(bG<=bz){bz--;if(bG<=bA){bA--}}}bB.splice(bG--,1);if(bw.unique){break}}
}}}return this},has:function(bG){if(bB){var bF=0,bH=bB.length;for(;bF<bH;bF++){if(bG===bB[bF]){return true}}
}return false},empty:function(){bB=[];return this},disable:function(){bB=bC=bx=L;return this},disabled:
function(){return !bB},lock:function(){bC=L;if(!bx||bx===true){bD.disable()}return this},locked:function(){
return !bC},fireWith:function(bG,bF){if(bC){if(by){if(!bw.once){bC.push([bG,bF])}}else{if(!(bw.once&&bx)){e(bG,
bF)}}}return this},fire:function(){bD.fireWith(this,arguments);return this},fired:function(){return !!bx}};
return bD};var aJ=[].slice;b.extend({Deferred:function(by){var bx=b.Callbacks("once memory"),bw=
b.Callbacks("once memory"),bv=b.Callbacks("memory"),e="pending",bA={resolve:bx,reject:bw,notify:bv},bC={
done:bx.add,fail:bw.add,progress:bv.add,state:function(){return e},isResolved:bx.fired,isRejected:bw.fired,
then:function(bE,bD,bF){bB.done(bE).fail(bD).progress(bF);return this},always:function(){bB.done.apply(bB,
arguments).fail.apply(bB,arguments);return this},pipe:function(bF,bE,bD){return b.Deferred(function(bG){
b.each({done:[bF,"resolve"],fail:[bE,"reject"],progress:[bD,"notify"]},function(bI,bL){var bH=bL[0],bK=bL[
1],bJ;if(b.isFunction(bH)){bB[bI](function(){bJ=bH.apply(this,arguments);if(bJ&&
b.isFunction(bJ.promise)){bJ.promise().then(bG.resolve,bG.reject,bG.notify)}else{bG[bK+"With"](this===bB?
bG:this,[bJ])}})}else{bB[bI](bG[bK])}})}).promise()},promise:function(bE){if(bE==null){bE=bC}else{for(var bD
in bC){bE[bD]=bC[bD]}}return bE}},bB=bC.promise({}),bz;for(bz in bA){bB[bz]=bA[bz].fire;bB[bz+"With"]=bA[bz]
.fireWith}bB.done(function(){e="resolved"},bw.disable,bv.lock).fail(function(){e="rejected"},bx.disable,bv.
lock);if(by){by.call(bB,bB)}return bB},when:function(bA){var bx=aJ.call(arguments,0),bv=0,e=bx.length,bB=new
Array(e),bw=e,by=e,bC=e<=1&&bA&&b.isFunction(bA.promise)?bA:b.Deferred(),bE=bC.promise();function bD(bF){
return function(bG){bx[bF]=arguments.length>1?aJ.call(arguments,0):bG;if(!(--bw)){bC.resolveWith(bC,bx)}}}
function bz(bF){return function(bG){bB[bF]=arguments.length>1?aJ.call(arguments,0):bG;bC.notifyWith(bE,bB)}}if(
e>1){for(;bv<e;bv++){if(bx[bv]&&bx[bv].promise&&b.isFunction(bx[bv].promise)){bx[bv].promise().then(bD(bv),
bC.reject,bz(bv))}else{--bw}}if(!bw){bC.resolveWith(bC,bx)}}else{if(bC!==bA){bC.resolveWith(bC,e?[bA]:[])}}
return bE}});b.support=(function(){var bJ,bI,bF,bG,bx,bE,bA,bD,bz,bK,bB,by,bw,bv=av.createElement("div"),bH=
av.documentElement;bv.setAttribute("className","t");bv.innerHTML="   <link/><table></table><a href='/a'
 style='top:1px;float:left;opacity:.55;'>a</a><input type='checkbox'/>";bI=bv.getElementsByTagName("*");bF=bv.
getElementsByTagName("a")[0];if(!bI||!bI.length||!bF){return{}}bG=av.createElement("select");bx=bG.appendChild(
av.createElement("option"));bE=bv.getElementsByTagName("input")[0];bJ={leadingWhitespace:(bv.firstChild.
nodeType===3),tbody:!bv.getElementsByTagName("tbody").length,htmlSerialize:!!bv.getElementsByTagName("link").
length,style:/top/.test(bF.getAttribute("style")),hrefNormalized:(bF.getAttribute("href")==="/a"),opacity:/^0.5
5/.test(bF.style.opacity),cssFloat:!!bF.style.cssFloat,checkOn:(bE.value==="on"),optSelected:bx.selected,
getSetAttribute:bv.className!=="t",enctype:!!av.createElement("form").enctype,html5Clone:av.createElement("nav"
).cloneNode(true).outerHTML!=="<:nav></:nav>",submitBubbles:true,changeBubbles:true,focusinBubbles:false,
deleteExpando:true,noCloneEvent:true,inlineBlockNeedsLayout:false,shrinkWrapBlocks:false,reliableMarginRight:
true};bE.checked=true;bJ.noCloneChecked=bE.cloneNode(true).checked;bG.disabled=true;bJ.optDisabled=!bx.
disabled;try{delete bv.test}catch(bC){bJ.deleteExpando=false}if(!bv.addEventListener&&bv.attachEvent&&bv.fireEvent)
{bv.attachEvent("onclick",function(){bJ.noCloneEvent=false});bv.cloneNode(true).fireEvent("onclick")}bE=av.
createElement("input");bE.value="t";bE.setAttribute("type","radio");bJ.radioValue=bE.value==="t";bE.
setAttribute("checked","checked");bv.appendChild(bE);bD=av.createDocumentFragment();bD.appendChild(bv.lastChild);bJ.
checkClone=bD.cloneNode(true).cloneNode(true).lastChild.checked;bJ.appendChecked=bE.checked;bD.removeChild(bE
);bD.appendChild(bv);bv.innerHTML="";if(bb.getComputedStyle){bA=av.createElement("div");bA.style.width="0"
;bA.style.marginRight="0";bv.style.width="2px";bv.appendChild(bA);bJ.reliableMarginRight=(parseInt((
bb.getComputedStyle(bA,null)||{marginRight:0}).marginRight,10)||0)===0}if(bv.attachEvent){for(by in {
submit:1,change:1,focusin:1}){bB="on"+by;bw=(bB in bv);if(!bw){bv.setAttribute(bB,"return;");bw=(typeof bv[bB]==
="function")}bJ[by+"Bubbles"]=bw}}bD.removeChild(bv);bD=bG=bx=bA=bv=bE=null;b(function(){var bM,bU,bV,bT,bN
,bO,bL,bS,bR,e,bP,bQ=av.getElementsByTagName("body")[0];if(!bQ){return}bL=1;bS="
position:absolute;top:0;left:0;width:1px;height:1px;margin:0;";bR="visibility:hidden;border:0;";e="style='"+bS+"border:5
 #000;padding:0;'";bP="<div "+e+"><div></div></div><table "+e+" cellpadding='0'
 cellspacing='0'><tr><td></td></tr></table>";bM=av.createElement("div");bM.style.cssText=bR+"width:0;height:0;position:s
bL+"px";bQ.insertBefore(bM,bQ.firstChild);bv=av.createElement("div");bM.appendChild(bv);bv.innerHTML="
<table><tr><td style='padding:0;border:0;display:none'></td><td>t</td></tr></table>";bz=bv.getElementsByTagName("
td");bw=(bz[0].offsetHeight===0);bz[0].style.display="";bz[1].style.display="none";bJ.reliableHiddenOffsets=
bw&&(bz[0].offsetHeight===0);bv.innerHTML="";bv.style.width=bv.style.paddingLeft="1px";
b.boxModel=bJ.boxModel=bv.offsetWidth===2;if(typeof bv.style.zoom!=="undefined"){bv.style.display="inline"
;bv.style.zoom=1;bJ.inlineBlockNeedsLayout=(bv.offsetWidth===2);bv.style.display="";bv.innerHTML="<div
 style='width:4px;'></div>";bJ.shrinkWrapBlocks=(bv.offsetWidth!==2)}bv.style.cssText=bS+bR;bv.innerHTML=bP;bU=bv.
firstChild;bV=bU.firstChild;bN=bU.nextSibling.firstChild.firstChild;bO={doesNotAddBorder:(bV.offsetTop!==5),
doesAddBorderForTableAndCells:(bN.offsetTop===5)};bV.style.position="fixed";bV.style.top="20px";bO.
fixedPosition=(bV.offsetTop===20||bV.offsetTop===15);bV.style.position=bV.style.top="";bU.style.overflow="hidden";bU.
style.position="relative";bO.subtractsBorderForOverflowNotVisible=(bV.offsetTop===-5);bO.
doesNotIncludeMarginInBodyOffset=(bQ.offsetTop!==bL);bQ.removeChild(bM);bv=bM=null;b.extend(bJ,bO)});return bJ})();var a
:\{.*\}|\[.*\])$/,aA=/([A-Z])/g;b.extend({cache:{},uuid:0,expando:"jQuery"+(b.fn.jquery+Math.random()).
replace(/\D/g,""),noData:{embed:true,object:"clsid:D27CDB6E-AE6D-11cf-96B8-444553540000",applet:true},hasData
:function(e){e=e.nodeType?b.cache[e[b.expando]]:e[b.expando];return !!e&&!S(e)},data:function(bx,bv,bz,
by){if(!b.acceptData(bx)){return}var bG,bA,bD,bE=b.expando,bC=typeof bv==="string",bF=bx.nodeType,e=bF?
b.cache:bx,bw=bF?bx[bE]:bx[bE]&&bE,bB=bv==="events";if((!bw||!e[bw]||(!bB&&!by&&!e[bw].data))&&bC&&bz===
L){return}if(!bw){if(bF){bx[bE]=bw=++b.uuid}else{bw=bE}}if(!e[bw]){e[bw]={};if(!bF){e[bw].toJSON=
b.noop}}if(typeof bv==="object"||typeof bv==="function"){if(by){e[bw]=b.extend(e[bw],bv)}else{e[bw].data=
b.extend(e[bw].data,bv)}}bG=bA=e[bw];if(!by){if(!bA.data){bA.data={}}bA=bA.data}if(bz!==
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L){bA[b.camelCase(bv)]=bz}if(bB&&!bA[bv]){return bG.events}if(bC){bD=bA[bv];if(bD==null){bD=bA[
b.camelCase(bv)]}}else{bD=bA}return bD},removeData:function(bx,bv,by){if(!b.acceptData(bx)){return}var bB
,bA,bz,bC=b.expando,bD=bx.nodeType,e=bD?b.cache:bx,bw=bD?bx[bC]:bC;if(!e[bw]){return}if(bv){bB=by?e[bw]:e[
bw].data;if(bB){if(!b.isArray(bv)){if(bv in bB){bv=[bv]}else{bv=b.camelCase(bv);if(bv in bB){bv=[bv]}else{
bv=bv.split(" ")}}}for(bA=0,bz=bv.length;bA<bz;bA++){delete bB[bv[bA]]}if(!(by?S:
b.isEmptyObject)(bB)){return}}if(!by){delete e[bw].data;if(!S(e[bw])){return}}if(
b.support.deleteExpando||!e.setInterval){delete e[bw]}else{e[bw]=null}if(bD){if(
b.support.deleteExpando){delete bx[bC]}else{if(bx.removeAttribute){bx.removeAttribute(bC)}else{bx[bC]=null
}}}},_data:function(bv,e,bw){return b.data(bv,e,bw,true)},acceptData:function(bv){if(bv.nodeName){var e=
b.noData[bv.nodeName.toLowerCase()];if(e){return !(e===true||bv.getAttribute("classid")!==e)}}return true}
});b.fn.extend({data:function(by,bA){var bB,e,bw,bz=null;if(typeof by==="undefined"){if(this.length){bz=
b.data(this[0]);if(this[0].nodeType===1&&!b._data(this[0],"parsedAttrs")){e=this[0].attributes;for(var bx
=0,bv=e.length;bx<bv;bx++){bw=e[bx].name;if(bw.indexOf("data-")===0){bw=b.camelCase(bw.substring(5));a5(
this[0],bw,bz[bw])}}b._data(this[0],"parsedAttrs",true)}}return bz}else{if(typeof by==="object"){return this.
each(function(){b.data(this,by)})}bB=by.split(".");bB[1]=bB[1]?"."+bB[1]:"";if(bA===
L){bz=this.triggerHandler("getData"+bB[1]+"!",[bB[0]]);if(bz===L&&this.length){bz=
b.data(this[0],by);bz=a5(this[0],by,bz)}return bz===L&&bB[1]?this.data(bB[0]):bz}else{return this.
each(function(){var bC=b(this),bD=[bB[0],bA];bC.triggerHandler("setData"+bB[1]+"!",bD);
b.data(this,by,bA);bC.triggerHandler("changeData"+bB[1]+"!",bD)})}},removeData:function(e){return this.
each(function(){b.removeData(this,e)})}});function a5(bx,bw,by){if(by===L&&bx.nodeType===1){var bv="
data-"+bw.replace(aA,"-$1").toLowerCase();by=bx.getAttribute(bv);if(typeof by==="string"){try{by=by==="true"?
true:by==="false"?false:by==="null"?null:b.isNumeric(by)?parseFloat(by):aS.test(by)?
b.parseJSON(by):by}catch(bz){}b.data(bx,bw,by)}else{by=L}}return by}function
S(bv){for(var e in bv){if(e==="data"&&b.isEmptyObject(bv[e])){continue}if(e!=="toJSON"){return false}}
return true}function bi(by,bx,bA){var bw=bx+"defer",bv=bx+"queue",e=bx+"mark",bz=b._data(by,bw);if(bz&&(bA==="
queue"||!b._data(by,bv))&&(bA==="mark"||!b._data(by,e))){setTimeout(function(){if(!
b._data(by,bv)&&!b._data(by,e)){b.removeData(by,bw,true);bz.fire()}},0)}}b.extend({_mark:function(bv,e)
{if(bv){e=(e||"fx")+"mark";b._data(bv,e,(b._data(bv,e)||0)+1)}},_unmark:function(by,bx,bv){if(by!==true){bv=
bx;bx=by;by=false}if(bx){bv=bv||"fx";var e=bv+"mark",bw=by?0:((b._data(bx,e)||1)-1);if(bw){b._data(bx,e,bw)}
else{b.removeData(bx,e,true);bi(bx,bv,"mark")}}},queue:function(bv,e,bx){var bw;if(bv){e=(e||"fx")+"queue";
bw=b._data(bv,e);if(bx){if(!bw||b.isArray(bx)){bw=b._data(bv,e,b.makeArray(bx))}else{bw.push(bx)}}return
bw||[]}},dequeue:function(by,bx){bx=bx||"fx";var bv=b.queue(by,bx),bw=bv.shift(),e={};if(bw==="inprogress")
{bw=bv.shift()}if(bw){if(bx==="fx"){bv.unshift("inprogress")}b._data(by,bx+".run",e);bw.call(by,function(){
b.dequeue(by,bx)},e)}if(!bv.length){b.removeData(by,bx+"queue "+bx+".run",true);bi(by,bx,"queue")}}});
b.fn.extend({queue:function(e,bv){if(typeof e!=="string"){bv=e;e="fx"}if(bv===L){return
b.queue(this[0],e)}return this.each(function(){var bw=b.queue(this,e,bv);if(e==="fx"&&bw[0]!==
inprogress"){b.dequeue(this,e)}})},dequeue:function(e){return this.each(function(){
b.dequeue(this,e)})},delay:function(bv,e){bv=b.fx?b.fx.speeds[bv]||bv:bv;e=e||"fx";return this.queue(e,
function(bx,bw){var by=setTimeout(bx,bv);bw.stop=function(){clearTimeout(by)}})},clearQueue:function(e){
return this.queue(e||"fx",[])},promise:function(bD,bw){if(typeof bD!=="string"){bw=bD;bD=
L}bD=bD||"fx";var e=b.Deferred(),bv=this,by=bv.length,bB=1,bz=bD+"defer",bA=bD+"queue",bC=bD+"mark",bx;
function bE(){if(!(--bB)){e.resolveWith(bv,[bv])}}while(by--){if((bx=b.data(bv[by],bz,
L,true)||(b.data(bv[by],bA,L,true)||b.data(bv[by],bC,L,true))&&b.data(bv[by],bz,
b.Callbacks("once memory"),true))){bB++;bx.add(bE)}}bE();return e.promise()}});var aP=/[\n\t\r]/g,af=/\s+/
,aU=/\r/g,g=/^(?:button|input)$/i,D=/^(?:button|input|object|select|textarea)$/
i,l=/^a(?:rea)?$/i,ao=/^(?:autofocus|autoplay|async|checked|controls|defer|disabled|hidden|loop|multiple|
open|readonly|required|scoped|selected)$/i,F=b.support.getSetAttribute,be,aY,aF;
b.fn.extend({attr:function(e,bv){return b.access(this,e,bv,true,b.attr)},removeAttr:function(e){return thi
s.each(function(){b.removeAttr(this,e)})},prop:function(e,bv){return b.access(this,e,bv,true,
b.prop)},removeProp:function(e){e=b.propFix[e]||e;return this.each(function(){try{this[e]=
L;delete this[e]}catch(bv){}})},addClass:function(by){var bA,bw,bv,bx,bz,bB,e;if(
b.isFunction(by)){return this.each(function(bC){b(this).addClass(by.call(this,bC,this.className))})}
if(by&&typeof by==="string"){bA=by.split(af);for(bw=0,bv=this.length;bw<bv;bw++){bx=this[bw];if(bx.nodeType==
=1){if(!bx.className&&bA.length===1){bx.className=by}else{bz=" "+bx.className+" ";for(bB=0,e=bA.length;bB<e;
bB++){if(!~bz.indexOf(" "+bA[bB]+" ")){bz+=bA[bB]+" "}}bx.className=b.trim(bz)}}}}return this},removeClass:
function(bz){var bA,bw,bv,by,bx,bB,e;if(b.isFunction(bz)){return this.each(function(bC){
b(this).removeClass(bz.call(this,bC,this.className))})}if((bz&&typeof bz==="string")||bz===
L){bA=(bz||"").split(af);for(bw=0,bv=this.length;bw<bv;bw++){by=this[bw];if(by.nodeType===1&&by.className)
{if(bz){bx=(" "+by.className+" ").replace(aP," ");for(bB=0,e=bA.length;bB<e;bB++){bx=bx.replace(" "+bA[bB]+"
 "," ")}by.className=b.trim(bx)}else{by.className=""}}}}return this},toggleClass:function(bx,bv){var bw=
typeof bx,e=typeof bv==="boolean";if(b.isFunction(bx)){return this.each(function(by){
b(this).toggleClass(bx.call(this,by,this.className,bv),bv)})}return this.each(function(){if(bw===
string"){var bA,bz=0,by=b(this),bB=bv,bC=bx.split(af);while((bA=bC[bz++])){bB=e?bB:!by.hasClass(bA);by[bB?"
addClass":"removeClass"](bA)}}else{if(bw==="undefined"||bw==="boolean"){if(this.className){
b._data(this,"__className__",this.className)}this.className=this.className||bx===false?"":
b._data(this,"__className__")||""}}})},hasClass:function(e){var bx=" "+e+" ",bw=0,bv=this.length;for(;bw<
bv;bw++){if(this[bw].nodeType===1&&(" "+this[bw].className+" ").replace(aP," ").indexOf(bx)>-1){return true}}
return false},val:function(bx){var e,bv,by,bw=this[0];if(!arguments.length){if(bw){e=
b.valHooks[bw.nodeName.toLowerCase()]||b.valHooks[bw.type];if(e&&"get" in e&&(bv=e.get(bw,"value"))!==
L){return bv}bv=bw.value;return typeof bv==="string"?bv.replace(aU,""):bv==null?"":bv}return}by=
b.isFunction(bx);return this.each(function(bA){var bz=b(this),bB;if(this.nodeType!==1){return}if(by){
bB=bx.call(this,bA,bz.val())}else{bB=bx}if(bB==null){bB=""}else{if(typeof bB==="number"){bB+=""}else{if(
b.isArray(bB)){bB=b.map(bB,function(bC){return bC==null?"":bC+""})}}e=b.valHooks[this.nodeName.
toLowerCase()]||b.valHooks[this.type];if(!e||!("set" in e)||e.set(this,bB,"value")===L){this.value=bB}})}});
b.extend({valHooks:{option:{get:function(e){var bv=e.attributes.value;return !bv||bv.specified?e.value:e.
text}},select:{get:function(e){var bA,bv,bz,bx,by=e.selectedIndex,bB=[],bC=e.options,bw=e.type==="select-one"
;if(by<0){return null}bv=bw?by:0;bz=bw?by+1:bC.length;for(;bv<bz;bv++){bx=bC[bv];if(bx.selected&&(
b.support.optDisabled?!bx.disabled:bx.getAttribute("disabled")===null)&&(!bx.parentNode.disabled||!
b.nodeName(bx.parentNode,"optgroup"))){bA=b(bx).val();if(bw){return bA}bB.push(bA)}if(bw&&!bB.length&&bC
.length){return b(bC[by]).val()}return bB},set:function(bv,bw){var e=b.makeArray(bw);
b(bv).find("option").each(function(){this.selected=b.inArray(b(this).val(),e)>=0});if(!e.length){bv.
selectedIndex=-1}return e}}},attrFn:{val:true,css:true,html:true,text:true,data:true,width:true,height:true,
offset:true},attr:function(bA,bx,bB,bz){var bw,e,by,bv=bA.nodeType;if(!bA||bv===3||bv===8||bv===2){return}if(
bz&&bx in b.attrFn){return b(bA)[bx](bB)}if(typeof bA.getAttribute==="undefined"){return
b.prop(bA,bx,bB)}by=bv!==1||!b.isXMLDoc(bA);if(by){bx=bx.toLowerCase();e=b.attrHooks[bx]||(ao.test(bx)?
aY:be)}if(bB!==L){if(bB===null){b.removeAttr(bA,bx);return}else{if(e&&"set" in e&&by&&(bw=e.set(bA,bB,bx))
!==L){return bw}else{bA.setAttribute(bx,""+bB);return bB}}}else{if(e&&"get" in e&&by&&(bw=e.get(bA,bx))!==
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null){return bw}else{bw=bA.getAttribute(bx);return bw===null?L:bw}},removeAttr:function(bx,bz){var by,bA,bv,
e,bw=0;if(bz&&bx.nodeType===1){bA=bz.toLowerCase().split(af);e=bA.length;for(;bw<e;bw++){bv=bA[bw];if(bv){by
=b.propFix[bv]||bv;b.attr(bx,bv,"");bx.removeAttribute(F?bv:by);if(ao.test(bv)&&by in bx){bx[by]=false}}}}
},attrHooks:{type:{set:function(e,bv){if(g.test(e.nodeName)&&e.parentNode){b.error("type property can't be
 changed")}else{if(!b.support.radioValue&&bv==="radio"&&b.nodeName(e,"input")){var bw=e.value;e.
setAttribute("type",bv);if(bw){e.value=bw}return bv}}}},value:{get:function(bv,e){if(be&&b.nodeName(bv,"button")){
return be.get(bv,e)}return e in bv?bv.value:null},set:function(bv,bw,e){if(be&&b.nodeName(bv,"button")){return
be.set(bv,bw,e)}bv.value=bw}}},propFix:{tabindex:"tabIndex",readonly:"readOnly","for":"htmlFor","class":"
className",maxlength:"maxLength",cellspacing:"cellSpacing",cellpadding:"cellPadding",rowspan:"rowSpan",colspan:
"colSpan",usemap:"useMap",frameborder:"frameBorder",contenteditable:"contentEditable"},prop:function(bz,bx,
bA){var bw,e,by,bv=bz.nodeType;if(!bz||bv===3||bv===8||bv===2){return}by=bv!==1||!
b.isXMLDoc(bz);if(by){bx=b.propFix[bx]||bx;e=b.propHooks[bx]}if(bA!==L){if(e&&"set" in e&&(bw=e.set(bz,
bA,bx))!==L){return bw}else{return(bz[bx]=bA)}}else{if(e&&"get" in e&&(bw=e.get(bz,bx))!==null){return bw}
else{return bz[bx]}}},propHooks:{tabIndex:{get:function(bv){var e=bv.getAttributeNode("tabindex");return e&&e
.specified?parseInt(e.value,10):D.test(bv.nodeName)||l.test(bv.nodeName)&&bv.href?0:
L}}}});b.attrHooks.tabindex=b.propHooks.tabIndex;aY={get:function(bv,e){var bx,bw=
b.prop(bv,e);return bw===true||typeof bw!=="boolean"&&(bx=bv.getAttributeNode(e))&&bx.nodeValue!==false?e.
toLowerCase():L},set:function(bv,bx,e){var bw;if(bx===false){b.removeAttr(bv,e)}else{bw=
b.propFix[e]||e;if(bw in bv){bv[bw]=true}bv.setAttribute(e,e.toLowerCase())}return e}};if(!F){aF={name:
true,id:true};be=b.valHooks.button={get:function(bw,bv){var e;e=bw.getAttributeNode(bv);return e&&(aF[bv]?e.
nodeValue!==""":e.specified)?e.nodeValue:L},set:function(bw,bx,bv){var e=bw.getAttributeNode(bv);if(!e){e=av.
createAttribute(bv);bw.setAttributeNode(e)}return(e.nodeValue=bx+"")}};b.attrHooks.tabindex.set=be.set;
b.each(["width","height"],function(bv,e){b.attrHooks[e]=b.extend(b.attrHooks[e],{set:function(bw,bx){if
(bx===""){bw.setAttribute(e,"auto");return bx}}})});b.attrHooks.contenteditable={get:be.get,set:function(bv
,bw,e){if(bw===""){bw="false"}be.set(bv,bw,e)}}if(!b.support.hrefNormalized){b.each(["href","src","width"
,"height"],function(bv,e){b.attrHooks[e]=b.extend(b.attrHooks[e],{get:function(bx){var bw=bx.getAttribute
(e,2);return bw===null?L:bw}})})}if(!b.support.style){b.attrHooks.style={get:function(e){return e.style.
cssText.toLowerCase()||L},set:function(e,bv){return(e.style.cssText=""+bv)}}}if(!b.support.optSelected){
b.propHooks.selected=b.extend(b.propHooks.selected,{get:function(bv){var e=bv.parentNode;if(e){e.selecte
dIndex;if(e.parentNode){e.parentNode.selectedIndex}}return null}})}if(!b.support.enctype){
b.propFix.enctype="encoding"}if(!b.support.checkOn){b.each(["radio","checkbox"],function(){
b.valHooks[this]={get:function(e){return e.getAttribute("value")===null?"on":e.value}}})}
b.each(["radio","checkbox"],function(){b.valHooks[this]=b.extend(b.valHooks[this],{set:function(e,bv){if(b
.isArray(bv)){return(e.checked=b.inArray(b(e).val(),bv)>=0)}})});var bd=/^(?:textarea|input|select)$/
i,n=/^([^\.]*)?(?:\.(.+))?$/,J=/\bhover(\.\S+)?\b/,aO=/^key/,bf=/^(?:mouse|contextmenu)|click/,
T=/^(?:focusinfocus|focusoutblur)$/,U=/^(\w*)(?:#([\w\-]+))?(?:\.([\w\-]+))?$/,Y=function(e){var bv=U.exec
(e);if(bv){bv[1]=(bv[1]||"").toLowerCase();bv[3]=bv[3]&&new RegExp("(?:^|\\s)"+bv[3]+"(?:\\s|$)")}return bv}
,j=function(bw,e){var bv=bw.attributes||{};return((!e[1]||bw.nodeName.toLowerCase()===e[1])&&(!e[2]||(bv.id
||{}).value===e[2])&&(!e[3]||e[3].test((bv["class"]||{}).value)))},bt=function(e){return
b.event.special.hover?e:e.replace(J,"mouseenter$1 mouseleave$1")};b.event={add:function(bx,bC,bJ,bA,by){
var bD,bB,bK,bI,bH,bF,e,bG,bv,bz,bw,bE;if(bx.nodeType===3||bx.nodeType===8||!bC||!bJ||!(bD=
b._data(bx))){return}if(bJ.handler){bv=bJ;bJ=bv.handler}if(!bJ.guid){bJ.guid=b.guid++}bK=bD.events;if(!bK
){bD.events=bK={}}bB=bD.handle;if(!bB){bD.handle=bB=function(bL){return typeof b!=="undefined"&&(!bL||
b.event.triggered!==bL.type)?b.event.dispatch.apply(bB.elem,arguments):L};bB.elem=bx}bC=
b.trim(bt(bC)).split(" ");for(bI=0;bI<bC.length;bI++){bH=n.exec(bC[bI])||[];bF=bH[1];e=(bH[2]||"").split(
".").sort();bE=b.event.special[bF]||{};bF=(by?bE.delegateType:bE.bindType)||bF;bE=
b.event.special[bF]||{};bG=b.extend({type:bF,origType:bH[1],data:bA,handler:bJ,guid:bJ.guid,selector:by,
quick:Y(by),namespace:e.join(".")},bv);bw=bK[bF];if(!bw){bw=bK[bF]=[];bw.delegateCount=0;if(!bE.setup||bE.
setup.call(bx,bA,e,bB)===false){if(bx.addEventListener){bx.addEventListener(bF,bB,false)}else{if(bx.attachEvent
){bx.attachEvent("on"+bF,bB)}}}if(bE.add){bE.add.call(bx,bG);if(!bG.handler.guid){bG.handler.guid=bJ.guid}}
if(by){bw.splice(bw.delegateCount++,0,bG)}else{bw.push(bG)}b.event.global[bF]=true}bx=null},global:{},
remove:function(bJ,bE,bv,bH,bB){var bI=b.hasData(bJ)&&b._data(bJ),bF,bx,bz,bL,bC,bA,bG,bw,by,bK,bD,e;if(!bI||!(
bw=bI.events)){return}bE=b.trim(bt(bE||"")).split(" ");for(bF=0;bF<bE.length;bF++){bx=
n.exec(bE[bF])||[];bz=bL=bx[1];bC=bx[2];if(!bz){for(bz in bw){b.event.remove(bJ,bz+bE[bF],bv,bH,true)}
continue}by=b.event.special[bz]||{};bz=(bH?by.delegateType:by.bindType)||bz;bD=bw[bz]||[];bA=bD.length;bC=bC?
new RegExp("(^|\\.)"+bC.split(".").sort().join("\\.(?:.*\\.)?")+"(\\.|$)"):null;for(bG=0;bG<bD.length;bG++){e
=bD[bG];if((bB||bL===e.origType)&&(!bv||bv.guid===e.guid)&&(!bC||bC.test(e.namespace))&&(!bH||bH===e.
selector||bH==="**"&&e.selector)){bD.splice(bG--,1);if(e.selector){bD.delegateCount--}if(by.remove){by.remove.call(
bJ,e)}}}if(bD.length===0&&bA!==bD.length){if(!by.teardown||by.teardown.call(bJ,bC)===false){
b.removeEvent(bJ,bz,bI.handle)}delete bw[bz]}if(b.isEmptyObject(bw)){bK=bI.handle;if(bK){bK.elem=null}
b.removeData(bJ,["events","handle"],true)}},customEvent:{getData:true,setData:true,changeData:true}
,trigger:function(bv,bD,bA,bJ){if(bA&&(bA.nodeType===3||bA.nodeType===8)){return}var bG=bv.type||bv,bx=[],e,
bw,bC,bH,bz,by,bF,bE,bB,bI;if(T.test(bG+b.event.triggered)){return}if(bG.indexOf("!")>=0){bG=bG.slice(0,-1
);bw=true}if(bG.indexOf(".")>=0){bx=bG.split(".");bG=bx.shift();bx.sort()}if((!bA||
b.event.customEvent[bG])&&!b.event.global[bG]){return}bv=typeof bv==="object"?bv[
b.expando]?bv:new b.Event(bG,bv):new b.Event(bG);bv.type=bG;bv.isTrigger=true;bv.exclusive=bw;bv.
namespace=bx.join(".");bv.namespace_re=bv.namespace?new RegExp("(^|\\.)"+bx.join("\\.(?:.*\\.)?")+"(\\.|$)"):null;
by=bG.indexOf(":")<0?"on"+bG:"";if(!bA){e=b.cache;for(bC in e){if(e[bC].events&&e[bC].events[bG]){
b.event.trigger(bv,bD,e[bC].handle.elem,true)}}return}bv.result=L;if(!bv.target){bv.target=bA}bD=bD!=null
?b.makeArray(bD):[];bD.unshift(bv);bF=b.event.special[bG]||{};if(bF.trigger&&bF.trigger.apply(bA,bD)===
false){return}bB=[[bA,bF.bindType||bG]];if(!bJ&&!bF.noBubble&&!b.isWindow(bA)){bI=bF.delegateType||bG;bH=
T.test(bI+bG)?bA:bA.parentNode;bz=null;for(;bH;bH=bH.parentNode){bB.push([bH,bI]);bz=bH}if(bz&&bz===bA.
ownerDocument){bB.push([bz.defaultView||bz.parentWindow||bb,bI])}}for(bC=0;bC<bB.length&&!bv.
isPropagationStopped();bC++){bH=bB[bC][0];bv.type=bB[bC][1];bE=(b._data(bH,"events")||{})[bv.type]&&
b._data(bH,"handle");if(bE){bE.apply(bH,bD)}bE=by&&bH[by];if(bE&&b.acceptData(bH)&&bE.apply(bH,bD)===
false){bv.preventDefault()}}bv.type=bG;if(!bJ&&!bv.isDefaultPrevented()){if((!bF._default||bF._default.apply(bA.
ownerDocument,bD)===false)&&!(bG==="click"&&b.nodeName(bA,"a"))&&b.acceptData(bA)){if(by&&bA[bG]&&((bG!=="
focus"&&bG!=="blur")||bv.target.offsetWidth!==0)&&!b.isWindow(bA)){bz=bA[by];if(bz){bA[by]=null}
b.event.triggered=bG;bA[bG]();b.event.triggered=L;if(bz){bA[by]=bz}}}}return bv.result},dispatch:
function(e){e=b.event.fix(e||bb.event);var bz=((b._data(this,"events")||{})[e.type]||[]),bA=bz.delegateCount,bG
=[].slice.call(arguments,0),by=!e.exclusive&&!e.namespace,bH=[],bC,bB,bK,bx,bF,bE,bv,bD,bI,bw,bJ;bG[0]=e;e.
delegateTarget=this;if(bA&&!e.target.disabled&&!(e.button&&e.type==="click")){bx=b(this);bx.context=this.
ownerDocument||this;for(bK=e.target;bK!=this;bK=bK.parentNode||this){bE={};bD=[];bx[0]=bK;for(bC=0;bC<bA;bC++){
bI=bz[bC];bw=bI.selector;if(bE[bw]===L){bE[bw]=(bI.quick?j(bK,bI.quick):bx.is(bw))}
if(bE[bw]){bD.push(bI)}}if(bD.length){bH.push({elem:bK,matches:bD})}}}if(bz.length>bA){bH.push({elem:this
,matches:bz.slice(bA)})}for(bC=0;bC<bH.length&&!e.isPropagationStopped();bC++){bv=bH[bC];e.currentTarget=bv.
elem;for(bB=0;bB<bv.matches.length&&!e.isImmediatePropagationStopped();bB++){bI=bv.matches[bB];if(by||(!e.
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namespace&&!bI.namespace)||e.namespace_re&&e.namespace_re.test(bI.namespace)){e.data=bI.data;e.handleObj=bI;bF
=((b.event.special[bI.origType]||{}).handle||bI.handler).apply(bv.elem,bG);if(bF!==
L){e.result=bF;if(bF===false){e.preventDefault();e.stopPropagation()}}}}}return e.result},props:"
attrChange attrName relatedNode srcElement altKey bubbles cancelable ctrlKey currentTarget eventPhase metaKey
 relatedTarget shiftKey target timeStamp view which".split(" "),fixHooks:{},keyHooks:{props:"char charCode key
 keyCode".split(" "),filter:function(bv,e){if(bv.which==null){bv.which=e.charCode!=null?e.charCode:e.keyCode}
return bv}},mouseHooks:{props:"button buttons clientX clientY fromElement offsetX offsetY pageX pageY screenX
 screenY toElement".split(" "),filter:function(bx,bw){var by,bz,e,bv=bw.button,bA=bw.fromElement;if(bx.pageX==
null&&bw.clientX!=null){by=bx.target.ownerDocument||av;bz=by.documentElement;e=by.body;bx.pageX=bw.clientX+(bz
&&bz.scrollLeft||e&&e.scrollLeft||0)-(bz&&bz.clientLeft||e&&e.clientLeft||0);bx.pageY=bw.clientY+(bz&&bz.
scrollTop||e&&e.scrollTop||0)-(bz&&bz.clientTop||e&&e.clientTop||0)}if(!bx.relatedTarget&&bA){bx.relatedTarget=
bA===bx.target?bw.toElement:bA}if(!bx.which&&bv!==L){bx.which=(bv&1?1:(bv&2?3:(bv&4?2:0)))}return bx}},fix:
function(bw){if(bw[b.expando]){return bw}var bv,bz,e=bw,bx=b.event.fixHooks[bw.type]||{},by=bx.props?this.
props.concat(bx.props):this.props;bw=b.Event(e);for(bv=by.length;bv;){bz=by[--bv];bw[bz]=e[bz]}if(!bw.
target){bw.target=e.srcElement||av}if(bw.target.nodeType===3){bw.target=bw.target.parentNode}if(bw.metaKey===
L){bw.metaKey=bw.ctrlKey}return bx.filter?bx.filter(bw,e):bw},special:{ready:{setup:
b.bindReady},load:{noBubble:true},focus:{delegateType:"focusin"},blur:{delegateType:"focusout"},
beforeunload:{setup:function(bw,bv,e){if(b.isWindow(this)){this.onbeforeunload=e}},teardown:function(bv,e){if(this.
onbeforeunload===e){this.onbeforeunload=null}}}},simulate:function(bw,by,bx,bv){var bz=
b.extend(new b.Event(),bx,{type:bw,isSimulated:true,originalEvent:{}});if(bv){
b.event.trigger(bz,null,by)}else{b.event.dispatch.call(by,bz)}if(bz.isDefaultPrevented()){bx.
preventDefault()}};b.event.handle=b.event.dispatch;b.removeEvent=av.removeEventListener?function(bv,e,bw){if(bv.
removeEventListener){bv.removeEventListener(e,bw,false)}}:function(bv,e,bw){if(bv.detachEvent){bv.detachEvent("
on"+e,bw)}};b.Event=function(bv,e){if(!(this instanceof b.Event)){return new b.Event(bv,e)}if(bv&&bv.type)
{this.originalEvent=bv;this.type=bv.type;this.isDefaultPrevented=(bv.defaultPrevented||bv.returnValue===
false||bv.getPreventDefault&&bv.getPreventDefault())?i:bk}else{this.type=bv}if(e){b.extend(this,e)}this.
timeStamp=bv&&bv.timeStamp||b.now();this[b.expando]=true};function bk(){return false}function
i(){return true}b.Event.prototype={preventDefault:function(){this.isDefaultPrevented=
i;var bv=this.originalEvent;if(!bv){return}if(bv.preventDefault){bv.preventDefault()}else{bv.returnValue=
false}},stopPropagation:function(){this.isPropagationStopped=i;var bv=this.originalEvent;if(!bv){return}if(
bv.stopPropagation){bv.stopPropagation()}bv.cancelBubble=true},stopImmediatePropagation:function(){this.
isImmediatePropagationStopped=i;this.stopPropagation()},isDefaultPrevented:bk,isPropagationStopped:bk,
isImmediatePropagationStopped:bk};b.each({mouseenter:"mouseover",mouseleave:"mouseout"},function(bv,e){
b.event.special[bv]={delegateType:e,bindType:e,handle:function(bz){var bB=this,bA=bz.relatedTarget,by=bz.
handleObj,bw=by.selector,bx;if(!bA||(bA!==bB&&!b.contains(bB,bA))){bz.type=by.origType;bx=by.handler.apply(
this,arguments);bz.type=e}return bx}}});if(!b.support.submitBubbles){b.event.special.submit={setup:function
(){if(b.nodeName(this,"form")){return false}b.event.add(this,"click._submit keypress._submit",function(bx)
{var bw=bx.target,bv=b.nodeName(bw,"input")||b.nodeName(bw,"button")?bw.form:L;if(bv&&!bv.
_submit_attached){b.event.add(bv,"submit._submit",function(e){if(this.parentNode&&!e.isTrigger){b.event.simulate("submit
this.parentNode,e,true)}});bv._submit_attached=true}})},teardown:function(){if(b.nodeName(this,"form")){
return false}b.event.remove(this,"._submit")}}}if(!b.support.changeBubbles){b.event.special.change={setup:
function(){if(bd.test(this.nodeName)){if(this.type==="checkbox"||this.type==="radio"){
b.event.add(this,"propertychange._change",function(e){if(e.originalEvent.propertyName==="checked"){this._j
ust_changed=true}});b.event.add(this,"click._change",function(e){if(this._just_changed&&!e.isTrigger){this.
_just_changed=false;b.event.simulate("change",this,e,true)}})}return false}b.event.add(this,"
beforeactivate._change",function(bw){var bv=bw.target;if(bd.test(bv.nodeName)&&!bv._change_attached){b.event.add(bv,"
change._change",function(e){if(this.parentNode&&!e.isSimulated&&!e.isTrigger){b.event.simulate("change",this.pare
ntNode,e,true)}});bv._change_attached=true}})},handle:function(bv){var e=bv.target;if(this!==e||bv.
isSimulated||bv.isTrigger||(e.type!=="radio"&&e.type!=="checkbox")){return bv.handleObj.handler.apply(this,arguments)
}},teardown:function(){b.event.remove(this,"._change");return bd.test(this.nodeName)}}}if(!
b.support.focusinBubbles){b.each({focus:"focusin",blur:"focusout"},function(bx,e){var bv=0,bw=function(by
){b.event.simulate(e,by.target,b.event.fix(by),true)};b.event.special[e]={setup:function(){if(bv++===0){
av.addEventListener(bx,bw,true)}},teardown:function(){if(--bv===0){av.removeEventListener(bx,bw,true)}}}})}
b.fn.extend({on:function(bw,e,bz,by,bv){var bA,bx;if(typeof bw==="object"){if(typeof e!=="string"){bz=e;e=
L}for(bx in bw){this.on(bx,e,bz,bw[bx],bv)}return this}if(bz==null&&by==null){by=e;bz=e=L}else{if(by==null){
if(typeof e==="string"){by=bz;bz=L}else{by=bz;bz=e;e=L}}if(by===false){by=bk}else{if(!by){return this}}if(b
v===1){bA=by;by=function(bB){b().off(bB);return bA.apply(this,arguments)};by.guid=bA.guid||(bA.guid=b.guid++
)}return this.each(function(){b.event.add(this,bw,by,bz,e)})},one:function(bv,e,bx,bw){return this.on.call(t
his,bv,e,bx,bw,1)},off:function(bw,e,by){if(bw&&bw.preventDefault&&bw.handleObj){var bv=bw.handleObj;b(bw.de
legateTarget).off(bv.namespace?bv.type+"."+bv.namespace:bv.type,bv.selector,bv.handler);return this}if(
typeof bw==="object"){for(var bx in bw){this.off(bx,e,bw[bx])}return this}if(e===false||typeof e==="function"){by
=e;e=L}if(by===false){by=bk}return this.each(function(){b.event.remove(this,bw,by,e)})},bind:function(
e,bw,bv){return this.on(e,null,bw,bv)},unbind:function(e,bv){return this.off(e,null,bv)},live:function(e,bw,
bv){b(this.context).on(e,this.selector,bw,bv);return this},die:function(e,bv){b(this.context).off(e,this.
selector||"**",bv);return this},delegate:function(e,bv,bx,bw){return this.on(bv,e,bx,bw)},undelegate:function
(e,bv,bw){return arguments.length==1?this.off(e,"**"):this.off(bv,e,bw)},trigger:function(e,bv){return this.
each(function(){b.event.trigger(e,bv,this)})},triggerHandler:function(e,bv){if(this[0]){return
b.event.trigger(e,bv,this[0],true)}},toggle:function(bx){var bv=arguments,e=bx.guid||
b.guid++,bw=0,by=function(bz){var bA=(b._data(this,"lastToggle"+bx.guid)||0)%bw;
b._data(this,"lastToggle"+bx.guid,bA+1);bz.preventDefault();return bv[bA].apply(this,arguments)||false};by
.guid=e;while(bw<bv.length){bv[bw++].guid=e}return this.click(by)},hover:function(e,bv){return this.
mouseenter(e).mouseleave(bv||e)}});b.each(("blur focus focusin focusout load resize scroll unload click dblclick
 mousedown mouseup mousemove mouseover mouseout mouseenter mouseleave change select submit keydown keypress
 keyup error contextmenu").split(" "),function(bv,e){b.fn[e]=function(bx,bw){if(bw==null){bw=bx;bx=null}return
arguments.length>0?this.on(e,null,bx,bw):this.trigger(e)};if(b.attrFn){b.attrFn[e]=true}if(aO.test(e)){
b.event.fixHooks[e]=b.event.keyHooks}if(bf.test(e)){b.event.fixHooks[e]=b.event.mouseHooks}});

(function(){var bH=/((?:\((?:\([^()]+\)|[^()]+)+\)|\[(?:\[[^\[\]]*\]|['"][^'"]*['"]|[^\[\]'"]+)+\]|\\.|[^
 >+~,(\[\\]+)+|[>+~])(\s*,\s*)?((?:.|\r|\n
)*)/g,bC="sizcache"+(Math.random()+"").replace(".",""),bI=0,bL=Object.prototype.toString,bB=false,bA=true,bK=/\\/g,bO=/\
 0});var by=function(bV,e,bY,bZ){bY=bY||[];e=e||av;var
 b1=e;if(e.nodeType!==1&&e.nodeType!==9){return[]}if(!bV||typeof bV!=="string"){return bY}var
 bS,b3,b6,bR,b2,b5,b4,bX,bU=true,bT=by.isXML(e),bW=[],b0=bV;do{bH.exec("");
bS=bH.exec(b0);if(bS){b0=bS[3];bW.push(bS[1]);if(bS[2]){bR=bS[3];break}}}while(bS);if(bW.length>1&&bD.exec(b
V)){if(bW.length===2&&bE.relative[bW[0]]){b3=bM(bW[0]+bW[1],e,bZ)}else{b3=bE.relative[bW[0]]?[e]:by(bW.shift
(),e);while(bW.length){bV=bW.shift();if(bE.relative[bV]){bV+=bW.shift()}b3=bM(bV,b3,bZ)}}}else{if(!bZ&&bW.le
ngth>1&&e.nodeType===9&&!bT&&bE.match.ID.test(bW[0])&&!bE.match.ID.test(bW[bW.length-1])){b2=by.find(bW.shif
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t(),e,bT);e=b2.expr?by.filter(b2.expr,b2.set)[0]:b2.set[0]}if(e){b2=bZ?{expr:bW.pop(),set:bF(bZ)}:by.find(bW
.pop(),bW.length===1&&(bW[0]==="~"||bW[0]==="+")&&e.parentNode?e.parentNode:e,bT);b3=b2.expr?by.filter(b2.ex
pr,b2.set):b2.set;if(bW.length>0){b6=bF(b3)}else{bU=false}while(bW.length){b5=bW.pop();b4=b5;if(!bE.relative
[b5]){b5=""}else{b4=bW.pop()}if(b4==null){b4=e}bE.relative[b5](b6,b4,bT)}}else{b6=bW=[]}}if(!b6){b6=b3}if(!b6){by.error
 Array]"){if(!bU){bY.push.apply(bY,b6)}else{if(e&&e.nodeType===
1){for(bX=0;b6[bX]!=null;bX++){if(b6[bX]&&(b6[bX]===true||b6[bX].nodeType===1&&by.contains(e,b6[bX]))){bY.pu
sh(b3[bX])}}}else{for(bX=0;b6[bX]!=null;bX++){if(b6[bX]&&b6[bX].nodeType===1){bY.push(b3[bX])}}}}}else{bF(b6,bY)}if(bR)
 bY};by.uniqueSort=function(bR){if(bJ){bB=bA;bR.sort(bJ);if(bB){for(var e=1;e<bR.length;e++){if(bR[e]===bR[e-1]){bR.spli
 bR};by.matches=function(e,bR){return by(e,null,null,bR)};by.matchesSelector=function(e,bR){return
 by(bR,null,null,[e]).length>0};by.find=function(bX,e,bY){var
 bW,bS,bU,bT,bV,bR;if(!bX){return[]}for(bS=0,bU=bE.order.length;bS<bU;bS++){bV=bE.order[bS];if((bT=bE.leftMatch[bV].exec
"){bT[1]
=(bT[1]||"").replace(bK,"");bW=bE.find[bV](bT,e,bY);if(bW!=null){bX=bX.replace(bE.match[bV],"");break}}}if(!bW){bW=type
 e.getElementsByTagName!=="undefined"?e.getElementsByTagName("*"):[]}return{set:bW,expr:bX}};by.filter=function(b1,b0,b
 bW,e,bZ,b6,b3,bR,bT,bV,b2,bS=b1,b5=[],bY=b0,bX=b0&&b0[0].ownerDocument&&by.isXML(b0[0]);while(b1&&b0.length){for(bZ in
 bE.filter){if((bW=bE.leftMatch[bZ].exec(b1))!=null&&bW[2]){bR=bE.filter[bZ];bT=bW[1];e=false;bW.splice(1,1);if(bT.subst
"){continue}if(bY===b5){b5=[]}if(bE.preFilter
[bZ]){bW=bE.preFilter[bZ](bW,bY,b4,b5,bU,bX);if(!bW){e=b6=true}else{if(bW===true){continue}}}if(bW){for(bV=0
;(b3=bY[bV])!=null;bV++){if(b3){b6=bR(b3,bW,bV,bY);b2=bU^b6;if(b4&&b6!=null){if(b2){e=true}else{bY[bV]=false
}}else{if(b2){b5.push(b3);e=true}}}}}if(b6!==L){if(!b4){bY=b5}b1=b1.replace(bE.match[bZ],"");if(!e){return[]}break}}}if
 Error("Syntax error, unrecognized expression: "+e)};var bw=by.getText=function(bU){var
 bS,bT,e=bU.nodeType,bR="";if(e){if(e===1||e===9){if(typeof bU.textContent==="string"){return bU.textContent}else{if(ty
 bU.innerText==="string"){return
 bU.innerText.replace(bO,"")}else{for(bU=bU.firstChild;bU;bU=bU.nextSibling){bR+=bw(bU)}}}}else{if(e===3||e===4){return
 bU.nodeValue)}}else{for(bS=0;(bT=bU[bS]);bS++){if(bT.nodeType!==8){bR+=bw(bT)}}}return bR};var bE=by.selectors={order:
.)+)/,CLASS:/\.((?:[\w\u00c0-\uFFFF\-]|\\.)+)/,NAME:/\[name=['"]*((?:[\w\u00c0-\uFFFF\-]|\\.)+)['"]*\]/,ATTR:/\[
\s*((?:[\w\u00c0-\uFFFF\-]|\\.)+)\s*(?:(\S?=)\s*(?:(['"])(.*?)\3|(#?(?:[\w\u00c0-\uFFFF\-]|\\.)*)|)|)\s*\]
/,TAG:/^((?:[\w\u00c0-\uFFFF\*\-]|\\.)+)/,CHILD:/:(only|nth|last|first)-child(?:\(\s*(even|odd|(?:[+\-]?\d
+|(?:[+\-]?\d*)?n\s*(?:[+\-]\s*\d+)?))\s*\))?/,POS:/:(nth|eq|gt|lt|first|last|even|odd)(?:\((\d*)\))?(?=[^\-
]|$)/,PSEUDO:/:((?:[\w\u00c0-\uFFFF\-]|\\.)+)(?:\((['"]?)((?:\([^\)]+\)|[^\(\)]*)+)\2\)
)?/},leftMatch:{},attrMap:{"class":"className","for":"htmlFor"},attrHandle:{href:function(e){return e.getAttribute("hre
)},type:function(e){return e.getAttribute("type")}},relative:{"+":function(bW,bR){var bT=typeof bR==="string"
,bV=bT&&!bQ.test(bR),bX=bT&&!bV;if(bV){bR=bR.toLowerCase()}for(var
 bS=0,e=bW.length,bU;bS<e;bS++){if((bU=bW[bS])){while
((bU=bU.previousSibling)&&bU.nodeType!==1){}bW[bS]=bX||bU&&bU.nodeName.toLowerCase()===bR?bU||false:bU===bR}}if(bX){by.
,bS=0,e=bW.length;if(bU&&!bQ.test(bR)){bR=bR.toLowerCase();for(;bS<e;bS++){bV=bW[bS];if(bV){var
 bT=bV.parentNode;bW[bS]=bT.nodeName.to
LowerCase()===bR?bT:false}}}else{for(;bS<e;bS++){bV=bW[bS];if(bV){bW[bS]=bU?bV.parentNode:bV.parentNode===bR}}if(bU){by
&&!bQ.test(bR)){bR=bR.toLowerCase();bU=bR;e=bv}e("parentNode",bR,bS,bT,bU,bV)},"~":function(bT,bR,bV){var
 bU,bS=bI++,e=bN;if(typeof bR==="string"&&!bQ.test(bR)){bR=bR.toLowerCase();bU=bR;e=bv}e("previousSibling"
,bR,bS,bT,bU,bV)}},find:{ID:function(bR,bS,bT){if(typeof bS.getElementById!=="undefined"&&!bT){var
 e=bS.getElementById(bR[1]);return e&&e.parentNode?[e]:[]}},NAME:function(bS,bV){if(typeof bV.getElementsByName!=="unde
 bR=[],bU=bV.getElementsByName(bS[1]);for(var bT=0,e=bU.length;bT<e;bT++){if(bU[bT].getAttribute("name"
)===bS[1]){bR.push(bU[bT])}}return bR.length===0?null:bR}},TAG:function(e,bR){if(typeof bR.getElementsByTagName!==
"undefined"){return bR.getElementsByTagName(e[1])}}},preFilter:{CLASS:function(bT,bR,bS,e,bW,bX){bT=" "
+bT[1].replace(bK,"")+" ";if(bX){return bT}for(var bU=0,bV;(bV=bR[bU])!=null;bU++){if(bV){if(bW^(bV.className&&("
 "+bV.className+" ").replace(/[\t\n\r]/g," "
).indexOf(bT)>=0)){if(!bS){e.push(bV)}}else{if(bS){bR[bU]=false}}}}return false},ID:function(e){return e[1].replace(bK,"
).toLowerCase()},CHILD:function(e){if(e[1]==="nth"){if(!e[2]){by.error(e[0])}e[2]=e[2].replace(/^\+|\s*/g,""
);var bR=/(-?)(\d*)(?:n([+\-]?\d*))?/.exec(e[2]==="even"&&"2n"||e[2]==="odd"&&"2n+1"||!/\D/.test(e[2])&&"0
n+"+e[2]||e[2]);e[2]=(bR[1]+(bR[2]||1))-0;e[3]=bR[3]-0}else{if(e[2]){by.error(e[0])}}e[0]=bI++;return
 e},ATTR:function(bU,bR,bS,e,bV,bW){var bT=bU[1]=bU[1].replace(bK,""
);if(!bW&&bE.attrMap[bT]){bU[1]=bE.attrMap[bT]}bU[4]=(bU[4]||bU[5]||"").replace(bK,"");if(bU[2]==="~="){bU[4]=" "+bU[4]
 bU},PSEUDO:function(bU,bR,bS,e,bV){if(bU[1]==="not"){if((bH.exec(bU[3])||"").length>1||/^\w
/.test(bU[3])){bU[3]=by(bU[3],null,null,bR)}else{var bT=by.filter(bU[3],bR,bS,true^bV);if(!bS){e.push.apply(e,bT)}return
 false}}else{if(bE.match.POS.test(bU[0])||bE.match.CHILD.test(bU[0])){return true}}return bU},POS:function(e){e.unshift
 e}},filters:{enabled:function(e){return e.disabled===false&&e.type!=="hidden"},disabled:function(e){return
 e.disabled===true},checked:function(e){return
 e.checked===true},selected:function(e){if(e.parentNode){e.parentNode.selectedIndex}return e.selected===true},parent:fu
 !!e.firstChild},empty:function(e){return !e.firstChild},has:function(bS,bR,e){return !!by(e[3],bS).length},header:funct
/i).test(e.nodeName)},text:function(bS){var e=bS.getAttribute("type"),bR=bS.type;return bS.nodeName.toLowerCase()==="
input"&&"text"===bR&&(e===bR||e===null)},radio:function(e){return e.nodeName.toLowerCase()==="input"&&"radio
"===e.type},checkbox:function(e){return e.nodeName.toLowerCase()==="input"&&"checkbox"
===e.type},file:function(e){return e.nodeName.toLowerCase()==="input"&&"file"===e.type},password:function(e){return
 e.nodeName.toLowerCase()==="input"&&"password"===e.type},submit:function(bR){var e=bR.nodeName.toLowerCase();return(e==
input"||e==="button")&&"submit"===bR.type},image:function(e){return e.nodeName.toLowerCase()==="input"&&"
image"===e.type},reset:function(bR){var e=bR.nodeName.toLowerCase();return(e==="input"||e==="button")&&"reset"
===bR.type},button:function(bR){var e=bR.nodeName.toLowerCase();return e==="input"&&"button"===bR.type||e==="
button"},input:function(e){return(/input|select|textarea|button/i).test(e.nodeName)},focus:function(e){return
 e===e.ownerDocument.activeElement}},setFilters:{first:function(bR,e){return
 e===0},last:function(bS,bR,e,bT){return bR===bT.length-1},even:function(bR,e){return e%2===0},odd:function(bR,e){return
 e%2===1},lt:function(bS,bR,e){return bR<e[3]-0},gt:function(bS,bR,e){return bR>e[3]-0},nth:function(bS,bR,e){return
 e[3]-0===bR},eq:function(bS,bR,e){return e[3]-0===bR}},filter:{PSEUDO:function(bS,bX,bW,bY){var
 e=bX[1],bR=bE.filters[e];if(bR){return bR(bS,bW,bX,bY)}else{if(e==="contains"){return(bS.textContent||bS.innerText||bw
).indexOf(bX[3])>=0}else{if(e==="not"){var bT=bX[3];for(var
 bV=0,bU=bT.length;bV<bU;bV++){if(bT[bV]===bS){return false}}return true}else{by.error(e)}}}},CHILD:function(bS,bU){var
 bT,b0,bW,bZ,e,bV,bY,bX=bU[1],bR=bS;switch(bX){case"only":case"first":while((bR=bR.previousSibling)){if(bR.nodeType===1)
"){return true}bR=bS;case"last":while((bR=bR.nextSibling)){if(bR.nodeType===1){return false}}return
 true;case"nth":bT=bU[2];b0=bU[3];if(bT===1&&b0===0){return
 true}bW=bU[0];bZ=bS.parentNode;if(bZ&&(bZ[bC]!==bW||!bS.no
deIndex)){bV=0;for(bR=bZ.firstChild;bR;bR=bR.nextSibling){if(bR.nodeType===1){bR.nodeIndex=++bV}}bZ[bC]=bW}bY=bS.nodeInd
 bR.nodeType===1&&bR.getAttribute("id")===e},TAG:function(bR,e){return(e==="*"
&&bR.nodeType===1)||!!bR.nodeName&&bR.nodeName.toLowerCase()===e},CLASS:function(bR,e){return(" "+(bR.className||bR.getA
).indexOf(e)>-1},ATTR:function(bV,bT){var
 bS=bT[1],e=by.attr?by.attr(bV,bS):bE.attrHandle[bS]?bE.attrHandle[bS](bV):bV[bS]!=null?bV[bS]:bV.getAttribute(bS),bW=e+
:!bU&&by.attr?e!=null:bU==="="?bW===bR:bU==="*="?bW.indexOf(bR)>=0:bU==="~="?(" "+bW+" "
).indexOf(bR)>=0:!bR?bW&&e!==false:bU==="!="?bW!==bR:bU==="^="?bW.indexOf(bR)===0:bU==="$="?bW.substr(bW.length-bR.lengt
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?bW===bR||bW.substr(0,bR.length+1)===bR+"-":false},POS:function(bU,bR,bS,bV){var
 e=bR[2],bT=bE.setFilters[e];if(bT){return bT(bU,bS,bR,bV)}}};var bD=bE.match.POS,bx=function(bR,e){return"\\"+(e-0+1)
 bE.match){bE.match[bz]=new RegExp(bE.match[bz].source+(/(?![^\[]*\])(?![^\(]*\)
)/.source));bE.leftMatch[bz]=new RegExp(/(^(?:.|\r|\n)*?)/.source+bE.match[bz].source.replace(/\\(\d+)/g,bx))}var
 bF=function(bR,e){bR=Array.prototype.slice.call(bR,0);if(e){e.push.apply(e,bR);return e}return
 bR};try{Array.prototype.slice.call(av.documentElement.childNodes,0)[0].nodeType}catch(bP){bF=function(bU,bT){var bS=0,
[object Array]"){Array.prototype.push.apply(bR,bU)}else{if(typeof bU.length==="number"){for(var
 e=bU.length;bS<e;bS++){bR.push(bU[bS])}}else{for(;bU[bS];bS++){bR.push(bU[bS])}}}return bR}}var
 bJ,bG;if(av.documentElement.compareDocumentPosition){bJ=function(bR,e){if(bR===e){bB=true;return
 0}if(!bR.compareDocumentPosition||!e.compareDocumentPosition){return bR.compareDocumentPosition?-1:1}return
 bR.compareDocumentPosition(e)&4?-1:1}}else{bJ=function(bY,bX){if(bY===bX){bB=true;return 0}else{if(bY.sourceIndex&&bX.s
 bY.sourceIndex-bX.sourceIndex}}var bV,bR,bS=[],e=[],bU=bY.parentNode,bW=bX.parentNode,bZ=bU;if(bU===bW){return
 bG(bY,bX)}else{if(!bU){return -1}else{if(!bW){return
 1}}}while(bZ){bS.unshift(bZ);bZ=bZ.parentNode}bZ=bW;while(bZ){e.unshift(bZ);bZ=bZ.parentNode}bV=bS.length;bR=e.length;
 bT=0;bT<bV&&bT<bR;bT++){if(bS[bT]!==e[bT]){return bG(bS[bT],e[bT])}}return
 bT===bV?bG(bY,e[bT],-1):bG(bS[bT],bX,1)};bG=function(bR,e,bS){if(bR===e){return bS}var bT=bR.nextSibling;while(bT){if(
 bR=av.createElement("div"),bS="script"+(new Date()).getTime(),e=av.documentElement;bR.innerHTML="<a name='
"+bS+"'/>";e.insertBefore(bR,e.firstChild);if(av.getElementById(bS)){bE.find.ID=function(bU,bV,bW){if(typeof
 bV.getElementById!=="undefined"&&!bW){var bT=bV.getElementById(bU[1]);return bT?bT.id===bU[1]||typeof
 bT.getAttributeNode!=="undefined"&&bT.getAttributeNode("id"
).nodeValue===bU[1]?[bT]:L:[]}};bE.filter.ID=function(bV,bT){var bU=typeof bV.getAttributeNode!=="undefined"&&bV.getAtt
 bV.nodeType===1&&bU&&bU.nodeValue===bT}}e.removeChild(bR);e=bR=null})();(function(){var e=av.createElement("div"
);e.appendChild(av.createComment(""));if(e.getElementsByTagName("*").length>0){bE.find.TAG=function(bR,bV){var
 bU=bV.getElementsByTagName(bR[1]);if(bR[1]==="*"){var bT=[];for(var
 bS=0;bU[bS];bS++){if(bU[bS].nodeType===1){bT.push(bU[bS])}}bU=bT}return bU}}e.innerHTML="<a href='#'></a>";if(e.firstCh
undefined"&&e.firstChild.getAttribute("href")!=="#"){bE.attrHandle.href=function(bR){return bR.getAttribute("
href",2)}}e=null})();if(av.querySelectorAll){(function(){var e=bv,bT=av.createElement("div"),bS="__sizzle__"
;bT.innerHTML="<p class='TEST'></p>";if(bT.querySelectorAll&&bT.querySelectorAll(".TEST"
).length===0){return}bv=function(b4,bV,bZ,b3){bV=bV||av;if(!b3&&!by.isXML(bV)){var b2=/^(\w+$)|^\.([\w\-]+$)|^#([\w\-
]+$)/.exec(b4);if(b2&&(bV.nodeType===1||bV.nodeType===9)){if(b2[1]){return
 bF(bV.getElementsByTagName(b4),bZ)}else{if(b2[2]&&bE.find.CLASS&&bV.getElementsByClassName){return
 bF(bV.getElementsByClassName(b2[2]),bZ)}}}if(bV.nodeType===9){if(b4==="body"&&bV.body){return bF([bV.body],bZ)}else{if
 bY=bV.getElementById(b2[3]);if(bY&&bY.parentNode){if(bY.id===b2[3]){return bF([bY],bZ)}}else{return bF([],bZ)}}}try{ret
 bF(bV.querySelectorAll(b4),bZ)}catch(b0){}}else{if(bV.nodeType===1&&bV.nodeName.toLowerCase()!=="object"){var
 bW=bV,bX=bV.getAttribute("id"),bU=bX||bS,b6=bV.parentNode,b5=/^\s*[+~]/.test(b4);if(!bX){bV.setAttribute("id"
,bU)}else{bU=bU.replace(/'/g,"\\$&")}if(b5&&b6){bV=bV.parentNode}try{if(!b5||b6){return bF(bV.querySelectorAll("[id='
"+bU+"'] "+b4),bZ)}}catch(b1){}finally{if(!bX){bW.removeAttribute("id")}}}}}return e(b4,bV,bZ,b3)};for(var
 bR in e){by[bR]=e[bR]}bT=null})()}(function(){var
 e=av.documentElement,bS=e.matchesSelector||e.mozMatchesSelector||e.webkitMatchesSelector||e.msMatchesSelector;if(bS){va
),bR=false;try{bS.call(av.documentElement,"[test!='']:sizzle"
)}catch(bT){bR=true}by.matchesSelector=function(bW,bY){bY=bY.replace(/\=\s*([^'"\]]*)\s*\]/g,"='$1']");if(!by.isXML(bW))
/!=/.test(bY)){var bV=bS.call(bW,bY);if(bV||!bU||bW.document&&bW.document.nodeType!==11){return bV}}catch(
bX){}}return by(bY,null,null,[bW]).length>0}})();(function(){var e=av.createElement("div");e.innerHTML="<div
 class='test e'></div><div class='test'></div>";if(!e.getElementsByClassName||e.getElementsByClassName("e").
length===0){return}e.lastChild.className="e";if(e.getElementsByClassName("e").length===1){return}bE.order.
splice(1,0,"CLASS");bE.find.CLASS=function(bR,bS,bT){if(typeof bS.getElementsByClassName!=="undefined"&&!bT){
return bS.getElementsByClassName(bR[1])}};e=null})();function bv(bR,bW,bV,bZ,bX,bY){for(var bT=0,bS=bZ.length
;bT<bS;bT++){var e=bZ[bT];if(e){var bU=false;e=e[bR];while(e){if(e[bC]===bV){bU=bZ[e.sizset];break}if(e.
nodeType===1&&!bY){e[bC]=bV;e.sizset=bT}if(e.nodeName.toLowerCase()===bW){bU=e;break}e=e[bR]}bZ[bT]=bU}}}
function bN(bR,bW,bV,bZ,bX,bY){for(var bT=0,bS=bZ.length;bT<bS;bT++){var e=bZ[bT];if(e){var bU=false;e=e[bR];while(
e){if(e[bC]===bV){bU=bZ[e.sizset];break}if(e.nodeType===1){if(!bY){e[bC]=bV;e.sizset=bT}if(typeof bW!==
string"){if(e===bW){bU=true;break}}else{if(by.filter(bW,[e]).length>0){bU=e;break}}}e=e[bR]}bZ[bT]=bU}}}if(av.
documentElement.contains){by.contains=function(bR,e){return bR!==e&&(bR.contains?bR.contains(e):true)}}else{if
(av.documentElement.compareDocumentPosition){by.contains=function(bR,e){return !!(bR.compareDocumentPosition
(e)&16)}}else{by.contains=function(){return false}}}by.isXML=function(e){var bR=(e?e.ownerDocument||e:0).
documentElement;return bR?bR.nodeName!=="HTML":false};var bM=function(bS,e,bW){var bV,bX=[],bU="",bY=e.nodeType
?[e]:e;while((bV=bE.match.PSEUDO.exec(bS))){bU+=bV[0];bS=bS.replace(bE.match.PSEUDO,"")}bS=bE.relative[bS]?
bS+"*":bS;for(var bT=0,bR=bY.length;bT<bR;bT++){by(bS,bY[bT],bX,bW)}return by.filter(bU,bX)};by.attr=
b.attr;by.selectors.attrMap={};b.find=by;b.expr=by.selectors;b.expr[":"]=b.expr.filters;
b.unique=by.uniqueSort;b.text=by.getText;b.isXMLDoc=by.isXML;b.contains=by.contains})();var ab=/Until$/
,aq=/^(?:parents|prevUntil|prevAll)/,a9=/,/,bp=/^.[^:#\[\.,]*$/,P=Array.prototype.slice,H=
b.expr.match.POS,ay={children:true,contents:true,next:true,prev:true};b.fn.extend({find:function(e){var
bw=this,by,bv;if(typeof e!=="string"){return b(e).filter(function(){for(by=0,bv=bw.length;by<bv;by++){if(b.c
ontains(bw[by],this)){return true}}})}var bx=this.pushStack("","find",e),bA,bB,bz;for(by=0,bv=this.length;by
<bv;by++){bA=bx.length;b.find(e,this[by],bx);if(by>0){for(bB=bA;bB<bx.length;bB++){for(bz=0;bz<bA;bz++){if(
bx[bz]===bx[bB]){bx.splice(bB--,1);break}}}}}return bx},has:function(bv){var e=b(bv);return this.filter(
function(){for(var bx=0,bw=e.length;bx<bw;bx++){if(b.contains(this,e[bx])){return true}}})},not:function(e){
return this.pushStack(aG(this,e,false),"not",e)},filter:function(e){return this.pushStack(aG(this,e,true),"
filter",e)},is:function(e){return !!e&&(typeof e==="string"?H.test(e)?b(e,this.context).index(this[0])>=0:
b.filter(e,this).length>0:this.filter(e).length>0)},closest:function(by,bx){var bv=[],bw,e,bz=this[0];if(
b.isArray(by)){var bB=1;while(bz&&bz.ownerDocument&&bz!==bx){for(bw=0;bw<by.length;bw++){if(
b(bz).is(by[bw])){bv.push({selector:by[bw],elem:bz,level:bB})}}bz=bz.parentNode;bB++}return bv}var bA=H.
test(by)||typeof by!=="string"?b(by,bx||this.context):0;for(bw=0,e=this.length;bw<e;bw++){bz=this[bw];while(
bz){if(bA?bA.index(bz)>-1:b.find.matchesSelector(bz,by)){bv.push(bz);break}else{bz=bz.parentNode;if(!bz||!bz
.ownerDocument||bz===bx||bz.nodeType===11){break}}}}bv=bv.length>1?b.unique(bv):bv;return this.pushStack(bv
,"closest",by)},index:function(e){if(!e){return(this[0]&&this[0].parentNode)?this.prevAll().length:-1}if(
typeof e==="string"){return b.inArray(this[0],b(e))}return b.inArray(e.jquery?e[0]:e,this)},add:function(e,
bv){var bx=typeof e==="string"?b(e,bv):b.makeArray(e&&e.nodeType?[e]:e),bw=b.merge(this.get(),bx);return
this.pushStack(C(bx[0])||C(bw[0])?bw:b.unique(bw))},andSelf:function(){return this.add(this.prevObject)}});
function C(e){return !e||!e.parentNode||e.parentNode.nodeType===11}b.each({parent:function(bv){var e=bv.
parentNode;return e&&e.nodeType!==11?e:null},parents:function(e){return b.dir(e,"parentNode")},parentsUntil:
function(bv,e,bw){return b.dir(bv,"parentNode",bw)},next:function(e){return b.nth(e,2,"nextSibling")},prev:
function(e){return b.nth(e,2,"previousSibling")},nextAll:function(e){return b.dir(e,"nextSibling")},prevAll:
function(e){return b.dir(e,"previousSibling")},nextUntil:function(bv,e,bw){return
b.dir(bv,"nextSibling",bw)},prevUntil:function(bv,e,bw){return b.dir(bv,"previousSibling",bw)},siblings:
function(e){return b.sibling(e.parentNode.firstChild,e)},children:function(e){return
b.sibling(e.firstChild)},contents:function(e){return b.nodeName(e,"iframe")?e.contentDocument||e.
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contentWindow.document:b.makeArray(e.childNodes)}},function(e,bv){b.fn[e]=function(by,bw){var bx=
b.map(this,bv,by);if(!ab.test(e)){bw=by}if(bw&&typeof bw==="string"){bx=b.filter(bw,bx)}bx=this.length>1&
&!ay[e]?b.unique(bx):bx;if((this.length>1||a9.test(bw))&&aq.test(e)){bx=bx.reverse()}return this.pushStack(
bx,e,P.call(arguments).join(","))})};b.extend({filter:function(bw,e,bv){if(bv){bw=":not("+bw+")"}return e.
length===1?b.find.matchesSelector(e[0],bw)?[e[0]]:[]:b.find.matches(bw,e)},dir:function(bw,bv,by){var e=[]
,bx=bw[bv];while(bx&&bx.nodeType!==9&&(by===L||bx.nodeType!==1||!b(bx).is(by))){if(bx.nodeType===1){e.push
(bx)}bx=bx[bv]}return e},nth:function(by,e,bw,bx){e=e||1;var bv=0;for(;by;by=by[bw]){if(by.nodeType===1&&++
bv===e){break}}return by},sibling:function(bw,bv){var e=[];for(;bw;bw=bw.nextSibling){if(bw.nodeType===1&&bw
!==bv){e.push(bw)}}return e}});function aG(bx,bw,e){bw=bw||0;if(b.isFunction(bw)){return
b.grep(bx,function(bz,by){var bA=!!bw.call(bz,by,bz);return bA===e})}else{if(bw.nodeType){return
b.grep(bx,function(bz,by){return(bz===bw)===e})}else{if(typeof bw==="string"){var bv=
b.grep(bx,function(by){return by.nodeType===1});if(bp.test(bw)){return b.filter(bw,bv,!e)}else{bw=
b.filter(bw,bv)}}}}return b.grep(bx,function(bz,by){return(b.inArray(bz,bw)>=0)===e})}function a(e){var
bw=aR.split("|"),bv=e.createDocumentFragment();if(bv.createElement){while(bw.length){bv.createElement(bw.pop
())}}return bv}var aR="
abbr|article|aside|audio|canvas|datalist|details|figcaption|figure|footer|header|hgroup|mark|meter|nav|output|progress|s
(?!area|br|col|embed|hr|img|input|link|meta|param)(([\w:]+)[^>]*)\/>/ig,d=/<([\w:]+)/,w=/<tbody/
i,W=/<|&#?\w+;/,ae=/<(?:script|style)/i,O=/<(?:script|object|embed|option|style)/
i,ah=new RegExp("<(?:"+aR+")","i"),o=/checked\s*(?:[^=]|=\s*.checked.)/i,bm=/\/(java|ecma)script/
i,aN=/^\s*<!(?:\[CDATA\[|\-\-)/,ax={option:[1,"<select multiple='multiple'>","</select>"],legend:[1,"
<fieldset>","</fieldset>"],thead:[1,"<table>","</table>"],tr:[2,"<table><tbody>","</tbody></table>"],td:[3,"
<table><tbody><tr>","</tr></tbody></table>"],col:[2,"<table><tbody></tbody><colgroup>","</colgroup></table>"],
area:[1,"<map>","</map>"],_default:[0,"",""]},ac=a(av);ax.optgroup=ax.option;ax.tbody=ax.tfoot=ax.
colgroup=ax.caption=ax.thead;ax.th=ax.td;if(!b.support.htmlSerialize){ax._default=[1,"div<div>","</div>"]}
b.fn.extend({text:function(e){if(b.isFunction(e)){return this.each(function(bw){var bv=
b(this);bv.text(e.call(this,bw,bv.text()))})}if(typeof e!=="object"&&e!==L){return this.empty().append((
this[0]&&this[0].ownerDocument||av).createTextNode(e))}return b.text(this)},wrapAll:function(e){if(
b.isFunction(e)){return this.each(function(bw){b(this).wrapAll(e.call(this,bw))})}if(this[0]){var bv=
b(e,this[0].ownerDocument).eq(0).clone(true);if(this[0].parentNode){bv.insertBefore(this[0])}bv.map(
function(){var bw=this;while(bw.firstChild&&bw.firstChild.nodeType===1){bw=bw.firstChild}return bw}).append(this)}
return this},wrapInner:function(e){if(b.isFunction(e)){return this.each(function(bv){
b(this).wrapInner(e.call(this,bv))})}return this.each(function(){var bv=b(this),bw=bv.contents();if(
bw.length){bw.wrapAll(e)}else{bv.append(e)}})},wrap:function(e){var bv=b.isFunction(e);return this.
each(function(bw){b(this).wrapAll(bv?e.call(this,bw):e)})},unwrap:function(){return this.parent().each
(function(){if(!b.nodeName(this,"body")){b(this).replaceWith(this.childNodes)}}).end()},append:function(){
return this.domManip(arguments,true,function(e){if(this.nodeType===1){this.appendChild(e)}})},prepend:
function(){return this.domManip(arguments,true,function(e){if(this.nodeType===1){this.insertBefore(e,this.
firstChild)}})},before:function(){if(this[0]&&this[0].parentNode){return this.domManip(arguments,false,function(bv){
this.parentNode.insertBefore(bv,this)})}else{if(arguments.length){var e=b.clean(arguments);e.push.apply(e,
this.toArray());return this.pushStack(e,"before",arguments)}}},after:function(){if(this[0]&&this[0].
parentNode){return this.domManip(arguments,false,function(bv){this.parentNode.insertBefore(bv,this.nextSibling)})}
else{if(arguments.length){var e=this.pushStack(this,"after",arguments);e.push.apply(e,
b.clean(arguments));return e}}},remove:function(e,bx){for(var bv=0,bw;(bw=this[bv])!=null;bv++){if(!e||
b.filter(e,[bw]).length){if(!bx&&bw.nodeType===1){b.cleanData(bw.getElementsByTagName("*"));
b.cleanData([bw])}if(bw.parentNode){bw.parentNode.removeChild(bw)}}}return this},empty:function(){for(var
e=0,bv;(bv=this[e])!=null;e++){if(bv.nodeType===1){b.cleanData(bv.getElementsByTagName("*"))}while(bv.
firstChild){bv.removeChild(bv.firstChild)}}return this},clone:function(bv,e){bv=bv==null?false:bv;e=e==null?bv:e;
return this.map(function(){return b.clone(this,bv,e)})},html:function(bx){if(bx===
L){return this[0]&&this[0].nodeType===1?this[0].innerHTML.replace(ag,""):null}else{if(typeof bx==="string"
&&!ae.test(bx)&&(b.support.leadingWhitespace||!ar.test(bx))&&!ax[(d.exec(bx)||["",""])[1].toLowerCase()]){
bx=bx.replace(R,"<$1></$2>");try{for(var bw=0,bv=this.length;bw<bv;bw++){if(this[bw].nodeType===1){
b.cleanData(this[bw].getElementsByTagName("*"));this[bw].innerHTML=bx}}}catch(by){this.empty().append(bx)}
}else{if(b.isFunction(bx)){this.each(function(bz){var e=b(this);e.html(bx.call(this,bz,e.html()))})}
else{this.empty().append(bx)}}}return this},replaceWith:function(e){if(this[0]&&this[0].parentNode){if(
b.isFunction(e)){return this.each(function(bx){var bw=b(this),bv=bw.html();bw.replaceWith(e.call(this
,bx,bv))})}if(typeof e!=="string"){e=b(e).detach()}return this.each(function(){var bw=this.nextSibling,
bv=this.parentNode;b(this).remove();if(bw){b(bw).before(e)}else{b(bv).append(e)}})}else{return this.
length?this.pushStack(b(b.isFunction(e)?e():e),"replaceWith",e):this}},detach:function(e){return this.remove(e,
true)},domManip:function(bB,bF,bE){var bx,by,bA,bD,bC=bB[0],bv=[];if(!b.support.checkClone&&arguments.
length===3&&typeof bC==="string"&&o.test(bC)){return this.each(function(){b(this).domManip(bB,bF,bE,true)})}
if(b.isFunction(bC)){return this.each(function(bH){var bG=b(this);bB[0]=bC.call(this,bH,bF?bG.html():
L);bG.domManip(bB,bF,bE)})}if(this[0]){bD=bC&&bC.parentNode;if(b.support.parentNode&&bD&&bD.nodeType===11
&&bD.childNodes.length===this.length){bx={fragment:bD}}else{bx=b.buildFragment(bB,this,bv)}bA=bx.fragment;
if(bA.childNodes.length===1){by=bA=bA.firstChild}else{by=bA.firstChild}if(by){bF=bF&&
b.nodeName(by,"tr");for(var bw=0,e=this.length,bz=e-1;bw<e;bw++){bE.call(bF?ba(this[bw],by):this[bw],bx.
cacheable||(e>1&&bw<bz)?b.clone(bA,true,true):bA)}}if(bv.length){b.each(bv,bo)}}return this}});function ba(e
,bv){return b.nodeName(e,"table")?(e.getElementsByTagName("tbody")[0]||e.appendChild(e.ownerDocument.
createElement("tbody"))):e}function t(bB,bv){if(bv.nodeType!==1||!b.hasData(bB)){return}var by,bx,e,bA=
b._data(bB),bz=b._data(bv,bA),bw=bA.events;if(bw){delete bz.handle;bz.events={};for(by in bw){for(bx=0,e=
bw[by].length;bx<e;bx++){b.event.add(bv,by+(bw[by][bx].namespace?".":"")+bw[by][bx].namespace,bw[by][bx],bw
[by][bx].data)}}}if(bz.data){bz.data=b.extend({},bz.data)}}function ai(bv,e){var bw;if(e.nodeType!==1){
return}if(e.clearAttributes){e.clearAttributes()}if(e.mergeAttributes){e.mergeAttributes(bv)}bw=e.nodeName.
toLowerCase();if(bw==="object"){e.outerHTML=bv.outerHTML}else{if(bw==="input"&&(bv.type==="checkbox"||bv.type==="
radio")){if(bv.checked){e.defaultChecked=e.checked=bv.checked}if(e.value!==bv.value){e.value=bv.value}}else{
if(bw==="option"){e.selected=bv.defaultSelected}else{if(bw==="input"||bw==="textarea"){e.defaultValue=bv.
defaultValue}}}e.removeAttribute(b.expando)}b.buildFragment=function(bz,bx,bv){var by,e,bw,bA,bB=bz[0];if(bx
&&bx[0]){bA=bx[0].ownerDocument||bx[0]}if(!bA.createDocumentFragment){bA=av}if(bz.length===1&&typeof bB==="
string"&&bB.length<512&&bA===av&&bB.charAt(0)==="<"&&!O.test(bB)&&(b.support.checkClone||!o.test(bB))&&(
b.support.html5Clone||!ah.test(bB))){e=true;bw=b.fragments[bB];if(bw&&bw!==1){by=bw}if(!by){by=bA.
createDocumentFragment();b.clean(bz,bA,by,bv)}if(e){b.fragments[bB]=bw?by:1}return{fragment:by,cacheable:e}};
b.fragments={};b.each({appendTo:"append",prependTo:"prepend",insertBefore:"before",insertAfter:"after",
replaceAll:"replaceWith"},function(e,bv){b.fn[e]=function(bw){var bz=[],bC=b(bw),bB=this.length===1&&this[0]
.parentNode;if(bB&&bB.nodeType===11&&bB.childNodes.length===1&&bC.length===1){bC[bv](this[0]);return this}
else{for(var bA=0,bx=bC.length;bA<bx;bA++){var by=(bA>0?this.clone(true):this).get();
b(bC[bA])[bv](by);bz=bz.concat(by)}return this.pushStack(bz,e,bC.selector)}}});function bg(e){if(typeof e.
getElementsByTagName!=="undefined"){return e.getElementsByTagName("*")}else{if(typeof e.querySelectorAll!=="
undefined"){return e.querySelectorAll("*")}else{return[]}}}function az(e){if(e.type==="checkbox"||e.type==="
```

```
radio"){e.defaultChecked=e.checked}}function E(e){var bv=(e.nodeName||"").toLowerCase();if(bv==="input"){az
(e)}else{if(bv!=="script"&&typeof e.getElementsByTagName!=="undefined"){b.grep(e.getElementsByTagName("
input"),az)}}}function al(e){var bv=av.createElement("div");ac.appendChild(bv);bv.innerHTML=e.outerHTML;return
bv.firstChild}b.extend({clone:function(by,bA,bw){var e,bv,bx,bz=b.support.html5Clone||!ah.test("<"+by.
nodeName)?by.cloneNode(true):al(by);if((!b.support.noCloneEvent||!b.support.noCloneChecked)&&(by.nodeType===1||
by.nodeType===11)&&!b.isXMLDoc(by)){ai(by,bz);e=bg(by);bv=bg(bz);for(bx=0;e[bx];++bx){if(bv[bx]){ai(e[bx],
bv[bx])}}}if(bA){t(by,bz);if(bw){e=bg(by);bv=bg(bz);for(bx=0;e[bx];++bx){t(e[bx],bv[bx])}}}e=bv=null;return
bz},clean:function(bw,by,bH,bA){var bF;by=by||av;if(typeof by.createElement==="undefined"){by=by.
ownerDocument||by[0]&&by[0].ownerDocument||av}var bI=[],bB;for(var bE=0,bz;(bz=bw[bE])!=null;bE++){if(typeof bz==="
number"){bz+=""}if(!bz){continue}if(typeof bz==="string"){if(!W.test(bz)){bz=by.createTextNode(bz)}else{bz=bz.
replace(R,"<$1></$2>");var bK=(d.exec(bz)||["",""])[1].toLowerCase(),bx=ax[bK]||ax._default,bD=bx[0],bv=by.
createElement("div");if(by===av){ac.appendChild(bv)}else{a(by).appendChild(bv)}bv.innerHTML=bx[1]+bz+bx[2];while
(bD--){bv=bv.lastChild}if(!b.support.tbody){var e=w.test(bz),bC=bK==="table"&&!e?bv.firstChild&&bv.
firstChild.childNodes:bx[1]==="<table>"&&!e?bv.childNodes:[];for(bB=bC.length-1;bB>=0;--bB){if(
b.nodeName(bC[bB],"tbody")&&!bC[bB].childNodes.length){bC[bB].parentNode.removeChild(bC[bB])}}}if(!
b.support.leadingWhitespace&&ar.test(bz)){bv.insertBefore(by.createTextNode(ar.exec(bz)[0]),bv.firstChild)
}bz=bv.childNodes}}var bG;if(!b.support.appendChecked){if(bz[0]&&typeof(bG=bz.length)==="number"){for(bB=0;
bB<bG;bB++){E(bz[bB])}}else{E(bz)}}if(bz.nodeType){bI.push(bz)}else{bI=b.merge(bI,bz)}}if(bH){bF=function
(bL){return !bL.type||bm.test(bL.type)};for(bE=0;bI[bE];bE++){if(bA&&b.nodeName(bI[bE],"script")&&(!bI[bE].
type||bI[bE].type.toLowerCase()==="text/javascript")){bA.push(bI[bE].parentNode?bI[bE].parentNode.
removeChild(bI[bE]):bI[bE])}else{if(bI[bE].nodeType===1){var bJ=b.grep(bI[bE].getElementsByTagName("script"),bF);bI.
splice.apply(bI,[bE+1,0].concat(bJ))}bH.appendChild(bI[bE])}}}return bI},cleanData:function(bv){var by,bw,e=
b.cache,bB=b.event.special,bA=b.support.deleteExpando;for(var bz=0,bx;(bx=bv[bz])!=null;bz++){if(bx.
nodeName&&b.noData[bx.nodeName.toLowerCase()]){continue}bw=bx[b.expando];if(bw){by=e[bw];if(by&&by.events){for
(var bC in by.events){if(bB[bC]){b.event.remove(bx,bC)}else{b.removeEvent(bx,bC,by.handle)}}if(by.handle){
by.handle.elem=null}}if(bA){delete bx[b.expando]}else{if(bx.removeAttribute){bx.removeAttribute(
b.expando)}}delete e[bw]}}});function bo(e,bv){if(bv.src){b.ajax({url:bv.src,async:false,dataType:"
script"})}else{b.globalEval((bv.text||bv.textContent||bv.innerHTML||"").replace(aN,"/*$0*/"))}if(bv.parentNode){
bv.parentNode.removeChild(bv)}}var ak=/alpha\([^)]*\)/i
```

Definition at line 16 of file jquery.js.

30.804.2.8 function bb

Definition at line 16 of file jquery.js.

30.804.2.9 var bq =/#.∗$/

Definition at line 23 of file jquery.js.

30.804.2.10 var bs =/\r?\n/g

Definition at line 23 of file jquery.js.

30.804.2.11 var c

Initial value:

```
=/^\/\
 * jQuery UI 1.8.18
 *
 * Copyright 2011
```

Definition at line 23 of file jquery.js.

30.804.2.12 b fn css =function(e,bv){if(arguments.length===2&&bv===L){return this}return b.access(this,e,bv,true,function(bx,bw,by){return by!==L?b.style(bx,bw,by):b.css(bx,bw)})}

Definition at line 23 of file jquery.js.

30.804.2.13 b curCSS =b.css

Definition at line 23 of file jquery.js.

30.804.2.14 var k =/%20/g

Definition at line 23 of file jquery.js.

30.804.2.15 function L {var av=bb.document,bu=bb.navigator,bl=bb.location

Definition at line 16 of file jquery.js.

30.804.2.16 Z =al||aX

Definition at line 23 of file jquery.js.

30.805 doc/html/jquery_8js.js File Reference

Variables

- var jquery_8js

30.805.1 Variable Documentation

30.805.1.1 var jquery_8js

Initial value:

```
=
[
    [ "b", "jquery_8js.html#a2fa551895933fae935a0a6b87282241d", null ],
    [ "each", "jquery_8js.html#a871ff39db627c54c710a3e9909b8234c", null ],
    [ "extend", "jquery_8js.html#a5fb206c91c64d1be35fde236706eab86", null ],
    [ "if", "jquery_8js.html#a2c54bd8ed7482e89d19331ba61fe221c", null ],
    [ "if", "jquery_8js.html#a30d3d2cd5b567c9f31b2aa30b9cb3bb8", null ],
    [ "if", "jquery_8js.html#a42cbfadee2b4749e8f699ea8d745a0e4", null ],
    [ "if", "jquery_8js.html#a9db6d45a025ad692282fe23e69eeba43", null ],
    [ "p", "jquery_8js.html#a2335e57f79b6acfb6de59c235dc8a83e", null ],
    [ "aD", "jquery_8js.html#ad223f5fba68c41c1236671ac5c5b0fcb", null ],
    [ "aM", "jquery_8js.html#a8cc6111a5def3ea889157d13fb9a9672", null ],
    [ "ap", "jquery_8js.html#a6ddf393cc7f9a8828e197bb0d9916c44", null ],
    [ "aQ", "jquery_8js.html#a79eb58dc6cdf0aef563d5dc1ded27df5", null ],
    [ "au", "jquery_8js.html#a4fd8ddfab07c8d7c7cae0ab0e052cad3", null ],
    [ "aZ", "jquery_8js.html#ac87125cdee1a5e57da4ef619af49bc7d", null ],
    [ "b", "jquery_8js.html#aa4026ad5544b958e54ce5e106fa1c805", null ],
    [ "bb", "jquery_8js.html#a1d6558865876e1c8cca029fce41a4bdb", null ],
    [ "bq", "jquery_8js.html#af6ee77c71b2c89bdb365145ac5ad1219", null ],
    [ "bs", "jquery_8js.html#ae77642f8ef73fb9c20c2a737d956acda", null ],
    [ "c", "jquery_8js.html#abce695e0af988ece0826d9ad59b8160d", null ],
    [ "css", "jquery_8js.html#a89ad527fcd82c01ebb587332f5b4fcd4", null ],
    [ "curCSS", "jquery_8js.html#a88b21f8ba3af86d6981b1da520ece33b", null ],
    [ "k", "jquery_8js.html#ab26645c014aa005ecedef329ecf58c99", null ],
    [ "L", "jquery_8js.html#a38ee4c0b5f4fe2a18d0c783af540d253", null ],
    [ "Z", "jquery_8js.html#adc18d83abfd9f87d396e8fd6b6ac0fe1", null ]
]
```

Definition at line 1 of file jquery_8js.js.

30.806 doc/html/main_8cpp.js File Reference

Variables

- var main_8cpp

30.806.1 Variable Documentation

30.806.1.1 var main_8cpp

Initial value:

```
=
[
    [ "eqPoints", "main_8cpp.html#a78f67d05b2d460e4479cbdb45d364472", null ],
    [ "ltLexPoint", "main_8cpp.html#a3ad6217edc1c1d915556be09a7a6e512", null ],
    [ "main", "main_8cpp.html#ae66f6b31b5ad750f1fe042a706a4e3d4", null ]
]
```

Definition at line 1 of file main_8cpp.js.

30.807 doc/html/make3_d_8c.js File Reference

Variables

- var make3_d_8c

30.807.1 Variable Documentation

30.807.1.1 var make3_d_8c

Initial value:

```
=
[
    [ "MAKE3D", "make3_d_8c.html#af73dcd2ed246a565df1162b610461e64", null ],
    [ "make3D", "make3_d_8c.html#a96b282e7a516c8aad1cdcdaa8ca3240b", null ]
]
```

Definition at line 1 of file make3_d_8c.js.

30.808 doc/html/makecvkreg_8c.js File Reference

Variables

- var makecvkreg_8c

30.808.1 Variable Documentation

30.808.1.1 var makecvkreg_8c

Initial value:

```
=
[
    [ "MAKE_CV_KREG", "makecvkreg_8c.html#a3d78c8854b03c4e271f7fcdc2642aaaa", null ],
    [ "make_cv_kreg", "makecvkreg_8c.html#a192abaac4dcfb0ab13f98dafcea4b5fe", null ]
]
```

Definition at line 1 of file makecvkreg_8c.js.

30.809 doc/html/makesfkreg_8c.js File Reference

Variables

- var makesfkreg_8c

30.809.1 Variable Documentation

30.809.1.1 var makesfkreg_8c

Initial value:

```
=
[
    [ "MAKE_SF_KREG", "makesfkreg_8c.html#ab2dd7beaefa1b53540f56163621670cd", null ],
    [ "make_sf_kreg", "makesfkreg_8c.html#a4d929d52047fe5051ed490891f3275d9", null ]
]
```

Definition at line 1 of file makesfkreg_8c.js.

30.810 doc/html/maketracks_8c.js File Reference

Variables

- var maketracks_8c

30.810.1 Variable Documentation

30.810.1.1 var maketracks_8c

Initial value:

```
=
[
    [ "MAKE_TRACKS", "maketracks_8c.html#af500037a7945500574264d2dda094220", null ],
    [ "make_tracks", "maketracks_8c.html#ad36cb40b8b93e0b6a8fa52234213ccb8", null ]
]
```

Definition at line 1 of file maketracks_8c.js.

30.811 doc/html/mk__cv__cycl_8c.js File Reference

Variables

- var mk__cv__cycl_8c

30.811.1 Variable Documentation

30.811.1.1 var mk__cv__cycl_8c

Initial value:

```
=
[
    [ "MAKE_CV_CYCLIC", "mk__cv__cycl_8c.html#afd0d637cd833f1e12447d183a72bf1ee", null ],
    [ "make_cv_cyclic", "mk__cv__cycl_8c.html#a0045019c9f5a8e5dfdd29a7cd029e99e", null ]
]
```

Definition at line 1 of file mk__cv__cycl_8c.js.

30.812 doc/html/modules.js File Reference

Variables

- var modules

30.812.1 Variable Documentation

30.812.1.1 var modules

Initial value:

```
=
[
    [ "RBD common library", "group__rbd__common.html", "group__rbd__common" ]
]
```

Definition at line 1 of file modules.js.

30.813 doc/html/mouse_8cpp.js File Reference

Variables

- var mouse_8cpp

30.813.1 Variable Documentation

30.813.1.1 var mouse_8cpp

Initial value:

```
=
[
    [ "GLUT_DISABLE_ATEXIT_HACK", "mouse_8cpp.html#ab07b3c93a1236fc83b162fb0a8945d72", null ],
    [ "PI", "mouse_8cpp.html#a598a3330b3c21701223ee0ca14316eca", null ],
    [ "draw_cursor", "mouse_8cpp.html#a108608b0f2d804c84a271547036b6ffd", null ],
    [ "Mouse", "mouse_8cpp.html#a5510b38c98574e8eae388f618f24f39f", null ],
    [ "MouseRotate", "mouse_8cpp.html#a240121d2c94e4f25abd36a26a76d48cf", null ],
    [ "MouseTranslate", "mouse_8cpp.html#a43fbe83a677284dcb5f401d73db80b7b", null ],
    [ "MouseZoom", "mouse_8cpp.html#a75f208ad1a6f0a1062c4b26ef1e13162", null ],
    [ "transversal_rotation", "mouse_8cpp.html#ac98380509e96a10b686a8a872a830c4a", null ],
    [ "allow_zrot", "mouse_8cpp.html#a506eb7695cd87667f501cfd89fe29839", null ],
    [ "curx", "mouse_8cpp.html#aee28fdc5f13f7a57d1996da267972350", null ],
    [ "cury", "mouse_8cpp.html#a19f72fc5f0f52553c05605db140d1e5a", null ],
    [ "curz", "mouse_8cpp.html#ad0deb24d97bde83be716f3bdd98621a2", null ],
    [ "last_x", "mouse_8cpp.html#abbf254766520cad4d7fe189eb184194c", null ],
    [ "last_x0", "mouse_8cpp.html#a697ce1bd6e962a31605d4672581067d5", null ],
    [ "last_y", "mouse_8cpp.html#a31e24c11fe7b55913887a78bff6ed30e", null ],
    [ "last_y0", "mouse_8cpp.html#ac9f8093288787fc838cca3e095567eb2", null ],
    [ "mouse_movement", "mouse_8cpp.html#abaf1e7e04c60ccfa143a1c5706d646d9", null ]
]
```

Definition at line 1 of file mouse_8cpp.js.

30.814 doc/html/mouse_8h.js File Reference

Variables

- var mouse_8h

30.814.1 Variable Documentation

30.814.1.1 var mouse_8h

Initial value:

```
=
[
    [ "MOUSE_H_INCLUDED", "mouse_8h.html#affe8d332d06f58a994aed49ecc20415a", null ],
    [ "Mouse", "mouse_8h.html#a5510b38c98574e8eae388f618f24f39f", null ],
    [ "MouseRotate", "mouse_8h.html#a240121d2c94e4f25abd36a26a76d48cf", null ],
    [ "MouseTranslate", "mouse_8h.html#a43fbe83a677284dcb5f401d73db80b7b", null ],
    [ "MouseZoom", "mouse_8h.html#a75f208ad1a6f0a1062c4b26ef1e13162", null ],
    [ "transversal_rotation", "mouse_8h.html#ac98380509e96a10b686a8a872a830c4a", null ],
    [ "allow_zrot", "mouse_8h.html#a506eb7695cd87667f501cfd89fe29839", null ],
    [ "last_x", "mouse_8h.html#abbf254766520cad4d7fe189eb184194c", null ],
    [ "last_x0", "mouse_8h.html#a697ce1bd6e962a31605d4672581067d5", null ],
    [ "last_y", "mouse_8h.html#a31e24c11fe7b55913887a78bff6ed30e", null ],
    [ "last_y0", "mouse_8h.html#ac9f8093288787fc838cca3e095567eb2", null ],
    [ "mouse_movement", "mouse_8h.html#abaf1e7e04c60ccfa143a1c5706d646d9", null ]
]
```

Definition at line 1 of file mouse_8h.js.

30.815 doc/html/myexcept_8cpp.js File Reference

Variables

- var myexcept_8cpp

30.815.1 Variable Documentation

30.815.1.1 var myexcept_8cpp

Initial value:

```
=
[
    [ "WANT_STREAM", "myexcept_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "WANT_STRING", "myexcept_8cpp.html#a981403274df661407a2ed2b71f7f2e29", null ],
    [ "Terminate", "myexcept_8cpp.html#a9b848654502024dde7e46ab002f2c9dd", null ]
]
```

Definition at line 1 of file myexcept_8cpp.js.

30.816 doc/html/myexcept_8h.js File Reference

Variables

- var myexcept_8h

30.816.1 Variable Documentation

30.816.1.1 var myexcept_8h

Initial value:

```
=
[
    [ "Tracer", "class_r_b_d___c_o_m_m_o_n_1_1_tracer.html", "class_r_b_d___c_o_m_m_o_n_1_1_tracer" ],
    [ "BaseException", "class_r_b_d___c_o_m_m_o_n_1_1_base_exception.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_base_exception" ],
    [ "Janitor", "class_r_b_d___c_o_m_m_o_n_1_1_janitor.html", "class_r_b_d___c_o_m_m_o_n_1_1_janitor" ],
    [ "Logic_error", "class_r_b_d___c_o_m_m_o_n_1_1_logic__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_logic__error" ],
    [ "Runtime_error", "class_r_b_d___c_o_m_m_o_n_1_1_runtime__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_runtime__error" ],
    [ "Domain_error", "class_r_b_d___c_o_m_m_o_n_1_1_domain__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_domain__error" ],
    [ "Invalid_argument", "class_r_b_d___c_o_m_m_o_n_1_1_invalid__argument.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_invalid__argument" ],
    [ "Length_error", "class_r_b_d___c_o_m_m_o_n_1_1_length__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_length__error" ],
    [ "Out_of_range", "class_r_b_d___c_o_m_m_o_n_1_1_out__of__range.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_out__of__range" ],
    [ "Range_error", "class_r_b_d___c_o_m_m_o_n_1_1_range__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_range__error" ],
    [ "Overflow_error", "class_r_b_d___c_o_m_m_o_n_1_1_overflow__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_overflow__error" ],
    [ "Bad_alloc", "class_r_b_d___c_o_m_m_o_n_1_1_bad__alloc.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_bad__alloc" ],
    [ "Catch", "myexcept_8h.html#af19f2de9b4bccab916654c258aa6f2d4", null ],
```

```
    [ "CatchAll", "myexcept_8h.html#a549ceb8bbab061440f4698483d6ad179", null ],
    [ "CatchAndThrow", "myexcept_8h.html#a3a7fd3e342806240062de1b14ff917ca", null ],
    [ "FREE_CHECK", "myexcept_8h.html#a38496bbc880a5b060716ea39a9e67990", null ],
    [ "MONITOR_INT_DELETE", "myexcept_8h.html#a0e12927a29ed5ea7b344106ac3a914b6", null ],
    [ "MONITOR_INT_NEW", "myexcept_8h.html#a124780b20c1f4395226be43e322456c1", null ],
    [ "MONITOR_REAL_DELETE", "myexcept_8h.html#af06beffef7dc5c1f4a48faf3a8b1b904", null ],
    [ "MONITOR_REAL_NEW", "myexcept_8h.html#a607c47d26b6401eb36af406cac59ff81", null ],
    [ "NEW_DELETE", "myexcept_8h.html#a7814d199e1da1e1a6255fa85f8e8c320", null ],
    [ "ReThrow", "myexcept_8h.html#af3461fc02f3e0b6bc70e6c310cef1424", null ],
    [ "Throw", "myexcept_8h.html#a7554028bfd929fe4391cb3f9ed7b9da1", null ],
    [ "Try", "myexcept_8h.html#a7a2b8ccf41cff483bac8e86ac7feff9b", null ],
    [ "Exception", "myexcept_8h.html#abbff87b4655088a6fd923859d2a6a8d2", null ],
    [ "Terminate", "myexcept_8h.html#a6afccc25f7fade97471bae8d72cbb931", null ]
]
```

Definition at line 1 of file myexcept_8h.js.

30.817 doc/html/namespace_go.js File Reference

Variables

- var namespace_go

30.817.1 Variable Documentation

30.817.1.1 var namespace_go

Definition at line 1 of file namespace_go.js.

30.818 doc/html/namespace_go_1_1_coons_patch_gen.js File Reference

Variables

- var namespace_go_1_1_coons_patch_gen

30.818.1 Variable Documentation

30.818.1.1 var namespace_go_1_1_coons_patch_gen

Initial value:

```
=
[
    [ "UnKnownError", "class_go_1_1_coons_patch_gen_1_1_un_known_error.html", null ]
]
```

Definition at line 1 of file namespace_go_1_1_coons_patch_gen.js.

30.819 doc/html/namespace_go_1_1_l_r_spline_utils.js File Reference

Variables

- var namespace_go_1_1_l_r_spline_utils

30.819.1 Variable Documentation

30.819.1.1 var namespace_go_1_1_l_r_spline_utils

Initial value:

```
=
[
    [ "support_compare", "struct_go_1_1_l_r_spline_utils_1_1support__compare.html", "
      struct_go_1_1_l_r_spline_utils_1_1support__compare" ]
]
```

Definition at line 1 of file namespace_go_1_1_l_r_spline_utils.js.

30.820 doc/html/namespace_go_1_1box_structuring.js File Reference

Variables

- var namespace_go_1_1box_structuring

30.820.1 Variable Documentation

30.820.1.1 var namespace_go_1_1box_structuring

Initial value:

```
=
[
    [ "BoundingBoxStructure", "class_go_1_1box_structuring_1_1_bounding_box_structure.html", "
      class_go_1_1box_structuring_1_1_bounding_box_structure" ],
    [ "SubSurfaceBoundingBox", "class_go_1_1box_structuring_1_1_sub_surface_bounding_box.html", "
      class_go_1_1box_structuring_1_1_sub_surface_bounding_box" ],
    [ "SurfaceData", "class_go_1_1box_structuring_1_1_surface_data.html", "
      class_go_1_1box_structuring_1_1_surface_data" ]
]
```

Definition at line 1 of file namespace_go_1_1box_structuring.js.

30.821 doc/html/namespace_n_e_w_m_a_t.js File Reference

Variables

- var namespace_n_e_w_m_a_t

30.821.1 Variable Documentation

30.821.1.1 var namespace_n_e_w_m_a_t

Definition at line 1 of file namespace_n_e_w_m_a_t.js.

30.822 doc/html/namespace_r_b_d___c_o_m_m_o_n.js File Reference

Variables

- var namespace_r_b_d___c_o_m_m_o_n

30.822.1 Variable Documentation

30.822.1.1 var namespace_r_b_d___c_o_m_m_o_n

Initial value:

```
=
[
    [ "Bad_alloc", "class_r_b_d___c_o_m_m_o_n_1_1_bad__alloc.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_bad__alloc" ],
    [ "BaseException", "class_r_b_d___c_o_m_m_o_n_1_1_base_exception.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_base_exception" ],
    [ "Domain_error", "class_r_b_d___c_o_m_m_o_n_1_1_domain__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_domain__error" ],
    [ "Invalid_argument", "class_r_b_d___c_o_m_m_o_n_1_1_invalid__argument.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_invalid__argument" ],
    [ "Janitor", "class_r_b_d___c_o_m_m_o_n_1_1_janitor.html", "class_r_b_d___c_o_m_m_o_n_1_1_janitor" ],
    [ "Length_error", "class_r_b_d___c_o_m_m_o_n_1_1_length__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_length__error" ],
    [ "Logic_error", "class_r_b_d___c_o_m_m_o_n_1_1_logic__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_logic__error" ],
    [ "OneDimSolve", "class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve" ],
    [ "Out_of_range", "class_r_b_d___c_o_m_m_o_n_1_1_out__of__range.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_out__of__range" ],
    [ "Overflow_error", "class_r_b_d___c_o_m_m_o_n_1_1_overflow__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_overflow__error" ],
    [ "R1_R1", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html", "class_r_b_d___c_o_m_m_o_n_1_1_r1___r1" ],
    [ "Range_error", "class_r_b_d___c_o_m_m_o_n_1_1_range__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_range__error" ],
    [ "Runtime_error", "class_r_b_d___c_o_m_m_o_n_1_1_runtime__error.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_runtime__error" ],
    [ "SolutionException", "class_r_b_d___c_o_m_m_o_n_1_1_solution_exception.html", "
      class_r_b_d___c_o_m_m_o_n_1_1_solution_exception" ],
    [ "Tracer", "class_r_b_d___c_o_m_m_o_n_1_1_tracer.html", "class_r_b_d___c_o_m_m_o_n_1_1_tracer" ]
]
```

Definition at line 1 of file namespace_r_b_d___c_o_m_m_o_n.js.

30.823 doc/html/namespaceh.js File Reference

Variables

- var namespaceh

30.823.1 Variable Documentation

30.823.1.1 var namespacehed

Initial value:

```
=
[
    [ "Dart", "classhed_1_1_dart.html", "classhed_1_1_dart" ],
    [ "Edge", "classhed_1_1_edge.html", "classhed_1_1_edge" ],
    [ "Node", "classhed_1_1_node.html", "classhed_1_1_node" ],
    [ "Triangulation", "classhed_1_1_triangulation.html", "classhed_1_1_triangulation" ],
    [ "TTLtraits", "structhed_1_1_t_t_ltraits.html", "structhed_1_1_t_t_ltraits" ]
]
```

Definition at line 1 of file namespacehed.js.

30.824 doc/html/namespacehetriang.js File Reference

Variables

- var namespacehetriang

30.824.1 Variable Documentation

30.824.1.1 var namespacehetriang

Initial value:

```
=
[
    [ "Dart", "classhetriang_1_1_dart.html", "classhetriang_1_1_dart" ],
    [ "Edge", "classhetriang_1_1_edge.html", "classhetriang_1_1_edge" ],
    [ "Node", "classhetriang_1_1_node.html", "classhetriang_1_1_node" ],
    [ "Triangulation", "classhetriang_1_1_triangulation.html", "classhetriang_1_1_triangulation" ],
    [ "TTLtraits", "structhetriang_1_1_t_t_ltraits.html", "structhetriang_1_1_t_t_ltraits" ]
]
```

Definition at line 1 of file namespacehetriang.js.

30.825 doc/html/namespacemembers_dup.js File Reference

Variables

- var namespacemembers_dup

30.825.1 Variable Documentation

30.825.1.1 var namespacemembers_dup

Initial value:

```
=
[
    [ "_", "namespacemembers.html", null ],
    [ "a", "namespacemembers_a.html", null ],
    [ "b", "namespacemembers_b.html", null ],
    [ "c", "namespacemembers_c.html", null ],
    [ "d", "namespacemembers_d.html", null ],
    [ "e", "namespacemembers_e.html", null ],
    [ "f", "namespacemembers_f.html", null ],
    [ "g", "namespacemembers_g.html", null ],
    [ "h", "namespacemembers_h.html", null ],
    [ "i", "namespacemembers_i.html", null ],
    [ "j", "namespacemembers_j.html", null ],
    [ "k", "namespacemembers_k.html", null ],
    [ "l", "namespacemembers_l.html", null ],
    [ "m", "namespacemembers_m.html", null ],
    [ "n", "namespacemembers_n.html", null ],
    [ "o", "namespacemembers_o.html", null ],
    [ "p", "namespacemembers_p.html", null ],
    [ "q", "namespacemembers_q.html", null ],
    [ "r", "namespacemembers_r.html", null ],
    [ "s", "namespacemembers_s.html", null ],
    [ "t", "namespacemembers_t.html", null ],
    [ "u", "namespacemembers_u.html", null ],
    [ "v", "namespacemembers_v.html", null ],
    [ "w", "namespacemembers_w.html", null ],
    [ "x", "namespacemembers_x.html", null ],
    [ "y", "namespacemembers_y.html", null ],
    [ "z", "namespacemembers_z.html", null ]
]
```

Definition at line 1 of file namespacemembers_dup.js.

30.826 doc/html/namespacemembers_eval.js File Reference

Variables

- var namespacemembers_eval

30.826.1 Variable Documentation

30.826.1.1 var namespacemembers_eval

Initial value:

```
=
[
    [ "a", "namespacemembers_eval.html", null ],
    [ "b", "namespacemembers_eval_b.html", null ],
    [ "c", "namespacemembers_eval_c.html", null ],
    [ "d", "namespacemembers_eval_d.html", null ],
    [ "e", "namespacemembers_eval_e.html", null ],
    [ "f", "namespacemembers_eval_f.html", null ],
    [ "g", "namespacemembers_eval_g.html", null ],
    [ "h", "namespacemembers_eval_h.html", null ],
    [ "i", "namespacemembers_eval_i.html", null ],
    [ "j", "namespacemembers_eval_j.html", null ],
    [ "k", "namespacemembers_eval_k.html", null ],
```

```
    [ "l", "namespacemembers_eval_l.html", null ],
    [ "m", "namespacemembers_eval_m.html", null ],
    [ "n", "namespacemembers_eval_n.html", null ],
    [ "o", "namespacemembers_eval_o.html", null ],
    [ "p", "namespacemembers_eval_p.html", null ],
    [ "r", "namespacemembers_eval_r.html", null ],
    [ "s", "namespacemembers_eval_s.html", null ],
    [ "t", "namespacemembers_eval_t.html", null ],
    [ "u", "namespacemembers_eval_u.html", null ],
    [ "v", "namespacemembers_eval_v.html", null ],
    [ "x", "namespacemembers_eval_x.html", null ],
    [ "y", "namespacemembers_eval_y.html", null ],
    [ "z", "namespacemembers_eval_z.html", null ]
]
```

Definition at line 1 of file namespacemembers_eval.js.

30.827 doc/html/namespacemembers_func.js File Reference

Variables

- var namespacemembers_func

30.827.1 Variable Documentation

30.827.1.1 var namespacemembers_func

Initial value:

```
=
[
    [ "_", "namespacemembers_func.html", null ],
    [ "a", "namespacemembers_func_a.html", null ],
    [ "b", "namespacemembers_func_b.html", null ],
    [ "c", "namespacemembers_func_c.html", null ],
    [ "d", "namespacemembers_func_d.html", null ],
    [ "e", "namespacemembers_func_e.html", null ],
    [ "f", "namespacemembers_func_f.html", null ],
    [ "g", "namespacemembers_func_g.html", null ],
    [ "h", "namespacemembers_func_h.html", null ],
    [ "i", "namespacemembers_func_i.html", null ],
    [ "j", "namespacemembers_func_j.html", null ],
    [ "k", "namespacemembers_func_k.html", null ],
    [ "l", "namespacemembers_func_l.html", null ],
    [ "m", "namespacemembers_func_m.html", null ],
    [ "n", "namespacemembers_func_n.html", null ],
    [ "o", "namespacemembers_func_o.html", null ],
    [ "p", "namespacemembers_func_p.html", null ],
    [ "q", "namespacemembers_func_q.html", null ],
    [ "r", "namespacemembers_func_r.html", null ],
    [ "s", "namespacemembers_func_s.html", null ],
    [ "t", "namespacemembers_func_t.html", null ],
    [ "u", "namespacemembers_func_u.html", null ],
    [ "v", "namespacemembers_func_v.html", null ],
    [ "w", "namespacemembers_func_w.html", null ]
]
```

Definition at line 1 of file namespacemembers_func.js.

30.828 doc/html/namespaces.js File Reference

Variables

- var namespaces

30.828.1 Variable Documentation

30.828.1.1 var namespaces

Initial value:

```
=
[
    [ "Go", "namespace_go.html", "namespace_go" ],
    [ "hed", "namespacehed.html", null ],
    [ "hetriang", "namespacehetriang.html", null ],
    [ "NEWMAT", "namespace_n_e_w_m_a_t.html", null ],
    [ "RBD_COMMON", "namespace_r_b_d___c_o_m_m_o_n.html", null ],
    [ "RBD_LIBRARIES", "namespace_r_b_d___l_i_b_r_a_r_i_e_s.html", null ],
    [ "std", "namespacestd.html", null ],
    [ "ttl", "namespacettl.html", null ],
    [ "ttl_constr", "namespacettl__constr.html", null ],
    [ "ttl_util", "namespacettl__util.html", null ]
]
```

Definition at line 1 of file namespaces.js.

30.829 doc/html/navtree.js File Reference

Functions

- function getData (varName)
- function stripPath (uri)
- function stripPath2 (uri)
- function hashValue ()
- function hashUrl ()
- function pathName ()
- function localStorageSupported ()
- function storeLink (link)
- function deleteLink ()
- function cachedLink ()
- function getScript (scriptName, func, show)
- function createIndent (o, domNode, node, level)
- function gotoAnchor (anchor, aname, updateLocation)
- function newNode (o, po, text, link, childrenData, lastNode)
- function showRoot ()
- function expandNode (o, node, imm, showRoot)
- function glowEffect (n, duration)
- function highlightAnchor ()
- function selectAndHighlight (hash, n)
- function showNode (o, node, index, hash)
- function removeToInsertLater (element)
- function getNode (o, po)
- function gotoNode (o, subIndex, root, hash, relpath)
- function navTo (o, root, hash, relpath)
- function showSyncOff (n, relpath)
- function showSyncOn (n, relpath)
- function toggleSyncButton (relpath)
- function initNavTree (toroot, relpath)

Variables

- var navTreeSubIndices = new Array()
- var animationInProgress = false

30.829.1 Function Documentation

30.829.1.1 function cachedLink ( )

Definition at line 63 of file navtree.js.

30.829.1.2 function createIndent (*o, domNode, node, level*)

Definition at line 91 of file navtree.js.

30.829.1.3 function deleteLink ( )

Definition at line 56 of file navtree.js.

30.829.1.4 function expandNode (*o, node, imm, showRoot*)

Definition at line 253 of file navtree.js.

30.829.1.5 function getData (*varName*)

Definition at line 3 of file navtree.js.

30.829.1.6 function getNode (*o, po*)

Definition at line 384 of file navtree.js.

30.829.1.7 function getScript (*scriptName, func, show*)

Definition at line 72 of file navtree.js.

30.829.1.8 function glowEffect (*n, duration*)

Definition at line 281 of file navtree.js.

30.829.1.9 function gotoAnchor (*anchor, aname, updateLocation*)

Definition at line 129 of file navtree.js.

30.829.1.10 function gotoNode (*o, subIndex, root, hash, relpath*)

Definition at line 397 of file navtree.js.

30.829.1.11 function hashUrl ( )

Definition at line 28 of file navtree.js.

30.829.1.12 function hashValue ( )

Definition at line 23 of file navtree.js.

30.829.1.13 function highlightAnchor ( )

Definition at line 288 of file navtree.js.

30.829.1.14 function initNavTree (*toroot, relpath*)

Definition at line 466 of file navtree.js.

30.829.1.15 function localStorageSupported ( )

Definition at line 38 of file navtree.js.

30.829.1.16 function navTo (*o, root, hash, relpath*)

Definition at line 412 of file navtree.js.

30.829.1.17 function newNode (*o, po, text, link, childrenData, lastNode*)

Definition at line 157 of file navtree.js.

30.829.1.18 function pathName ( )

Definition at line 33 of file navtree.js.

30.829.1.19 function removeToInsertLater (*element*)

Definition at line 371 of file navtree.js.

30.829.1.20 function selectAndHighlight (*hash, n*)

Definition at line 307 of file navtree.js.

30.829.1.21 function showNode (*o, node, index, hash*)

Definition at line 330 of file navtree.js.

30.829.1.22 function showRoot ( )

Definition at line 238 of file navtree.js.

30.829.1.23 function showSyncOff (*n, relpath*)

Definition at line 442 of file navtree.js.

30.829.1.24 function showSyncOn (*n, relpath*)

Definition at line 447 of file navtree.js.

30.829.1.25 function storeLink (*link*)

Definition at line 49 of file navtree.js.

30.829.1.26 function stripPath (*uri*)

Definition at line 10 of file navtree.js.

30.829.1.27 function stripPath2 (*uri*)

Definition at line 15 of file navtree.js.

30.829.1.28 function toggleSyncButton (*relpath*)

Definition at line 452 of file navtree.js.

30.829.2 Variable Documentation

30.829.2.1 var animationInProgress = false

Definition at line 127 of file navtree.js.

30.829.2.2 var navTreeSubIndices = new Array()

Definition at line 1 of file navtree.js.

30.830 doc/html/navtreedata.js File Reference

Variables

- var NAVTREE
- var NAVTREEINDEX
- var SYNCONMSG = 'click to disable panel synchronisation'
- var SYNCOFFMSG = 'click to enable panel synchronisation'

30.830.1 Variable Documentation

30.830.1.1 var NAVTREE

Definition at line 1 of file navtreedata.js.

30.830.1.2 var NAVTREEINDEX

Definition at line 175 of file navtreedata.js.

30.830.1.3 var SYNCOFFMSG = 'click to enable panel synchronisation'

Definition at line 244 of file navtreedata.js.

30.830.1.4 var SYNCONMSG = 'click to disable panel synchronisation'

Definition at line 243 of file navtreedata.js.

30.831 doc/html/navtreeindex0.js File Reference

Variables

- var NAVTREEINDEX0

30.831.1 Variable Documentation

30.831.1.1 var NAVTREEINDEX0

Definition at line 1 of file navtreeindex0.js.

30.832 doc/html/navtreeindex1.js File Reference

Variables

- var NAVTREEINDEX1

30.832.1 Variable Documentation

30.832.1.1 var NAVTREEINDEX1

Definition at line 1 of file navtreeindex1.js.

30.833 doc/html/navtreeindex10.js File Reference

Variables

- var NAVTREEINDEX10

30.833.1 Variable Documentation

30.833.1.1 var NAVTREEINDEX10

Definition at line 1 of file navtreeindex10.js.

30.834 doc/html/navtreeindex11.js File Reference

Variables

- var NAVTREEINDEX11

30.834.1 Variable Documentation

30.834.1.1 var NAVTREEINDEX11

Definition at line 1 of file navtreeindex11.js.

30.835 doc/html/navtreeindex12.js File Reference

Variables

- var NAVTREEINDEX12

30.835.1 Variable Documentation

30.835.1.1 var NAVTREEINDEX12

Definition at line 1 of file navtreeindex12.js.

30.836 doc/html/navtreeindex13.js File Reference

Variables

- var NAVTREEINDEX13

30.836.1 Variable Documentation

30.836.1.1 var NAVTREEINDEX13

Definition at line 1 of file navtreeindex13.js.

30.837 doc/html/navtreeindex14.js File Reference

Variables

- var NAVTREEINDEX14

30.837.1 Variable Documentation

30.837.1.1 var NAVTREEINDEX14

Definition at line 1 of file navtreeindex14.js.

30.838 doc/html/navtreeindex15.js File Reference

Variables

- var NAVTREEINDEX15

30.838.1 Variable Documentation

30.838.1.1 var NAVTREEINDEX15

Definition at line 1 of file navtreeindex15.js.

30.839 doc/html/navtreeindex16.js File Reference

Variables

- var NAVTREEINDEX16

30.839.1 Variable Documentation

30.839.1.1 var NAVTREEINDEX16

Definition at line 1 of file navtreeindex16.js.

30.840 doc/html/navtreeindex17.js File Reference

Variables

- var NAVTREEINDEX17

30.840.1 Variable Documentation

30.840.1.1 var NAVTREEINDEX17

Definition at line 1 of file navtreeindex17.js.

30.841 doc/html/navtreeindex18.js File Reference

Variables

- var NAVTREEINDEX18

30.841.1 Variable Documentation

30.841.1.1 var NAVTREEINDEX18

Definition at line 1 of file navtreeindex18.js.

30.842 doc/html/navtreeindex19.js File Reference

Variables

- var NAVTREEINDEX19

30.842.1 Variable Documentation

30.842.1.1 var NAVTREEINDEX19

Definition at line 1 of file navtreeindex19.js.

30.843 doc/html/navtreeindex2.js File Reference

Variables

- var NAVTREEINDEX2

30.843.1 Variable Documentation

30.843.1.1 var NAVTREEINDEX2

Definition at line 1 of file navtreeindex2.js.

30.844 doc/html/navtreeindex20.js File Reference

Variables

- var NAVTREEINDEX20

30.844.1 Variable Documentation

30.844.1.1 var NAVTREEINDEX20

Definition at line 1 of file navtreeindex20.js.

30.845 doc/html/navtreeindex21.js File Reference

Variables

- var NAVTREEINDEX21

30.845.1 Variable Documentation

30.845.1.1 var NAVTREEINDEX21

Definition at line 1 of file navtreeindex21.js.

30.846 doc/html/navtreeindex22.js File Reference

Variables

- var NAVTREEINDEX22

30.846.1 Variable Documentation

30.846.1.1 var NAVTREEINDEX22

Definition at line 1 of file navtreeindex22.js.

30.847 doc/html/navtreeindex23.js File Reference

Variables

- var NAVTREEINDEX23

30.847.1 Variable Documentation

30.847.1.1 var NAVTREEINDEX23

Definition at line 1 of file navtreeindex23.js.

30.848 doc/html/navtreeindex24.js File Reference

Variables

- var NAVTREEINDEX24

30.848.1 Variable Documentation

30.848.1.1 var NAVTREEINDEX24

Definition at line 1 of file navtreeindex24.js.

30.849 doc/html/navtreeindex25.js File Reference

Variables

- var NAVTREEINDEX25

30.849.1 Variable Documentation

30.849.1.1 var NAVTREEINDEX25

Definition at line 1 of file navtreeindex25.js.

30.850 doc/html/navtreeindex26.js File Reference

Variables

- var NAVTREEINDEX26

30.850.1 Variable Documentation

30.850.1.1 var NAVTREEINDEX26

Definition at line 1 of file navtreeindex26.js.

30.851 doc/html/navtreeindex27.js File Reference

Variables

- var NAVTREEINDEX27

30.851.1 Variable Documentation

30.851.1.1 var NAVTREEINDEX27

Definition at line 1 of file navtreeindex27.js.

30.852 doc/html/navtreeindex28.js File Reference

Variables

- var NAVTREEINDEX28

30.852.1 Variable Documentation

30.852.1.1 var NAVTREEINDEX28

Definition at line 1 of file navtreeindex28.js.

30.853 doc/html/navtreeindex29.js File Reference

Variables

- var NAVTREEINDEX29

30.853.1 Variable Documentation

30.853.1.1 var NAVTREEINDEX29

Definition at line 1 of file navtreeindex29.js.

30.854 doc/html/navtreeindex3.js File Reference

Variables

- var NAVTREEINDEX3

30.854.1 Variable Documentation

30.854.1.1 var NAVTREEINDEX3

Definition at line 1 of file navtreeindex3.js.

30.855 doc/html/navtreeindex30.js File Reference

Variables

- var NAVTREEINDEX30

30.855.1 Variable Documentation

30.855.1.1 var NAVTREEINDEX30

Definition at line 1 of file navtreeindex30.js.

30.856 doc/html/navtreeindex31.js File Reference

Variables

- var NAVTREEINDEX31

30.856.1 Variable Documentation

30.856.1.1 var NAVTREEINDEX31

Definition at line 1 of file navtreeindex31.js.

30.857 doc/html/navtreeindex32.js File Reference

Variables

- var NAVTREEINDEX32

30.857.1 Variable Documentation

30.857.1.1 var NAVTREEINDEX32

Definition at line 1 of file navtreeindex32.js.

30.858 doc/html/navtreeindex33.js File Reference

Variables

- var NAVTREEINDEX33

30.858.1 Variable Documentation

30.858.1.1 var NAVTREEINDEX33

Definition at line 1 of file navtreeindex33.js.

30.859 doc/html/navtreeindex34.js File Reference

Variables

- var NAVTREEINDEX34

30.859.1 Variable Documentation

30.859.1.1 var NAVTREEINDEX34

Definition at line 1 of file navtreeindex34.js.

30.860 doc/html/navtreeindex35.js File Reference

Variables

- var NAVTREEINDEX35

30.860.1 Variable Documentation

30.860.1.1 var NAVTREEINDEX35

Definition at line 1 of file navtreeindex35.js.

30.861 doc/html/navtreeindex36.js File Reference

Variables

- var NAVTREEINDEX36

30.861.1 Variable Documentation

30.861.1.1 var NAVTREEINDEX36

Definition at line 1 of file navtreeindex36.js.

30.862 doc/html/navtreeindex37.js File Reference

Variables

- var NAVTREEINDEX37

30.862.1 Variable Documentation

30.862.1.1 var NAVTREEINDEX37

Definition at line 1 of file navtreeindex37.js.

30.863 doc/html/navtreeindex38.js File Reference

Variables

- var NAVTREEINDEX38

30.863.1 Variable Documentation

30.863.1.1 var NAVTREEINDEX38

Definition at line 1 of file navtreeindex38.js.

30.864 doc/html/navtreeindex39.js File Reference

Variables

- var NAVTREEINDEX39

30.864.1 Variable Documentation

30.864.1.1 var NAVTREEINDEX39

Definition at line 1 of file navtreeindex39.js.

30.865 doc/html/navtreeindex4.js File Reference

Variables

- var NAVTREEINDEX4

30.865.1 Variable Documentation

30.865.1.1 var NAVTREEINDEX4

Definition at line 1 of file navtreeindex4.js.

30.866 doc/html/navtreeindex40.js File Reference

Variables

- var NAVTREEINDEX40

30.866.1 Variable Documentation

30.866.1.1 var NAVTREEINDEX40

Definition at line 1 of file navtreeindex40.js.

30.867 doc/html/navtreeindex41.js File Reference

Variables

- var NAVTREEINDEX41

30.867.1 Variable Documentation

30.867.1.1 var NAVTREEINDEX41

Definition at line 1 of file navtreeindex41.js.

30.868 doc/html/navtreeindex42.js File Reference

Variables

- var NAVTREEINDEX42

30.868.1 Variable Documentation

30.868.1.1 var NAVTREEINDEX42

Definition at line 1 of file navtreeindex42.js.

30.869 doc/html/navtreeindex43.js File Reference

Variables

- var NAVTREEINDEX43

30.869.1 Variable Documentation

30.869.1.1 var NAVTREEINDEX43

Definition at line 1 of file navtreeindex43.js.

30.870 doc/html/navtreeindex44.js File Reference

Variables

- var NAVTREEINDEX44

30.870.1 Variable Documentation

30.870.1.1 var NAVTREEINDEX44

Definition at line 1 of file navtreeindex44.js.

30.871 doc/html/navtreeindex45.js File Reference

Variables

- var NAVTREEINDEX45

30.871.1 Variable Documentation

30.871.1.1 var NAVTREEINDEX45

Definition at line 1 of file navtreeindex45.js.

30.872 doc/html/navtreeindex46.js File Reference

Variables

- var NAVTREEINDEX46

30.872.1 Variable Documentation

30.872.1.1 var NAVTREEINDEX46

Definition at line 1 of file navtreeindex46.js.

30.873 doc/html/navtreeindex47.js File Reference

Variables

- var NAVTREEINDEX47

30.873.1 Variable Documentation

30.873.1.1 var NAVTREEINDEX47

Definition at line 1 of file navtreeindex47.js.

30.874 doc/html/navtreeindex48.js File Reference

Variables

- var NAVTREEINDEX48

30.874.1 Variable Documentation

30.874.1.1 var NAVTREEINDEX48

Definition at line 1 of file navtreeindex48.js.

30.875 doc/html/navtreeindex49.js File Reference

Variables

- var NAVTREEINDEX49

30.875.1 Variable Documentation

30.875.1.1 var NAVTREEINDEX49

Definition at line 1 of file navtreeindex49.js.

30.876 doc/html/navtreeindex5.js File Reference

Variables

- var NAVTREEINDEX5

30.876.1 Variable Documentation

30.876.1.1 var NAVTREEINDEX5

Definition at line 1 of file navtreeindex5.js.

30.877 doc/html/navtreeindex50.js File Reference

Variables

- var NAVTREEINDEX50

30.877.1 Variable Documentation

30.877.1.1 var NAVTREEINDEX50

Definition at line 1 of file navtreeindex50.js.

30.878 doc/html/navtreeindex51.js File Reference

Variables

- var NAVTREEINDEX51

30.878.1 Variable Documentation

30.878.1.1 var NAVTREEINDEX51

Definition at line 1 of file navtreeindex51.js.

30.879 doc/html/navtreeindex52.js File Reference

Variables

- var NAVTREEINDEX52

30.879.1 Variable Documentation

30.879.1.1 var NAVTREEINDEX52

Definition at line 1 of file navtreeindex52.js.

30.880 doc/html/navtreeindex53.js File Reference

Variables

- var NAVTREEINDEX53

30.880.1 Variable Documentation

30.880.1.1 var NAVTREEINDEX53

Definition at line 1 of file navtreeindex53.js.

30.881 doc/html/navtreeindex54.js File Reference

Variables

- var NAVTREEINDEX54

30.881.1 Variable Documentation

30.881.1.1 var NAVTREEINDEX54

Definition at line 1 of file navtreeindex54.js.

30.882 doc/html/navtreeindex55.js File Reference

Variables

- var NAVTREEINDEX55

30.882.1 Variable Documentation

30.882.1.1 var NAVTREEINDEX55

Definition at line 1 of file navtreeindex55.js.

30.883 doc/html/navtreeindex56.js File Reference

Variables

- var NAVTREEINDEX56

30.883.1 Variable Documentation

30.883.1.1 var NAVTREEINDEX56

Definition at line 1 of file navtreeindex56.js.

30.884 doc/html/navtreeindex57.js File Reference

Variables

- var NAVTREEINDEX57

30.884.1 Variable Documentation

30.884.1.1 var NAVTREEINDEX57

Definition at line 1 of file navtreeindex57.js.

30.885 doc/html/navtreeindex58.js File Reference

Variables

- var NAVTREEINDEX58

30.885.1 Variable Documentation

30.885.1.1 var NAVTREEINDEX58

Definition at line 1 of file navtreeindex58.js.

30.886 doc/html/navtreeindex59.js File Reference

Variables

- var NAVTREEINDEX59

30.886.1 Variable Documentation

30.886.1.1 var NAVTREEINDEX59

Definition at line 1 of file navtreeindex59.js.

30.887 doc/html/navtreeindex6.js File Reference

Variables

- var NAVTREEINDEX6

30.887.1 Variable Documentation

30.887.1.1 var NAVTREEINDEX6

Definition at line 1 of file navtreeindex6.js.

30.888 doc/html/navtreeindex60.js File Reference

Variables

- var NAVTREEINDEX60

30.888.1 Variable Documentation

30.888.1.1 var NAVTREEINDEX60

Definition at line 1 of file navtreeindex60.js.

30.889 doc/html/navtreeindex61.js File Reference

Variables

- var NAVTREEINDEX61

30.889.1 Variable Documentation

30.889.1.1 var NAVTREEINDEX61

Definition at line 1 of file navtreeindex61.js.

30.890 doc/html/navtreeindex62.js File Reference

Variables

- var NAVTREEINDEX62

30.890.1 Variable Documentation

30.890.1.1 var NAVTREEINDEX62

Definition at line 1 of file navtreeindex62.js.

30.891 doc/html/navtreeindex63.js File Reference

Variables

- var NAVTREEINDEX63

30.891.1 Variable Documentation

30.891.1.1 var NAVTREEINDEX63

Definition at line 1 of file navtreeindex63.js.

30.892 doc/html/navtreeindex7.js File Reference

Variables

- var NAVTREEINDEX7

30.892.1 Variable Documentation

30.892.1.1 var NAVTREEINDEX7

Definition at line 1 of file navtreeindex7.js.

30.893 doc/html/navtreeindex8.js File Reference

Variables

- var NAVTREEINDEX8

30.893.1 Variable Documentation

30.893.1.1 var NAVTREEINDEX8

Definition at line 1 of file navtreeindex8.js.

30.894 doc/html/navtreeindex9.js File Reference

Variables

- var NAVTREEINDEX9

30.894.1 Variable Documentation

30.894.1.1 var NAVTREEINDEX9

Definition at line 1 of file navtreeindex9.js.

30.895 doc/html/newfft_8cpp.js File Reference

Variables

- var newfft_8cpp

30.895.1 Variable Documentation

30.895.1.1 var newfft_8cpp

Initial value:

```
=
[
    [ "REPORT", "newfft_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "newfft_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "WANT_STREAM", "newfft_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "square", "newfft_8cpp.html#ae0c42a7620957500708a95cbb31e4260", null ],
    [ "square", "newfft_8cpp.html#ab12b3cad66448e2bfc8c590d002052da", null ]
]
```

Definition at line 1 of file newfft_8cpp.js.

30.896 doc/html/newknots_8c.js File Reference

Variables

- var newknots_8c

30.896.1 Variable Documentation

30.896.1.1 var newknots_8c

Initial value:

```
=
[
    [ "NEWKNOTS", "newknots_8c.html#a2cfe4b9fd93d72364a6776e3f87406b9", null ],
    [ "newknots", "newknots_8c.html#abc755a018e609869e18ffac75568f040", null ]
]
```

Definition at line 1 of file newknots_8c.js.

30.897 doc/html/newmat1_8cpp.js File Reference

Variables

- var newmat1_8cpp

30.897.1 Variable Documentation

30.897.1.1 var newmat1_8cpp

Initial value:

```
=
[
    [ "REPORT", "newmat1_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "Rectangular", "newmat1_8cpp.html#a858f15c5cad7d2271c38bc54fbca9b5c", null ]
]
```

Definition at line 1 of file newmat1_8cpp.js.

30.898 doc/html/newmat2_8cpp.js File Reference

Variables

- var newmat2_8cpp

30.898.1 Variable Documentation

30.898.1.1 var newmat2_8cpp

Initial value:

```
=
[
    [ "MONITOR", "newmat2_8cpp.html#a152473011fe478405090e77cd65667fb", null ],
    [ "REPORT", "newmat2_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "newmat2_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "DotProd", "newmat2_8cpp.html#ad4a6e1e55a32b648fc6564538f1cfc35", null ]
]
```

Definition at line 1 of file newmat2_8cpp.js.

30.899 doc/html/newmat3_8cpp.js File Reference

Variables

- var newmat3_8cpp

30.899.1 Variable Documentation

30.899.1.1 var newmat3_8cpp

Initial value:

```
=
[
    [ "MONITOR", "newmat3_8cpp.html#a152473011fe478405090e77cd65667fb", null ],
    [ "REPORT", "newmat3_8cpp.html#a787099914a94ed31fa544b985b55752f", null ]
]
```

Definition at line 1 of file newmat3_8cpp.js.

30.900 doc/html/newmat4_8cpp.js File Reference

Variables

- var newmat4_8cpp

30.900.1 Variable Documentation

30.900.1.1 var newmat4_8cpp

Initial value:

```
=
[
    [ "DO_SEARCH", "newmat4_8cpp.html#a46095a903a9295f8efd055f5c72f4dac", null ],
    [ "REPORT", "newmat4_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "Compare", "newmat4_8cpp.html#afad59b9d5b29862e68144236e760ccb8", null ]
]
```

Definition at line 1 of file newmat4_8cpp.js.

30.901 doc/html/newmat5_8cpp.js File Reference

Variables

- var newmat5_8cpp

30.901.1 Variable Documentation

30.901.1.1 var newmat5_8cpp

Initial value:

```
=
[
    [ "REPORT", "newmat5_8cpp.html#a787099914a94ed31fa544b985b55752f", null ]
]
```

Definition at line 1 of file newmat5_8cpp.js.

30.902 doc/html/newmat6_8cpp.js File Reference

Variables

- var newmat6_8cpp

30.902.1 Variable Documentation

30.902.1.1 var newmat6_8cpp

Initial value:

```
=
[
    [ "REPORT", "newmat6_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "KP", "newmat6_8cpp.html#ae3166f1201bb79865ac1945a9ebc64d6", null ],
    [ "operator-", "newmat6_8cpp.html#a46268a98e860120bbd9f0dd63aff0da5", null ],
    [ "SP", "newmat6_8cpp.html#a12f8dde3a19dd650078a3243e0517e84", null ]
]
```

Definition at line 1 of file newmat6_8cpp.js.

30.903 doc/html/newmat7_8cpp.js File Reference

Variables

- var newmat7_8cpp

30.903.1 Variable Documentation

30.903.1.1 var newmat7_8cpp

Initial value:

```
=
[
    [ "REPORT", "newmat7_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "IsZero", "newmat7_8cpp.html#a3038afe6bd8d1b109230942ebfdb58cf", null ],
    [ "operator==", "newmat7_8cpp.html#adeda112c50558644158778d1e55d325f", null ],
    [ "operator==", "newmat7_8cpp.html#a28893be0b55f3b6e534c15d8d7a7e0cf", null ]
]
```

Definition at line 1 of file newmat7_8cpp.js.

30.904 doc/html/newmat8_8cpp.js File Reference

Variables

- var newmat8_8cpp

30.904.1 Variable Documentation

30.904.1.1 var newmat8_8cpp

Initial value:

```
=
[
    [ "REPORT", "newmat8_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "newmat8_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "DotProduct", "newmat8_8cpp.html#a9e8ce3d9f963c09ee55fd8e84d540973", null ],
    [ "square", "newmat8_8cpp.html#ae0c42a7620957500708a95cbb31e4260", null ]
]
```

Definition at line 1 of file newmat8_8cpp.js.

30.905 doc/html/newmat9_8cpp.js File Reference

Variables

- var newmat9_8cpp

30.905.1 Variable Documentation

30.905.1.1 var newmat9_8cpp

Initial value:

```
=
[
    [ "ios_format_flags", "newmat9_8cpp.html#a0876a6126359b29117790265d60d034d", null ],
    [ "REPORT", "newmat9_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_FSTREAM", "newmat9_8cpp.html#a37d625862c54954e237886ad4bb5e75f", null ],
    [ "operator<<", "newmat9_8cpp.html#a766fb839d2cb6052d302c75e6254f4e3", null ],
    [ "operator<<", "newmat9_8cpp.html#a027ba0d51e59dba3c06b646673c8f3a0", null ]
]
```

Definition at line 1 of file newmat9_8cpp.js.

30.906 doc/html/newmat_8h.js File Reference

Variables

- var newmat_8h

30.906.1 Variable Documentation

30.906.1.1 var newmat_8h

Definition at line 1 of file newmat_8h.js.

30.907 doc/html/newmatap_8h.js File Reference

Variables

- var newmatap_8h

30.907.1 Variable Documentation

30.907.1.1 var newmatap_8h

Definition at line 1 of file newmatap_8h.js.

30.908 doc/html/newmatex_8cpp.js File Reference

Variables

- var newmatex_8cpp

30.908.1 Variable Documentation

30.908.1.1 var newmatex_8cpp

Initial value:

```
=
[
    [ "WANT_STREAM", "newmatex_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "MatrixErrorNoSpace", "newmatex_8cpp.html#ab44cf78e8368f61a521f79abbd4ae2b7", null ]
]
```

Definition at line 1 of file newmatex_8cpp.js.

30.909 doc/html/newmatio_8h.js File Reference

Variables

- var newmatio_8h

30.909.1 Variable Documentation

30.909.1.1 var newmatio_8h

Initial value:

```
=
[
    [ "NEWMATIO_LIB", "newmatio_8h.html#a65fb8e2c45ceffd1871256a348617cbf", null ],
    [ "operator<<", "newmatio_8h.html#aac312f0f56489c9a1f829f5f9bbd17b8", null ],
    [ "operator<<", "newmatio_8h.html#adc370b27ca69af82de17f158a4973cec", null ]
]
```

Definition at line 1 of file newmatio_8h.js.

30.910 doc/html/newmatnl_8cpp.js File Reference

Variables

- var newmatnl_8cpp

30.910.1 Variable Documentation

30.910.1.1 var newmatnl_8cpp

Initial value:

```
=
[
    [ "WANT_MATH", "newmatnl_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "WANT_STREAM", "newmatnl_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ]
]
```

Definition at line 1 of file newmatnl_8cpp.js.

30.911 doc/html/newmatnl_8h.js File Reference

Variables

- var newmatnl_8h

30.911.1 Variable Documentation

30.911.1.1 var newmatnl_8h

Initial value:

```
=
[
    [ "FindMaximum2", "class_n_e_w_m_a_t_1_1_find_maximum2.html", "class_n_e_w_m_a_t_1_1_find_maximum2" ],
    [ "R1_Col_I_D", "class_n_e_w_m_a_t_1_1_r1___col___i___d.html", "class_n_e_w_m_a_t_1_1_r1___col___i___d"
     ],
    [ "NonLinearLeastSquares", "class_n_e_w_m_a_t_1_1_non_linear_least_squares.html", "
      class_n_e_w_m_a_t_1_1_non_linear_least_squares" ],
    [ "LL_D_FI", "class_n_e_w_m_a_t_1_1_l_l___d___f_i.html", "class_n_e_w_m_a_t_1_1_l_l___d___f_i" ],
    [ "MLE_D_FI", "class_n_e_w_m_a_t_1_1_m_l_e___d___f_i.html", "class_n_e_w_m_a_t_1_1_m_l_e___d___f_i" ],
    [ "NEWMATNL_LIB", "newmatnl_8h.html#aed6d29a446241bb9799d3e281972c9c1", null ]
]
```

Definition at line 1 of file newmatnl_8h.js.

30.912 doc/html/newmatrc_8h.js File Reference

Variables

- var newmatrc_8h

30.912.1 Variable Documentation

30.912.1.1 var newmatrc_8h

Initial value:

```
=
[
    [ "LoadAndStoreFlag", "class_load_and_store_flag.html", "class_load_and_store_flag" ],
    [ "MatrixRowCol", "class_matrix_row_col.html", "class_matrix_row_col" ],
    [ "MatrixRow", "class_matrix_row.html", "class_matrix_row" ],
    [ "MatrixCol", "class_matrix_col.html", "class_matrix_col" ],
    [ "MatrixColX", "class_matrix_col_x.html", "class_matrix_col_x" ],
    [ "NEWMATRC_LIB", "newmatrc_8h.html#a96d76d6bee402806b06fcce48adf34e0", null ],
    [ "LSF", "newmatrc_8h.html#ae75c691eb2643cc7fe952b12f074040c", [
      [ "LoadOnEntry", "newmatrc_8h.html#ae75c691eb2643cc7fe952b12f074040caf82aaa0389ad880499aa17ee995acd62
      ", null ],
      [ "StoreOnExit", "newmatrc_8h.html#ae75c691eb2643cc7fe952b12f074040cae09c50f27d849b518368992b0f092916
      ", null ],
      [ "DirectPart", "newmatrc_8h.html#ae75c691eb2643cc7fe952b12f074040cac1dd577ab18fd18fcbe43d9654721c8f"
      , null ],
      [ "StoreHere", "newmatrc_8h.html#ae75c691eb2643cc7fe952b12f074040cab2a94c88732f5f171000bbfcafacb98d",
       null ],
      [ "HaveStore", "newmatrc_8h.html#ae75c691eb2643cc7fe952b12f074040ca53133c14cb06987614a1d83f0c44700c",
       null ]
    ] ]
]
```

Definition at line 1 of file newmatrc_8h.js.

30.913 doc/html/newmatrm_8cpp.js File Reference

Variables

- var newmatrm_8cpp

30.913.1 Variable Documentation

30.913.1.1 var newmatrm_8cpp

Initial value:

```
=
[
    [ "REPORT", "newmatrm_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "ComplexScale", "newmatrm_8cpp.html#ae7d0eadc62c8b79047f0d82cb2addb5a", null ],
    [ "Rotate", "newmatrm_8cpp.html#ab7b780d91409fd2f1e11b6d07789c231", null ]
]
```

Definition at line 1 of file newmatrm_8cpp.js.

30.914 doc/html/newmatrm_8h.js File Reference

Variables

- var newmatrm_8h

30.914.1 Variable Documentation

30.914.1.1 var newmatrm_8h

Initial value:

```
=
[
    [ "RectMatrixRowCol", "class_rect_matrix_row_col.html", "class_rect_matrix_row_col" ],
    [ "RectMatrixRow", "class_rect_matrix_row.html", "class_rect_matrix_row" ],
    [ "RectMatrixCol", "class_rect_matrix_col.html", "class_rect_matrix_col" ],
    [ "RectMatrixDiag", "class_rect_matrix_diag.html", "class_rect_matrix_diag" ],
    [ "NEWMATRM_LIB", "newmatrm_8h.html#a57c1191464ba3297be3ac91c6a339c60", null ],
    [ "sign", "newmatrm_8h.html#a405e11394e2ab3803e14552eb1f7b1d4", null ],
    [ "square", "newmatrm_8h.html#ae0c42a7620957500708a95cbb31e4260", null ]
]
```

Definition at line 1 of file newmatrm_8h.js.

30.915 doc/html/nl__ex_8cpp.js File Reference

Variables

- var nl__ex_8cpp

30.915.1 Variable Documentation

30.915.1.1 var nl__ex_8cpp

Initial value:

```
=
[
    [ "Model_3pe", "class_model__3pe.html", "class_model__3pe" ],
    [ "WANT_MATH", "nl__ex_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "WANT_STREAM", "nl__ex_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "main", "nl__ex_8cpp.html#ae66f6b31b5ad750f1fe042a706a4e3d4", null ]
]
```

Definition at line 1 of file nl__ex_8cpp.js.

30.916 doc/html/orient_curves_8h.js File Reference

Variables

- var orient_curves_8h

30.916.1 Variable Documentation

30.916.1.1 var orient_curves_8h

Initial value:

```
=
[
    [ "orientCurves", "orient_curves_8h.html#a5bd2ee4daeb32bba01486884a638e5eb", null ]
]
```

Definition at line 1 of file orient_curves_8h.js.

30.917 doc/html/pickcrvsf_8c.js File Reference

Variables

- var pickcrvsf_8c

30.917.1 Variable Documentation

30.917.1.1 var pickcrvsf_8c

Initial value:

```
=
[
    [ "PICK_CRV_SF", "pickcrvsf_8c.html#a155aaf976a37fafa8e7bb3d1c973d64c", null ],
    [ "pick_crv_sf", "pickcrvsf_8c.html#a1ec8aa653acdb0bfd2a176460f6b9833", null ]
]
```

Definition at line 1 of file pickcrvsf_8c.js.

30.918 doc/html/pocrvtang_8c.js File Reference

Variables

- var pocrvtang_8c

30.918.1 Variable Documentation

30.918.1.1 var pocrvtang_8c

Initial value:

```
=
[
    [ "PO_CRV_TANG", "pocrvtang_8c.html#af76534eda9b944a2b8b2c6ef042eddb9", null ],
    [ "po_crv_tang", "pocrvtang_8c.html#a6e8a1352a942920cdd5e77ddaa8aaf3a", null ]
]
```

Definition at line 1 of file pocrvtang_8c.js.

30.919 doc/html/precisio_8h.js File Reference

Variables

- var precisio_8h

30.919.1 Variable Documentation

30.919.1.1 var precisio_8h

Initial value:

```
=
[
    [ "FloatingPointPrecision", "class_n_e_w_m_a_t_1_1_floating_point_precision.html", null ],
    [ "PRECISION_LIB", "precisio_8h.html#a3ab28e0c843e28acdfaa488761772d4b", null ],
    [ "WANT_MATH", "precisio_8h.html#a8335b327d416f961a5dbaa0e058cc515", null ]
]
```

Definition at line 1 of file precisio_8h.js.

30.920 doc/html/randomnoise_8h.js File Reference

Variables

- var randomnoise_8h

30.920.1 Variable Documentation

30.920.1.1 var randomnoise_8h

Initial value:

```
=
[
    [ "normalNoise", "randomnoise_8h.html#a676090feb61df5841159959dd8a2e773", null ],
    [ "uniformNoise", "randomnoise_8h.html#a5c4a39c5c7ee9e89ae32946275e646ce", null ]
]
```

Definition at line 1 of file randomnoise_8h.js.

30.921 doc/html/raster_8h.js File Reference

Variables

- var raster_8h

30.921.1 Variable Documentation

30.921.1.1 var raster_8h

Initial value:

```
=
[
    [ "RASTERUTILS_H_INCLUDED", "raster_8h.html#ae6d95c22bae73000aac0efdc2997c55d", null ],
    [ "read_ppm_file", "raster_8h.html#ab0cd289afbca1d817808954b3b7b7abc", null ],
    [ "write_ppm_file", "raster_8h.html#a9695a5e9660225deeed83e08f077a4f2", null ]
]
```

Definition at line 1 of file raster_8h.js.

30.922 doc/html/refine__all_8c.js File Reference

Variables

- var refine__all_8c

30.922.1 Variable Documentation

30.922.1.1 var refine__all_8c

Initial value:

```
=
[
    [ "REFINE_ALL", "refine__all_8c.html#a7021f2e1b451a7d88475a011da9cffe9", null ],
    [ "refine_all", "refine__all_8c.html#a09d880f4de7830b355b4e88ce89a199c", null ]
]
```

Definition at line 1 of file refine__all_8c.js.

30.923 doc/html/resize.js File Reference

Functions

- function readCookie (cookie)
- function writeCookie (cookie, val, expiration)
- function resizeWidth ()
- function restoreWidth (navWidth)
- function resizeHeight ()
- function initResizable ()

Variables

- var cookie_namespace = 'doxygen'
- var sidenav
- var navtree
- var content
- var header

30.923.1 Function Documentation

30.923.1.1 function initResizable ( )

Definition at line 62 of file resize.js.

30.923.1.2 function readCookie (*cookie*)

Definition at line 4 of file resize.js.

30.923.1.3 function resizeHeight ( )

Definition at line 52 of file resize.js.

30.923.1.4 function resizeWidth ( )

Definition at line 37 of file resize.js.

30.923.1.5 function restoreWidth (*navWidth*)

Definition at line 45 of file resize.js.

30.923.1.6 function writeCookie (*cookie, val, expiration*)

Definition at line 25 of file resize.js.

30.923.2 Variable Documentation

30.923.2.1 var content

Definition at line 2 of file resize.js.

30.923.2.2 var cookie_namespace = 'doxygen'

Definition at line 1 of file resize.js.

30.923.2.3 var header

Definition at line 2 of file resize.js.

30.923.2.4 var navtree

Definition at line 2 of file resize.js.

30.923.2.5 var sidenav

Definition at line 2 of file resize.js.

30.924 doc/html/s1001_8c.js File Reference

Variables

- var s1001_8c

30.924.1 Variable Documentation

30.924.1.1 var s1001_8c

Initial value:

```
=
[
    [ "S1001", "s1001_8c.html#a56ccf110d6c3ffd6ec1bc77ba9bf017f", null ],
    [ "s1001", "s1001_8c.html#a80164f5f99c5cfb032d8384a3dc986ba", null ]
]
```

Definition at line 1 of file s1001_8c.js.

30.925 doc/html/s1011_8c.js File Reference

Variables

- var s1011_8c

30.925.1 Variable Documentation

30.925.1.1 var s1011_8c

Initial value:

```
=
[
    [ "S1011", "s1011_8c.html#a2450ea7c588d7669544dd8f787498d80", null ],
    [ "s1011", "s1011_8c.html#ad410d6930a817ffac1b37386954c46a1", null ]
]
```

Definition at line 1 of file s1011_8c.js.

30.926 doc/html/s1012_8c.js File Reference

Variables

- var s1012_8c

30.926.1 Variable Documentation

30.926.1.1 var s1012_8c

Initial value:

```
=
[
    [ "S1012", "s1012_8c.html#a6271f794dd9fabab2eac8e3053de0319", null ],
    [ "s1012", "s1012_8c.html#a976d969f65fd46bba600e032927c02c0", null ]
]
```

Definition at line 1 of file s1012_8c.js.

30.927 doc/html/s1013_8c.js File Reference

Variables

- var s1013_8c

30.927.1 Variable Documentation

30.927.1.1 var s1013_8c

Initial value:

```
=
[
    [ "S1013", "s1013_8c.html#aa28f965565254269350f5017d414b42a", null ],
    [ "s1013", "s1013_8c.html#a728ddfbc68d2a36a9d89b2042da2ac1d", null ]
]
```

Definition at line 1 of file s1013_8c.js.

30.928 doc/html/s1014_8c.js File Reference

Variables

- var s1014_8c

30.928.1 Variable Documentation

30.928.1.1 var s1014_8c

Initial value:

```
=
[
    [ "S1014", "s1014_8c.html#a6387307dd5d73e0625ba7692f19936d2", null ],
    [ "s1014", "s1014_8c.html#afdde53e01257120ed8dff6eaea809e27", null ]
]
```

Definition at line 1 of file s1014_8c.js.

30.929 doc/html/s1015_8c.js File Reference

Variables

- var s1015_8c

30.929.1 Variable Documentation

30.929.1.1 var s1015_8c

Initial value:

```
=
[
    [ "S1015", "s1015_8c.html#aac8add6ae31d5bf0b48e9e638e5f0016", null ],
    [ "s1015", "s1015_8c.html#a7c7cb84a3a10e0ba1a3282a81d12b3a9", null ]
]
```

Definition at line 1 of file s1015_8c.js.

30.930 doc/html/s1016_8c.js File Reference

Variables

- var s1016_8c

30.930.1 Variable Documentation

30.930.1.1 var s1016_8c

Initial value:

```
=
[
    [ "S1016", "s1016_8c.html#ae9abb35161fc73b35ad6a7d187928232", null ],
    [ "s1016", "s1016_8c.html#a0c6d91061697e2998e64585592fefaf4", null ]
]
```

Definition at line 1 of file s1016_8c.js.

30.931 doc/html/s1017_8c.js File Reference

Variables

- var s1017_8c

30.931.1 Variable Documentation

30.931.1.1 var s1017_8c

Initial value:

```
=
[
    [ "S1017", "s1017_8c.html#a5259eaf0d4050357b7138c0f0a3183ab", null ],
    [ "s1017", "s1017_8c.html#a30761a4ad3ec2cfc9cd26a38f7c52d6c", null ]
]
```

Definition at line 1 of file s1017_8c.js.

30.932 doc/html/s1018_8c.js File Reference

Variables

- var s1018_8c

30.932.1 Variable Documentation

30.932.1.1 var s1018_8c

Initial value:

```
=
[
    [ "S1018", "s1018_8c.html#af72f29e0e0f70c80f0a0393e6d1a0dc8", null ],
    [ "s1018", "s1018_8c.html#a1c00f59e472b28f899644d258992859e", null ]
]
```

Definition at line 1 of file s1018_8c.js.

30.933 doc/html/s1021_8c.js File Reference

Variables

- var s1021_8c

30.933.1 Variable Documentation

30.933.1.1 var s1021_8c

Initial value:

```
=
[
    [ "S1021", "s1021_8c.html#a2a8a8b124088a4401508238e97705ca8", null ],
    [ "s1021", "s1021_8c.html#a9c29a340f1991e0d5bd3625fb8861ae9", null ]
]
```

Definition at line 1 of file s1021_8c.js.

30.934 doc/html/s1022_8c.js File Reference

Variables

- var s1022_8c

30.934.1 Variable Documentation

30.934.1.1 var s1022_8c

Initial value:

```
=
[
    [ "S1022", "s1022_8c.html#a1a1336f406499846d8524b12e2049ed3", null ],
    [ "s1022", "s1022_8c.html#a50db2aed3ebc0f36aa4bf2aaf3c7592a", null ]
]
```

Definition at line 1 of file s1022_8c.js.

30.935 doc/html/s1023_8c.js File Reference

Variables

- var s1023_8c

30.935.1 Variable Documentation

30.935.1.1 var s1023_8c

Initial value:

```
=
[
    [ "S1023", "s1023_8c.html#a2319b7b895af87056c0dbbac2f8c1db7", null ],
    [ "s1023", "s1023_8c.html#a1397ccd0fbaa0287d0522c7ec60cd84e", null ]
]
```

Definition at line 1 of file s1023_8c.js.

30.936 doc/html/s1024_8c.js File Reference

Variables

- var s1024_8c

30.936.1 Variable Documentation

30.936.1.1 var s1024_8c

Initial value:

```
=
[
    [ "S1024", "s1024_8c.html#a5ccd291a4e3f4bc7fb2a19eaddd3932b", null ],
    [ "s1024", "s1024_8c.html#a053e206fdca7490b98d5af6691908037", null ]
]
```

Definition at line 1 of file s1024_8c.js.

30.937 doc/html/s1025_8c.js File Reference

Variables

- var s1025_8c

30.937.1 Variable Documentation

30.937.1.1 var s1025_8c

Initial value:

```
=
[
    [ "S1025", "s1025_8c.html#a83f0f0cacd1261f3061f555f9141ac5c", null ],
    [ "s1025", "s1025_8c.html#ab781e32a5221879d484d15db903a0b42", null ]
]
```

Definition at line 1 of file s1025_8c.js.

30.938 doc/html/s1119_8c.js File Reference

Variables

- var s1119_8c

30.938.1 Variable Documentation

30.938.1.1 var s1119_8c

Initial value:

```
=
[
    [ "S1119", "s1119_8c.html#acf43354b6dbc649264e8cfd7ab88fa38", null ],
    [ "s1119", "s1119_8c.html#a425aa27d6333f7fb2588c8dffeda922b", null ]
]
```

Definition at line 1 of file s1119_8c.js.

30.939 doc/html/s1161_8c.js File Reference

Variables

- var s1161_8c

30.939.1 Variable Documentation

30.939.1.1 var s1161_8c

Initial value:

```
=
[
    [ "S1161", "s1161_8c.html#a2b8cba67ceaf34cb0164b9c7b91fd794", null ],
    [ "s1161", "s1161_8c.html#a1468d5cd03f78b73b532c5ea9e764283", null ]
]
```

Definition at line 1 of file s1161_8c.js.

30.940 doc/html/s1162_8c.js File Reference

Variables

- var s1162_8c

30.940.1 Variable Documentation

30.940.1.1 var s1162_8c

Initial value:

```
=
[
    [ "S1162", "s1162_8c.html#af082be7a7b2fec444bd7b5c9c7ccfa28", null ],
    [ "s1162", "s1162_8c.html#a963ee9680ed373de27d6469ddd515d76", null ]
]
```

Definition at line 1 of file s1162_8c.js.

30.941 doc/html/s1172_8c.js File Reference

Variables

- var s1172_8c

30.941.1 Variable Documentation

30.941.1.1 var s1172_8c

Initial value:

```
=
[
    [ "S1172", "s1172_8c.html#a4f05d96507f55416f094fca8580a39d4", null ],
    [ "s1172", "s1172_8c.html#afbdb2cd45b33c12c544718d9a1a6edc6", null ]
]
```

Definition at line 1 of file s1172_8c.js.

30.942 doc/html/s1173_8c.js File Reference

Variables

- var s1173_8c

30.942.1 Variable Documentation

30.942.1.1 var s1173_8c

Initial value:

```
=
[
    [ "S1173", "s1173_8c.html#a2e08429081bab8c16a1c8687443129b7", null ],
    [ "s1173", "s1173_8c.html#adfe997d7c6353c6fef25e5b6c554a995", null ]
]
```

Definition at line 1 of file s1173_8c.js.

30.943 doc/html/s1174_8c.js File Reference

Variables

- var s1174_8c

30.943.1 Variable Documentation

30.943.1.1 var s1174_8c

Initial value:

```
=
[
    [ "S1174", "s1174_8c.html#a0e6e7478e43a2fffaa212d45095e4f0d", null ],
    [ "s1174", "s1174_8c.html#af6e3d6bac38979775cbc65e7c67a726e", null ]
]
```

Definition at line 1 of file s1174_8c.js.

30.944 doc/html/s1190_8c.js File Reference

Variables

- var s1190_8c

30.944.1 Variable Documentation

30.944.1.1 var s1190_8c

Initial value:

```
=
[
    [ "S1190", "s1190_8c.html#a2e828756d2f79a7814e435fc7b67af8a", null ],
    [ "s1190", "s1190_8c.html#a571ab89bc8fd94a46cdde612db5d6be8", null ]
]
```

Definition at line 1 of file s1190_8c.js.

30.945 doc/html/s1192_8c.js File Reference

Variables

- var s1192_8c

30.945.1 Variable Documentation

30.945.1.1 var s1192_8c

Initial value:

```
=
[
    [ "S1192", "s1192_8c.html#a63274164e81b43fdf3245113f8157d6b", null ],
    [ "s1192", "s1192_8c.html#ae71c8e60d97baa45efea8c3512005528", null ]
]
```

Definition at line 1 of file s1192_8c.js.

30.946 doc/html/s1219_8c.js File Reference

Variables

- var s1219_8c

30.946.1 Variable Documentation

30.946.1.1 var s1219_8c

Initial value:

```
=
[
    [ "S1219", "s1219_8c.html#a2be917f34d9f27fb61514adcc63f1e63", null ],
    [ "s1219", "s1219_8c.html#a0b95d504d0e6678c9f49cbc44de8e196", null ]
]
```

Definition at line 1 of file s1219_8c.js.

30.947 doc/html/s1220_8c.js File Reference

Variables

- var s1220_8c

30.947.1 Variable Documentation

30.947.1.1 var s1220_8c

Initial value:

```
=
[
    [ "S1220", "s1220_8c.html#a6683cab3e26a6eedbdc4d1f866a7be08", null ],
    [ "s1220", "s1220_8c.html#a7920b9717becd2b896bb3c4de0ce0e09", null ]
]
```

Definition at line 1 of file s1220_8c.js.

30.948 doc/html/s1221_8c.js File Reference

Variables

- var s1221_8c

30.948.1 Variable Documentation

30.948.1.1 var s1221_8c

Initial value:

```
=
[
    [ "S1221", "s1221_8c.html#a4c9acc62a212403e6165d58f107f2e69", null ],
    [ "s1221", "s1221_8c.html#ad18ef4c36086f4e0505e7f8ad543eddd", null ]
]
```

Definition at line 1 of file s1221_8c.js.

30.949 doc/html/s1222_8c.js File Reference

Variables

- var s1222_8c

30.949.1 Variable Documentation

30.949.1.1 var s1222_8c

Initial value:

```
=
[
    [ "S1222", "s1222_8c.html#a598c40da485810552a54da20c31bc771", null ],
    [ "s1222", "s1222_8c.html#ae0ff05bc204ef58cbc447e15da65104f", null ]
]
```

Definition at line 1 of file s1222_8c.js.

30.950 doc/html/s1223_8c.js File Reference

Variables

- var s1223_8c

30.950.1 Variable Documentation

30.950.1.1 var s1223_8c

Initial value:

```
=
[
    [ "S1223", "s1223_8c.html#a0931d678f6ca74583e9266b5c0cbd11d", null ],
    [ "s1223", "s1223_8c.html#a7f266f4175fdf0623bd7218f1fca8082", null ]
]
```

Definition at line 1 of file s1223_8c.js.

30.951 doc/html/s1224_8c.js File Reference

Variables

- var s1224_8c

30.951.1 Variable Documentation

30.951.1.1 var s1224_8c

Initial value:

```
=
[
    [ "S1224", "s1224_8c.html#a70e0a3c2bad9c05be84ac9de899208a7", null ],
    [ "s1224", "s1224_8c.html#a51d86bfe293f9c52a01089d5bef1cbe3", null ]
]
```

Definition at line 1 of file s1224_8c.js.

30.952 doc/html/s1225_8c.js File Reference

Variables

- var s1225_8c

30.952.1 Variable Documentation

30.952.1.1 var s1225_8c

Initial value:

```
=
[
    [ "S1225", "s1225_8c.html#af20713c1c01491193949f485f1c190b7", null ],
    [ "s1225", "s1225_8c.html#a694d9795b276fc5eae6d3ef1d663803d", null ]
]
```

Definition at line 1 of file s1225_8c.js.

30.953 doc/html/s1226_8c.js File Reference

Variables

- var s1226_8c

30.953.1 Variable Documentation

30.953.1.1 var s1226_8c

Initial value:

```
=
[
    [ "S1226", "s1226_8c.html#a81711abdea8a89b41af77cf3548424c6", null ],
    [ "s1226", "s1226_8c.html#af8b1be094720c25ec8e221dd2c03c6f9", null ]
]
```

Definition at line 1 of file s1226_8c.js.

30.954 doc/html/s1227_8c.js File Reference

Variables

- var s1227_8c

30.954.1 Variable Documentation

30.954.1.1 var s1227_8c

Initial value:

```
=
[
    [ "S1227", "s1227_8c.html#af10330a648416d74712ce2fcdb36c74b", null ],
    [ "s1227", "s1227_8c.html#a44b462edc43a3570a149b5d10a0ecd38", null ]
]
```

Definition at line 1 of file s1227_8c.js.

30.955 doc/html/s1231_8c.js File Reference

Variables

- var s1231_8c

30.955.1 Variable Documentation

30.955.1.1 var s1231_8c

Initial value:

```
=
[
    [ "S1231", "s1231_8c.html#a258195a1741bbcae24f4fe54ab3124a0", null ],
    [ "s1231", "s1231_8c.html#a5cb87e14c129d1250113814231c7584b", null ]
]
```

Definition at line 1 of file s1231_8c.js.

30.956 doc/html/s1232_8c.js File Reference

Variables

- var s1232_8c

30.956.1 Variable Documentation

30.956.1.1 var s1232_8c

Initial value:

```
=
[
    [ "S1232", "s1232_8c.html#a7cc3b5081ff3055e00d5a13f0a8e9b3d", null ],
    [ "s1232", "s1232_8c.html#abcc863a3de7f2bc6e38852ef06f0e29d", null ]
]
```

Definition at line 1 of file s1232_8c.js.

30.957 doc/html/s1233_8c.js File Reference

Variables

- var s1233_8c

30.957.1 Variable Documentation

30.957.1.1 var s1233_8c

Initial value:

```
=
[
    [ "S1233", "s1233_8c.html#a7f743335f0b13e160336e69707be1d65", null ],
    [ "s1233", "s1233_8c.html#a891bf909d3d7bc948b1d29c2d642d46a", null ]
]
```

Definition at line 1 of file s1233_8c.js.

30.958 doc/html/s1235_8c.js File Reference

Variables

- var s1235_8c

30.958.1 Variable Documentation

30.958.1.1 var s1235_8c

Initial value:

```
=
[
    [ "S1235", "s1235_8c.html#aa10161c73a5093ff0e3badb9487ef944", null ],
    [ "s1235", "s1235_8c.html#ae1473bb1de379da575f1168a08224bec", null ]
]
```

Definition at line 1 of file s1235_8c.js.

30.959 doc/html/s1236_8c.js File Reference

Variables

- var s1236_8c

30.959.1 Variable Documentation

30.959.1.1 var s1236_8c

Initial value:

```
=
[
    [ "S1236", "s1236_8c.html#aa33fe1bb24997baf0a196e0222f92b4e", null ],
    [ "s1236", "s1236_8c.html#aff93eacbd6d08855e7c84fac0fc0fd29", null ]
]
```

Definition at line 1 of file s1236_8c.js.

30.960 doc/html/s1237_8c.js File Reference

Variables

- var s1237_8c

30.960.1 Variable Documentation

30.960.1.1 var s1237_8c

Initial value:

```
=
[
    [ "S1237", "s1237_8c.html#a06f4b329ebd9478a3e737eedfa42463c", null ],
    [ "s1237", "s1237_8c.html#af8462ab7f71fdbe9fc94f1c838cf75b4", null ]
]
```

Definition at line 1 of file s1237_8c.js.

30.961 doc/html/s1238_8c.js File Reference

Variables

- var s1238_8c

30.961.1 Variable Documentation

30.961.1.1 var s1238_8c

Initial value:

```
=
[
    [ "S1238", "s1238_8c.html#a39df6fe62fd3385b8c7d7cf0a41e8f68", null ],
    [ "s1238", "s1238_8c.html#af479669cbd3b3f5b6704c9f2052668ed", null ]
]
```

Definition at line 1 of file s1238_8c.js.

30.962 doc/html/s1239_8c.js File Reference

Variables

- var s1239_8c

30.962.1 Variable Documentation

30.962.1.1 var s1239_8c

Initial value:

```
=
[
    [ "S1239", "s1239_8c.html#a61bcd3745ed140f9b036175a1033435b", null ],
    [ "s1239", "s1239_8c.html#a57b5d3c1718ae8ecb51f5d4ddf095862", null ]
]
```

Definition at line 1 of file s1239_8c.js.

30.963 doc/html/s1240_8c.js File Reference

Variables

- var s1240_8c

30.963.1 Variable Documentation

30.963.1.1 var s1240_8c

Initial value:

```
=
[
    [ "S1240", "s1240_8c.html#a0971794330c111b76321c140e59b70a3", null ],
    [ "s1240", "s1240_8c.html#a8533b0342d8758533728a812bc7dab94", null ]
]
```

Definition at line 1 of file s1240_8c.js.

30.964 doc/html/s1241_8c.js File Reference

Variables

- var s1241_8c

30.964.1 Variable Documentation

30.964.1.1 var s1241_8c

Initial value:

```
=
[
    [ "S1241", "s1241_8c.html#a4a8781d94e744a9829374d742bdf66f4", null ],
    [ "s1241", "s1241_8c.html#af9417a5b1b1fa9dcd4a1783856c23ec3", null ]
]
```

Definition at line 1 of file s1241_8c.js.

30.965 doc/html/s1243_8c.js File Reference

Variables

- var s1243_8c

30.965.1 Variable Documentation

30.965.1.1 var s1243_8c

Initial value:

```
=
[
    [ "S1243", "s1243_8c.html#ac5dc9fa40ebdff3add1ac4f522be390a", null ],
    [ "s1243", "s1243_8c.html#a1ace4d974a3f96d73e85bb76248503fb", null ]
]
```

Definition at line 1 of file s1243_8c.js.

30.966 doc/html/s1244_8c.js File Reference

Variables

- var s1244_8c

30.966.1 Variable Documentation

30.966.1.1 var s1244_8c

Initial value:

```
=
[
    [ "S1244", "s1244_8c.html#af14104d9a52102a29bdb5a23d9d8b27e", null ],
    [ "s1244", "s1244_8c.html#ac8fdb8e67a138a4882e76025b24ebbd8", null ]
]
```

Definition at line 1 of file s1244_8c.js.

30.967 doc/html/s1245_8c.js File Reference

Variables

- var s1245_8c

30.967.1 Variable Documentation

30.967.1.1 var s1245_8c

Initial value:

```
=
[
    [ "S1245", "s1245_8c.html#a1dba5d931d965b7106f4f737881d6f6d", null ],
    [ "s1245", "s1245_8c.html#ad54b9d68117a6e670b1daba3e1f29a5c", null ]
]
```

Definition at line 1 of file s1245_8c.js.

30.968 doc/html/s1251_8c.js File Reference

Variables

- var s1251_8c

30.968.1 Variable Documentation

30.968.1.1 var s1251_8c

Initial value:

```
=
[
    [ "S1251", "s1251_8c.html#a4f87e50a7e57af5dd9ed6371bc37f778", null ],
    [ "s1251", "s1251_8c.html#a95695088f1d3f5de4fde290ce14edb9b", null ]
]
```

Definition at line 1 of file s1251_8c.js.

30.969 doc/html/s1252_8c.js File Reference

Variables

- var s1252_8c

30.969.1 Variable Documentation

30.969.1.1 var s1252_8c

Initial value:

```
=
[
    [ "S1252", "s1252_8c.html#a4a658f051bab6ff33e018eff459dd4e5", null ],
    [ "s1252", "s1252_8c.html#a4150f0a2cb6340c3ef266a5899bde984", null ]
]
```

Definition at line 1 of file s1252_8c.js.

30.970 doc/html/s1301_8c.js File Reference

Variables

- var s1301_8c

30.970.1 Variable Documentation

30.970.1.1 var s1301_8c

Initial value:

```
=
[
    [ "S1301", "s1301_8c.html#a87664c4ab275003faddf52da4b19be0c", null ],
    [ "s1301", "s1301_8c.html#a53e991bcbe9eb302e837d1ac46213c35", null ]
]
```

Definition at line 1 of file s1301_8c.js.

30.971 doc/html/s1302_8c.js File Reference

Variables

- var s1302_8c

30.971.1 Variable Documentation

30.971.1.1 var s1302_8c

Initial value:

```
=
[
    [ "S1302", "s1302_8c.html#a9d9f159ab859926dad2112a952b8b6cd", null ],
    [ "s1302", "s1302_8c.html#a09aeadcb91df21fe24abbe76da2abdd9", null ]
]
```

Definition at line 1 of file s1302_8c.js.

30.972 doc/html/s1303_8c.js File Reference

Variables

- var s1303_8c

30.972.1 Variable Documentation

30.972.1.1 var s1303_8c

Initial value:

```
=
[
    [ "S1303", "s1303_8c.html#ab98372d457f4093a1a00049ff30968ac", null ],
    [ "s1303", "s1303_8c.html#ab095f44eb1cbbd4b0182b746799b71c9", null ]
]
```

Definition at line 1 of file s1303_8c.js.

30.973 doc/html/s1304_8c.js File Reference

Variables

- var s1304_8c

30.973.1 Variable Documentation

30.973.1.1 var s1304_8c

Initial value:

```
=
[
    [ "S1304", "s1304_8c.html#a04dcd6d004b9864307ed1341b3afef7e", null ],
    [ "s1304", "s1304_8c.html#a9072f2da05219f3fd0c4cc6f969ade81", null ]
]
```

Definition at line 1 of file s1304_8c.js.

30.974 doc/html/s1305_8c.js File Reference

Variables

- var s1305_8c

30.974.1 Variable Documentation

30.974.1.1 var s1305_8c

Initial value:

```
=
[
    [ "S1305", "s1305_8c.html#adc0ad0abd85cfe7e0a7a9c5dfe26f4db", null ],
    [ "s1305", "s1305_8c.html#a8f1e1f9e1b0605a58187c77e96c6da63", null ]
]
```

Definition at line 1 of file s1305_8c.js.

30.975 doc/html/s1306_8c.js File Reference

Variables

- var s1306_8c

30.975.1 Variable Documentation

30.975.1.1 var s1306_8c

Initial value:

```
=
[
    [ "S1306", "s1306_8c.html#afa4ac3aaf0daf9041de15f0b6eb0f187", null ],
    [ "s1306", "s1306_8c.html#a2f55a277175f71fbb649d5fcba8c1314", null ]
]
```

Definition at line 1 of file s1306_8c.js.

30.976 doc/html/s1307_8c.js File Reference

Variables

- var s1307_8c

30.976.1 Variable Documentation

30.976.1.1 var s1307_8c

Initial value:

```
=
[
    [ "S1307", "s1307_8c.html#a6a91db92a736628bc5caba4593000c6f", null ],
    [ "s1307", "s1307_8c.html#a42661bbffbd78086c9eee3737f0193cb", null ]
]
```

Definition at line 1 of file s1307_8c.js.

30.977 doc/html/s1308_8c.js File Reference

Variables

- var s1308_8c

30.977.1 Variable Documentation

30.977.1.1 var s1308_8c

Initial value:

```
=
[
    [ "S1308", "s1308_8c.html#a0d8f2e6ff587aede5779e675e8fb34aa", null ],
    [ "s1308", "s1308_8c.html#a6cb6311342a40f856ca9f54d73eae953", null ]
]
```

Definition at line 1 of file s1308_8c.js.

30.978 doc/html/s1309_8c.js File Reference

Variables

- var s1309_8c

30.978.1 Variable Documentation

30.978.1.1 var s1309_8c

Initial value:

```
=
[
    [ "S1309", "s1309_8c.html#a885cc4c255c051fcb8c39a59b605d516", null ],
    [ "s1309", "s1309_8c.html#a8a13ea00a9578bb0a141d9c7329212a4", null ]
]
```

Definition at line 1 of file s1309_8c.js.

30.979 doc/html/s1310_8c.js File Reference

Variables

- var s1310_8c

30.979.1 Variable Documentation

30.979.1.1 var s1310_8c

Initial value:

```
=
[
    [ "S1310", "s1310_8c.html#a66176bb507ea977fb1c75fa658f97176", null ],
    [ "s1310", "s1310_8c.html#aa1ac9d7cc59026d2125f2feb608704b0", null ]
]
```

Definition at line 1 of file s1310_8c.js.

30.980 doc/html/s1311_8c.js File Reference

Variables

- var s1311_8c

30.980.1 Variable Documentation

30.980.1.1 var s1311_8c

Initial value:

```
=
[
    [ "S1311", "s1311_8c.html#a9e92923a88642f0abcff8b8ae036f78a", null ],
    [ "s1311", "s1311_8c.html#a5b85914b02c70d710b06912207ed284e", null ]
]
```

Definition at line 1 of file s1311_8c.js.

30.981 doc/html/s1312_8c.js File Reference

Variables

- var s1312_8c

30.981.1 Variable Documentation

30.981.1.1 var s1312_8c

Initial value:

```
=
[
    [ "S1312", "s1312_8c.html#a655e10996b8fc3d9ebe2cc1f975ed8fb", null ],
    [ "s1312", "s1312_8c.html#abf550a849865b9c274ada136ae344ca0", null ]
]
```

Definition at line 1 of file s1312_8c.js.

30.982 doc/html/s1313_8c.js File Reference

Variables

- var s1313_8c

30.982.1 Variable Documentation

30.982.1.1 var s1313_8c

Initial value:

```
=
[
    [ "S1313", "s1313_8c.html#aed8010dcef179e760efeac56226813c3", null ],
    [ "s1313", "s1313_8c.html#a05fa7bb93e5285c716c05297a6212829", null ]
]
```

Definition at line 1 of file s1313_8c.js.

30.983 doc/html/s1314_8c.js File Reference

Variables

- var s1314_8c

30.983.1 Variable Documentation

30.983.1.1 var s1314_8c

Initial value:

```
=
[
    [ "S1314", "s1314_8c.html#afbf43a189d5b7f43d4c17c5fadcf35e8", null ],
    [ "s1314", "s1314_8c.html#a33b2926e4ada0e5bd11039dad0b00b16", null ]
]
```

Definition at line 1 of file s1314_8c.js.

30.984 doc/html/s1315_8c.js File Reference

Variables

- var s1315_8c

30.984.1 Variable Documentation

30.984.1.1 var s1315_8c

Initial value:

```
=
[
    [ "S1315", "s1315_8c.html#ad0d68d829cb23aeadcff787f6acc2c70", null ],
    [ "s1315", "s1315_8c.html#a478596052c3b1bcd110b3a7444725602", null ]
]
```

Definition at line 1 of file s1315_8c.js.

30.985 doc/html/s1316_8c.js File Reference

Variables

- var s1316_8c

30.985.1 Variable Documentation

30.985.1.1 var s1316_8c

Initial value:

```
=
[
    [ "S1316", "s1316_8c.html#a8426c1ccdc6e04844f4354f57ca07187", null ],
    [ "s1316", "s1316_8c.html#a161cd04bd67e22cb56002a28c07497c3", null ]
]
```

Definition at line 1 of file s1316_8c.js.

30.986 doc/html/s1317_8c.js File Reference

Variables

- var s1317_8c

30.986.1 Variable Documentation

30.986.1.1 var s1317_8c

Initial value:

```
=
[
    [ "S1317", "s1317_8c.html#acbe916c08812c9332a5f1fd86ff77c1e", null ],
    [ "s1317", "s1317_8c.html#a5e5c86b111e0200098efd7030696ac54", null ]
]
```

Definition at line 1 of file s1317_8c.js.

30.987 doc/html/s1318_8c.js File Reference

Variables

- var s1318_8c

30.987.1 Variable Documentation

30.987.1.1 var s1318_8c

Initial value:

```
=
[
    [ "S1318", "s1318_8c.html#a1aa2d44d42ecc555f813f719e7ed0b82", null ],
    [ "s1318", "s1318_8c.html#ac742fee572c83d9aaa24ea7cb01cd9e5", null ]
]
```

Definition at line 1 of file s1318_8c.js.

30.988 doc/html/s1319_8c.js File Reference

Variables

- var s1319_8c

30.988.1 Variable Documentation

30.988.1.1 var s1319_8c

Initial value:

```
=
[
    [ "S1319", "s1319_8c.html#aa4aafb12fc1d4099f478a5f6ea53f0f6", null ],
    [ "s1319", "s1319_8c.html#acbd0469d864acc9844b3c26abaddd5e0", null ]
]
```

Definition at line 1 of file s1319_8c.js.

30.989 doc/html/s1320_8c.js File Reference

Variables

- var s1320_8c

30.989.1 Variable Documentation

30.989.1.1 var s1320_8c

Initial value:

```
=
[
    [ "S1320", "s1320_8c.html#a0d50afc02292ea6110f40dc0730641ef", null ],
    [ "s1320", "s1320_8c.html#aabeeb642be67520195f27aed9eee6878", null ]
]
```

Definition at line 1 of file s1320_8c.js.

30.990 doc/html/s1321_8c.js File Reference

Variables

- var s1321_8c

30.990.1 Variable Documentation

30.990.1.1 var s1321_8c

Initial value:

```
=
[
    [ "S1321", "s1321_8c.html#af3e6bd48bd83df0e604ff195ae6350e9", null ],
    [ "s1321", "s1321_8c.html#abc423ced6c7a58871452be43e7503f33", null ]
]
```

Definition at line 1 of file s1321_8c.js.

30.991 doc/html/s1322_8c.js File Reference

Variables

- var s1322_8c

30.991.1 Variable Documentation

30.991.1.1 var s1322_8c

Initial value:

```
=
[
    [ "S1322", "s1322_8c.html#a2e1e6c409b0b2a8d76bb05ae0b6b23cf", null ],
    [ "s1322", "s1322_8c.html#ad263986de488331eb092675ae103fe50", null ]
]
```

Definition at line 1 of file s1322_8c.js.

30.992 doc/html/s1323_8c.js File Reference

Variables

- var s1323_8c

30.992.1 Variable Documentation

30.992.1.1 var s1323_8c

Initial value:

```
=
[
    [ "S1323", "s1323_8c.html#a4c79b67625296717ee27eb5e6227abb1", null ],
    [ "s1323", "s1323_8c.html#aa0e01c7cc57461a140df1ae95958bd1a", null ]
]
```

Definition at line 1 of file s1323_8c.js.

30.993 doc/html/s1324_8c.js File Reference

Variables

- var s1324_8c

30.993.1 Variable Documentation

30.993.1.1 var s1324_8c

Initial value:

```
=
[
    [ "S1324", "s1324_8c.html#a4c8d4e636dd1cd805c3421054787246f", null ],
    [ "s1324", "s1324_8c.html#ad6177f844ae19bf4cea1336d62418c1e", null ]
]
```

Definition at line 1 of file s1324_8c.js.

30.994 doc/html/s1325_8c.js File Reference

Variables

- var s1325_8c

30.994.1 Variable Documentation

30.994.1.1 var s1325_8c

Initial value:

```
=
[
    [ "S1325", "s1325_8c.html#a67ee413bed57ae251ee2c3b878a60396", null ],
    [ "s1325", "s1325_8c.html#a99bf06beb880cfb2682cec203197fa9e", null ]
]
```

Definition at line 1 of file s1325_8c.js.

30.995 doc/html/s1327_8c.js File Reference

Variables

- var s1327_8c

30.995.1 Variable Documentation

30.995.1.1 var s1327_8c

Initial value:

```
=
[
    [ "S1327", "s1327_8c.html#a72b0aeb9475fd2ac4ffb0b40c3149d3e", null ],
    [ "s1327", "s1327_8c.html#ab70f32af5a77f85182f6452e497d2465", null ]
]
```

Definition at line 1 of file s1327_8c.js.

30.996 doc/html/s1328_8c.js File Reference

Variables

- var s1328_8c

30.996.1 Variable Documentation

30.996.1.1 var s1328_8c

Initial value:

```
=
[
    [ "S1328", "s1328_8c.html#ade58f92e451c261fbc2ee684affd5a61", null ],
    [ "s1328", "s1328_8c.html#a590cbe13f313c9b1e72fe2f1203fe4d1", null ]
]
```

Definition at line 1 of file s1328_8c.js.

30.997 doc/html/s1329_8c.js File Reference

Variables

- var s1329_8c

30.997.1 Variable Documentation

30.997.1.1 var s1329_8c

Initial value:

```
=
[
    [ "S1329", "s1329_8c.html#ab0d54ae747a497889d937dc352bd6744", null ],
    [ "s1329", "s1329_8c.html#a2a13f555b330c163192a01a870aed06a", null ]
]
```

Definition at line 1 of file s1329_8c.js.

30.998 doc/html/s1330_8c.js File Reference

Variables

- var s1330_8c

30.998.1 Variable Documentation

30.998.1.1 var s1330_8c

Initial value:

```
=
[
    [ "S1330", "s1330_8c.html#a7e167cdade1254b94a0d3823f9d5a66c", null ],
    [ "s1330", "s1330_8c.html#a1fae0075f1afac55aad1c49989015e9a", null ]
]
```

Definition at line 1 of file s1330_8c.js.

30.999 doc/html/s1331_8c.js File Reference

Variables

- var s1331_8c

30.999.1 Variable Documentation

30.999.1.1 var s1331_8c

Initial value:

```
=
[
    [ "S1331", "s1331_8c.html#ab307ba5ca24ab4f531485754617d67af", null ],
    [ "s1331", "s1331_8c.html#a00724236770bc18f6bb3f74b84815f88", null ]
]
```

Definition at line 1 of file s1331_8c.js.

30.1000 doc/html/s1332_8c.js File Reference

Variables

- var s1332_8c

30.1000.1 Variable Documentation

30.1000.1.1 var s1332_8c

Initial value:

```
=
[
    [ "S1332", "s1332_8c.html#ad7e16210f93feaafbf84da623e172ba6", null ],
    [ "s1332", "s1332_8c.html#ac8e33e2d2c107bfbbe0745ac1d88d5c0", null ]
]
```

Definition at line 1 of file s1332_8c.js.

30.1001 doc/html/s1333_8c.js File Reference

Variables

- var s1333_8c

30.1001.1 Variable Documentation

30.1001.1.1 var s1333_8c

Initial value:

```
=
[
    [ "S1333", "s1333_8c.html#acb2745d58a1db1daa188c1aca382561c", null ],
    [ "s1333", "s1333_8c.html#a09094b83efe45bf371981a53f8a1e0e4", null ]
]
```

Definition at line 1 of file s1333_8c.js.

30.1002 doc/html/s1333count_8c.js File Reference

Variables

- var s1333count_8c

30.1002.1 Variable Documentation

30.1002.1.1 var s1333count_8c

Initial value:

```
=
[
    [ "S1333_COUNT", "s1333count_8c.html#ab94d9a438ee6c843fc55791b07454488", null ],
    [ "s1333_count", "s1333count_8c.html#ae0243effd266804446667fd437e94057", null ]
]
```

Definition at line 1 of file s1333count_8c.js.

30.1003 doc/html/s1333cycli_8c.js File Reference

Variables

- var s1333cycli_8c

30.1003.1 Variable Documentation

30.1003.1.1 var s1333cycli_8c

Initial value:

```
=
[
    [ "S1333_CYCLIC", "s1333cycli_8c.html#aa4c035acfd165d3f513dab0223260b25", null ],
    [ "s1333_cyclic", "s1333cycli_8c.html#aefaeba47a818bc9b44884a9ec82e6c0c", null ]
]
```

Definition at line 1 of file s1333cycli_8c.js.

30.1004 doc/html/s1334_8c.js File Reference

Variables

- var s1334_8c

30.1004.1 Variable Documentation

30.1004.1.1 var s1334_8c

Initial value:

```
=
[
    [ "S1334", "s1334_8c.html#a307f364fe6dc547ea2793b91096a1105", null ],
    [ "s1334", "s1334_8c.html#ad41dd1d9bcfe75753e66b14918f01539", null ]
]
```

Definition at line 1 of file s1334_8c.js.

30.1005 doc/html/s1340_8c.js File Reference

Variables

- var s1340_8c

30.1005.1 Variable Documentation

30.1005.1.1 var s1340_8c

Initial value:

```
=
[
    [ "S1340", "s1340_8c.html#ac59747c754c2ded945a7c3b7f5d0f7fb", null ],
    [ "s1340", "s1340_8c.html#af1459d0de194b29c4fc669aa56385637", null ]
]
```

Definition at line 1 of file s1340_8c.js.

30.1006 doc/html/s1341_8c.js File Reference

Variables

- var s1341_8c

30.1006.1 Variable Documentation

30.1006.1.1 var s1341_8c

Initial value:

```
=
[
    [ "S1341", "s1341_8c.html#ac3b880ff5beac915a167507d9b8b5f76", null ],
    [ "s1341", "s1341_8c.html#a741deaab564540cf800100a6c1c47c3a", null ]
]
```

Definition at line 1 of file s1341_8c.js.

30.1007 doc/html/s1342_8c.js File Reference

Variables

- var s1342_8c

30.1007.1 Variable Documentation

30.1007.1.1 var s1342_8c

Initial value:

```
=
[
    [ "S1342", "s1342_8c.html#a63f3de47618467cc1f3b26d356b2f356", null ],
    [ "s1342", "s1342_8c.html#af20707cee7c04d498088f1631036b1e6", null ]
]
```

Definition at line 1 of file s1342_8c.js.

30.1008 doc/html/s1343_8c.js File Reference

Variables

- var s1343_8c

30.1008.1 Variable Documentation

30.1008.1.1 var s1343_8c

Initial value:

```
=
[
    [ "S1343", "s1343_8c.html#a5b5e3dbbf447d87facfddfe208dba3a2", null ],
    [ "s1343", "s1343_8c.html#ad070d9110d9e4120a3307f4ea6f87904", null ]
]
```

Definition at line 1 of file s1343_8c.js.

30.1009 doc/html/s1345_8c.js File Reference

Variables

- var s1345_8c

30.1009.1 Variable Documentation

30.1009.1.1 var s1345_8c

Initial value:

```
=
[
    [ "S1345", "s1345_8c.html#a193a55148d292106b60cd669a7094c6d", null ],
    [ "s1345", "s1345_8c.html#aca7a1c3bda7399de78ed1f68af109eef", null ]
]
```

Definition at line 1 of file s1345_8c.js.

30.1010 doc/html/s1346_8c.js File Reference

Variables

- var s1346_8c

30.1010.1 Variable Documentation

30.1010.1.1 var s1346_8c

Initial value:

```
=
[
    [ "S1346", "s1346_8c.html#a660a4ae237160c28e84f937afa893297", null ],
    [ "s1346", "s1346_8c.html#ad634967ff422a1f5aa90a6437dd18b10", null ]
]
```

Definition at line 1 of file s1346_8c.js.

30.1011 doc/html/s1347_8c.js File Reference

Variables

- var s1347_8c

30.1011.1 Variable Documentation

30.1011.1.1 var s1347_8c

Initial value:

```
=
[
    [ "S1347", "s1347_8c.html#abddbdf8b3d65acaaa83bd280797ea36e", null ],
    [ "s1347", "s1347_8c.html#a2cb26213ffe7003af077b195d9054ebc", null ]
]
```

Definition at line 1 of file s1347_8c.js.

30.1012 doc/html/s1348_8c.js File Reference

Variables

- var s1348_8c

30.1012.1 Variable Documentation

30.1012.1.1 var s1348_8c

Initial value:

```
=
[
    [ "S1348", "s1348_8c.html#a985fc5c863c4c8f032393347605dfe07", null ],
    [ "s1348", "s1348_8c.html#a0ad0beb48f57f5de5ece8de2fc59cb89", null ]
]
```

Definition at line 1 of file s1348_8c.js.

30.1013 doc/html/s1349_8c.js File Reference

Variables

- var s1349_8c

30.1013.1 Variable Documentation

30.1013.1.1 var s1349_8c

Initial value:

```
=
[
    [ "S1349", "s1349_8c.html#a2a2a0da550da465715456315O5f85ab5", null ],
    [ "s1349", "s1349_8c.html#a2d8ef743d9282816f9b051a7553e3a4a", null ]
]
```

Definition at line 1 of file s1349_8c.js.

30.1014 doc/html/s1350_8c.js File Reference

Variables

- var s1350_8c

30.1014.1 Variable Documentation

30.1014.1.1 var s1350_8c

Initial value:

```
=
[
    [ "S1350", "s1350_8c.html#a768c827ac3ac13ae07d6b6f9f39ab418", null ],
    [ "s1350", "s1350_8c.html#a69772baebcf7fab66d959aa216d5b96e", null ]
]
```

Definition at line 1 of file s1350_8c.js.

30.1015 doc/html/s1351_8c.js File Reference

Variables

- var s1351_8c

30.1015.1 Variable Documentation

30.1015.1.1 var s1351_8c

Initial value:

```
=
[
    [ "S1351", "s1351_8c.html#a071aa51592ac3e321e06e6d52ae36a56", null ],
    [ "s1351", "s1351_8c.html#affa858eea360871fba19e48ab23621d3", null ]
]
```

Definition at line 1 of file s1351_8c.js.

30.1016 doc/html/s1352_8c.js File Reference

Variables

- var s1352_8c

30.1016.1 Variable Documentation

30.1016.1.1 var s1352_8c

Initial value:

```
=
[
    [ "S1352", "s1352_8c.html#aace167c5bca01666b56379f8e52cf7fd", null ],
    [ "s1352", "s1352_8c.html#a1f28435cc74c5e4a5d4a61085968bb18", null ]
]
```

Definition at line 1 of file s1352_8c.js.

30.1017 doc/html/s1353_8c.js File Reference

Variables

- var s1353_8c

30.1017.1 Variable Documentation

30.1017.1.1 var s1353_8c

Initial value:

```
=
[
    [ "S1353", "s1353_8c.html#ab0d54c8c594a05e74562b723a54afce7", null ],
    [ "s1353", "s1353_8c.html#a31c4aef7b440763d22258dae47bc52ea", null ]
]
```

Definition at line 1 of file s1353_8c.js.

30.1018 doc/html/s1354_8c.js File Reference

Variables

- var s1354_8c

30.1018.1 Variable Documentation

30.1018.1.1 var s1354_8c

Initial value:

```
=
[
    [ "S1354", "s1354_8c.html#a25b3231763fd33d5432eccbb7b39595f", null ],
    [ "s1354", "s1354_8c.html#a707af475e779ee837238cdf8960813b0", null ]
]
```

Definition at line 1 of file s1354_8c.js.

30.1019 doc/html/s1355_8c.js File Reference

Variables

- var s1355_8c

30.1019.1 Variable Documentation

30.1019.1.1 var s1355_8c

Initial value:

```
=
[
    [ "S1355", "s1355_8c.html#a98f387a10bdc941cc4ee1949d1b70b2d", null ],
    [ "s1355", "s1355_8c.html#ab8c94157c0227992970fc1cae84f1312", null ]
]
```

Definition at line 1 of file s1355_8c.js.

30.1020 doc/html/s1356_8c.js File Reference

Variables

- var s1356_8c

30.1020.1 Variable Documentation

30.1020.1.1 var s1356_8c

Initial value:

```
=
[
    [ "S1356", "s1356_8c.html#a88953576d012723c97c5b8373bb6211d", null ],
    [ "s1356", "s1356_8c.html#a175a32cb1d645c160faa4d3d92a355ce", null ]
]
```

Definition at line 1 of file s1356_8c.js.

30.1021 doc/html/s1357_8c.js File Reference

Variables

- var s1357_8c

30.1021.1 Variable Documentation

30.1021.1.1 var s1357_8c

Initial value:

```
=
[
    [ "S1357", "s1357_8c.html#a344246c9d63e828b5d00dd9ba44e1bbd", null ],
    [ "s1357", "s1357_8c.html#aa1d0940fdb2942d0cca2104da77a759b", null ]
]
```

Definition at line 1 of file s1357_8c.js.

30.1022 doc/html/s1358_8c.js File Reference

Variables

- var s1358_8c

30.1022.1 Variable Documentation

30.1022.1.1 var s1358_8c

Initial value:

```
=
[
    [ "S1358", "s1358_8c.html#a648a2c60b1e464e248a02c74aae55ed3", null ],
    [ "s1358", "s1358_8c.html#aa7ab0c3daaf200bcc57dacb001213bfc", null ]
]
```

Definition at line 1 of file s1358_8c.js.

30.1023 doc/html/s1359_8c.js File Reference

Variables

- var s1359_8c

30.1023.1 Variable Documentation

30.1023.1.1 var s1359_8c

Initial value:

```
=
[
    [ "S1359", "s1359_8c.html#aab086b4078a68bf044e51878b7af9a72", null ],
    [ "s1359", "s1359_8c.html#a4847037081587fbf7c42899bc9112e03", null ]
]
```

Definition at line 1 of file s1359_8c.js.

30.1024 doc/html/s1360_8c.js File Reference

Variables

- var s1360_8c

30.1024.1 Variable Documentation

30.1024.1.1 var s1360_8c

Initial value:

```
=
[
    [ "S1360", "s1360_8c.html#a3697612bca77b715fc76fbef535c0e6a", null ],
    [ "s1360", "s1360_8c.html#adfe3c417084afbb277f4d239a8c24d80", null ]
]
```

Definition at line 1 of file s1360_8c.js.

30.1025 doc/html/s1361_8c.js File Reference

Variables

- var s1361_8c

30.1025.1 Variable Documentation

30.1025.1.1 var s1361_8c

Initial value:

```
=
[
    [ "S1361", "s1361_8c.html#ab4c1204945bc84b95d6b3918b3e78b14", null ],
    [ "s1361", "s1361_8c.html#a83fba16e124ba3c7c23d41a560afaabf", null ]
]
```

Definition at line 1 of file s1361_8c.js.

30.1026 doc/html/s1362_8c.js File Reference

Variables

- var s1362_8c

30.1026.1 Variable Documentation

30.1026.1.1 var s1362_8c

Initial value:

```
=
[
    [ "S1362", "s1362_8c.html#af6b028df1316ed63742b12ec8430b347", null ],
    [ "s1362", "s1362_8c.html#acc973e63174affe23c51f48b892b08c1", null ]
]
```

Definition at line 1 of file s1362_8c.js.

30.1027 doc/html/s1363_8c.js File Reference

Variables

- var s1363_8c

30.1027.1 Variable Documentation

30.1027.1.1 var s1363_8c

Initial value:

```
=
[
    [ "S1363", "s1363_8c.html#a0bd8483141a72072291e4cba70edf1ad", null ],
    [ "s1363", "s1363_8c.html#ac2be086fc1de20dc8a00d7e6f1b428e1", null ]
]
```

Definition at line 1 of file s1363_8c.js.

30.1028 doc/html/s1364_8c.js File Reference

Variables

- var s1364_8c

30.1028.1 Variable Documentation

30.1028.1.1 var s1364_8c

Initial value:

```
=
[
    [ "S1364", "s1364_8c.html#a7dd392b4c514f869575e7d07eb39715a", null ],
    [ "s1364", "s1364_8c.html#ab3f1874bb3643ea37433a63aee0d01fa", null ]
]
```

Definition at line 1 of file s1364_8c.js.

30.1029 doc/html/s1365_8c.js File Reference

Variables

- var s1365_8c

30.1029.1 Variable Documentation

30.1029.1.1 var s1365_8c

Initial value:

```
=
[
    [ "S1365", "s1365_8c.html#ab8b1b2eca2af9dd9dca62cd6cc02da7e", null ],
    [ "s1365", "s1365_8c.html#afad4ba49070fbff41b1fa8203bc13b4c", null ]
]
```

Definition at line 1 of file s1365_8c.js.

30.1030 doc/html/s1366_8c.js File Reference

Variables

- var s1366_8c

30.1030.1 Variable Documentation

30.1030.1.1 var s1366_8c

Initial value:

```
=
[
    [ "S1366", "s1366_8c.html#a2e1ce87fe9d084069151fa8995aa7fac", null ],
    [ "s1366", "s1366_8c.html#a766ef57616413b5ed07c6d6fcdb1e61f", null ]
]
```

Definition at line 1 of file s1366_8c.js.

30.1031 doc/html/s1367_8c.js File Reference

Variables

- var s1367_8c

30.1031.1 Variable Documentation

30.1031.1.1 var s1367_8c

Initial value:

```
=
[
    [ "S1366", "s1367_8c.html#a2e1ce87fe9d084069151fa8995aa7fac", null ],
    [ "s1367", "s1367_8c.html#aaff59efbce3b52296d98653bd0648f19", null ]
]
```

Definition at line 1 of file s1367_8c.js.

30.1032 doc/html/s1369_8c.js File Reference

Variables

- var s1369_8c

30.1032.1 Variable Documentation

30.1032.1.1 var s1369_8c

Initial value:

```
=
[
    [ "S1369", "s1369_8c.html#a5452d9beb150cfb7ffac2c6aeebff36a", null ],
    [ "s1369", "s1369_8c.html#a243118f384fd093632a8f78a8a30b853", null ]
]
```

Definition at line 1 of file s1369_8c.js.

30.1033 doc/html/s1370_8c.js File Reference

Variables

- var s1370_8c

30.1033.1 Variable Documentation

30.1033.1.1 var s1370_8c

Initial value:

```
=
[
    [ "S1370", "s1370_8c.html#a93b454b31e1de3f73de7e2117f6330aa", null ],
    [ "s1370", "s1370_8c.html#a746010f9f90a1608bfff1e1efe059f79", null ]
]
```

Definition at line 1 of file s1370_8c.js.

30.1034 doc/html/s1371_8c.js File Reference

Variables

- var s1371_8c

30.1034.1 Variable Documentation

30.1034.1.1 var s1371_8c

Initial value:

```
=
[
    [ "S1371", "s1371_8c.html#a3f1b0494f9be05bff28bbfbdc1eb9bb6", null ],
    [ "s1371", "s1371_8c.html#a5207fbd2ceb4f2d9f2824bf7a2cffd59", null ]
]
```

Definition at line 1 of file s1371_8c.js.

30.1035 doc/html/s1372_8c.js File Reference

Variables

- var s1372_8c

30.1035.1 Variable Documentation

30.1035.1.1 var s1372_8c

Initial value:

```
=
[
    [ "S1372", "s1372_8c.html#a46a6b3e1c594558add03d4d3f8c1a20e", null ],
    [ "s1372", "s1372_8c.html#a84e94b6339f5e48a7157f8d16948797b", null ]
]
```

Definition at line 1 of file s1372_8c.js.

30.1036 doc/html/s1373_8c.js File Reference

Variables

- var s1373_8c

30.1036.1 Variable Documentation

30.1036.1.1 var s1373_8c

Initial value:

```
=
[
    [ "S1373", "s1373_8c.html#a44c4888ec49f44093929ee5a482bc5de", null ],
    [ "s1373", "s1373_8c.html#ab63f9a66fb9094644dac1350f7eaf37c", null ]
]
```

Definition at line 1 of file s1373_8c.js.

30.1037 doc/html/s1374_8c.js File Reference

Variables

- var s1374_8c

30.1037.1 Variable Documentation

30.1037.1.1 var s1374_8c

Initial value:

```
=
[
    [ "S1374", "s1374_8c.html#ab1882aa66a39365f05fb774d3572bd8c", null ],
    [ "s1374", "s1374_8c.html#aec48f0b2ea35a2a24975fe177a3037ca", null ]
]
```

Definition at line 1 of file s1374_8c.js.

30.1038 doc/html/s1375_8c.js File Reference

Variables

- var s1375_8c

30.1038.1 Variable Documentation

30.1038.1.1 var s1375_8c

Initial value:

```
=
[
    [ "S1375", "s1375_8c.html#a223e2b9635bf9e8b4d29c81ec2c00d7f", null ],
    [ "s1375", "s1375_8c.html#a35a8380a308297346065b756767b9c14", null ]
]
```

Definition at line 1 of file s1375_8c.js.

30.1039 doc/html/s1376_8c.js File Reference

Variables

- var s1376_8c

30.1039.1 Variable Documentation

30.1039.1.1 var s1376_8c

Initial value:

```
=
[
    [ "S1376", "s1376_8c.html#ae3bc4d271d9113fff3ac1f6d9a7882f9", null ],
    [ "s1376", "s1376_8c.html#a3dc11d99b2aab5c3999574018d8d771c", null ]
]
```

Definition at line 1 of file s1376_8c.js.

30.1040 doc/html/s1377_8c.js File Reference

Variables

- var s1377_8c

30.1040.1 Variable Documentation

30.1040.1.1 var s1377_8c

Initial value:

```
=
[
    [ "S1377", "s1377_8c.html#a71f0bfdb1f07ffa674d01faf44f4217f", null ],
    [ "s1377", "s1377_8c.html#af06c868a78283e6cdd0c4b4ccf58ebaf", null ]
]
```

Definition at line 1 of file s1377_8c.js.

30.1041 doc/html/s1378_8c.js File Reference

Variables

- var s1378_8c

30.1041.1 Variable Documentation

30.1041.1.1 var s1378_8c

Initial value:

```
=
[
    [ "S1378", "s1378_8c.html#a1e1b11d2170ea4c036aafc01b7ad14d7", null ],
    [ "s1378", "s1378_8c.html#ae96b81135414a6a3eb145d014a1cd612", null ]
]
```

Definition at line 1 of file s1378_8c.js.

30.1042 doc/html/s1379_8c.js File Reference

Variables

- var s1379_8c

30.1042.1 Variable Documentation

30.1042.1.1 var s1379_8c

Initial value:

```
=
[
    [ "S1379", "s1379_8c.html#a5b722eccc232c1c045f396a530f70487", null ],
    [ "s1379", "s1379_8c.html#aa381bd905be046678b669b0dfcd7213f", null ]
]
```

Definition at line 1 of file s1379_8c.js.

30.1043 doc/html/s1380_8c.js File Reference

Variables

- var s1380_8c

30.1043.1 Variable Documentation

30.1043.1.1 var s1380_8c

Initial value:

```
=
[
    [ "S1380", "s1380_8c.html#afa01098127274a02fa967ca8fb0adeb2", null ],
    [ "s1380", "s1380_8c.html#ada04b92a0f0445889f8fcdda8f911d70", null ]
]
```

Definition at line 1 of file s1380_8c.js.

30.1044 doc/html/s1381_8c.js File Reference

Variables

- var s1381_8c

30.1044.1 Variable Documentation

30.1044.1.1 var s1381_8c

Initial value:

```
=
[
    [ "S1381", "s1381_8c.html#a69a8954104ab7b61529ecfa6a224343e", null ],
    [ "s1381", "s1381_8c.html#ae2aef1b37e8f2a6e0fccaf2f348774f2", null ]
]
```

Definition at line 1 of file s1381_8c.js.

30.1045 doc/html/s1382_8c.js File Reference

Variables

- var s1382_8c

30.1045.1 Variable Documentation

30.1045.1.1 var s1382_8c

Initial value:

```
=
[
    [ "S1382", "s1382_8c.html#acccd5a5a0772c1e0ada51f6de2efb63f", null ],
    [ "s1382", "s1382_8c.html#a2edccf991b4a3a6ce9e6e66758e981a1", null ]
]
```

Definition at line 1 of file s1382_8c.js.

30.1046 doc/html/s1383_8c.js File Reference

Variables

- var s1383_8c

30.1046.1 Variable Documentation

30.1046.1.1 var s1383_8c

Initial value:

```
=
[
    [ "S1383", "s1383_8c.html#aa1a11f8e113a1ec05ae8e9d9c551ab59", null ],
    [ "s1383", "s1383_8c.html#aed301e19e53a6d96c15d692421c593a7", null ]
]
```

Definition at line 1 of file s1383_8c.js.

30.1047 doc/html/s1384_8c.js File Reference

Variables

- var s1384_8c

30.1047.1 Variable Documentation

30.1047.1.1 var s1384_8c

Initial value:

```
=
[
    [ "S1384", "s1384_8c.html#a5ad99e4bf03cba855fc7c5436ef152a9", null ],
    [ "s1384", "s1384_8c.html#af9d7ea3ce9cf9e5639fbd865af3d1c88", null ]
]
```

Definition at line 1 of file s1384_8c.js.

30.1048 doc/html/s1385_8c.js File Reference

Variables

- var s1385_8c

30.1048.1 Variable Documentation

30.1048.1.1 var s1385_8c

Initial value:

```
=
[
    [ "S1385", "s1385_8c.html#ab2274200efdfdbbefe70f59e184d41db", null ],
    [ "s1385", "s1385_8c.html#a28c33bca6b87afd5f207435a45b50644", null ]
]
```

Definition at line 1 of file s1385_8c.js.

30.1049 doc/html/s1386_8c.js File Reference

Variables

- var s1386_8c

30.1049.1 Variable Documentation

30.1049.1.1 var s1386_8c

Initial value:

```
=
[
    [ "S1386", "s1386_8c.html#ad83db55d9a94abc1c817811df1262f2a", null ],
    [ "s1386", "s1386_8c.html#a4beb6f6bfa1a38988db8c3a0dd62bcee", null ]
]
```

Definition at line 1 of file s1386_8c.js.

30.1050 doc/html/s1387_8c.js File Reference

Variables

- var s1387_8c

30.1050.1 Variable Documentation

30.1050.1.1 var s1387_8c

Initial value:

```
=
[
    [ "S1387", "s1387_8c.html#a423983b8d38292dec54b6fefac1e142a", null ],
    [ "s1387", "s1387_8c.html#ad7dc082c10ce120f96ce6be869c50cdf", null ]
]
```

Definition at line 1 of file s1387_8c.js.

30.1051 doc/html/s1388_8c.js File Reference

Variables

- var s1388_8c

30.1051.1 Variable Documentation

30.1051.1.1 var s1388_8c

Initial value:

```
=
[
    [ "S1388", "s1388_8c.html#ad1d74ab73d285526127f371002770c99", null ],
    [ "s1388", "s1388_8c.html#a89c207a6bfb91d893d4f85ce5f43739e", null ]
]
```

Definition at line 1 of file s1388_8c.js.

30.1052 doc/html/s1389_8c.js File Reference

Variables

- var s1389_8c

30.1052.1 Variable Documentation

30.1052.1.1 var s1389_8c

Initial value:

```
=
[
    [ "S1389", "s1389_8c.html#a3fdf8286addc1a22f10ac7a5b4116c22", null ],
    [ "s1389", "s1389_8c.html#a3f330364138dddd588856c93822bf404", null ]
]
```

Definition at line 1 of file s1389_8c.js.

30.1053 doc/html/s1390_8c.js File Reference

Variables

- var s1390_8c

30.1053.1 Variable Documentation

30.1053.1.1 var s1390_8c

Initial value:

```
=
[
    [ "S1390", "s1390_8c.html#ae6c31d34b1c8e2de697e810e40cda817", null ],
    [ "s1390", "s1390_8c.html#ad607a45da4118391c128f7de66d18565", null ]
]
```

Definition at line 1 of file s1390_8c.js.

30.1054 doc/html/s1391_8c.js File Reference

Variables

- var s1391_8c

30.1054.1 Variable Documentation

30.1054.1.1 var s1391_8c

Initial value:

```
=
[
    [ "S1391", "s1391_8c.html#a22a8061c91f71c94d37fdedf332d2362", null ],
    [ "fshapeProc", "s1391_8c.html#a23a1402d8877b20ca4dec1197f85940c", null ],
    [ "s1391", "s1391_8c.html#a46706579d2366ef990f1874f849d894a", null ]
]
```

Definition at line 1 of file s1391_8c.js.

30.1055 doc/html/s1393_8c.js File Reference

Variables

- var s1393_8c

30.1055.1 Variable Documentation

30.1055.1.1 var s1393_8c

Initial value:

```
=
[
    [ "S1393", "s1393_8c.html#a30c4519567589040d19eb4e73090e0e8", null ],
    [ "s1393", "s1393_8c.html#afa7980f983e89ca6820ae78757a166e4", null ]
]
```

Definition at line 1 of file s1393_8c.js.

30.1056 doc/html/s1399_8c.js File Reference

Variables

- var s1399_8c

30.1056.1 Variable Documentation

30.1056.1.1 var s1399_8c

Initial value:

```
=
[
    [ "S1399", "s1399_8c.html#aced37cc843b3553873764360452e9a71", null ],
    [ "s1399", "s1399_8c.html#a695a27f9339d4297b5848c30bca94b25", null ]
]
```

Definition at line 1 of file s1399_8c.js.

30.1057 doc/html/s1401_8c.js File Reference

Variables

- var s1401_8c

30.1057.1 Variable Documentation

30.1057.1.1 var s1401_8c

Initial value:

```
=
[
    [ "S1401", "s1401_8c.html#a267d111f6d47bf39435b819bfe629629", null ],
    [ "s1401", "s1401_8c.html#aefca4b8131ccfc8cd4461b74837c97ea", null ]
]
```

Definition at line 1 of file s1401_8c.js.

30.1058 doc/html/s1421_8c.js File Reference

Variables

- var s1421_8c

30.1058.1 Variable Documentation

30.1058.1.1 var s1421_8c

Initial value:

```
=
[
    [ "S1421", "s1421_8c.html#aff91803aeccc09a16ac8ad217e3fdf8e", null ],
    [ "s1421", "s1421_8c.html#a1d84bdeee41e7d1e179d8e5af81b01a7", null ]
]
```

Definition at line 1 of file s1421_8c.js.

30.1059 doc/html/s1422_8c.js File Reference

Variables

- var s1422_8c

30.1059.1 Variable Documentation

30.1059.1.1 var s1422_8c

Initial value:

```
=
[
    [ "S1422", "s1422_8c.html#af2db7ff709e4b93cd4c4d78270a1317e", null ],
    [ "s1422", "s1422_8c.html#ae613095392eee8b7af89e94770535e79", null ]
]
```

Definition at line 1 of file s1422_8c.js.

30.1060 doc/html/s1424_8c.js File Reference

Variables

- var s1424_8c

30.1060.1 Variable Documentation

30.1060.1.1 var s1424_8c

Initial value:

```
=
[
    [ "S1424", "s1424_8c.html#a23875afacb0f919a894f321157f24a74", null ],
    [ "s1424", "s1424_8c.html#a2d1687b79d1417f43d242da585b7523e", null ]
]
```

Definition at line 1 of file s1424_8c.js.

30.1061 doc/html/s1425_8c.js File Reference

Variables

- var s1425_8c

30.1061.1 Variable Documentation

30.1061.1.1 var s1425_8c

Initial value:

```
=
[
    [ "S1425", "s1425_8c.html#a363a479b71dc362c4a260c13b1a5da3b", null ],
    [ "s1425", "s1425_8c.html#a146c184e4ab808d3edd09d830bf874a4", null ]
]
```

Definition at line 1 of file s1425_8c.js.

30.1062 doc/html/s1435_8c.js File Reference

Variables

- var s1435_8c

30.1062.1 Variable Documentation

30.1062.1.1 var s1435_8c

Initial value:

```
=
[
    [ "S1435", "s1435_8c.html#ace36343bff396338ebe5fdf10201a1ed", null ],
    [ "s1435", "s1435_8c.html#a28ff92fb8a25444ef76aafe4dd8d264d", null ]
]
```

Definition at line 1 of file s1435_8c.js.

30.1063 doc/html/s1436_8c.js File Reference

Variables

- var s1436_8c

30.1063.1 Variable Documentation

30.1063.1.1 var s1436_8c

Initial value:

```
=
[
    [ "S1436", "s1436_8c.html#a2379f39fc5e396ee4dc69d5e547528a0", null ],
    [ "s1436", "s1436_8c.html#a3573ac59b657ab2d26fca2a65009f01d", null ]
]
```

Definition at line 1 of file s1436_8c.js.

30.1064 doc/html/s1437_8c.js File Reference

Variables

- var s1437_8c

30.1064.1 Variable Documentation

30.1064.1.1 var s1437_8c

Initial value:

```
=
[
    [ "S1437", "s1437_8c.html#a2f0e6d83f0324ebbb0405e8935a8fc13", null ],
    [ "s1437", "s1437_8c.html#a53c7b0fc0654f7760ec9665550c5cebb", null ]
]
```

Definition at line 1 of file s1437_8c.js.

30.1065 doc/html/s1438_8c.js File Reference

Variables

- var s1438_8c

30.1065.1 Variable Documentation

30.1065.1.1 var s1438_8c

Initial value:

```
=
[
    [ "S1438", "s1438_8c.html#a0699da2fe06c3d70d72c80cb73af4812", null ],
    [ "s1438", "s1438_8c.html#ae188ebb527a630649c7b6ca4b088e55c", null ]
]
```

Definition at line 1 of file s1438_8c.js.

30.1066 doc/html/s1439_8c.js File Reference

Variables

- var s1439_8c

30.1066.1 Variable Documentation

30.1066.1.1 var s1439_8c

Initial value:

```
=
[
    [ "S1439", "s1439_8c.html#aab597b90f15ac5585f94f96943f89447", null ],
    [ "s1439", "s1439_8c.html#abc8bed96e83ffdf3815d56429b62a0e7", null ]
]
```

Definition at line 1 of file s1439_8c.js.

30.1067 doc/html/s1440_8c.js File Reference

Variables

- var s1440_8c

30.1067.1 Variable Documentation

30.1067.1.1 var s1440_8c

Initial value:

```
=
[
    [ "S1440", "s1440_8c.html#a0b27fa37dda40a4060307450d6d5d226", null ],
    [ "s1440", "s1440_8c.html#a892946d7d6996e99398f22e5d6111e8b", null ]
]
```

Definition at line 1 of file s1440_8c.js.

30.1068 doc/html/s1450_8c.js File Reference

Variables

- var s1450_8c

30.1068.1 Variable Documentation

30.1068.1.1 var s1450_8c

Initial value:

```
=
[
    [ "S1450", "s1450_8c.html#a13e986b5135727102f6445457cbf675d", null ],
    [ "s1450", "s1450_8c.html#aaf364c274b9f654c16da906c82a22d9b", null ]
]
```

Definition at line 1 of file s1450_8c.js.

30.1069 doc/html/s1451_8c.js File Reference

Variables

- var s1451_8c

30.1069.1 Variable Documentation

30.1069.1.1 var s1451_8c

Initial value:

```
=
[
    [ "S1451", "s1451_8c.html#aa9664a8c9a271228a83657af6569d0d2", null ],
    [ "s1451", "s1451_8c.html#a39d89e0c25330c6158ba136153d4ab7e", null ]
]
```

Definition at line 1 of file s1451_8c.js.

30.1070 doc/html/s1452_8c.js File Reference

Variables

- var s1452_8c

30.1070.1 Variable Documentation

30.1070.1.1 var s1452_8c

Initial value:

```
=
[
    [ "S1452", "s1452_8c.html#ac5f5b3b65256b029067e792144d72590", null ],
    [ "s1452", "s1452_8c.html#a7a6f8f8465ec22bd06b5d645083c8a9e", null ]
]
```

Definition at line 1 of file s1452_8c.js.

30.1071 doc/html/s1500_8c.js File Reference

Variables

- var s1500_8c

30.1071.1 Variable Documentation

30.1071.1.1 var s1500_8c

Initial value:

```
=
[
    [ "S1500", "s1500_8c.html#a4031c940ea0ebec17da0d0c29812ae4d", null ],
    [ "s1500", "s1500_8c.html#aa8d8348c0584de3227b445151d1af8f0", null ]
]
```

Definition at line 1 of file s1500_8c.js.

30.1072 doc/html/s1501_8c.js File Reference

Variables

- var s1501_8c

30.1072.1 Variable Documentation

30.1072.1.1 var s1501_8c

Initial value:

```
=
[
    [ "S1501", "s1501_8c.html#ae55d6b7f7f11ee1913dd6f49b2ed3625", null ],
    [ "s1501", "s1501_8c.html#a0dc7b561fa684990dd1d3c3a4796535c", null ]
]
```

Definition at line 1 of file s1501_8c.js.

30.1073 doc/html/s1502_8c.js File Reference

Variables

- var s1502_8c

30.1073.1 Variable Documentation

30.1073.1.1 var s1502_8c

Initial value:

```
=
[
    [ "S1502", "s1502_8c.html#a73d73094d094f6a4daa2b13ae9adc98d", null ],
    [ "s1502", "s1502_8c.html#a641edf5b161b1c82bda09397ade7eb05", null ]
]
```

Definition at line 1 of file s1502_8c.js.

30.1074 doc/html/s1503_8c.js File Reference

Variables

- var s1503_8c

30.1074.1 Variable Documentation

30.1074.1.1 var s1503_8c

Initial value:

```
=
[
    [ "S1503", "s1503_8c.html#a20e8937a5d9e76562da1bfa4a27ca66a", null ],
    [ "s1503", "s1503_8c.html#a528a2821a28f09299bab45d9720dbcd1", null ]
]
```

Definition at line 1 of file s1503_8c.js.

30.1075 doc/html/s1504_8c.js File Reference

Variables

- var s1504_8c

30.1075.1 Variable Documentation

30.1075.1.1 var s1504_8c

Initial value:

```
=
[
    [ "S1504", "s1504_8c.html#a2c0a0d623e26b63686dffec2a3b61085", null ],
    [ "s1504", "s1504_8c.html#ad5173328786b66f85b9bb21f30e67146", null ]
]
```

Definition at line 1 of file s1504_8c.js.

30.1076 doc/html/s1505_8c.js File Reference

Variables

- var s1505_8c

30.1076.1 Variable Documentation

30.1076.1.1 var s1505_8c

Initial value:

```
=
[
    [ "S1505", "s1505_8c.html#a39acb508d084c04c130c4df7b5b0f966", null ],
    [ "s1505", "s1505_8c.html#ac2f92230bcddbf5a8c1f74a3f2918835", null ]
]
```

Definition at line 1 of file s1505_8c.js.

30.1077 doc/html/s1506_8c.js File Reference

Variables

- var s1506_8c

30.1077.1 Variable Documentation

30.1077.1.1 var s1506_8c

Initial value:

```
=
[
    [ "S1506", "s1506_8c.html#a88531f3bdfccd4f64af0cc496539e2df", null ],
    [ "s1506", "s1506_8c.html#a9e804b833c5d7d9f7e09a9f5e159e5df", null ]
]
```

Definition at line 1 of file s1506_8c.js.

30.1078 doc/html/s1507_8c.js File Reference

Variables

- var s1507_8c

30.1078.1 Variable Documentation

30.1078.1.1 var s1507_8c

Initial value:

```
=
[
    [ "S1507", "s1507_8c.html#ae5b9efbd72688d47e5e892546771608d", null ],
    [ "s1507", "s1507_8c.html#a36481d7d53f952f53d0d9c00b10ede72", null ]
]
```

Definition at line 1 of file s1507_8c.js.

30.1079 doc/html/s1508_8c.js File Reference

Variables

- var s1508_8c

30.1079.1 Variable Documentation

30.1079.1.1 var s1508_8c

Initial value:

```
=
[
    [ "S1508", "s1508_8c.html#a783beb8c157b47f8e9eed854bcf9c697", null ],
    [ "s1508", "s1508_8c.html#a50e25f2c58ba524fbe34cfa7e1880981", null ]
]
```

Definition at line 1 of file s1508_8c.js.

30.1080 doc/html/s1510_8c.js File Reference

Variables

- var s1510_8c

30.1080.1 Variable Documentation

30.1080.1.1 var s1510_8c

Initial value:

```
=
[
    [ "S1510", "s1510_8c.html#a9f7f52b7e9dcd6cc44d50949a30e9ef7", null ],
    [ "s1510", "s1510_8c.html#a45ce40ef11ef21ba4d62dad4ae3d0f6a", null ]
]
```

Definition at line 1 of file s1510_8c.js.

30.1081 doc/html/s1511_8c.js File Reference

Variables

- var s1511_8c

30.1081.1 Variable Documentation

30.1081.1.1 var s1511_8c

Initial value:

```
=
[
    [ "S1511", "s1511_8c.html#ae934f5b3048d0acfcfef77e628d8c7b7", null ],
    [ "s1511", "s1511_8c.html#a2d221716f7f7ef064466df8cef4041f5", null ]
]
```

Definition at line 1 of file s1511_8c.js.

30.1082 doc/html/s1512_8c.js File Reference

Variables

- var s1512_8c

30.1082.1 Variable Documentation

30.1082.1.1 var s1512_8c

Initial value:

```
=
[
    [ "S1512", "s1512_8c.html#a40106d2e1df895759345540c23e28fce", null ],
    [ "s1512", "s1512_8c.html#a3312b4b7017be2a75ba73bb69488d191", null ]
]
```

Definition at line 1 of file s1512_8c.js.

30.1083 doc/html/s1513_8c.js File Reference

Variables

- var s1513_8c

30.1083.1 Variable Documentation

30.1083.1.1 var s1513_8c

Initial value:

```
=
[
    [ "S1513", "s1513_8c.html#ab3ef93b65c975c171433bdeeeec4beaf", null ],
    [ "s1513", "s1513_8c.html#afdf45308ab45f5300e02027b0c28fc52", null ]
]
```

Definition at line 1 of file s1513_8c.js.

30.1084 doc/html/s1514_8c.js File Reference

Variables

- var s1514_8c

30.1084.1 Variable Documentation

30.1084.1.1 var s1514_8c

Initial value:

```
=
[
    [ "S1514", "s1514_8c.html#a83ac8ac8d2c4e6150a7103ac64948bf9", null ],
    [ "s1514", "s1514_8c.html#aeb12428dd7ddb9c6c78b1d6df0a348f8", null ]
]
```

Definition at line 1 of file s1514_8c.js.

30.1085 doc/html/s1515_8c.js File Reference

Variables

- var s1515_8c

30.1085.1 Variable Documentation

30.1085.1.1 var s1515_8c

Initial value:

```
=
[
    [ "S1515", "s1515_8c.html#ab5eee8762ab66175d0cfa6e77c7ae8d4", null ],
    [ "s1515", "s1515_8c.html#ac62e8d53b455285134bf444bcbfa8852", null ]
]
```

Definition at line 1 of file s1515_8c.js.

30.1086 doc/html/s1516_8c.js File Reference

Variables

- var s1516_8c

30.1086.1 Variable Documentation

30.1086.1.1 var s1516_8c

Initial value:

```
=
[
    [ "S1516", "s1516_8c.html#ad1cd8f37659ea120c14d73db66ccad8a", null ],
    [ "s1516", "s1516_8c.html#a4ed22b9d3da9759b61a5f15fc78cd4a9", null ]
]
```

Definition at line 1 of file s1516_8c.js.

30.1087 doc/html/s1517_8c.js File Reference

Variables

- var s1517_8c

30.1087.1 Variable Documentation

30.1087.1.1 var s1517_8c

Initial value:

```
=
[
    [ "S1517", "s1517_8c.html#a95d58e22a1b437ccb97da8cb1110f9df", null ],
    [ "s1517", "s1517_8c.html#a6a1207257941658272037af1840bd1ce", null ]
]
```

Definition at line 1 of file s1517_8c.js.

30.1088 doc/html/s1518_8c.js File Reference

Variables

- var s1518_8c

30.1088.1 Variable Documentation

30.1088.1.1 var s1518_8c

Initial value:

```
=
[
    [ "S1518", "s1518_8c.html#acdd28d02400b6c6090451eb6a6e4a69f", null ],
    [ "s1518", "s1518_8c.html#a332b2b27b2619bc65b029009c0904b89", null ]
]
```

Definition at line 1 of file s1518_8c.js.

30.1089 doc/html/s1520_8c.js File Reference

Variables

- var s1520_8c

30.1089.1 Variable Documentation

30.1089.1.1 var s1520_8c

Initial value:

```
=
[
    [ "S1520", "s1520_8c.html#acc4fea4f45afaf5586b8c8eb0f37fa8e", null ],
    [ "s1520", "s1520_8c.html#acb0823675c13bf78016c65c9eb74261b", null ]
]
```

Definition at line 1 of file s1520_8c.js.

30.1090 doc/html/s1521_8c.js File Reference

Variables

- var s1521_8c

30.1090.1 Variable Documentation

30.1090.1.1 var s1521_8c

Initial value:

```
=
[
    [ "S1521", "s1521_8c.html#a8cd39404134a411bf62134e959f06904", null ],
    [ "s1521", "s1521_8c.html#a84356cb25a8649dab3dc218bacc251dc", null ]
]
```

Definition at line 1 of file s1521_8c.js.

30.1091 doc/html/s1522_8c.js File Reference

Variables

- var s1522_8c

30.1091.1 Variable Documentation

30.1091.1.1 var s1522_8c

Initial value:

```
=
[
    [ "S1522", "s1522_8c.html#a0fe619b936f3c47b8257e8f905e9b427", null ],
    [ "s1522", "s1522_8c.html#a689aae5d08a076c4bb1fc58020519edc", null ]
]
```

Definition at line 1 of file s1522_8c.js.

30.1092 doc/html/s1528_8c.js File Reference

Variables

- var s1528_8c

30.1092.1 Variable Documentation

30.1092.1.1 var s1528_8c

Initial value:

```
=
[
    [ "S1528", "s1528_8c.html#ad1c4db07c34f6f4435134b2e71a63712", null ],
    [ "s1528", "s1528_8c.html#a7e27f141786fb80a448ecdb19d38709b", null ]
]
```

Definition at line 1 of file s1528_8c.js.

30.1093 doc/html/s1529_8c.js File Reference

Variables

- var s1529_8c

30.1093.1 Variable Documentation

30.1093.1.1 var s1529_8c

Initial value:

```
=
[
    [ "S1529", "s1529_8c.html#a6bbd251a67111324464676accf0c2934", null ],
    [ "s1529", "s1529_8c.html#a3b7dd6d38ebb34bbdedf68005565416e", null ]
]
```

Definition at line 1 of file s1529_8c.js.

30.1094 doc/html/s1530_8c.js File Reference

Variables

- var s1530_8c

30.1094.1 Variable Documentation

30.1094.1.1 var s1530_8c

Initial value:

```
=
[
    [ "S1530", "s1530_8c.html#aa689db34fbc96ac8767550dfef3ca03b", null ],
    [ "s1530", "s1530_8c.html#a8d53e22e3dc47c27199a9e8b462ba5ea", null ]
]
```

Definition at line 1 of file s1530_8c.js.

30.1095 doc/html/s1531_8c.js File Reference

Variables

- var s1531_8c

30.1095.1 Variable Documentation

30.1095.1.1 var s1531_8c

Initial value:

```
=
[
    [ "S1531", "s1531_8c.html#a5c2636ce8e4c57f7d077a99433d6b021", null ],
    [ "s1531", "s1531_8c.html#af9e6a78d3a08df396c03a37f6118574d", null ]
]
```

Definition at line 1 of file s1531_8c.js.

30.1096 doc/html/s1534_8c.js File Reference

Variables

- var s1534_8c

30.1096.1 Variable Documentation

30.1096.1.1 var s1534_8c

Initial value:

```
=
[
    [ "S1534", "s1534_8c.html#a6d46e247f66948f4ce57ba02cb0e6299", null ],
    [ "s1534", "s1534_8c.html#aac6969bc32e0226f9310dfc113e42ddc", null ]
]
```

Definition at line 1 of file s1534_8c.js.

30.1097 doc/html/s1535_8c.js File Reference

Variables

- var s1535_8c

30.1097.1 Variable Documentation

30.1097.1.1 var s1535_8c

Initial value:

```
=
[
    [ "S1535", "s1535_8c.html#a2cc843fc4f91f947e0f5531834b6ba0f", null ],
    [ "s1535", "s1535_8c.html#a3c9412d6b5458fedf81c1431a148bb21", null ]
]
```

Definition at line 1 of file s1535_8c.js.

30.1098 doc/html/s1536_8c.js File Reference

Variables

- var s1536_8c

30.1098.1 Variable Documentation

30.1098.1.1 var s1536_8c

Initial value:

```
=
[
    [ "S1536", "s1536_8c.html#ac3dbc16cf1f4ea63fe8ff7a93e9685cc", null ],
    [ "s1536", "s1536_8c.html#ae2c1f52401a24b646e4717bdddca2606", null ]
]
```

Definition at line 1 of file s1536_8c.js.

30.1099 doc/html/s1537_8c.js File Reference

Variables

- var s1537_8c

30.1099.1 Variable Documentation

30.1099.1.1 var s1537_8c

Initial value:

```
=
[
    [ "S1537", "s1537_8c.html#a706bcf941cce8fd0cde16f264195196f", null ],
    [ "s1537", "s1537_8c.html#a8a59ceab2a71a300b6bd69c211481ed9", null ]
]
```

Definition at line 1 of file s1537_8c.js.

30.1100 doc/html/s1538_8c.js File Reference

Variables

- var s1538_8c

30.1100.1 Variable Documentation

30.1100.1.1 var s1538_8c

Initial value:

```
=
[
    [ "S1538", "s1538_8c.html#a7183f7a144c5eac9e3b9c52d83b44113", null ],
    [ "s1538", "s1538_8c.html#a86a32c12907cc53dd75ce4cceea5c6e5", null ]
]
```

Definition at line 1 of file s1538_8c.js.

30.1101 doc/html/s1539_8c.js File Reference

Variables

- var s1539_8c

30.1101.1 Variable Documentation

30.1101.1.1 var s1539_8c

Initial value:

```
=
[
    [ "S1539", "s1539_8c.html#aaf0337bb0984e297d10f5359b4e1e175", null ],
    [ "s1539", "s1539_8c.html#ab4cad17c2172a091775a454c285bb6e0", null ]
]
```

Definition at line 1 of file s1539_8c.js.

30.1102 doc/html/s1540_8c.js File Reference

Variables

- var s1540_8c

30.1102.1 Variable Documentation

30.1102.1.1 var s1540_8c

Initial value:

```
=
[
    [ "S1540", "s1540_8c.html#a40360950b51b502e42a0ce1c245dfdbf", null ],
    [ "s1540", "s1540_8c.html#aec9a229152e7f56fad1eac83309b8fea", null ]
]
```

Definition at line 1 of file s1540_8c.js.

30.1103 doc/html/s1541_8c.js File Reference

Variables

- var s1541_8c

30.1103.1 Variable Documentation

30.1103.1.1 var s1541_8c

Initial value:

```
=
[
    [ "S1541", "s1541_8c.html#a61caeb2c247865af3f1944eca833592d", null ],
    [ "s1541", "s1541_8c.html#a0cc1c23c9944ff6a6c8f5e35350be5d2", null ]
]
```

Definition at line 1 of file s1541_8c.js.

30.1104 doc/html/s1542_8c.js File Reference

Variables

- var s1542_8c

30.1104.1 Variable Documentation

30.1104.1.1 var s1542_8c

Initial value:

```
=
[
    [ "S1542", "s1542_8c.html#a43ee1413e2e7fa57fa6328cdcbc88958", null ],
    [ "s1542", "s1542_8c.html#a771aeeced58f39100a261c5d4e2843a6", null ]
]
```

Definition at line 1 of file s1542_8c.js.

30.1105 doc/html/s1600_8c.js File Reference

Variables

- var s1600_8c

30.1105.1 Variable Documentation

30.1105.1.1 var s1600_8c

Initial value:

```
=
[
    [ "S1600", "s1600_8c.html#a0e086ef8c5b60aaf1e1cbe53bb909d15", null ],
    [ "s1600", "s1600_8c.html#a82d436f466dbc9dcae3ac2576b883234", null ]
]
```

Definition at line 1 of file s1600_8c.js.

30.1106 doc/html/s1601_8c.js File Reference

Variables

- var s1601_8c

30.1106.1 Variable Documentation

30.1106.1.1 var s1601_8c

Initial value:

```
=
[
    [ "S1601", "s1601_8c.html#a58d1799a235fad5fc73211581a4f10bd", null ],
    [ "s1601", "s1601_8c.html#ae44e83cf53dde1b524244c75c1a54d18", null ]
]
```

Definition at line 1 of file s1601_8c.js.

30.1107 doc/html/s1602_8c.js File Reference

Variables

- var s1602_8c

30.1107.1 Variable Documentation

30.1107.1.1 var s1602_8c

Initial value:

```
=
[
    [ "S1602", "s1602_8c.html#ae441b62d9e775eac0e226927beb2aa60", null ],
    [ "s1602", "s1602_8c.html#a5cf39e641ec3fa3f25ec10b2b4a6f372", null ]
]
```

Definition at line 1 of file s1602_8c.js.

30.1108 doc/html/s1603_8c.js File Reference

Variables

- var s1603_8c

30.1108.1 Variable Documentation

30.1108.1.1 var s1603_8c

Initial value:

```
=
[
    [ "S1603", "s1603_8c.html#abab6abdb1eb459b3267cc303f4d0312a", null ],
    [ "s1603", "s1603_8c.html#af5cada6b407a1c48665f8d8ae469ba74", null ]
]
```

Definition at line 1 of file s1603_8c.js.

30.1109 doc/html/s1604_8c.js File Reference

Variables

- var s1604_8c

30.1109.1 Variable Documentation

30.1109.1.1 var s1604_8c

Initial value:

```
=
[
    [ "S1604", "s1604_8c.html#a3aac309f8fd545c030cf6f6300089131", null ],
    [ "s1604", "s1604_8c.html#af9afa82adc59f7c7ae5e53b99c5165ae", null ]
]
```

Definition at line 1 of file s1604_8c.js.

30.1110 doc/html/s1605_8c.js File Reference

Variables

- var s1605_8c

30.1110.1 Variable Documentation

30.1110.1.1 var s1605_8c

Initial value:

```
=
[
    [ "S1605", "s1605_8c.html#ab6751a36b7218303f52ed8e7a75b33b2", null ],
    [ "s1605", "s1605_8c.html#ad631f33ea34d60b5774a2f32c0fa1229", null ]
]
```

Definition at line 1 of file s1605_8c.js.

30.1111 doc/html/s1606_8c.js File Reference

Variables

- var s1606_8c

30.1111.1 Variable Documentation

30.1111.1.1 var s1606_8c

Initial value:

```
=
[
    [ "S1606", "s1606_8c.html#ab01d8698a6b6b039469eaff89aa8e7ad", null ],
    [ "s1606", "s1606_8c.html#a1c50b95759b03dbe3d5dd524a69967e7", null ]
]
```

Definition at line 1 of file s1606_8c.js.

30.1112 doc/html/s1607_8c.js File Reference

Variables

- var s1607_8c

30.1112.1 Variable Documentation

30.1112.1.1 var s1607_8c

Initial value:

```
=
[
    [ "S1607", "s1607_8c.html#a2010cb7acdcd0f920fcf80a0300941ec", null ],
    [ "s1607", "s1607_8c.html#a4f5ea196a30c048609cdd11b07f5fa7d", null ]
]
```

Definition at line 1 of file s1607_8c.js.

30.1113 doc/html/s1608_8c.js File Reference

Variables

- var s1608_8c

30.1113.1 Variable Documentation

30.1113.1.1 var s1608_8c

Initial value:

```
=
[
    [ "S1608", "s1608_8c.html#a19347a30ca53e0f2795a2f582444b845", null ],
    [ "s1608", "s1608_8c.html#a19e84c9b8e255d300f0c9a1fa798ed93", null ]
]
```

Definition at line 1 of file s1608_8c.js.

30.1114 doc/html/s1609_8c.js File Reference

Variables

- var s1609_8c

30.1114.1 Variable Documentation

30.1114.1.1 var s1609_8c

Initial value:

```
=
[
    [ "S1609", "s1609_8c.html#af701b05874a679871299af201d4ed586", null ],
    [ "s1609", "s1609_8c.html#a2ade710773132addbc2a84c30e3525b2", null ]
]
```

Definition at line 1 of file s1609_8c.js.

30.1115 doc/html/s1611_8c.js File Reference

Variables

- var s1611_8c

30.1115.1 Variable Documentation

30.1115.1.1 var s1611_8c

Initial value:

```
=
[
    [ "S1611", "s1611_8c.html#a88beb8be5874c4052b0c09f4aad27862", null ],
    [ "s1611", "s1611_8c.html#ab16ca516eba69d9c97365ee429d0019d", null ]
]
```

Definition at line 1 of file s1611_8c.js.

30.1116 doc/html/s1612_8c.js File Reference

Variables

- var s1612_8c

30.1116.1 Variable Documentation

30.1116.1.1 var s1612_8c

Initial value:

```
=
[
    [ "S1612", "s1612_8c.html#a7d718ebf13d4472371fc78d195d29f3c", null ],
    [ "s1612", "s1612_8c.html#a79b79b224bddd4b580ea4c874b8f166d", null ]
]
```

Definition at line 1 of file s1612_8c.js.

30.1117 doc/html/s1613_8c.js File Reference

Variables

- var s1613_8c

30.1117.1 Variable Documentation

30.1117.1.1 var s1613_8c

Initial value:

```
=
[
    [ "S1613", "s1613_8c.html#a7f75b81162cdb9ed867db90bdf260365", null ],
    [ "s1613", "s1613_8c.html#a153900a2d14f50ebaaf8e67cd9e9aeed", null ]
]
```

Definition at line 1 of file s1613_8c.js.

30.1118 doc/html/s1613bez_8c.js File Reference

Variables

- var s1613bez_8c

30.1118.1 Variable Documentation

30.1118.1.1 var s1613bez_8c

Initial value:

```
=
[
    [ "S1613BEZ", "s1613bez_8c.html#aadb5b964d3e0e032301d36be31302f5b", null ],
    [ "s1613bez", "s1613bez_8c.html#a8a7ee8fce499d06ce861100548c05e94", null ]
]
```

Definition at line 1 of file s1613bez_8c.js.

30.1119 doc/html/s1614_8c.js File Reference

Variables

- var s1614_8c

30.1119.1 Variable Documentation

30.1119.1.1 var s1614_8c

Initial value:

```
=
[
    [ "S1614", "s1614_8c.html#a7cc6ee3cbf608efe862886b10d8b680a", null ],
    [ "s1614", "s1614_8c.html#aa6d6b843ac707ca90be34563f3174bfc", null ]
]
```

Definition at line 1 of file s1614_8c.js.

30.1120 doc/html/s1615_8c.js File Reference

Variables

- var s1615_8c

30.1120.1 Variable Documentation

30.1120.1.1 var s1615_8c

Initial value:

```
=
[
    [ "S1615", "s1615_8c.html#a45bb4e1c39bc77a180710bb0db1167fb", null ],
    [ "s1615", "s1615_8c.html#a0aeb63abc64b157d9dc969b9dd7c0f22", null ]
]
```

Definition at line 1 of file s1615_8c.js.

30.1121 doc/html/s1616_8c.js File Reference

Variables

- var s1616_8c

30.1121.1 Variable Documentation

30.1121.1.1 var s1616_8c

Initial value:

```
=
[
    [ "S1616", "s1616_8c.html#a95cc7e6a80da3caeb7ad771c9acc8a2b", null ],
    [ "s1616", "s1616_8c.html#a902a4c5938dc0867db13451e998a6734", null ]
]
```

Definition at line 1 of file s1616_8c.js.

30.1122 doc/html/s1617_8c.js File Reference

Variables

- var s1617_8c

30.1122.1 Variable Documentation

30.1122.1.1 var s1617_8c

Initial value:

```
=
[
    [ "S1617", "s1617_8c.html#a741f5fd1e98c470cf1db99d6e6ad249b", null ],
    [ "s1617", "s1617_8c.html#aa0b7055f1aeb5314cafcbee63ab57e8a", null ]
]
```

Definition at line 1 of file s1617_8c.js.

30.1123 doc/html/s1618_8c.js File Reference

Variables

- var s1618_8c

30.1123.1 Variable Documentation

30.1123.1.1 var s1618_8c

Initial value:

```
=
[
    [ "S1618", "s1618_8c.html#ab85ceeeae837c525f258bb73446dbdbf", null ],
    [ "s1618", "s1618_8c.html#a32a13feca69349237bbbb3ffaa311d73", null ]
]
```

Definition at line 1 of file s1618_8c.js.

30.1124 doc/html/s1619_8c.js File Reference

Variables

- var s1619_8c

30.1124.1 Variable Documentation

30.1124.1.1 var s1619_8c

Initial value:

```
=
[
    [ "S1619", "s1619_8c.html#a4bafbeb505ea8b9bb61e347b011550cd", null ],
    [ "s1619", "s1619_8c.html#acfa872673774e245ca9f9d1129d16572", null ]
]
```

Definition at line 1 of file s1619_8c.js.

30.1125 doc/html/s1620_8c.js File Reference

Variables

- var s1620_8c

30.1125.1 Variable Documentation

30.1125.1.1 var s1620_8c

Initial value:

```
=
[
    [ "S1620", "s1620_8c.html#aad71d3eaa62385d792a54c11971a244e", null ],
    [ "s1620", "s1620_8c.html#a71d58a8d850db4d06df449c2e18461b6", null ]
]
```

Definition at line 1 of file s1620_8c.js.

30.1126 doc/html/s1630_8c.js File Reference

Variables

- var s1630_8c

30.1126.1 Variable Documentation

30.1126.1.1 var s1630_8c

Initial value:

```
=
[
    [ "S1630", "s1630_8c.html#a0eb594073118f9401c9424c5a57000b0", null ],
    [ "s1630", "s1630_8c.html#ace8f3395f7bfcaae53a0e0150779f4d3", null ]
]
```

Definition at line 1 of file s1630_8c.js.

30.1127 doc/html/s1631_8c.js File Reference

Variables

- var s1631_8c

30.1127.1 Variable Documentation

30.1127.1.1 var s1631_8c

Initial value:

```
=
[
    [ "S1631", "s1631_8c.html#a3514f00152c2ed1d05513babbdbe952b", null ],
    [ "s1631", "s1631_8c.html#a53aabae901df5442ab7393decd45b7cc", null ]
]
```

Definition at line 1 of file s1631_8c.js.

30.1128 doc/html/s1700_8c.js File Reference

Variables

- var s1700_8c

30.1128.1 Variable Documentation

30.1128.1.1 var s1700_8c

Initial value:

```
=
[
    [ "S1700", "s1700_8c.html#adb6f62dd936e1ebe0534f03c5041022e", null ],
    [ "s1700", "s1700_8c.html#ac925c030622ffad61682e63a3d800239", null ]
]
```

Definition at line 1 of file s1700_8c.js.

30.1129 doc/html/s1701_8c.js File Reference

Variables

- var s1701_8c

30.1129.1 Variable Documentation

30.1129.1.1 var s1701_8c

Initial value:

```
=
[
    [ "S1701", "s1701_8c.html#a12a65d58ace3e42c788e36591961484a", null ],
    [ "s1701", "s1701_8c.html#a512329a3b4177630dec261a42898e6fb", null ]
]
```

Definition at line 1 of file s1701_8c.js.

30.1130 doc/html/s1705_8c.js File Reference

Variables

- var s1705_8c

30.1130.1 Variable Documentation

30.1130.1.1 var s1705_8c

Initial value:

```
=
[
    [ "S1705", "s1705_8c.html#a35d011b6419bb14ffdeec84fe4795a68", null ],
    [ "s1705", "s1705_8c.html#a22ad4f2315e47abc067d97c5094d4058", null ]
]
```

Definition at line 1 of file s1705_8c.js.

30.1131 doc/html/s1706_8c.js File Reference

Variables

- var s1706_8c

30.1131.1 Variable Documentation

30.1131.1.1 var s1706_8c

Initial value:

```
=
[
    [ "S1706", "s1706_8c.html#af4a0debde381347653d010f25636c0af", null ],
    [ "s1706", "s1706_8c.html#adf958135b6137debf09658673adfa20b", null ]
]
```

Definition at line 1 of file s1706_8c.js.

30.1132 doc/html/s1707_8c.js File Reference

Variables

- var s1707_8c

30.1132.1 Variable Documentation

30.1132.1.1 var s1707_8c

Initial value:

```
=
[
    [ "S1707", "s1707_8c.html#af9229b6e83db6072d144db8376230188", null ],
    [ "s1707", "s1707_8c.html#a13cd0a521a04d0b4b4b47107e048167d", null ]
]
```

Definition at line 1 of file s1707_8c.js.

30.1133 doc/html/s1708_8c.js File Reference

Variables

- var s1708_8c

30.1133.1 Variable Documentation

30.1133.1.1 var s1708_8c

Initial value:

```
=
[
    [ "S1708", "s1708_8c.html#a1e0e8dc5b64ef91c7ce22dda5712670d", null ],
    [ "s1708", "s1708_8c.html#a7ee444215733b2481127af6519e2e284", null ]
]
```

Definition at line 1 of file s1708_8c.js.

30.1134 doc/html/s1710_8c.js File Reference

Variables

- var s1710_8c

30.1134.1 Variable Documentation

30.1134.1.1 var s1710_8c

Initial value:

```
=
[
    [ "S1710", "s1710_8c.html#a44f63887e573a4453b97871f4c3d4392", null ],
    [ "s1710", "s1710_8c.html#abee883b856eb89bfd5594198077d3b9a", null ]
]
```

Definition at line 1 of file s1710_8c.js.

30.1135 doc/html/s1711_8c.js File Reference

Variables

- var s1711_8c

30.1135.1 Variable Documentation

30.1135.1.1 var s1711_8c

Initial value:

```
=
[
    [ "S1711", "s1711_8c.html#ad3e7ecff87a8515cd38820fbdaeb63e8", null ],
    [ "s1711", "s1711_8c.html#a3c1ed6980d680a0617a7a328cea57f7b", null ]
]
```

Definition at line 1 of file s1711_8c.js.

30.1136 doc/html/s1712_8c.js File Reference

Variables

- var s1712_8c

30.1136.1 Variable Documentation

30.1136.1.1 var s1712_8c

Initial value:

```
=
[
    [ "S1712", "s1712_8c.html#a20c8e656dd00cde713676ba8b137b674", null ],
    [ "s1712", "s1712_8c.html#a0d46472ada115e5265f31981fd336571", null ]
]
```

Definition at line 1 of file s1712_8c.js.

30.1137 doc/html/s1713_8c.js File Reference

Variables

- var s1713_8c

30.1137.1 Variable Documentation

30.1137.1.1 var s1713_8c

Initial value:

```
=
[
    [ "S1713", "s1713_8c.html#af00af2c2d81b3c49e995b5ef59f6ef9a", null ],
    [ "s1713", "s1713_8c.html#a84417fad7a01a33dd6a869b4dc62cd87", null ]
]
```

Definition at line 1 of file s1713_8c.js.

30.1138 doc/html/s1714_8c.js File Reference

Variables

- var s1714_8c

30.1138.1 Variable Documentation

30.1138.1.1 var s1714_8c

Initial value:

```
=
[
    [ "S1714", "s1714_8c.html#a04f12d45afabb0e1ea23e63db4e267bb", null ],
    [ "SISL_CRV_CLOSED", "s1714_8c.html#a275970986604600d92d99b5d05aac901", null ],
    [ "SISL_CRV_OPEN", "s1714_8c.html#a82c6dce6b0c6cf85e58ca798cd55e945", null ],
    [ "SISL_CRV_PERIODIC", "s1714_8c.html#a6fdb4242729596e8ce8f8ac54d58a30a", null ],
    [ "s1714", "s1714_8c.html#a9ea5b8b11f691c34fe7e75262fb0500c", null ]
]
```

Definition at line 1 of file s1714_8c.js.

30.1139 doc/html/s1715_8c.js File Reference

Variables

- var s1715_8c

30.1139.1 Variable Documentation

30.1139.1.1 var s1715_8c

Initial value:

```
=
[
    [ "S1715", "s1715_8c.html#a4ffe20781f8d19aeb1d2301e7735afc7", null ],
    [ "s1715", "s1715_8c.html#a4de5f010f709e9d6b8ea5b0ab512d71e", null ]
]
```

Definition at line 1 of file s1715_8c.js.

30.1140 doc/html/s1716_8c.js File Reference

Variables

- var s1716_8c

30.1140.1 Variable Documentation

30.1140.1.1 var s1716_8c

Initial value:

```
=
[
    [ "S1716", "s1716_8c.html#a0d5008ce8ec41295fa8fc2b8c59f055e", null ],
    [ "s1716", "s1716_8c.html#a9830f5bc1f3331268a3c1c4ea07167e0", null ]
]
```

Definition at line 1 of file s1716_8c.js.

30.1141 doc/html/s1720_8c.js File Reference

Variables

- var s1720_8c

30.1141.1 Variable Documentation

30.1141.1.1 var s1720_8c

Initial value:

```
=
[
    [ "S1720", "s1720_8c.html#a7db7d2bb37b9e44b3e8a9293fc4a3bb2", null ],
    [ "s1720", "s1720_8c.html#a2f48fd3fd118ce3b11361a96b1664e80", null ]
]
```

Definition at line 1 of file s1720_8c.js.

30.1142 doc/html/s1730_8c.js File Reference

Variables

- var s1730_8c

30.1142.1 Variable Documentation

30.1142.1.1 var s1730_8c

Initial value:

```
=
[
    [ "S1730", "s1730_8c.html#a1c4a1f8500bb6da352d1d94e89c5be32", null ],
    [ "s1730", "s1730_8c.html#a57a12822cfb425659496e90a02678a14", null ]
]
```

Definition at line 1 of file s1730_8c.js.

30.1143 doc/html/s1731_8c.js File Reference

Variables

- var s1731_8c

30.1143.1 Variable Documentation

30.1143.1.1 var s1731_8c

Initial value:

```
=
[
    [ "S1731", "s1731_8c.html#af1723678e50f5b3be5f77a4aa9b6da08", null ],
    [ "s1731", "s1731_8c.html#ac14462b868b33b0bf0c84652f079b9b6", null ]
]
```

Definition at line 1 of file s1731_8c.js.

30.1144 doc/html/s1732_8c.js File Reference

Variables

- var s1732_8c

30.1144.1 Variable Documentation

30.1144.1.1 var s1732_8c

Initial value:

```
=
[
    [ "S1732", "s1732_8c.html#ab395d9f90c202ae754e17375fde12fa1", null ],
    [ "s1732", "s1732_8c.html#a0cbdbaa76f144dba2d19c27560ac325a", null ]
]
```

Definition at line 1 of file s1732_8c.js.

30.1145 doc/html/s1733_8c.js File Reference

Variables

- var s1733_8c

30.1145.1 Variable Documentation

30.1145.1.1 var s1733_8c

Initial value:

```
=
[
    [ "S1733", "s1733_8c.html#aede761c84aef8681e579480be27ea7dd", null ],
    [ "s1733", "s1733_8c.html#a95a165f231a7427d7854f778eb8a240f", null ]
]
```

Definition at line 1 of file s1733_8c.js.

30.1146 doc/html/s1741_8c.js File Reference

Variables

- var s1741_8c

30.1146.1 Variable Documentation

30.1146.1.1 var s1741_8c

Initial value:

```
=
[
    [ "S1741", "s1741_8c.html#ad0cb579f137b0860f8cbe144acf2a431", null ],
    [ "s1741", "s1741_8c.html#a1a4188de8c523f3a94965ce788a6f71d", null ]
]
```

Definition at line 1 of file s1741_8c.js.

30.1147 doc/html/s1750_8c.js File Reference

Variables

- var s1750_8c

30.1147.1 Variable Documentation

30.1147.1.1 var s1750_8c

Initial value:

```
=
[
    [ "S1750", "s1750_8c.html#aa0cde0a2239d2196dc686d2366afc64c", null ],
    [ "s1750", "s1750_8c.html#ad7417ba9f75fd5a9aa2cde8af5e8eed6", null ]
]
```

Definition at line 1 of file s1750_8c.js.

30.1148 doc/html/s1753_8c.js File Reference

Variables

- var s1753_8c

30.1148.1 Variable Documentation

30.1148.1.1 var s1753_8c

Initial value:

```
=
[
    [ "S1753", "s1753_8c.html#a4e04bf0ef6b21605a2585fb4c063c79d", null ],
    [ "s1753", "s1753_8c.html#a9c1895747dd3ad8222e58b622a1fb462", null ]
]
```

Definition at line 1 of file s1753_8c.js.

30.1149 doc/html/s1754_8c.js File Reference

Variables

- var s1754_8c

30.1149.1 Variable Documentation

30.1149.1.1 var s1754_8c

Initial value:

```
=
[
    [ "S1754", "s1754_8c.html#a8678f43cd292ef59e829d0635d21f9c5", null ],
    [ "s1754", "s1754_8c.html#a7b2cce6b758dc22c3d5120f84f4d762b", null ]
]
```

Definition at line 1 of file s1754_8c.js.

30.1150 doc/html/s1755_8c.js File Reference

Variables

- var s1755_8c

30.1150.1 Variable Documentation

30.1150.1.1 var s1755_8c

Initial value:

```
=
[
    [ "S1755", "s1755_8c.html#a8734373c7548dad90ef20f937da922ef", null ],
    [ "s1755", "s1755_8c.html#a07ae936702dedadda59d8d570c20f586", null ]
]
```

Definition at line 1 of file s1755_8c.js.

30.1151 doc/html/s17702d_8c.js File Reference

Variables

- var s17702d_8c

30.1151.1 Variable Documentation

30.1151.1.1 var s17702d_8c

Initial value:

```
=
[
    [ "copy2", "s17702d_8c.html#a94d298c6c82c75789d11ea2fad958ff1", null ],
    [ "copy3", "s17702d_8c.html#abf5f71af6eec81e8ff8b99c9dae9f0b1", null ],
    [ "decr2", "s17702d_8c.html#aa8ea14f873c1bff5a2e825ff20759e33", null ],
    [ "incr2", "s17702d_8c.html#a66086fa9df80019f1e7929b6368f30dc", null ],
    [ "S1770_2D", "s17702d_8c.html#ae7fb2e682dc4304d9ef57e060624fa55", null ],
    [ "set_order", "s17702d_8c.html#af1da7d699e660aee38a1ff2d1d660da8", null ],
    [ "SINGULAR", "s17702d_8c.html#a87d5f56e2e026ba605bc9303c4fceafa", null ],
    [ "s1770_2D", "s17702d_8c.html#a8ee503d46024d4c317e6390b57fd9c52", null ]
]
```

Definition at line 1 of file s17702d_8c.js.

30.1152 doc/html/s1770_8c.js File Reference

Variables

- var s1770_8c

30.1152.1 Variable Documentation

30.1152.1.1 var s1770_8c

Initial value:

```
=
[
    [ "S1770", "s1770_8c.html#ae23588e589367d602793e45c7f85a03a", null ],
    [ "s1770", "s1770_8c.html#a780f75fe9d360fbfe1ca156df74c8750", null ]
]
```

Definition at line 1 of file s1770_8c.js.

30.1153 doc/html/s1771_8c.js File Reference

Variables

- var s1771_8c

30.1153.1 Variable Documentation

30.1153.1.1 var s1771_8c

Initial value:

```
=
[
    [ "S1771", "s1771_8c.html#a7609a453b844a2b3a12f80755e7a6294", null ],
    [ "s1771", "s1771_8c.html#a648e035471a0aacb650f9d206ee3bf7c", null ]
]
```

Definition at line 1 of file s1771_8c.js.

30.1154 doc/html/s1772_8c.js File Reference

Variables

- var s1772_8c

30.1154.1 Variable Documentation

30.1154.1.1 var s1772_8c

Initial value:

```
=
[
    [ "copy2", "s1772_8c.html#a94d298c6c82c75789d11ea2fad958ff1", null ],
    [ "copy3", "s1772_8c.html#abf5f71af6eec81e8ff8b99c9dae9f0b1", null ],
    [ "decr2", "s1772_8c.html#aa8ea14f873c1bff5a2e825ff20759e33", null ],
    [ "incr2", "s1772_8c.html#a66086fa9df80019f1e7929b6368f30dc", null ],
    [ "S1772", "s1772_8c.html#a928afcd76735443482324cc52e8cb3a4", null ],
    [ "set_order", "s1772_8c.html#af1da7d699e660aee38a1ff2d1d660da8", null ],
    [ "SINGULAR", "s1772_8c.html#a87d5f56e2e026ba605bc9303c4fceafa", null ],
    [ "s1772", "s1772_8c.html#ac375d1a4f8cc68ef9e9975c5eb97bbd4", null ]
]
```

Definition at line 1 of file s1772_8c.js.

30.1155 doc/html/s1773_8c.js File Reference

Variables

- var s1773_8c

30.1155.1 Variable Documentation

30.1155.1.1 var s1773_8c

Initial value:

```
=
[
    [ "S1773", "s1773_8c.html#ab9402a7ae24a7a51760a038f873ae123", null ],
    [ "s1773", "s1773_8c.html#a1b8c84f7a560d6aaf077181cabeb7f52", null ]
]
```

Definition at line 1 of file s1773_8c.js.

30.1156 doc/html/s1774_8c.js File Reference

Variables

- var s1774_8c

30.1156.1 Variable Documentation

30.1156.1.1 var s1774_8c

Initial value:

```
=
[
    [ "S1774", "s1774_8c.html#a21800a6dba1144464a9e5c0448d0648d", null ],
    [ "s1774", "s1774_8c.html#aa14e06e74f9ce43d0973338cdc0a0d3d", null ]
]
```

Definition at line 1 of file s1774_8c.js.

30.1157 doc/html/s1775_8c.js File Reference

Variables

- var s1775_8c

30.1157.1 Variable Documentation

30.1157.1.1 var s1775_8c

Initial value:

```
=
[
    [ "S1775", "s1775_8c.html#aa115a33cce76971296a745a3dfc258ff", null ],
    [ "s1775", "s1775_8c.html#a1f9662c192d2a9eca80a55819654832d", null ]
]
```

Definition at line 1 of file s1775_8c.js.

30.1158 doc/html/s1780_8c.js File Reference

Variables

- var s1780_8c

30.1158.1 Variable Documentation

30.1158.1.1 var s1780_8c

Initial value:

```
=
[
    [ "S1780", "s1780_8c.html#ae3b7e58fbdb6f44203cc526682fde382", null ],
    [ "s1780", "s1780_8c.html#a75790ec10957b2266827c5c4bd179941", null ]
]
```

Definition at line 1 of file s1780_8c.js.

30.1159 doc/html/s1785_8c.js File Reference

Variables

- var s1785_8c

30.1159.1 Variable Documentation

30.1159.1.1 var s1785_8c

Initial value:

```
=
[
    [ "S1785", "s1785_8c.html#a7e312a93012661af40279e2322058247", null ],
    [ "s1785", "s1785_8c.html#a474c8d138f62f1dc89f14ac8f5616565", null ]
]
```

Definition at line 1 of file s1785_8c.js.

30.1160 doc/html/s1786_8c.js File Reference

Variables

- var s1786_8c

30.1160.1 Variable Documentation

30.1160.1.1 var s1786_8c

Initial value:

```
=
[
    [ "S1786", "s1786_8c.html#a92cbf525ee29c8519a05fc9cd9a4a69e", null ],
    [ "fevalcProc", "s1786_8c.html#a6f5d68d6da132de46dd79668ba91bb37", null ],
    [ "s1786", "s1786_8c.html#ac58d8ac51e7cbac85f86849ef604ea65", null ]
]
```

Definition at line 1 of file s1786_8c.js.

30.1161 doc/html/s1787_8c.js File Reference

Variables

- var s1787_8c

30.1161.1 Variable Documentation

30.1161.1.1 var s1787_8c

Initial value:

```
=
[
    [ "S1787", "s1787_8c.html#a11c2763709988e29bfc25952b086b357", null ],
    [ "s1787", "s1787_8c.html#a0541ea96e7e8fcdf333c6fd3cd0b13c4", null ]
]
```

Definition at line 1 of file s1787_8c.js.

30.1162 doc/html/s1788_8c.js File Reference

Variables

- var s1788_8c

30.1162.1 Variable Documentation

30.1162.1.1 var s1788_8c

Initial value:

```
=
[
    [ "S1788", "s1788_8c.html#a79ced9cdb5ef648c5b0ca7ed585713aa", null ],
    [ "s1788", "s1788_8c.html#aa76e1a7505d819ce6319f7c1a6e7ea3e", null ]
]
```

Definition at line 1 of file s1788_8c.js.

30.1163 doc/html/s1789_8c.js File Reference

Variables

- var s1789_8c

30.1163.1 Variable Documentation

30.1163.1.1 var s1789_8c

Initial value:

```
=
[
    [ "S1789", "s1789_8c.html#a5befd0675445f19b13c4f7288f9f932c", null ],
    [ "s1789", "s1789_8c.html#a1ccc6ecfefada63d7bcad50f72d5e119", null ]
]
```

Definition at line 1 of file s1789_8c.js.

30.1164 doc/html/s1790_8c.js File Reference

Variables

- var s1790_8c

30.1164.1 Variable Documentation

30.1164.1.1 var s1790_8c

Initial value:

```
=
[
    [ "S1790", "s1790_8c.html#a3ce6598076009ea8061ed79bf9584f91", null ],
    [ "s1790", "s1790_8c.html#a40f7a78962da4f28a2ece3ccb04ce666", null ]
]
```

Definition at line 1 of file s1790_8c.js.

30.1165 doc/html/s1791_8c.js File Reference

Variables

- var s1791_8c

30.1165.1 Variable Documentation

30.1165.1.1 var s1791_8c

Initial value:

```
=
[
    [ "S1791", "s1791_8c.html#a42a61237e2617155dc0dadf35776f5e3", null ],
    [ "s1791", "s1791_8c.html#a5721c0c9b593c252bc4d033d5ac6f642", null ]
]
```

Definition at line 1 of file s1791_8c.js.

30.1166 doc/html/s1792_8c.js File Reference

Variables

- var s1792_8c

30.1166.1 Variable Documentation

30.1166.1.1 var s1792_8c

Initial value:

```
=
[
    [ "S1792", "s1792_8c.html#aca1a540f503102e0556b1d2a42378f93", null ],
    [ "s1792", "s1792_8c.html#af4b3c2d321fc86f2a24c721cce053cee", null ]
]
```

Definition at line 1 of file s1792_8c.js.

30.1167 doc/html/s1795_8c.js File Reference

Variables

- var s1795_8c

30.1167.1 Variable Documentation

30.1167.1.1 var s1795_8c

Initial value:

```
=
[
    [ "S1795", "s1795_8c.html#a672d7f40168a03a4148f456867da18b7", null ],
    [ "s1795", "s1795_8c.html#ad4be6942d3725e0dd63bec5791b6a8cc", null ]
]
```

Definition at line 1 of file s1795_8c.js.

30.1168 doc/html/s1796_8c.js File Reference

Variables

- var s1796_8c

30.1168.1 Variable Documentation

30.1168.1.1 var s1796_8c

Initial value:

```
=
[
    [ "S1796", "s1796_8c.html#ae0903d18fe3755edbd81601347a8e067", null ],
    [ "s1796", "s1796_8c.html#a0ed4b30590356c9f4be85c9155b67d5a", null ]
]
```

Definition at line 1 of file s1796_8c.js.

30.1169 doc/html/s1797_8c.js File Reference

Variables

- var s1797_8c

30.1169.1 Variable Documentation

30.1169.1.1 var s1797_8c

Initial value:

```
=
[
    [ "S1797", "s1797_8c.html#a1c1acc3a62f4f516c6af659dade52a37", null ],
    [ "s1797", "s1797_8c.html#ae4e54adf6d1c8302bca8dc913d242af8", null ]
]
```

Definition at line 1 of file s1797_8c.js.

30.1170 doc/html/s1830_8c.js File Reference

Variables

- var s1830_8c

30.1170.1 Variable Documentation

30.1170.1.1 var s1830_8c

Initial value:

```
=
[
    [ "S1830", "s1830_8c.html#ac9b478dc0b37c2e4f219f1bfa2c92c68", null ],
    [ "s1830", "s1830_8c.html#a5e67c0ec6af8c243236a930dadb1f9d1", null ]
]
```

Definition at line 1 of file s1830_8c.js.

30.1171 doc/html/s1834_8c.js File Reference

Variables

- var s1834_8c

30.1171.1 Variable Documentation

30.1171.1.1 var s1834_8c

Initial value:

```
=
[
    [ "S1834", "s1834_8c.html#a64cbc5c796dd6c75fad57ffa3d161b34", null ],
    [ "s1834", "s1834_8c.html#a45e46152948c711003013e019d3b3782", null ]
]
```

Definition at line 1 of file s1834_8c.js.

30.1172 doc/html/s1839_8c.js File Reference

Variables

- var s1839_8c

30.1172.1 Variable Documentation

30.1172.1.1 var s1839_8c

Initial value:

```
=
[
    [ "S1839", "s1839_8c.html#a81dd74ed7d43b444407685292e1de4d4", null ],
    [ "s1839", "s1839_8c.html#a382799b6bfb725b4ff45e65d87965b43", null ]
]
```

Definition at line 1 of file s1839_8c.js.

30.1173 doc/html/s1840_8c.js File Reference

Variables

- var s1840_8c

30.1173.1 Variable Documentation

30.1173.1.1 var s1840_8c

Initial value:

```
=
[
    [ "S1840", "s1840_8c.html#a7b7be0678ffad39f96259df0c1c2645a", null ],
    [ "s1840", "s1840_8c.html#ae83296350dce7a5195bbe10dc9cf705f", null ]
]
```

Definition at line 1 of file s1840_8c.js.

30.1174 doc/html/s1850_8c.js File Reference

Variables

- var s1850_8c

30.1174.1 Variable Documentation

30.1174.1.1 var s1850_8c

Initial value:

```
=
[
    [ "S1850", "s1850_8c.html#a665bd743c4b047fa4a20980c996aacda", null ],
    [ "s1850", "s1850_8c.html#a6a2e79aa2fdf3c1985fdaef153f542de", null ]
]
```

Definition at line 1 of file s1850_8c.js.

30.1175 doc/html/s1851_8c.js File Reference

Variables

- var s1851_8c

30.1175.1 Variable Documentation

30.1175.1.1 var s1851_8c

Initial value:

```
=
[
    [ "S1851", "s1851_8c.html#a4cb6dfc8672b711c2b7052610cdbfd48", null ],
    [ "s1851", "s1851_8c.html#aa67212524fc6e8ea0d35c9f367f9dfd9", null ]
]
```

Definition at line 1 of file s1851_8c.js.

30.1176 doc/html/s1852_8c.js File Reference

Variables

- var s1852_8c

30.1176.1 Variable Documentation

30.1176.1.1 var s1852_8c

Initial value:

```
=
[
    [ "S1852", "s1852_8c.html#aa2a042fc13e197b22d57cab6b169e676", null ],
    [ "s1852", "s1852_8c.html#a3d0c0523066186753109c4347f85b22a", null ]
]
```

Definition at line 1 of file s1852_8c.js.

30.1177 doc/html/s1853_8c.js File Reference

Variables

- var s1853_8c

30.1177.1 Variable Documentation

30.1177.1.1 var s1853_8c

Initial value:

```
=
[
    [ "S1853", "s1853_8c.html#a4648d8be668765760517ff0d212efe36", null ],
    [ "s1853", "s1853_8c.html#abd36c946780d421748b983ab2ec8bc8d", null ]
]
```

Definition at line 1 of file s1853_8c.js.

30.1178 doc/html/s1854_8c.js File Reference

Variables

- var s1854_8c

30.1178.1 Variable Documentation

30.1178.1.1 var s1854_8c

Initial value:

```
=
[
    [ "S1854", "s1854_8c.html#a4b65fd23ceeb92c325eec4e77b7bd819", null ],
    [ "s1854", "s1854_8c.html#af4e7417292fb7b6615fd39d5f28fe281", null ]
]
```

Definition at line 1 of file s1854_8c.js.

30.1179 doc/html/s1855_8c.js File Reference

Variables

- var s1855_8c

30.1179.1 Variable Documentation

30.1179.1.1 var s1855_8c

Initial value:

```
=
[
    [ "S1855", "s1855_8c.html#ad2b751f0ea135580dd36f40db5bf348c", null ],
    [ "s1855", "s1855_8c.html#a48f345c05911304f9534c00187768db0", null ]
]
```

Definition at line 1 of file s1855_8c.js.

30.1180 doc/html/s1856_8c.js File Reference

Variables

- var s1856_8c

30.1180.1 Variable Documentation

30.1180.1.1 var s1856_8c

Initial value:

```
=
[
    [ "S1856", "s1856_8c.html#a8d17bb9cdd5246b69158f9c01f871305", null ],
    [ "s1856", "s1856_8c.html#aff3d52e3b042e946679a41bff5dfe223", null ]
]
```

Definition at line 1 of file s1856_8c.js.

30.1181 doc/html/s1857_8c.js File Reference

Variables

- var s1857_8c

30.1181.1 Variable Documentation

30.1181.1.1 var s1857_8c

Initial value:

```
=
[
    [ "S1857", "s1857_8c.html#a6be0ffcd196ba7a9f9dcaba5b8d00395", null ],
    [ "s1857", "s1857_8c.html#a21269a7593217f4aa2733eed442175bc", null ]
]
```

Definition at line 1 of file s1857_8c.js.

30.1182 doc/html/s1858_8c.js File Reference

Variables

- var s1858_8c

30.1182.1 Variable Documentation

30.1182.1.1 var s1858_8c

Initial value:

```
=
[
    [ "S1858", "s1858_8c.html#af9bfe323d2d60cdc76444103ee3481fd", null ],
    [ "s1858", "s1858_8c.html#a554fb7aa59bddf5e20462f0d7dd9641a", null ]
]
```

Definition at line 1 of file s1858_8c.js.

30.1183 doc/html/s1859_8c.js File Reference

Variables

- var s1859_8c

30.1183.1 Variable Documentation

30.1183.1.1 var s1859_8c

Initial value:

```
=
[
    [ "S1859", "s1859_8c.html#a93c373f9577c114c6db83980702326cf", null ],
    [ "s1859", "s1859_8c.html#a474fdbe04906e04d8d8351d4a72d3f48", null ]
]
```

Definition at line 1 of file s1859_8c.js.

30.1184 doc/html/s1860_8c.js File Reference

Variables

- var s1860_8c

30.1184.1 Variable Documentation

30.1184.1.1 var s1860_8c

Initial value:

```
=
[
    [ "S1860", "s1860_8c.html#a1e1a8be89d3800e4e70bcba7b4ac08ee", null ],
    [ "s1860", "s1860_8c.html#ac86d120adc27d2ecb653339a9336d022", null ]
]
```

Definition at line 1 of file s1860_8c.js.

30.1185 doc/html/s1870_8c.js File Reference

Variables

- var s1870_8c

30.1185.1 Variable Documentation

30.1185.1.1 var s1870_8c

Initial value:

```
=
[
    [ "S1870", "s1870_8c.html#aa8f22c39cf06fa92c501241955b9959c", null ],
    [ "s1870", "s1870_8c.html#a9acd1de6c8ceecfe1e290f014350a047", null ]
]
```

Definition at line 1 of file s1870_8c.js.

30.1186 doc/html/s1871_8c.js File Reference

Variables

- var s1871_8c

30.1186.1 Variable Documentation

30.1186.1.1 var s1871_8c

Initial value:

```
=
[
    [ "S1871", "s1871_8c.html#a555fcb5ab210814792c3d515e4407750", null ],
    [ "s1871", "s1871_8c.html#a973722c65e9fa3155b1433bd01da2332", null ]
]
```

Definition at line 1 of file s1871_8c.js.

30.1187 doc/html/s1880_8c.js File Reference

Variables

- var s1880_8c

30.1187.1 Variable Documentation

30.1187.1.1 var s1880_8c

Initial value:

```
=
[
    [ "S1880", "s1880_8c.html#adf62faf690bf998018baac89112755da", null ],
    [ "s1880", "s1880_8c.html#a0be05ce148374b803d8f5f1eb3485bdb", null ]
]
```

Definition at line 1 of file s1880_8c.js.

30.1188 doc/html/s1890_8c.js File Reference

Variables

- var s1890_8c

30.1188.1 Variable Documentation

30.1188.1.1 var s1890_8c

Initial value:

```
=
[
    [ "S1890", "s1890_8c.html#ad6b06233018038a9040b6654bad41e80", null ],
    [ "s1890", "s1890_8c.html#af504cc7a4dc4d2d23e5dc06ae87e3075", null ]
]
```

Definition at line 1 of file s1890_8c.js.

30.1189 doc/html/s1891_8c.js File Reference

Variables

- var s1891_8c

30.1189.1 Variable Documentation

30.1189.1.1 var s1891_8c

Initial value:

```
=
[
    [ "MAX_SIZE", "s1891_8c.html#a0592dba56693fad79136250c11e5a7fe", null ],
    [ "S1891", "s1891_8c.html#af067c27d78997910d1d8aea06c02d225", null ],
    [ "s1891", "s1891_8c.html#acd7628686af47b2af41e63f84d7ffc8d", null ]
]
```

Definition at line 1 of file s1891_8c.js.

30.1190 doc/html/s1893_8c.js File Reference

Variables

- var s1893_8c

30.1190.1 Variable Documentation

30.1190.1.1 var s1893_8c

Initial value:

```
=
[
    [ "S1893", "s1893_8c.html#a60c88aa238f5edbe12d910164b02b3a7", null ],
    [ "s1893", "s1893_8c.html#a82ce4a46d6e6d9202b495a1960af10f1", null ]
]
```

Definition at line 1 of file s1893_8c.js.

30.1191 doc/html/s1894_8c.js File Reference

Variables

- var s1894_8c

30.1191.1 Variable Documentation

30.1191.1.1 var s1894_8c

Initial value:

```
=
[
    [ "S1894", "s1894_8c.html#af700ddc4bf0f472e5668b4369ae57a87", null ],
    [ "s1894", "s1894_8c.html#a99bf48bacd3b9ea98574ba8393294434", null ]
]
```

Definition at line 1 of file s1894_8c.js.

30.1192 doc/html/s1896_8c.js File Reference

Variables

- var s1896_8c

30.1192.1 Variable Documentation

30.1192.1.1 var s1896_8c

Initial value:

```
=
[
    [ "S1896", "s1896_8c.html#a066848aff8c99dce0b143df72eab003f", null ],
    [ "s1896", "s1896_8c.html#ab404f2c2e6a05b1c0b3f19782b1ede67", null ]
]
```

Definition at line 1 of file s1896_8c.js.

30.1193 doc/html/s1897_8c.js File Reference

Variables

- var s1897_8c

30.1193.1 Variable Documentation

30.1193.1.1 var s1897_8c

Initial value:

```
=
[
    [ "MAX_IK", "s1897_8c.html#ac79ba5168f3ea53c51d1f9aa515cf7b3", null ],
    [ "S1897", "s1897_8c.html#a19c36dcc4b203e29e4d9a49a06c64ca0", null ],
    [ "s1897", "s1897_8c.html#a1fbbf1920937a33f66202cb96c39a5cb", null ]
]
```

Definition at line 1 of file s1897_8c.js.

30.1194 doc/html/s1900_8c.js File Reference

Variables

- var s1900_8c

30.1194.1 Variable Documentation

30.1194.1.1 var s1900_8c

Initial value:

```
=
[
    [ "S1900", "s1900_8c.html#a9448930545d6384f02aed5041a0968ce", null ],
    [ "s1900", "s1900_8c.html#a9cd8432125d6a0c688d40bfe567663be", null ]
]
```

Definition at line 1 of file s1900_8c.js.

30.1195 doc/html/s1901_8c.js File Reference

Variables

- var s1901_8c

30.1195.1 Variable Documentation

30.1195.1.1 var s1901_8c

Initial value:

```
=
[
    [ "S1901", "s1901_8c.html#a8bbe2100595e58d4531194358d162e01", null ],
    [ "fknotsProc", "s1901_8c.html#a693628c216123daeabc374eaf6826103", null ],
    [ "fparamProc", "s1901_8c.html#a340939cdef71c179f28742c34ace9588", null ],
    [ "s1901", "s1901_8c.html#a02b22ba4aef3e76d04f1c64efef75ce6", null ]
]
```

Definition at line 1 of file s1901_8c.js.

30.1196 doc/html/s1902_8c.js File Reference

Variables

- var s1902_8c

30.1196.1 Variable Documentation

30.1196.1.1 var s1902_8c

Initial value:

```
=
[
    [ "S1902", "s1902_8c.html#ae2b3cb8648e7042b8936b60e213b9b35", null ],
    [ "s1902", "s1902_8c.html#a674ca8a9ea7509f21e5ba08face1b4ac", null ]
]
```

Definition at line 1 of file s1902_8c.js.

30.1197 doc/html/s1903_8c.js File Reference

Variables

- var s1903_8c

30.1197.1 Variable Documentation

30.1197.1.1 var s1903_8c

Initial value:

```
=
[
    [ "S1903", "s1903_8c.html#a4e7145d035b2703c74a2c8a5277c444c", null ],
    [ "s1903", "s1903_8c.html#ae0bad153a5779b416d2488c60ba79216", null ]
]
```

Definition at line 1 of file s1903_8c.js.

30.1198 doc/html/s1904_8c.js File Reference

Variables

- var s1904_8c

30.1198.1 Variable Documentation

30.1198.1.1 var s1904_8c

Initial value:

```
=
[
    [ "S1904", "s1904_8c.html#a22edc87c279177ab6960b5d0c6e5c177", null ],
    [ "s1904", "s1904_8c.html#ae79dfd4451e99871b71bcc5dfc55b662", null ]
]
```

Definition at line 1 of file s1904_8c.js.

30.1199 doc/html/s1905_8c.js File Reference

Variables

- var s1905_8c

30.1199.1 Variable Documentation

30.1199.1.1 var s1905_8c

Initial value:

```
=
[
    [ "S1905", "s1905_8c.html#a2e876c8cc0b9f63c7b608f1918a91c7a", null ],
    [ "s1905", "s1905_8c.html#a4512aadef7d64f0d49829f1b83acd38f", null ]
]
```

Definition at line 1 of file s1905_8c.js.

30.1200 doc/html/s1906_8c.js File Reference

Variables

- var s1906_8c

30.1200.1 Variable Documentation

30.1200.1.1 var s1906_8c

Initial value:

```
=
[
    [ "S1906", "s1906_8c.html#ab730d8827ee4522e1d927074c697dace", null ],
    [ "s1906", "s1906_8c.html#a4273aca5c105ed71d3f44203edd5ceda", null ]
]
```

Definition at line 1 of file s1906_8c.js.

30.1201 doc/html/s1907_8c.js File Reference

Variables

- var s1907_8c

30.1201.1 Variable Documentation

30.1201.1.1 var s1907_8c

Initial value:

```
=
[
    [ "S1907", "s1907_8c.html#ad5de6531944574d48d9e515c4c3fca54", null ],
    [ "s1907", "s1907_8c.html#a367084d3c28c7becfd81091a328ce3fa", null ]
]
```

Definition at line 1 of file s1907_8c.js.

30.1202 doc/html/s1908_8c.js File Reference

Variables

- var s1908_8c

30.1202.1 Variable Documentation

30.1202.1.1 var s1908_8c

Initial value:

```
=
[
    [ "MAX_SIZE", "s1908_8c.html#a0592dba56693fad79136250c11e5a7fe", null ],
    [ "S1908", "s1908_8c.html#af541a900fbe68873a8dfbcd7a6f9fd5f", null ],
    [ "s1908", "s1908_8c.html#a5dce781e9972f6cba17926ba985e4d43", null ]
]
```

Definition at line 1 of file s1908_8c.js.

30.1203 doc/html/s1909_8c.js File Reference

Variables

- var s1909_8c

30.1203.1 Variable Documentation

30.1203.1.1 var s1909_8c

Initial value:

```
=
[
    [ "S1909", "s1909_8c.html#a2d322e6ef8dbf202db80442168dab7bc", null ],
    [ "s1909", "s1909_8c.html#a8b2c33cc07b3f5cb64618417ff26e849", null ]
]
```

Definition at line 1 of file s1909_8c.js.

30.1204 doc/html/s1910_8c.js File Reference

Variables

- var s1910_8c

30.1204.1 Variable Documentation

30.1204.1.1 var s1910_8c

Initial value:

```
=
[
    [ "S1910", "s1910_8c.html#a1fc65e678b865c0896c2312f436319e3", null ],
    [ "s1910", "s1910_8c.html#afda52b1548a546f017c5d80da9f7cf4f", null ]
]
```

Definition at line 1 of file s1910_8c.js.

30.1205 doc/html/s1911_8c.js File Reference

Variables

- var s1911_8c

30.1205.1 Variable Documentation

30.1205.1.1 var s1911_8c

Initial value:

```
=
[
    [ "S1911", "s1911_8c.html#a1a6fce5b8d91f01dd4ca17c9753b0583", null ],
    [ "s1911", "s1911_8c.html#ab57c25f9faccb47928a2a4d446c5f57a", null ]
]
```

Definition at line 1 of file s1911_8c.js.

30.1206 doc/html/s1912_8c.js File Reference

Variables

- var s1912_8c

30.1206.1 Variable Documentation

30.1206.1.1 var s1912_8c

Initial value:

```
=
[
    [ "S1912", "s1912_8c.html#ac5f70f28673ca19ef1420a422b7879db", null ],
    [ "fknotsProc", "s1912_8c.html#a693628c216123daeabc374eaf6826103", null ],
    [ "fparamProc", "s1912_8c.html#a340939cdef71c179f28742c34ace9588", null ],
    [ "s1912", "s1912_8c.html#a915b77d52378968aacedaf18d2de35c9", null ]
]
```

Definition at line 1 of file s1912_8c.js.

30.1207 doc/html/s1916_8c.js File Reference

Variables

- var s1916_8c

30.1207.1 Variable Documentation

30.1207.1.1 var s1916_8c

Initial value:

```
=
[
    [ "S1916", "s1916_8c.html#a7a35efb8c803a604237dc80b9c95f302", null ],
    [ "s1916", "s1916_8c.html#adbb98e521b32cf77f72faf758374ea67", null ]
]
```

Definition at line 1 of file s1916_8c.js.

30.1208 doc/html/s1917_8c.js File Reference

Variables

- var s1917_8c

30.1208.1 Variable Documentation

30.1208.1.1 var s1917_8c

Initial value:

```
=
[
    [ "S1917", "s1917_8c.html#a7e6afc77cb472bd70e59fd3d159c13bc", null ],
    [ "s1917", "s1917_8c.html#a13a76bbf8eb432fbef82413bd29f3eb8", null ]
]
```

Definition at line 1 of file s1917_8c.js.

30.1209 doc/html/s1918_8c.js File Reference

Variables

- var s1918_8c

30.1209.1 Variable Documentation

30.1209.1.1 var s1918_8c

Initial value:

```
=
[
    [ "S1918", "s1918_8c.html#a79424fb2554c0554d6030d0f1ac2d3c7", null ],
    [ "s1918", "s1918_8c.html#a5dbb084e4a89ca7a791dbc35b06af2b9", null ]
]
```

Definition at line 1 of file s1918_8c.js.

30.1210 doc/html/s1919_8c.js File Reference

Variables

- var s1919_8c

30.1210.1 Variable Documentation

30.1210.1.1 var s1919_8c

Initial value:

```
=
[
    [ "S1919", "s1919_8c.html#a844d9e6129aae459a1ae2a9821e8ec88", null ],
    [ "s1919", "s1919_8c.html#a677e7cfa6f36691e4b4e8d90ca2d55d9", null ]
]
```

Definition at line 1 of file s1919_8c.js.

30.1211 doc/html/s1920_8c.js File Reference

Variables

- var s1920_8c

30.1211.1 Variable Documentation

30.1211.1.1 var s1920_8c

Initial value:

```
=
[
    [ "S1920", "s1920_8c.html#a5d5cf9b50e3af38bdb813c1feb031a28", null ],
    [ "s1920", "s1920_8c.html#a63ff26ca818677270088aec48e1a9b47", null ]
]
```

Definition at line 1 of file s1920_8c.js.

30.1212 doc/html/s1921_8c.js File Reference

Variables

- var s1921_8c

30.1212.1 Variable Documentation

30.1212.1.1 var s1921_8c

Initial value:

```
=
[
    [ "S1921", "s1921_8c.html#a54327164da028c304eb6cb8a35cd8d74", null ],
    [ "s1921", "s1921_8c.html#a9647f729d243840aa37af614dabe36dc", null ]
]
```

Definition at line 1 of file s1921_8c.js.

30.1213 doc/html/s1924_8c.js File Reference

Variables

- var s1924_8c

30.1213.1 Variable Documentation

30.1213.1.1 var s1924_8c

Initial value:

```
=
[
    [ "S1924", "s1924_8c.html#aef77ed666cdf4fee79b028b3835fa8cf", null ],
    [ "s1924", "s1924_8c.html#a99220dc4bd23bb1f9048c757b967a161", null ]
]
```

Definition at line 1 of file s1924_8c.js.

30.1214 doc/html/s1925_8c.js File Reference

Variables

- var s1925_8c

30.1214.1 Variable Documentation

30.1214.1.1 var s1925_8c

Initial value:

```
=
[
    [ "S1925", "s1925_8c.html#a845d6c868ae305a35bbad07a696574de", null ],
    [ "s1925_MAX_ARRAY_SIZE", "s1925_8c.html#acfd9b0888b2fa7c92930501e996ab1fe", null ],
    [ "s1925", "s1925_8c.html#ada46ce038fc3e28ea98dc7b6bc9fe479", null ]
]
```

Definition at line 1 of file s1925_8c.js.

30.1215 doc/html/s1926_8c.js File Reference

Variables

- var s1926_8c

30.1215.1 Variable Documentation

30.1215.1.1 var s1926_8c

Initial value:

```
=
[
    [ "S1926", "s1926_8c.html#a98c09e45d22650de337f5ae577626964", null ],
    [ "s1926", "s1926_8c.html#a90330bd1c15720281c38b4dcf1d492d8", null ]
]
```

Definition at line 1 of file s1926_8c.js.

30.1216 doc/html/s1927_8c.js File Reference

Variables

- var s1927_8c

30.1216.1 Variable Documentation

30.1216.1.1 var s1927_8c

Initial value:

```
=
[
    [ "S1927", "s1927_8c.html#abcd7955ad43cc6de94ad1cfe8192d65e", null ],
    [ "s1927", "s1927_8c.html#a31f68f728089445762ddf6ef07f93e1d", null ]
]
```

Definition at line 1 of file s1927_8c.js.

30.1217 doc/html/s1930_8c.js File Reference

Variables

- var s1930_8c

30.1217.1 Variable Documentation

30.1217.1.1 var s1930_8c

Initial value:

```
=
[
    [ "S1930", "s1930_8c.html#acb112f1405be2c5eb8daa3ad33bbe29f", null ],
    [ "s1930", "s1930_8c.html#a41903fa4d83fe83e3766f084c9294ae1", null ]
]
```

Definition at line 1 of file s1930_8c.js.

30.1218 doc/html/s1931_8c.js File Reference

Variables

- var s1931_8c

30.1218.1 Variable Documentation

30.1218.1.1 var s1931_8c

Initial value:

```
=
[
    [ "S1931", "s1931_8c.html#ab1ed3c793fe8c28a35302f79f926aa06", null ],
    [ "s1931", "s1931_8c.html#ac2e9c821c6cce5a7d35b50c38b246405", null ]
]
```

Definition at line 1 of file s1931_8c.js.

30.1219 doc/html/s1931unit_8c.js File Reference

Variables

- var s1931unit_8c

30.1219.1 Variable Documentation

30.1219.1.1 var s1931unit_8c

Initial value:

```
=
[
    [ "S1931UNIT", "s1931unit_8c.html#a16d3bae4164afd017621b41abdc7c9a8", null ],
    [ "s1931unit", "s1931unit_8c.html#aeb9b9d99b0371a1c6d325f2d68d25b94", null ]
]
```

Definition at line 1 of file s1931unit_8c.js.

30.1220 doc/html/s1932_8c.js File Reference

Variables

- var s1932_8c

30.1220.1 Variable Documentation

30.1220.1.1 var s1932_8c

Initial value:

```
=
[
    [ "S1932", "s1932_8c.html#aa78b655bbefa3057f0d5b7c5a400d4c3", null ],
    [ "s1932", "s1932_8c.html#a71254496de0f20b31d3036851515987f", null ]
]
```

Definition at line 1 of file s1932_8c.js.

30.1221 doc/html/s1933_8c.js File Reference

Variables

- var s1933_8c

30.1221.1 Variable Documentation

30.1221.1.1 var s1933_8c

Initial value:

```
=
[
    [ "S1933", "s1933_8c.html#ae8767619c8972beb0325749b5bdc723f", null ],
    [ "s1933", "s1933_8c.html#a312c97e6e061b3dd80f246c9c4b607cf", null ]
]
```

Definition at line 1 of file s1933_8c.js.

30.1222 doc/html/s1934_8c.js File Reference

Variables

- var s1934_8c

30.1222.1 Variable Documentation

30.1222.1.1 var s1934_8c

Initial value:

```
=
[
    [ "S1934", "s1934_8c.html#a07b4d6fd48c5be386af7a9d2c7de66ea", null ],
    [ "s1934", "s1934_8c.html#aae2cf2dd30e9de48400971d30610584f", null ]
]
```

Definition at line 1 of file s1934_8c.js.

30.1223 doc/html/s1935_8c.js File Reference

Variables

- var s1935_8c

30.1223.1 Variable Documentation

30.1223.1.1 var s1935_8c

Initial value:

```
=
[
    [ "S1935", "s1935_8c.html#aa854c23ad8bcc3d4111eebb581a2f70e", null ],
    [ "s1935", "s1935_8c.html#a3f1fa57d175d00c2b405cf015f7a3279", null ]
]
```

Definition at line 1 of file s1935_8c.js.

30.1224 doc/html/s1936_8c.js File Reference

Variables

- var s1936_8c

30.1224.1 Variable Documentation

30.1224.1.1 var s1936_8c

Initial value:

```
=
[
    [ "MAX_SIZE", "s1936_8c.html#a0592dba56693fad79136250c11e5a7fe", null ],
    [ "S1936", "s1936_8c.html#a80aa31fc9052aefed38fb9691e503851", null ],
    [ "s1936", "s1936_8c.html#ab4b5ae59dcf3e58f195599783badf046", null ]
]
```

Definition at line 1 of file s1936_8c.js.

30.1225 doc/html/s1937_8c.js File Reference

Variables

- var s1937_8c

30.1225.1 Variable Documentation

30.1225.1.1 var s1937_8c

Initial value:

```
=
[
    [ "S1937", "s1937_8c.html#a7759b2cab0af26b3ec412eaf72dd8d1d", null ],
    [ "s1937", "s1937_8c.html#a7368f3e7a1856c40a3db4bc3dcef8a99", null ]
]
```

Definition at line 1 of file s1937_8c.js.

30.1226 doc/html/s1938_8c.js File Reference

Variables

- var s1938_8c

30.1226.1 Variable Documentation

30.1226.1.1 var s1938_8c

Initial value:

```
=
[
    [ "MAX_SIZE", "s1938_8c.html#a0592dba56693fad79136250c11e5a7fe", null ],
    [ "S1938", "s1938_8c.html#a49fe8ad56fb9551be254a3048ab6ff1b", null ],
    [ "s1938", "s1938_8c.html#aad8935f0cbf156bd064e2c7185d7947e", null ]
]
```

Definition at line 1 of file s1938_8c.js.

30.1227 doc/html/s1940_8c.js File Reference

Variables

- var s1940_8c

30.1227.1 Variable Documentation

30.1227.1.1 var s1940_8c

Initial value:

```
=
[
    [ "S1940", "s1940_8c.html#a236b66f678433f488b2d94f298d4b908", null ],
    [ "s1940", "s1940_8c.html#a43246d0dcf0fdd4096230f5970f3c113", null ]
]
```

Definition at line 1 of file s1940_8c.js.

30.1228 doc/html/s1941_8c.js File Reference

Variables

- var s1941_8c

30.1228.1 Variable Documentation

30.1228.1.1 var s1941_8c

Initial value:

```
=
[
    [ "S1941", "s1941_8c.html#ab41dfe3b05343e734f70442f8706be3f", null ],
    [ "s1941", "s1941_8c.html#a53b9c6b2f9ff6f52ed3116bb6306bb5a", null ]
]
```

Definition at line 1 of file s1941_8c.js.

30.1229 doc/html/s1942_8c.js File Reference

Variables

- var s1942_8c

30.1229.1 Variable Documentation

30.1229.1.1 var s1942_8c

Initial value:

```
=
[
    [ "S1942", "s1942_8c.html#ac0fba87501fce1ccd921c91414abad36", null ],
    [ "s1942", "s1942_8c.html#a0028158729ab71a3da6df69951854a8e", null ]
]
```

Definition at line 1 of file s1942_8c.js.

30.1230 doc/html/s1943_8c.js File Reference

Variables

- var s1943_8c

30.1230.1 Variable Documentation

30.1230.1.1 var s1943_8c

Initial value:

```
=
[
    [ "S1943", "s1943_8c.html#a8c817b948930cbc3c60d3a4593008e74", null ],
    [ "s1943", "s1943_8c.html#a4117475641c9e4fb6a48d8bc619598e9", null ]
]
```

Definition at line 1 of file s1943_8c.js.

30.1231 doc/html/s1944_8c.js File Reference

Variables

- var s1944_8c

30.1231.1 Variable Documentation

30.1231.1.1 var s1944_8c

Initial value:

```
=
[
    [ "S1944", "s1944_8c.html#a8926b14f3f594eb5e7bb4efedac1b2ba", null ],
    [ "s1944", "s1944_8c.html#a156c6bd691d787b34eee04c95530c914", null ]
]
```

Definition at line 1 of file s1944_8c.js.

30.1232 doc/html/s1945_8c.js File Reference

Variables

- var s1945_8c

30.1232.1 Variable Documentation

30.1232.1.1 var s1945_8c

Initial value:

```
=
[
    [ "S1945", "s1945_8c.html#a2dc881db3c56d7373bbff803454d55d0", null ],
    [ "s1945", "s1945_8c.html#a038c2a1b715688f6f69607b526de1e0c", null ]
]
```

Definition at line 1 of file s1945_8c.js.

30.1233 doc/html/s1946_8c.js File Reference

Variables

- var s1946_8c

30.1233.1 Variable Documentation

30.1233.1.1 var s1946_8c

Initial value:

```
=
[
    [ "S1946", "s1946_8c.html#ac7e1c8f9e383a3df8b0b0e21308718b2", null ],
    [ "s1946", "s1946_8c.html#aa93838095013b9516075ef52aaa5f7ee", null ]
]
```

Definition at line 1 of file s1946_8c.js.

30.1234 doc/html/s1947_8c.js File Reference

Variables

- var s1947_8c

30.1234.1 Variable Documentation

30.1234.1.1 var s1947_8c

Initial value:

```
=
[
    [ "S1947", "s1947_8c.html#a9f488e8e5a988c9fd1023bbae1bf3c06", null ],
    [ "s1947", "s1947_8c.html#ad3699f35b3badf3776bb073f9ce151b7", null ]
]
```

Definition at line 1 of file s1947_8c.js.

30.1235 doc/html/s1948_8c.js File Reference

Variables

- var s1948_8c

30.1235.1 Variable Documentation

30.1235.1.1 var s1948_8c

Initial value:

```
=
[
    [ "S1948", "s1948_8c.html#a41df2968dc07d9f2c214f40b8db583d6", null ],
    [ "s1948", "s1948_8c.html#a975a2cf7881b34c991b79a8975594f71", null ]
]
```

Definition at line 1 of file s1948_8c.js.

30.1236 doc/html/s1949_8c.js File Reference

Variables

- var s1949_8c

30.1236.1 Variable Documentation

30.1236.1.1 var s1949_8c

Initial value:

```
=
[
    [ "S1949", "s1949_8c.html#a542401b20028844ccab4298e4a27c305", null ],
    [ "s1949", "s1949_8c.html#a0ee6676434ce6d8853d2b9dc5f4b4f86", null ]
]
```

Definition at line 1 of file s1949_8c.js.

30.1237 doc/html/s1950_8c.js File Reference

Variables

- var s1950_8c

30.1237.1 Variable Documentation

30.1237.1.1 var s1950_8c

Initial value:

```
=
[
    [ "S1950", "s1950_8c.html#a01fdb1e92896634d2667c0331c4c0ba4", null ],
    [ "s1950", "s1950_8c.html#acbdd8aa7fb5ae03dd9159990be8088ea", null ]
]
```

Definition at line 1 of file s1950_8c.js.

30.1238 doc/html/s1951_8c.js File Reference

Variables

- var s1951_8c

30.1238.1 Variable Documentation

30.1238.1.1 var s1951_8c

Initial value:

```
=
[
    [ "S1951", "s1951_8c.html#af2293574eb448e576e1ea6e07f140dfa", null ],
    [ "s1951", "s1951_8c.html#ab2e8aa2d4fb9c13806fcfc38af75f7d6", null ]
]
```

Definition at line 1 of file s1951_8c.js.

30.1239 doc/html/s1953_8c.js File Reference

Variables

- var s1953_8c

30.1239.1 Variable Documentation

30.1239.1.1 var s1953_8c

Initial value:

```
=
[
    [ "S1953", "s1953_8c.html#ac2b895632b9997427ec3aa1b6b86df57", null ],
    [ "s1953", "s1953_8c.html#a412e8c2338296109e645a10e6f995cea", null ]
]
```

Definition at line 1 of file s1953_8c.js.

30.1240 doc/html/s1954_8c.js File Reference

Variables

- var s1954_8c

30.1240.1 Variable Documentation

30.1240.1.1 var s1954_8c

Initial value:

```
=
[
    [ "S1954", "s1954_8c.html#a31623ec0e969382fad7ce4c8a1598ba8", null ],
    [ "s1954", "s1954_8c.html#a19f2837c42e8d3a244d9795ab574a0dd", null ]
]
```

Definition at line 1 of file s1954_8c.js.

30.1241 doc/html/s1955_8c.js File Reference

Variables

- var s1955_8c

30.1241.1 Variable Documentation

30.1241.1.1 var s1955_8c

Initial value:

```
=
[
    [ "S1955", "s1955_8c.html#aa0d94dd7e714cbd474a6f6afd1c8bd04", null ],
    [ "s1955", "s1955_8c.html#a7ce774d20fcb38d980c57b2c58fc553a", null ]
]
```

Definition at line 1 of file s1955_8c.js.

30.1242 doc/html/s1956_8c.js File Reference

Variables

- var s1956_8c

30.1242.1 Variable Documentation

30.1242.1.1 var s1956_8c

Initial value:

```
=
[
    [ "S1956", "s1956_8c.html#a5b26eae30f31f67adc0c11c860a36a35", null ],
    [ "s1956", "s1956_8c.html#a126fd1ed9a2e8d51cef04caed9efc463", null ]
]
```

Definition at line 1 of file s1956_8c.js.

30.1243 doc/html/s1957_8c.js File Reference

Variables

- var s1957_8c

30.1243.1 Variable Documentation

30.1243.1.1 var s1957_8c

Initial value:

```
=
[
    [ "S1957", "s1957_8c.html#a1aeead56c9dad3eff4d95e5270a770f2", null ],
    [ "s1957", "s1957_8c.html#a0d9c97be58e612bf36a7e5a8770ca4b3", null ]
]
```

Definition at line 1 of file s1957_8c.js.

30.1244 doc/html/s1958_8c.js File Reference

Variables

- var s1958_8c

30.1244.1 Variable Documentation

30.1244.1.1 var s1958_8c

Initial value:

```
=
[
    [ "S1958", "s1958_8c.html#aba55281b345a84317f767942097c9e88", null ],
    [ "s1958", "s1958_8c.html#afb09d9e55f0637d6475cb34184159610", null ]
]
```

Definition at line 1 of file s1958_8c.js.

30.1245 doc/html/s1959_8c.js File Reference

Variables

- var s1959_8c

30.1245.1 Variable Documentation

30.1245.1.1 var s1959_8c

Initial value:

```
=
[
    [ "S1959", "s1959_8c.html#ae79aad26cb69ae0daf58161997bd8d39", null ],
    [ "s1959", "s1959_8c.html#ad6f564a465cfcb1753ec48623e467ad1", null ]
]
```

Definition at line 1 of file s1959_8c.js.

30.1246 doc/html/s1960_8c.js File Reference

Variables

- var s1960_8c

30.1246.1 Variable Documentation

30.1246.1.1 var s1960_8c

Initial value:

```
=
[
    [ "S1960", "s1960_8c.html#a93650ba21515281b5786de1d2db835c3", null ],
    [ "s1960", "s1960_8c.html#a12ec960b2fa694469af65052b3e78f37", null ]
]
```

Definition at line 1 of file s1960_8c.js.

30.1247 doc/html/s1961_8c.js File Reference

Variables

- var s1961_8c

30.1247.1 Variable Documentation

30.1247.1.1 var s1961_8c

Initial value:

```
=
[
    [ "S1961", "s1961_8c.html#ab74fbad2da6426ff6091c94a1cbdfb93", null ],
    [ "s1961", "s1961_8c.html#abdad5f166043bdce3e93bd0cb8a573c1", null ]
]
```

Definition at line 1 of file s1961_8c.js.

30.1248 doc/html/s1962_8c.js File Reference

Variables

- var s1962_8c

30.1248.1 Variable Documentation

30.1248.1.1 var s1962_8c

Initial value:

```
=
[
    [ "S1962", "s1962_8c.html#abc343df8b5785df0d1cd2be611eee74e", null ],
    [ "s1962", "s1962_8c.html#aed83f404d2099e90e9028bc8ce45eee8", null ]
]
```

Definition at line 1 of file s1962_8c.js.

30.1249 doc/html/s1963_8c.js File Reference

Variables

- var s1963_8c

30.1249.1 Variable Documentation

30.1249.1.1 var s1963_8c

Initial value:

```
=
[
    [ "S1963", "s1963_8c.html#a8488e865634f22cbf9cd2b50e8675117", null ],
    [ "s1963", "s1963_8c.html#abd9cfe765a45d6afff26cda2bf06c118", null ]
]
```

Definition at line 1 of file s1963_8c.js.

30.1250 doc/html/s1965_8c.js File Reference

Variables

- var s1965_8c

30.1250.1 Variable Documentation

30.1250.1.1 var s1965_8c

Initial value:

```
=
[
    [ "S1965", "s1965_8c.html#a74ae6d370384bbd305c566cf538665ea", null ],
    [ "s1965", "s1965_8c.html#a945dcdc87c87a97fbcc4b4b59b057955", null ]
]
```

Definition at line 1 of file s1965_8c.js.

30.1251 doc/html/s1966_8c.js File Reference

Variables

- var s1966_8c

30.1251.1 Variable Documentation

30.1251.1.1 var s1966_8c

Initial value:

```
=
[
    [ "S1966", "s1966_8c.html#ae95daceceb1ce20d36dbccf90016e9d2", null ],
    [ "s1966", "s1966_8c.html#aeeca6edae7ecfc3c1b8d3f1e0c9592a9", null ]
]
```

Definition at line 1 of file s1966_8c.js.

30.1252 doc/html/s1967_8c.js File Reference

Variables

- var s1967_8c

30.1252.1 Variable Documentation

30.1252.1.1 var s1967_8c

Initial value:

```
=
[
    [ "S1967", "s1967_8c.html#a390235277c65264616727dac31294c4e", null ],
    [ "s1967", "s1967_8c.html#ac6330023975d6d90f1a171d82fd8c41a", null ]
]
```

Definition at line 1 of file s1967_8c.js.

30.1253 doc/html/s1968_8c.js File Reference

Variables

- var s1968_8c

30.1253.1 Variable Documentation

30.1253.1.1 var s1968_8c

Initial value:

```
=
[
    [ "S1968", "s1968_8c.html#acb61af634a88be2affdfbe109b0dce40", null ],
    [ "s1968", "s1968_8c.html#adb78baf33c957adbfe38271e17389d25", null ]
]
```

Definition at line 1 of file s1968_8c.js.

30.1254 doc/html/s1986_8c.js File Reference

Variables

- var s1986_8c

30.1254.1 Variable Documentation

30.1254.1.1 var s1986_8c

Initial value:

```
=
[
    [ "S1986", "s1986_8c.html#ac86ce654b6e6d4c3a2dec233b1581262", null ],
    [ "s1986", "s1986_8c.html#a3bb2556dc60f0a820fc2ba72f0b3d2a2", null ]
]
```

Definition at line 1 of file s1986_8c.js.

30.1255 doc/html/s1987_8c.js File Reference

Variables

- var s1987_8c

30.1255.1 Variable Documentation

30.1255.1.1 var s1987_8c

Initial value:

```
=
[
    [ "S1987", "s1987_8c.html#af422f292633f9ab231ead78ed736da6c", null ],
    [ "s1987", "s1987_8c.html#a5b15e768d153a1bc5366a729f573d935", null ]
]
```

Definition at line 1 of file s1987_8c.js.

30.1256 doc/html/s1988_8c.js File Reference

Variables

- var s1988_8c

30.1256.1 Variable Documentation

30.1256.1.1 var s1988_8c

Initial value:

```
=
[
    [ "S1988", "s1988_8c.html#a6273281b0ee9321b6ce8ceb4f597bf58", null ],
    [ "s1988", "s1988_8c.html#ac90891f06d1f165bf4b60d7344d8493b", null ]
]
```

Definition at line 1 of file s1988_8c.js.

30.1257 doc/html/s1989_8c.js File Reference

Variables

- var s1989_8c

30.1257.1 Variable Documentation

30.1257.1.1 var s1989_8c

Initial value:

```
=
[
    [ "S1989", "s1989_8c.html#a02b33a06f6c825233be52bfc43ea5318", null ],
    [ "s1989", "s1989_8c.html#a7a8021f5e5762b0ad6a24720df9e1567", null ]
]
```

Definition at line 1 of file s1989_8c.js.

30.1258 doc/html/s1990_8c.js File Reference

Variables

- var s1990_8c

30.1258.1 Variable Documentation

30.1258.1.1 var s1990_8c

Initial value:

```
=
[
    [ "S1990", "s1990_8c.html#adde63d686829c5900f0879df204db2c7", null ],
    [ "s1990", "s1990_8c.html#ab28572ba520d26e749bf12b76ea325b8", null ]
]
```

Definition at line 1 of file s1990_8c.js.

30.1259 doc/html/s1991_8c.js File Reference

Variables

- var s1991_8c

30.1259.1 Variable Documentation

30.1259.1.1 var s1991_8c

Initial value:

```
=
[
    [ "S1991", "s1991_8c.html#acb6f458aec338edb12620ab8853cb781", null ],
    [ "s1991", "s1991_8c.html#a0923d7923d3369bba81c2340176319cf", null ]
]
```

Definition at line 1 of file s1991_8c.js.

30.1260 doc/html/s1992_8c.js File Reference

Variables

- var s1992_8c

30.1260.1 Variable Documentation

30.1260.1.1 var s1992_8c

Initial value:

```
=
[
    [ "S1992", "s1992_8c.html#a834f6a97dee6c2ac119a9dc0f274a2d3", null ],
    [ "s1992", "s1992_8c.html#a7a5bd51c6f1a033735d40e78c88f139b", null ],
    [ "s1992cu", "s1992_8c.html#a100175ae477544966a4cc3ce2f0488d8", null ],
    [ "s1992su", "s1992_8c.html#af1a99e9bc10d1a6873c738964e8aa633", null ]
]
```

Definition at line 1 of file s1992_8c.js.

30.1261 doc/html/s1993_8c.js File Reference

Variables

- var s1993_8c

30.1261.1 Variable Documentation

30.1261.1.1 var s1993_8c

Initial value:

```
=
[
    [ "S1993", "s1993_8c.html#a8bc6b3835dfc5dbf39924c9949e07e49", null ],
    [ "s1993", "s1993_8c.html#a6beb0050a071d1a8397003193e7f5b36", null ]
]
```

Definition at line 1 of file s1993_8c.js.

30.1262 doc/html/s1994_8c.js File Reference

Variables

- var s1994_8c

30.1262.1 Variable Documentation

30.1262.1.1 var s1994_8c

Initial value:

```
=
[
    [ "S1994", "s1994_8c.html#a80674b1ab4412cf5aa6ed04c39fca7d9", null ],
    [ "s1994", "s1994_8c.html#a2c4581b9571930c0d02a1e694629bde9", null ]
]
```

Definition at line 1 of file s1994_8c.js.

30.1263 doc/html/s2500_8c.js File Reference

Variables

- var s2500_8c

30.1263.1 Variable Documentation

30.1263.1.1 var s2500_8c

Initial value:

```
=
[
    [ "S2500", "s2500_8c.html#a4d7d2275501950766e9e645ed24fdec3", null ],
    [ "s2500", "s2500_8c.html#a99b29fb11524f2398e40dcadea1b3ac7", null ]
]
```

Definition at line 1 of file s2500_8c.js.

30.1264 doc/html/s2501_8c.js File Reference

Variables

- var s2501_8c

30.1264.1 Variable Documentation

30.1264.1.1 var s2501_8c

Initial value:

```
=
[
    [ "S2501", "s2501_8c.html#a142dfb5c25ae4e9f2bd468bc52f766d9", null ],
    [ "s2501", "s2501_8c.html#a85ed6a2755f92d22249b8b7c621d21a5", null ]
]
```

Definition at line 1 of file s2501_8c.js.

30.1265 doc/html/s2502_8c.js File Reference

Variables

- var s2502_8c

30.1265.1 Variable Documentation

30.1265.1.1 var s2502_8c

Initial value:

```
=
[
    [ "S2502", "s2502_8c.html#a9b31bb52ea63cc1e0e28756a22a0e5b1", null ],
    [ "s2502", "s2502_8c.html#a1803d49d8babc9fdf28517055664b5d5", null ]
]
```

Definition at line 1 of file s2502_8c.js.

30.1266 doc/html/s2503_8c.js File Reference

Variables

- var s2503_8c

30.1266.1 Variable Documentation

30.1266.1.1 var s2503_8c

Initial value:

```
=
[
    [ "S2503", "s2503_8c.html#afd21d17ff576ad35a27497e21a883c9c", null ],
    [ "s2503", "s2503_8c.html#a15df620ee6a3afaa9abbe2793a9406ec", null ]
]
```

Definition at line 1 of file s2503_8c.js.

30.1267 doc/html/s2504_8c.js File Reference

Variables

- var s2504_8c

30.1267.1 Variable Documentation

30.1267.1.1 var s2504_8c

Initial value:

```
=
[
    [ "S2504", "s2504_8c.html#a473a72ee34c168beee444b1d5e8c3f62", null ],
    [ "s2504", "s2504_8c.html#a3d35c27348369cdf129a6302780084e7", null ]
]
```

Definition at line 1 of file s2504_8c.js.

30.1268 doc/html/s2505_8c.js File Reference

Variables

- var s2505_8c

30.1268.1 Variable Documentation

30.1268.1.1 var s2505_8c

Initial value:

```
=
[
    [ "S2505", "s2505_8c.html#a71b422f405b7bedd0f58fe67b301dc46", null ],
    [ "s2505", "s2505_8c.html#af304c78340c4fd2a090ba19abedd626d", null ]
]
```

Definition at line 1 of file s2505_8c.js.

30.1269 doc/html/s2506_8c.js File Reference

Variables

- var s2506_8c

30.1269.1 Variable Documentation

30.1269.1.1 var s2506_8c

Initial value:

```
=
[
    [ "S2506", "s2506_8c.html#a9e75a7847ba99a656ef30f53cda9fb5a", null ],
    [ "s2506", "s2506_8c.html#abf9d9e5affbdf7cc8a300916842b63b1", null ]
]
```

Definition at line 1 of file s2506_8c.js.

30.1270 doc/html/s2507_8c.js File Reference

Variables

- var s2507_8c

30.1270.1 Variable Documentation

30.1270.1.1 var s2507_8c

Initial value:

```
=
[
    [ "S2507", "s2507_8c.html#a70cac93ddedc634a39cd987a69142928", null ],
    [ "s2507", "s2507_8c.html#a0057655f02b71f4f3a13adbf2d76332e", null ]
]
```

Definition at line 1 of file s2507_8c.js.

30.1271 doc/html/s2508_8c.js File Reference

Variables

- var s2508_8c

30.1271.1 Variable Documentation

30.1271.1.1 var s2508_8c

Initial value:

```
=
[
    [ "S2508", "s2508_8c.html#a2a670524c161e63723338d6bc73e4eef", null ],
    [ "s2508", "s2508_8c.html#ab1798cd3dae4aec076fd9717a1d7cb7f", null ]
]
```

Definition at line 1 of file s2508_8c.js.

30.1272 doc/html/s2509_8c.js File Reference

Variables

- var s2509_8c

30.1272.1 Variable Documentation

30.1272.1.1 var s2509_8c

Initial value:

```
=
[
    [ "S2509", "s2509_8c.html#a421067631ac948901d41bc58127f8c6a", null ],
    [ "s2509", "s2509_8c.html#a380286a79bef03fddd98baf33e6845f2", null ]
]
```

Definition at line 1 of file s2509_8c.js.

30.1273 doc/html/s2510_8c.js File Reference

Variables

- var s2510_8c

30.1273.1 Variable Documentation

30.1273.1.1 var s2510_8c

Initial value:

```
=
[
    [ "S2510", "s2510_8c.html#a3ffee703742b34b2fe2e11f035132467", null ],
    [ "s2510", "s2510_8c.html#aa3ec3764187c063a66d4832e2b2f38b5", null ]
]
```

Definition at line 1 of file s2510_8c.js.

30.1274 doc/html/s2511_8c.js File Reference

Variables

- var s2511_8c

30.1274.1 Variable Documentation

30.1274.1.1 var s2511_8c

Initial value:

```
=
[
    [ "S2511", "s2511_8c.html#a8fbe9afde3c256398ee36e446598a63c", null ],
    [ "s2511", "s2511_8c.html#a8f1c6305a53616371d111f8529697ad5", null ]
]
```

Definition at line 1 of file s2511_8c.js.

30.1275 doc/html/s2512_8c.js File Reference

Variables

- var s2512_8c

30.1275.1 Variable Documentation

30.1275.1.1 var s2512_8c

Initial value:

```
=
[
    [ "S2512", "s2512_8c.html#a72441239d3de4ee8ba3fb2a03d9cc7e5", null ],
    [ "s2512", "s2512_8c.html#a4dc2649dd1c1e4fa081f6bcfcefd50e0", null ]
]
```

Definition at line 1 of file s2512_8c.js.

30.1276 doc/html/s2513_8c.js File Reference

Variables

- var s2513_8c

30.1276.1 Variable Documentation

30.1276.1.1 var s2513_8c

Initial value:

```
=
[
    [ "S2513", "s2513_8c.html#a487ad0e3da62b489f2dceca111ab677c", null ],
    [ "s2513", "s2513_8c.html#aabfa0c2c0afa6b10d54bfcb5977d3f23", null ]
]
```

Definition at line 1 of file s2513_8c.js.

30.1277 doc/html/s2514_8c.js File Reference

Variables

- var s2514_8c

30.1277.1 Variable Documentation

30.1277.1.1 var s2514_8c

Initial value:

```
=
[
    [ "S2514", "s2514_8c.html#ac95c36c7fc0ccabc4c747c8bc8c528ad", null ],
    [ "s2514", "s2514_8c.html#a08c58aadf1cefe9787d5b7f8ea20453c", null ]
]
```

Definition at line 1 of file s2514_8c.js.

30.1278 doc/html/s2515_8c.js File Reference

Variables

- var s2515_8c

30.1278.1 Variable Documentation

30.1278.1.1 var s2515_8c

Initial value:

```
=
[
    [ "S2515", "s2515_8c.html#a5cda4f8382a8baf0b61b508a8dcb0e92", null ],
    [ "s2515", "s2515_8c.html#a605dd31bd838d07c2f4ce9cbdb69344f", null ]
]
```

Definition at line 1 of file s2515_8c.js.

30.1279 doc/html/s2516_8c.js File Reference

Variables

- var s2516_8c

30.1279.1 Variable Documentation

30.1279.1.1 var s2516_8c

Initial value:

```
=
[
    [ "S2516", "s2516_8c.html#aad40157aeef970f1afa238a2e142bd60", null ],
    [ "s2516", "s2516_8c.html#a5a69ef752de55c44379c250ae30e2b8f", null ]
]
```

Definition at line 1 of file s2516_8c.js.

30.1280 doc/html/s2532_8c.js File Reference

Variables

- var s2532_8c

30.1280.1 Variable Documentation

30.1280.1.1 var s2532_8c

Initial value:

```
=
[
    [ "S2532", "s2532_8c.html#a0222a12dbb6061ef233bcfacfc94810c", null ],
    [ "s2532", "s2532_8c.html#a6757deb4f32f78a8499f7d0d92ccd32e", null ]
]
```

Definition at line 1 of file s2532_8c.js.

30.1281 doc/html/s2533_8c.js File Reference

Variables

- var s2533_8c

30.1281.1 Variable Documentation

30.1281.1.1 var s2533_8c

Initial value:

```
=
[
    [ "S2533", "s2533_8c.html#ae9cf4d238e9b4273f048c481fea7889e", null ],
    [ "s2533", "s2533_8c.html#aa0240d0e738aa20a2cc06b7b2fa70654", null ]
]
```

Definition at line 1 of file s2533_8c.js.

30.1282 doc/html/s2534_8c.js File Reference

Variables

- var s2534_8c

30.1282.1 Variable Documentation

30.1282.1.1 var s2534_8c

Initial value:

```
=
[
    [ "S2534", "s2534_8c.html#a8d03810260fea89852580810b106ff59", null ],
    [ "s2534", "s2534_8c.html#a5bdf9fa86ed953814edfd028bbe437ec", null ]
]
```

Definition at line 1 of file s2534_8c.js.

30.1283 doc/html/s2535_8c.js File Reference

Variables

- var s2535_8c

30.1283.1 Variable Documentation

30.1283.1.1 var s2535_8c

Initial value:

```
=
[
    [ "S2535", "s2535_8c.html#ae27db3010a36ca4111d3bd8b24e35357", null ],
    [ "s2535", "s2535_8c.html#a76680a535ea63087af69ab022cad9639", null ]
]
```

Definition at line 1 of file s2535_8c.js.

30.1284 doc/html/s2536_8c.js File Reference

Variables

- var s2536_8c

30.1284.1 Variable Documentation

30.1284.1.1 var s2536_8c

Initial value:

```
=
[
    [ "S2536", "s2536_8c.html#a5ed8c67af3816fa5e69e171e049c8795", null ],
    [ "s2536", "s2536_8c.html#a3373ec59ea4c62106d0cb248d8d0fac8", null ]
]
```

Definition at line 1 of file s2536_8c.js.

30.1285 doc/html/s2540_8c.js File Reference

Variables

- var s2540_8c

30.1285.1 Variable Documentation

30.1285.1.1 var s2540_8c

Initial value:

```
=
[
    [ "S2540", "s2540_8c.html#aeb5a6af0cd7b651179d7028ca12738ac", null ],
    [ "s2540", "s2540_8c.html#a13fa46720c3ff6fb9836404d099e7d07", null ]
]
```

Definition at line 1 of file s2540_8c.js.

30.1286 doc/html/s2541_8c.js File Reference

Variables

- var s2541_8c

30.1286.1 Variable Documentation

30.1286.1.1 var s2541_8c

Initial value:

```
=
[
    [ "S2541", "s2541_8c.html#aac8bfde742d1b94e7ba7fae5d6788dab", null ],
    [ "s2541", "s2541_8c.html#a237e411ceb881aac87b94fbde03a1d95", null ]
]
```

Definition at line 1 of file s2541_8c.js.

30.1287 doc/html/s2542_8c.js File Reference

Variables

- var s2542_8c

30.1287.1 Variable Documentation

30.1287.1.1 var s2542_8c

Initial value:

```
=
[
    [ "S2542", "s2542_8c.html#a26ba475c9a0f6a789eb101d850af22ae", null ],
    [ "s2542", "s2542_8c.html#a4b23a44f7ff69a9190fcd55008c4d148", null ]
]
```

Definition at line 1 of file s2542_8c.js.

30.1288 doc/html/s2543_8c.js File Reference

Variables

- var s2543_8c

30.1288.1 Variable Documentation

30.1288.1.1 var s2543_8c

Initial value:

```
=
[
    [ "S2543", "s2543_8c.html#aa683afaa39e2aef9ec2780d26079f1e9", null ],
    [ "s2543", "s2543_8c.html#a617bcd5068cda0f10dc4e9acd3e2b484", null ]
]
```

Definition at line 1 of file s2543_8c.js.

30.1289 doc/html/s2544_8c.js File Reference

Variables

- var s2544_8c

30.1289.1 Variable Documentation

30.1289.1.1 var s2544_8c

Initial value:

```
=
[
    [ "S2544", "s2544_8c.html#a84cdee037024bb4ad69a5c3576a8cf94", null ],
    [ "s2544", "s2544_8c.html#a5f5d710746400640c7bc3924679b081c", null ]
]
```

Definition at line 1 of file s2544_8c.js.

30.1290 doc/html/s2545_8c.js File Reference

Variables

- var s2545_8c

30.1290.1 Variable Documentation

30.1290.1.1 var s2545_8c

Initial value:

```
=
[
    [ "S2545", "s2545_8c.html#aa3625e0c61b75e10a40edbbc6f633f69", null ],
    [ "s2545", "s2545_8c.html#a41de0ed9938c634f47a9cdb2153376b6", null ]
]
```

Definition at line 1 of file s2545_8c.js.

30.1291 doc/html/s2550_8c.js File Reference

Variables

- var s2550_8c

30.1291.1 Variable Documentation

30.1291.1.1 var s2550_8c

Initial value:

```
=
[
    [ "S2550", "s2550_8c.html#a7467fb874321237e877e4e6281aabafb", null ],
    [ "s2550", "s2550_8c.html#ab4d3acef06d32976596b8e891eb08069", null ]
]
```

Definition at line 1 of file s2550_8c.js.

30.1292 doc/html/s2551_8c.js File Reference

Variables

- var s2551_8c

30.1292.1 Variable Documentation

30.1292.1.1 var s2551_8c

Initial value:

```
=
[
    [ "S2551", "s2551_8c.html#a442aba2fe0e9d1f49fd5a98d6f895462", null ],
    [ "s2551", "s2551_8c.html#a9a9e439ea38dbe0d3fda019d8bafb612", null ]
]
```

Definition at line 1 of file s2551_8c.js.

30.1293 doc/html/s2553_8c.js File Reference

Variables

- var s2553_8c

30.1293.1 Variable Documentation

30.1293.1.1 var s2553_8c

Initial value:

```
=
[
    [ "S2553", "s2553_8c.html#a172f512637d72486554910f16d92242b", null ],
    [ "s2553", "s2553_8c.html#ac60405e3e343a34c992c6c4bfe845172", null ]
]
```

Definition at line 1 of file s2553_8c.js.

30.1294 doc/html/s2554_8c.js File Reference

Variables

- var s2554_8c

30.1294.1 Variable Documentation

30.1294.1.1 var s2554_8c

Initial value:

```
=
[
    [ "S2554", "s2554_8c.html#a4250cbc624fbe7721f91ae94228853a8", null ],
    [ "s2554", "s2554_8c.html#ab4aebea0e94291ed4c9081364c995337", null ]
]
```

Definition at line 1 of file s2554_8c.js.

30.1295 doc/html/s2555_8c.js File Reference

Variables

- var s2555_8c

30.1295.1 Variable Documentation

30.1295.1.1 var s2555_8c

Initial value:

```
=
[
    [ "S2555", "s2555_8c.html#ab05c8828c32b4f12c0aa0cb5c0a40509", null ],
    [ "s2555", "s2555_8c.html#a35950511e590abf071ec7e691e8018c1", null ]
]
```

Definition at line 1 of file s2555_8c.js.

30.1296 doc/html/s2556_8c.js File Reference

Variables

- var s2556_8c

30.1296.1 Variable Documentation

30.1296.1.1 var s2556_8c

Initial value:

```
=
[
    [ "S2556", "s2556_8c.html#ae80e009e69a1e440913e7ea77b695919", null ],
    [ "s2556", "s2556_8c.html#a639b34165f9d7bfcef5d4b00e7026234", null ]
]
```

Definition at line 1 of file s2556_8c.js.

30.1297 doc/html/s2557_8c.js File Reference

Variables

- var s2557_8c

30.1297.1 Variable Documentation

30.1297.1.1 var s2557_8c

Initial value:

```
=
[
    [ "S2557", "s2557_8c.html#a164c2bd7adc605b0ca9c3ace703aa7d8", null ],
    [ "s2557", "s2557_8c.html#a94cf3c7be106e38adc8871a4656bfef7", null ]
]
```

Definition at line 1 of file s2557_8c.js.

30.1298 doc/html/s2558_8c.js File Reference

Variables

- var s2558_8c

30.1298.1 Variable Documentation

30.1298.1.1 var s2558_8c

Initial value:

```
=
[
    [ "S2558", "s2558_8c.html#a288eb78f482bc364cb5f710268a6a985", null ],
    [ "s2558", "s2558_8c.html#a53845d56d990a847b1ccbbd691aa4ee2", null ]
]
```

Definition at line 1 of file s2558_8c.js.

30.1299 doc/html/s2559_8c.js File Reference

Variables

- var s2559_8c

30.1299.1 Variable Documentation

30.1299.1.1 var s2559_8c

Initial value:

```
=
[
    [ "S2559", "s2559_8c.html#af7f92acdd065d9dc7b72846180db005a", null ],
    [ "s2559", "s2559_8c.html#aa214528f28ad5f7415e8490ff57243ff", null ]
]
```

Definition at line 1 of file s2559_8c.js.

30.1300 doc/html/s2560_8c.js File Reference

Variables

- var s2560_8c

30.1300.1 Variable Documentation

30.1300.1.1 var s2560_8c

Initial value:

```
=
[
    [ "S2560", "s2560_8c.html#a1f9c67b4ca3321bf99d4d76f50832175", null ],
    [ "s2560", "s2560_8c.html#ab0f341f619a4a04c811d7c9c546d5fac", null ]
]
```

Definition at line 1 of file s2560_8c.js.

30.1301 doc/html/s2561_8c.js File Reference

Variables

- var s2561_8c

30.1301.1 Variable Documentation

30.1301.1.1 var s2561_8c

Initial value:

```
=
[
    [ "S2561", "s2561_8c.html#a994c13158ea772cbacfae7fdb087ea79", null ],
    [ "s2561", "s2561_8c.html#a3170c8b6c7134c9588b7d2739dd5551e", null ]
]
```

Definition at line 1 of file s2561_8c.js.

30.1302 doc/html/s2562_8c.js File Reference

Variables

- var s2562_8c

30.1302.1 Variable Documentation

30.1302.1.1 var s2562_8c

Initial value:

```
=
[
    [ "S2562", "s2562_8c.html#a4d8239c7bf886b530acefc9568b9c148", null ],
    [ "s2562", "s2562_8c.html#a45964a15239cba527d6639ac8d037644", null ]
]
```

Definition at line 1 of file s2562_8c.js.

30.1303 doc/html/s6addcurve_8c.js File Reference

Variables

- var s6addcurve_8c

30.1303.1 Variable Documentation

30.1303.1.1 var s6addcurve_8c

Initial value:

```
=
[
    [ "S6ADDCURVE", "s6addcurve_8c.html#ac68a3efe3fd76c850d49a7e60d256db5", null ],
    [ "s6addcurve", "s6addcurve_8c.html#a2ff4b8d15c68b87f85b4dcb6f28b9a9d", null ]
]
```

Definition at line 1 of file s6addcurve_8c.js.

30.1304 doc/html/s6affdist_8c.js File Reference

Variables

- var s6affdist_8c

30.1304.1 Variable Documentation

30.1304.1.1 var s6affdist_8c

Initial value:

```
=
[
    [ "S6AFFDIST", "s6affdist_8c.html#a9618d268d1513e3bf866ce8ae5a1479b", null ],
    [ "s6affdist", "s6affdist_8c.html#a8c4b95d6f1acd4ae2eb0ea5269a62a11", null ]
]
```

Definition at line 1 of file s6affdist_8c.js.

30.1305 doc/html/s6ang_8c.js File Reference

Variables

- var s6ang_8c

30.1305.1 Variable Documentation

30.1305.1.1 var s6ang_8c

Initial value:

```
=
[
    [ "S6ANG", "s6ang_8c.html#a3c5bc78a99382a60efb86386ac88dc16", null ],
    [ "s6ang", "s6ang_8c.html#a51df2fd4b947cdced9cf60effaa99b73", null ]
]
```

Definition at line 1 of file s6ang_8c.js.

30.1306 doc/html/s6angle_8c.js File Reference

Variables

- var s6angle_8c

30.1306.1 Variable Documentation

30.1306.1.1 var s6angle_8c

Initial value:

```
=
[
    [ "S6ANGLE", "s6angle_8c.html#aaadf9755caa77f601eb0bdd9fdd9a4e5", null ],
    [ "s6angle", "s6angle_8c.html#a576f12c38ad86a65726f971477290cfe", null ]
]
```

Definition at line 1 of file s6angle_8c.js.

30.1307 doc/html/s6castelja_8c.js File Reference

Variables

- var s6castelja_8c

30.1307.1 Variable Documentation

30.1307.1.1 var s6castelja_8c

Initial value:

```
=
[
    [ "S6DECASTELJAU", "s6castelja_8c.html#a6fc444779a1c5bc6722cc3203ef90898", null ],
    [ "s6deCasteljau", "s6castelja_8c.html#a33e813e1fc6e2dfbf6e69df2a26e6cac", null ]
]
```

Definition at line 1 of file s6castelja_8c.js.

30.1308 doc/html/s6chpar_8c.js File Reference

Variables

- var s6chpar_8c

30.1308.1 Variable Documentation

30.1308.1.1 var s6chpar_8c

Initial value:

```
=
[
    [ "S6CHPAR", "s6chpar_8c.html#a6bc188257f3209e82c48420abab5aaa6", null ],
    [ "s6chpar", "s6chpar_8c.html#abf77d8075b532741cd8cfbbcbeb35e8b", null ]
]
```

Definition at line 1 of file s6chpar_8c.js.

30.1309 doc/html/s6crss_8c.js File Reference

Variables

- var s6crss_8c

30.1309.1 Variable Documentation

30.1309.1.1 var s6crss_8c

Initial value:

```
=
[
    [ "S6CRSS", "s6crss_8c.html#acf0ca9217120a824a0bbc19229bb862d", null ],
    [ "s6crss", "s6crss_8c.html#a336bcca08dedd525a044d6fbbafda3d2", null ]
]
```

Definition at line 1 of file s6crss_8c.js.

30.1310 doc/html/s6crvature_8c.js File Reference

Variables

- var s6crvature_8c

30.1310.1 Variable Documentation

30.1310.1.1 var s6crvature_8c

Initial value:

```
=
[
    [ "S6CURVATURE", "s6crvature_8c.html#a26fad67421bf84e53104cd1747942bac", null ],
    [ "s6curvature", "s6crvature_8c.html#a2d1ed0197ce0a554f0905097832e5667", null ]
]
```

Definition at line 1 of file s6crvature_8c.js.

30.1311 doc/html/s6crvcheck_8c.js File Reference

Variables

- var s6crvcheck_8c

30.1311.1 Variable Documentation

30.1311.1.1 var s6crvcheck_8c

Initial value:

```
=
[
    [ "S6CRVCHECK", "s6crvcheck_8c.html#a044eb3a4b59cd57dfcaa93508c01a9b2", null ],
    [ "s6crvcheck", "s6crvcheck_8c.html#ae702ec538a65924ee0a6b5310fa1b075", null ]
]
```

Definition at line 1 of file s6crvcheck_8c.js.

30.1312 doc/html/s6curvrad_8c.js File Reference

Variables

- var s6curvrad_8c

30.1312.1 Variable Documentation

30.1312.1.1 var s6curvrad_8c

Initial value:

```
=
[
    [ "S6CURVRAD", "s6curvrad_8c.html#a0a1cbfd7f19e573f1534678f4af8bcd7", null ],
    [ "s6curvrad", "s6curvrad_8c.html#a0868b595e8286dc1e7494afeaf148fdc", null ]
]
```

Definition at line 1 of file s6curvrad_8c.js.

30.1313 doc/html/s6decomp_8c.js File Reference

Variables

- var s6decomp_8c

30.1313.1 Variable Documentation

30.1313.1.1 var s6decomp_8c

Initial value:

```
=
[
    [ "S6DECOMP", "s6decomp_8c.html#a688e17aa7e50581a93f2125cd045f4de", null ],
    [ "s6decomp", "s6decomp_8c.html#a3ec124c98793420ece87b04c1fd9718c", null ]
]
```

Definition at line 1 of file s6decomp_8c.js.

30.1314 doc/html/s6degnorm_8c.js File Reference

Variables

- var s6degnorm_8c

30.1314.1 Variable Documentation

30.1314.1.1 var s6degnorm_8c

Initial value:

```
=
[
    [ "S6DEGNORM", "s6degnorm_8c.html#a9f043d8f2a39cd4493a14ff660524eab", null ],
    [ "s6degnorm", "s6degnorm_8c.html#a18263570cde4087ccacf7291e5b86fa7", null ]
]
```

Definition at line 1 of file s6degnorm_8c.js.

30.1315 doc/html/s6dertopt_8c.js File Reference

Variables

- var s6dertopt_8c

30.1315.1 Variable Documentation

30.1315.1.1 var s6dertopt_8c

Initial value:

```
=
[
    [ "S6DERTOPT", "s6dertopt_8c.html#adb1c9d25e1cd66a4c17f880ed0ca9209", null ],
    [ "s6dertopt", "s6dertopt_8c.html#a795f8e351a96dfeb4677cffdc44cfce2", null ]
]
```

Definition at line 1 of file s6dertopt_8c.js.

30.1316 doc/html/s6diff_8c.js File Reference

Variables

- var s6diff_8c

30.1316.1 Variable Documentation

30.1316.1.1 var s6diff_8c

Initial value:

```
=
[
    [ "S6DIFF", "s6diff_8c.html#a52f2ec9621cd96b5615373339612f483", null ],
    [ "s6diff", "s6diff_8c.html#afcb16ff486c070d8ab17984792f8d019", null ]
]
```

Definition at line 1 of file s6diff_8c.js.

30.1317 doc/html/s6dist_8c.js File Reference

Variables

- var s6dist_8c

30.1317.1 Variable Documentation

30.1317.1.1 var s6dist_8c

Initial value:

```
=
[
    [ "S6DIST", "s6dist_8c.html#aeedd4ab2682ab3fcadd5dc74b34d72e5", null ],
    [ "s6dist", "s6dist_8c.html#abf2d8ba2b1b09b76a3995451c8a3871a", null ]
]
```

Definition at line 1 of file s6dist_8c.js.

30.1318 doc/html/s6dline_8c.js File Reference

Variables

- var s6dline_8c

30.1318.1 Variable Documentation

30.1318.1.1 var s6dline_8c

Initial value:

```
=
[
    [ "S6DLINE", "s6dline_8c.html#a7d9aba73a62e98d7700f5cc71feb2c45", null ],
    [ "s6dline", "s6dline_8c.html#a4eb6806bf84772599b5ad8c3184cdf03", null ]
]
```

Definition at line 1 of file s6dline_8c.js.

30.1319 doc/html/s6dplane_8c.js File Reference

Variables

- var s6dplane_8c

30.1319.1 Variable Documentation

30.1319.1.1 var s6dplane_8c

Initial value:

```
=
[
    [ "S6DPLANE", "s6dplane_8c.html#a133f94fd304dae3d48b685f3ce27952d", null ],
    [ "s6dplane", "s6dplane_8c.html#a87003f3f940d7e9f43ee852d02bd0c06", null ]
]
```

Definition at line 1 of file s6dplane_8c.js.

30.1320 doc/html/s6drawseq_8c.js File Reference

Variables

- var s6drawseq_8c

30.1320.1 Variable Documentation

30.1320.1.1 var s6drawseq_8c

Initial value:

```
=
[
    [ "S6DRAWSEQ", "s6drawseq_8c.html#abbb0d778c2b13e4b9143096ad525b2e6", null ],
    [ "s6drawseq", "s6drawseq_8c.html#a556a3d8485d6ef340453c058d8098dc2", null ],
    [ "s6line", "s6drawseq_8c.html#aa297adc147bdb171116578256e9ab29a", null ],
    [ "s6move", "s6drawseq_8c.html#a52f54508d7c8698b4484ae09c8fe0f7f", null ]
]
```

Definition at line 1 of file s6drawseq_8c.js.

30.1321 doc/html/s6equal_8c.js File Reference

Variables

- var s6equal_8c

30.1321.1 Variable Documentation

30.1321.1.1 var s6equal_8c

Initial value:

```
=
[
    [ "S6EQUAL", "s6equal_8c.html#a05da7fbced1106716585bc6441cbad13", null ],
    [ "s6equal", "s6equal_8c.html#aaf4f250c73dbac97e39ca7378d2bcbff", null ]
]
```

Definition at line 1 of file s6equal_8c.js.

30.1322 doc/html/s6err_8c.js File Reference

Variables

- var s6err_8c

30.1322.1 Variable Documentation

30.1322.1.1 var s6err_8c

Initial value:

```
=
[
    [ "S6ERR", "s6err_8c.html#a7869604fc2bc0a0e0dc94fae2c82c817", null ],
    [ "s6err", "s6err_8c.html#a0167287f293e82ee78fe9d9650a57ca9", null ]
]
```

Definition at line 1 of file s6err_8c.js.

30.1323 doc/html/s6existbox_8c.js File Reference

Variables

- var s6existbox_8c

30.1323.1 Variable Documentation

30.1323.1.1 var s6existbox_8c

Initial value:

```
=
[
    [ "S6EXISTBOX", "s6existbox_8c.html#a645c371a463bd4597717a1696257c688", null ],
    [ "s6existbox", "s6existbox_8c.html#a6c06fd32283f71f44906a065af629599", null ]
]
```

Definition at line 1 of file s6existbox_8c.js.

30.1324 doc/html/s6findfac_8c.js File Reference

Variables

- var s6findfac_8c

30.1324.1 Variable Documentation

30.1324.1.1 var s6findfac_8c

Initial value:

```
=
[
    [ "S6FINDFAC", "s6findfac_8c.html#ac841a22706ed1d66248ede6e5048c8ca", null ],
    [ "s6findfac", "s6findfac_8c.html#a61a90f39e6f3e087394aaeefe188805e", null ]
]
```

Definition at line 1 of file s6findfac_8c.js.

30.1325 doc/html/s6fndintv_8c.js File Reference

Variables

- var s6fndintv_8c

30.1325.1 Variable Documentation

30.1325.1.1 var s6fndintv_8c

Initial value:

```
=
[
    [ "SFNDINTVL", "s6fndintv_8c.html#af649c083c01b5e823c602582961b646f", null ],
    [ "s6fndintvl", "s6fndintv_8c.html#aa399b9d02e274b4c18c6cb0c34cb116c", null ]
]
```

Definition at line 1 of file s6fndintv_8c.js.

30.1326 doc/html/s6herm_8c.js File Reference

Variables

- var s6herm_8c

30.1326.1 Variable Documentation

30.1326.1.1 var s6herm_8c

Initial value:

```
=
[
    [ "S6HERM", "s6herm_8c.html#a96e45525e882ad80bf597c3db2ba0797", null ],
    [ "s6herm", "s6herm_8c.html#af8b2797bde0e5dd1a671752b8bd7b3cf", null ]
]
```

Definition at line 1 of file s6herm_8c.js.

30.1327 doc/html/s6herm__bez_8c.js File Reference

Variables

- var s6herm__bez_8c

30.1327.1 Variable Documentation

30.1327.1.1 var s6herm__bez_8c

Initial value:

```
=
[
    [ "S6HERMITE_BEZIER", "s6herm__bez_8c.html#a36fc301409b7a5b958924911a927a71a", null ],
    [ "s6hermite_bezier", "s6herm__bez_8c.html#aee846e0428939cf56de479b09058add2", null ]
]
```

Definition at line 1 of file s6herm__bez_8c.js.

30.1328 doc/html/s6idcon_8c.js File Reference

Variables

- var s6idcon_8c

30.1328.1 Variable Documentation

30.1328.1.1 var s6idcon_8c

Initial value:

```
=
[
    [ "S6IDCON", "s6idcon_8c.html#a2af77f50ad3fc89be205eba38f844c4c", null ],
    [ "s6idcon", "s6idcon_8c.html#a5167ce75e2b84f14bceaaa49f920c48f", null ]
]
```

Definition at line 1 of file s6idcon_8c.js.

30.1329 doc/html/s6idcpt_8c.js File Reference

Variables

- var s6idcpt_8c

30.1329.1 Variable Documentation

30.1329.1.1 var s6idcpt_8c

Initial value:

```
=
[
    [ "S6IDCPT", "s6idcpt_8c.html#a8572104e61cd1b7b1c6a1789a5e59e8b", null ],
    [ "s6idcpt", "s6idcpt_8c.html#aca82e0758dc21ec7dbe1b0b37251f010", null ]
]
```

Definition at line 1 of file s6idcpt_8c.js.

30.1330 doc/html/s6idedg_8c.js File Reference

Variables

- var s6idedg_8c

30.1330.1 Variable Documentation

30.1330.1.1 var s6idedg_8c

Initial value:

```
=
[
    [ "S6IDEDG", "s6idedg_8c.html#aba0d67648f173100ac45016261aadd82", null ],
    [ "s6idedg", "s6idedg_8c.html#a1198cc3b46fdb9d3504abed53dcb4c9d", null ]
]
```

Definition at line 1 of file s6idedg_8c.js.

30.1331 doc/html/s6identify_8c.js File Reference

Variables

- var s6identify_8c

30.1331.1 Variable Documentation

30.1331.1.1 var s6identify_8c

Initial value:

```
=
[
    [ "S6IDENTIFY", "s6identify_8c.html#ab631a87fe6bfd230408f39af40ba4b56", null ],
    [ "s6identify", "s6identify_8c.html#a0788f16c57aefb9d79a2c00a7ddad9af", null ]
]
```

Definition at line 1 of file s6identify_8c.js.

30.1332 doc/html/s6idget_8c.js File Reference

Variables

- var s6idget_8c

30.1332.1 Variable Documentation

30.1332.1.1 var s6idget_8c

Initial value:

```
=
[
    [ "S6IDGET", "s6idget_8c.html#a78f556bc28612bf71d52cf5f4736fb27", null ],
    [ "s6idget", "s6idget_8c.html#a228b26dba5eb138af035e636006a0587", null ]
]
```

Definition at line 1 of file s6idget_8c.js.

30.1333 doc/html/s6idint_8c.js File Reference

Variables

- var s6idint_8c

30.1333.1 Variable Documentation

30.1333.1.1 var s6idint_8c

Initial value:

```
=
[
    [ "S6IDINT", "s6idint_8c.html#acddd2b11e0a5d0833df9a3b1d698094a", null ],
    [ "s6idint", "s6idint_8c.html#af55007f23c080999d4323349fa432c2a", null ]
]
```

Definition at line 1 of file s6idint_8c.js.

30.1334 doc/html/s6idklist_8c.js File Reference

Variables

- var s6idklist_8c

30.1334.1 Variable Documentation

30.1334.1.1 var s6idklist_8c

Initial value:

```
=
[
    [ "S6IDKLIST", "s6idklist_8c.html#ae30e25e1923a505fca4d8d717d7b8d64", null ],
    [ "s6idklist", "s6idklist_8c.html#a2dce0fc5acab84bf248773b41f294bbe", null ]
]
```

Definition at line 1 of file s6idklist_8c.js.

30.1335 doc/html/s6idkpt_8c.js File Reference

Variables

- var s6idkpt_8c

30.1335.1 Variable Documentation

30.1335.1.1 var s6idkpt_8c

Initial value:

```
=
[
    [ "S6IDKPT", "s6idkpt_8c.html#a9cdb66d9ecc5c082ad0c17786c154aa6", null ],
    [ "s6idkpt", "s6idkpt_8c.html#a07728432bcac58961e45bef761ca0c15", null ]
]
```

Definition at line 1 of file s6idkpt_8c.js.

30.1336 doc/html/s6idlis_8c.js File Reference

Variables

- var s6idlis_8c

30.1336.1 Variable Documentation

30.1336.1.1 var s6idlis_8c

Initial value:

```
=
[
    [ "S6IDLIS", "s6idlis_8c.html#ab229e11e340f375f26908e4d1281c6a9", null ],
    [ "s6idlis", "s6idlis_8c.html#a0843f5040f7f11f931a76d85fe465021", null ]
]
```

Definition at line 1 of file s6idlis_8c.js.

30.1337 doc/html/s6idnpt_8c.js File Reference

Variables

- var s6idnpt_8c

30.1337.1 Variable Documentation

30.1337.1.1 var s6idnpt_8c

Initial value:

```
=
[
    [ "S6IDNPT", "s6idnpt_8c.html#a129f7e227953427208ef8ccf87a2b67a", null ],
    [ "s6idnpt", "s6idnpt_8c.html#a138f2f281e16c38b65adcc9a7c6c9b16", null ]
]
```

Definition at line 1 of file s6idnpt_8c.js.

30.1338 doc/html/s6idput_8c.js File Reference

Variables

- var s6idput_8c

30.1338.1 Variable Documentation

30.1338.1.1 var s6idput_8c

Initial value:

```
=
[
    [ "S6IDPUT", "s6idput_8c.html#afd37cbabd0ff2565b68f594940d21854", null ],
    [ "s6idput", "s6idput_8c.html#a3c8cb17e9dc024fb0e541bca04186ff0", null ]
]
```

Definition at line 1 of file s6idput_8c.js.

30.1339 doc/html/s6inv4_8c.js File Reference

Variables

- var s6inv4_8c

30.1339.1 Variable Documentation

30.1339.1.1 var s6inv4_8c

Initial value:

```
=
[
    [ "S6INV4", "s6inv4_8c.html#a857a7d701c40da166947982927a5dd6b", null ],
    [ "s6inv4", "s6inv4_8c.html#a4db5f9686061d17476e2aecad965252e", null ]
]
```

Definition at line 1 of file s6inv4_8c.js.

30.1340 doc/html/s6invert_8c.js File Reference

Variables

- var s6invert_8c

30.1340.1 Variable Documentation

30.1340.1.1 var s6invert_8c

Initial value:

```
=
[
    [ "S6INVERT", "s6invert_8c.html#a997cf2309b2ab801f18b3c832a14290b", null ],
    [ "s6invert", "s6invert_8c.html#a82f814ee44540bb24d2c04bc5add30fa", null ]
]
```

Definition at line 1 of file s6invert_8c.js.

30.1341 doc/html/s6knotmult_8c.js File Reference

Variables

- var s6knotmult_8c

30.1341.1 Variable Documentation

30.1341.1.1 var s6knotmult_8c

Initial value:

```
=
[
    [ "S6KNOTMULT", "s6knotmult_8c.html#a019e18124f54b338304b5a43f6c61084", null ],
    [ "s6knotmult", "s6knotmult_8c.html#aa0ca077eb0bac9c9d1ca0ca013d6acde", null ]
]
```

Definition at line 1 of file s6knotmult_8c.js.

30.1342 doc/html/s6length_8c.js File Reference

Variables

- var s6length_8c

30.1342.1 Variable Documentation

30.1342.1.1 var s6length_8c

Initial value:

```
=
[
    [ "S6LENGTH", "s6length_8c.html#a767c68f7534983e95f61411a7dbe8b18", null ],
    [ "s6length", "s6length_8c.html#a4cbe26a79c8c65d3de133bc410284362", null ]
]
```

Definition at line 1 of file s6length_8c.js.

30.1343 doc/html/s6line_8c.js File Reference

Variables

- var s6line_8c

30.1343.1 Variable Documentation

30.1343.1.1 var s6line_8c

Initial value:

```
=
[
    [ "S6LINE", "s6line_8c.html#a464a9074552d5db5f33f86836f2b063d", null ],
    [ "s6line", "s6line_8c.html#a506e5de24c3b032d09ca07ab943bea5c", null ]
]
```

Definition at line 1 of file s6line_8c.js.

30.1344 doc/html/s6lprj_8c.js File Reference

Variables

- var s6lprj_8c

30.1344.1 Variable Documentation

30.1344.1.1 var s6lprj_8c

Initial value:

```
=
[
    [ "S6LPRJ", "s6lprj_8c.html#a004ef1e03c0aceba2c4193d0e719da43", null ],
    [ "s6lprj", "s6lprj_8c.html#ad18893baf6ae8c078f0c3a988343baa7", null ]
]
```

Definition at line 1 of file s6lprj_8c.js.

30.1345 doc/html/s6lufacp_8c.js File Reference

Variables

- var s6lufacp_8c

30.1345.1 Variable Documentation

30.1345.1.1 var s6lufacp_8c

Initial value:

```
=
[
    [ "S6LUFACP", "s6lufacp_8c.html#a22b6042f1b88759f9f9bc8450a357cc8", null ],
    [ "s6lufacp", "s6lufacp_8c.html#a7928ab7cd261b6b9a5deec9823e18b74", null ]
]
```

Definition at line 1 of file s6lufacp_8c.js.

30.1346 doc/html/s6lusolp_8c.js File Reference

Variables

- var s6lusolp_8c

30.1346.1 Variable Documentation

30.1346.1.1 var s6lusolp_8c

Initial value:

```
=
[
    [ "S6LUSOLP", "s6lusolp_8c.html#a18d5b0dbcf7cbb509be34cffa88c30c1", null ],
    [ "s6lusolp", "s6lusolp_8c.html#a4c0b16a24b1478981eafaa76e18de353", null ]
]
```

Definition at line 1 of file s6lusolp_8c.js.

30.1347 doc/html/s6metric_8c.js File Reference

Variables

- var s6metric_8c

30.1347.1 Variable Documentation

30.1347.1.1 var s6metric_8c

Initial value:

```
=
[
    [ "S6METRIC", "s6metric_8c.html#ac0aeaf33961c1cf1d9a38ce2a81a6f07", null ],
    [ "s6metric", "s6metric_8c.html#ad2f21b9fd696bcfffebf4ff599c24ff5", null ]
]
```

Definition at line 1 of file s6metric_8c.js.

30.1348 doc/html/s6move_8c.js File Reference

Variables

- var s6move_8c

30.1348.1 Variable Documentation

30.1348.1.1 var s6move_8c

Initial value:

```
=
[
    [ "S6MOVE", "s6move_8c.html#ab3e4f32fe1c029cfe3f0e2dd5b6bf011", null ],
    [ "s6move", "s6move_8c.html#aa0b696eefa27818ca8d4ad70cb3e99ed", null ]
]
```

Definition at line 1 of file s6move_8c.js.

30.1349 doc/html/s6mulvec_8c.js File Reference

Variables

- var s6mulvec_8c

30.1349.1 Variable Documentation

30.1349.1.1 var s6mulvec_8c

Initial value:

```
=
[
    [ "S6MULVEC", "s6mulvec_8c.html#a197128589eb422ba5b5380884f2cb32d", null ],
    [ "s6mulvec", "s6mulvec_8c.html#a302d23e7e5af682d7ecf15b59d7c6e4d", null ]
]
```

Definition at line 1 of file s6mulvec_8c.js.

30.1350 doc/html/s6mvec_8c.js File Reference

Variables

- var s6mvec_8c

30.1350.1 Variable Documentation

30.1350.1.1 var s6mvec_8c

Initial value:

```
=
[
    [ "S6MVEC", "s6mvec_8c.html#a0c5eac9eac55c41c90a1b5d4c6e7a0af", null ],
    [ "s6mvec", "s6mvec_8c.html#ae68867523bc91432656b4032b5f94112", null ]
]
```

Definition at line 1 of file s6mvec_8c.js.

30.1351 doc/html/s6newbox_8c.js File Reference

Variables

- var s6newbox_8c

30.1351.1 Variable Documentation

30.1351.1.1 var s6newbox_8c

Initial value:

```
=
[
    [ "S6NEWBOX", "s6newbox_8c.html#a80bdb02860ab488616fdcc3b7fea3a31", null ],
    [ "s6newbox", "s6newbox_8c.html#a1cf9e9f8ea8d1311324eace684cc377d", null ]
]
```

Definition at line 1 of file s6newbox_8c.js.

30.1352 doc/html/s6norm_8c.js File Reference

Variables

- var s6norm_8c

30.1352.1 Variable Documentation

30.1352.1.1 var s6norm_8c

Initial value:

```
=
[
    [ "S6NORM", "s6norm_8c.html#abf455c4d8e356823d97ecc511604ca5f", null ],
    [ "s6norm", "s6norm_8c.html#a19390630ed1341ab54a0eb2776276a0c", null ]
]
```

Definition at line 1 of file s6norm_8c.js.

30.1353 doc/html/s6ratder_8c.js File Reference

Variables

- var s6ratder_8c

30.1353.1 Variable Documentation

30.1353.1.1 var s6ratder_8c

Initial value:

```
=
[
    [ "S6RATDER", "s6ratder_8c.html#a063cf39116101938f54c80e79fe26c4b", null ],
    [ "s6ratder", "s6ratder_8c.html#a0fefc63294377a0650c07bcff86c6717", null ]
]
```

Definition at line 1 of file s6ratder_8c.js.

30.1354 doc/html/s6rotax_8c.js File Reference

Variables

- var s6rotax_8c

30.1354.1 Variable Documentation

30.1354.1.1 var s6rotax_8c

Initial value:

```
=
[
    [ "S6ROTAX", "s6rotax_8c.html#a635d38c53fd72e0eb2be74b1cd2eab31", null ],
    [ "s6rotax", "s6rotax_8c.html#a69df2fc294e5ff516f7055742c19f2ee", null ]
]
```

Definition at line 1 of file s6rotax_8c.js.

30.1355 doc/html/s6rotmat_8c.js File Reference

Variables

- var s6rotmat_8c

30.1355.1 Variable Documentation

30.1355.1.1 var s6rotmat_8c

Initial value:

```
=
[
    [ "S6ROTMAT", "s6rotmat_8c.html#a94540cb2345f671e2fb12e1e1018ac95", null ],
    [ "s6rotmat", "s6rotmat_8c.html#a002798ab6371ee28c5a7cd51c229ad90", null ]
]
```

Definition at line 1 of file s6rotmat_8c.js.

30.1356 doc/html/s6schoen_8c.js File Reference

Variables

- var s6schoen_8c

30.1356.1 Variable Documentation

30.1356.1.1 var s6schoen_8c

Initial value:

```
=
[
    [ "S6SCHOEN", "s6schoen_8c.html#add2d4df20ecfd9af20478df0cf108415", null ],
    [ "s6schoen", "s6schoen_8c.html#acbd883798bfb4524c7551b22e0d42877", null ]
]
```

Definition at line 1 of file s6schoen_8c.js.

30.1357 doc/html/s6scpr_8c.js File Reference

Variables

- var s6scpr_8c

30.1357.1 Variable Documentation

30.1357.1.1 var s6scpr_8c

Initial value:

```
=
[
    [ "S6SCPR", "s6scpr_8c.html#ae0303e3d897d74693bfeda2685a671ee", null ],
    [ "s6scpr", "s6scpr_8c.html#a40208ad1a68943542bb9aa05fc1d0d06", null ]
]
```

Definition at line 1 of file s6scpr_8c.js.

30.1358 doc/html/s6sortpar_8c.js File Reference

Variables

- var s6sortpar_8c

30.1358.1 Variable Documentation

30.1358.1.1 var s6sortpar_8c

Initial value:

```
=
[
    [ "S6SORTPAR", "s6sortpar_8c.html#ada7d7b2269768599979515f92d93fc45", null ],
    [ "s6sortpar", "s6sortpar_8c.html#a6e0679bdaf720915f7b62c846c649305", null ]
]
```

Definition at line 1 of file s6sortpar_8c.js.

30.1359 doc/html/s6sratder_8c.js File Reference

Variables

- var s6sratder_8c

30.1359.1 Variable Documentation

30.1359.1.1 var s6sratder_8c

Initial value:

```
=
[
    [ "S6SRATDER", "s6sratder_8c.html#a1cec956106edf5e66a511ad1fc401eeb", null ],
    [ "s6sratder", "s6sratder_8c.html#a8ff72acc1bf5029d23c2413dd60efce9", null ]
]
```

Definition at line 1 of file s6sratder_8c.js.

30.1360 doc/html/s6strider_8c.js File Reference

Variables

- var s6strider_8c

30.1360.1 Variable Documentation

30.1360.1.1 var s6strider_8c

Initial value:

```
=
[
    [ "S6STRIDER", "s6strider_8c.html#a9420da05d5e965c859088e28b6d76e88", null ],
    [ "s6strider", "s6strider_8c.html#a5e5ce51ae18855baeaa64e091eab12c6", null ]
]
```

Definition at line 1 of file s6strider_8c.js.

30.1361 doc/html/s6takunion_8c.js File Reference

Variables

- var s6takunion_8c

30.1361.1 Variable Documentation

30.1361.1.1 var s6takunion_8c

Initial value:

```
=
[
    [ "S6TAKEUNION", "s6takunion_8c.html#a5208d1a25bb96397654bf171929c4dfc", null ],
    [ "s6takeunion", "s6takunion_8c.html#ac950a0db8775ec752295efe918b1437d", null ]
]
```

Definition at line 1 of file s6takunion_8c.js.

30.1362 doc/html/s6twonorm_8c.js File Reference

Variables

- var s6twonorm_8c

30.1362.1 Variable Documentation

30.1362.1.1 var s6twonorm_8c

Initial value:

```
=
[
    [ "S6TWONORM", "s6twonorm_8c.html#aaccffb62e19263aebaaf015b9a0e53df", null ],
    [ "s6twonorm", "s6twonorm_8c.html#a8dae3bd50bf7607282d493eebe504351", null ]
]
```

Definition at line 1 of file s6twonorm_8c.js.

30.1363 doc/html/s9adsimp_8c.js File Reference

Variables

- var s9adsimp_8c

30.1363.1 Variable Documentation

30.1363.1.1 var s9adsimp_8c

Initial value:

```
=
[
    [ "S9ADSIMP", "s9adsimp_8c.html#a38cd209f5ec01ffe03bc9f6af9fddd91", null ],
    [ "s9adsimp", "s9adsimp_8c.html#a8fd1c9dfa80574a33aacd6c89375f9be", null ]
]
```

Definition at line 1 of file s9adsimp_8c.js.

30.1364 doc/html/s9adstep_8c.js File Reference

Variables

- var s9adstep_8c

30.1364.1 Variable Documentation

30.1364.1.1 var s9adstep_8c

Initial value:

```
=
[
    [ "S9ADSTEP", "s9adstep_8c.html#a3fc6930442b1a55563f686043787d9a6", null ],
    [ "s9adstep", "s9adstep_8c.html#ae4b9864fe962edbc6b905ce9a3663fd0", null ]
]
```

Definition at line 1 of file s9adstep_8c.js.

30.1365 doc/html/s9boundimp_8c.js File Reference

Variables

- var s9boundimp_8c

30.1365.1 Variable Documentation

30.1365.1.1 var s9boundimp_8c

Initial value:

```
=
[
    [ "S9BOUNDIMP", "s9boundimp_8c.html#a8db74aad6f21980b8bb7a22e43ffddb6", null ],
    [ "s9boundimp", "s9boundimp_8c.html#af88a19b4eb19f86a784c0e5fecc94a9c", null ]
]
```

Definition at line 1 of file s9boundimp_8c.js.

30.1366 doc/html/s9boundit_8c.js File Reference

Variables

- var s9boundit_8c

30.1366.1 Variable Documentation

30.1366.1.1 var s9boundit_8c

Initial value:

```
=
[
    [ "S9BOUNDIT", "s9boundit_8c.html#a4d5c7c5503a88b39fac7dc5df92d8de3", null ],
    [ "s9boundit", "s9boundit_8c.html#a4fc3d38497c6dee699ccb978f42afded", null ]
]
```

Definition at line 1 of file s9boundit_8c.js.

30.1367 doc/html/s9clipimp_8c.js File Reference

Variables

- var s9clipimp_8c

30.1367.1 Variable Documentation

30.1367.1.1 var s9clipimp_8c

Initial value:

```
=
[
    [ "S9CLIPIMP", "s9clipimp_8c.html#a239aaee9a37f54bb2cef68a06e87a5ba", null ],
    [ "s9clipimp", "s9clipimp_8c.html#a4e242d424e250ad264c3a95b5ef2faae", null ]
]
```

Definition at line 1 of file s9clipimp_8c.js.

30.1368 doc/html/s9clipit_8c.js File Reference

Variables

- var s9clipit_8c

30.1368.1 Variable Documentation

30.1368.1.1 var s9clipit_8c

Initial value:

```
=
[
    [ "S9CLIPIT", "s9clipit_8c.html#a71376b9c4eb67357ea151d6a770688b7", null ],
    [ "s9clipit", "s9clipit_8c.html#acce291c32ed4dfca1c5b48b3cdceb1f2", null ]
]
```

Definition at line 1 of file s9clipit_8c.js.

30.1369 doc/html/s9conmarch_8c.js File Reference

Variables

- var s9conmarch_8c

30.1369.1 Variable Documentation

30.1369.1.1 var s9conmarch_8c

Initial value:

```
=
[
    [ "S9CONMARCH", "s9conmarch_8c.html#a8bef0e5e6c53d8bf855c17a6d2d46807", null ],
    [ "s9conmarch", "s9conmarch_8c.html#ade2fcd614208fa9de6755fb38b89cfaf", null ]
]
```

Definition at line 1 of file s9conmarch_8c.js.

30.1370 doc/html/s9iterate_8c.js File Reference

Variables

- var s9iterate_8c

30.1370.1 Variable Documentation

30.1370.1.1 var s9iterate_8c

Initial value:

```
=
[
    [ "S9ITERATE", "s9iterate_8c.html#a7bf9741589513d5161cd93fa4be8119b", null ],
    [ "s9iterate", "s9iterate_8c.html#a145dfbbdce306bc13048f283d3e4d302", null ]
]
```

Definition at line 1 of file s9iterate_8c.js.

30.1371 doc/html/s9iterimp_8c.js File Reference

Variables

- var s9iterimp_8c

30.1371.1 Variable Documentation

30.1371.1.1 var s9iterimp_8c

Initial value:

```
=
[
    [ "S9ITERIMP", "s9iterimp_8c.html#a74c9fe8b5b9e1b31b4a0672efad86a26", null ],
    [ "s9iterimp", "s9iterimp_8c.html#ac1ad95062a5b32009141c9a21f9a8d87", null ]
]
```

Definition at line 1 of file s9iterimp_8c.js.

30.1372 doc/html/s9smplknot_8c.js File Reference

Variables

- var s9smplknot_8c

30.1372.1 Variable Documentation

30.1372.1.1 var s9smplknot_8c

Initial value:

```
=
[
    [ "S9SIMPLE_KNOT", "s9smplknot_8c.html#a02a6310cafd59b07701624ab7b22b903", null ],
    [ "s9simple_knot", "s9smplknot_8c.html#a6353f6acd9d39814e7ec5c93ef25eb6d", null ]
]
```

Definition at line 1 of file s9smplknot_8c.js.

30.1373 doc/html/s9surmarch_8c.js File Reference

Variables

- var s9surmarch_8c

30.1373.1 Variable Documentation

30.1373.1.1 var s9surmarch_8c

Initial value:

```
=
[
    [ "S9SURMARCH", "s9surmarch_8c.html#ae3cedf3fd5412862b698e60d4efa0b25", null ],
    [ "s9surmarch", "s9surmarch_8c.html#a3f0fdcdc6f5fc9bfcfb5c0f6ed8a1dac", null ]
]
```

Definition at line 1 of file s9surmarch_8c.js.

30.1374 doc/html/search/all_0.js File Reference

Variables

- var searchData

30.1374.1 Variable Documentation

30.1374.1.1 var searchData

Initial value:

```
=
[
  ['2dpoly_5ffor_5fs2m_2eh',['2dpoly_for_s2m.h',['../2dpoly__for__s2m_8h.html',1,'']]]
]
```

Definition at line 1 of file all_0.js.

30.1375 doc/html/search/all_1.js File Reference

Variables

- var searchData

30.1375.1 Variable Documentation

30.1375.1.1 var searchData

Initial value:

```
=
[
  ['_5f_5fpower',['__power',['../namespacestd.html#a97b81ceb78c6f342eb91ad62ba86260f',1,'std::__power(_Tp
      __x, _Integer __n, _MonoidOperation __oper)'],['../namespacestd.html#ac866b28c409b5c4b6b613e17fd3b5c85',1,'
     std::__power(_Tp __x, _Integer __n)']]],
  ['_5fcopyright_5fh',['_COPYRIGHT_H',['
     ../gotools-core_2include_2_go_tools_2geometry_2copyright_8h.html#abdfb6b142e6341a6d5e35b87ccbfab07',1,'copyright.h']]],
  ['_5ferrormacros_5fh',['_ERRORMACROS_H',['../aux2_8h.html#a3f97e52087e510f4d7c49c7eb28624c0',1,'aux2.h']]
     ],
  ['_5figeslib',['_IGESLIB',['../igeslib__doxymain_8h.html#aa60f7acaa57d814a1403f7bb16981c1d',1,'
     igeslib_doxymain.h']]],
  ['_5flrsplineevavgrid_5fh',['_LRSPLINEEVAVGRID_H',['
     ../_l_r_spline_eval_grid_8h.html#a861377e9079b564d42abe23579c6992b',1,'LRSplineEvalGrid.h']]],
  ['_5foffsetutils_5fh',['_OFFSETUTILS_H',['
     ../_creators_offset_utils_8h.html#ad9fc2da1082c23bb539309710e76122f',1,'CreatorsOffsetUtils.h']]],
  ['_5fvolumefilehandler_5fh',['_VOLUMEFILEHANDLER_H',['
     ../_volume_model_file_handler_8h.html#a1d5505728388942e4ea90d4be08daaea',1,'VolumeModelFileHandler.h']]]
]
```

Definition at line 1 of file all_1.js.

30.1376 doc/html/search/all_10.js File Reference

Variables

- var searchData
- StreamUtils h
- StreamUtils int idx
- StreamUtils int int idx const
- StreamUtils int int idx int i int i
- StreamUtils int int idx int i int int i int int i int int num int num

30.1376.1 Variable Documentation

30.1376.1.1 StreamUtils int int idx int i int int i int int i int int num int int num int int num int int num int int int i int int i const [bound]

Initial value:

```
=0'],['../class_go_1_1_composite_model.html#a1546764e88cba9c13fa2bea819e9fe2c'
      ,1,'Go::CompositeModel::tesselate(double density, std::vector&
      lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const =0'],['../
      class_go_1_1_curve_model.html#a5aa6f99880fd5126485b39a59932a30f',1,'
      Go::CurveModel::tesselate(std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &
      amp;meshes) const '],['../class_go_1_1_curve_model.html#
      a2cc71ae48a6d1024c8779c1fde08eb80',1,'Go::CurveModel::tesselate(int resolution[], std::vector&lt;
      shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const '],['../
      class_go_1_1_curve_model.html#a13361c5bf5d010aa4da56ae5569070e0',1,'
      Go::CurveModel::tesselate(double density, std::vector&lt; shared_ptr&lt;
      GeneralMesh &gt; &gt; &amp;meshes) const '],['../class_go_1_1ft_curve_segment.html#
      ad3a6be9011d0466686c7095dd6e54f85',1,'Go::ftCurveSegment::tesselate()'],['../
      class_go_1_1ft_curve.html#a3fa46cd0cd1b6301996463d9fc95589c',1,'
      Go::ftCurve::tesselate(std::vector&lt; shared_ptr&lt; LineStrip &
      gt; &gt; &amp;meshes) const '],['../class_go_1_1ft_curve.html#
      a2305a44a658989280b9877ac04600a19',1,'Go::ftCurve::tesselate(int resolution, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes) const '],['../class_go_1_1ft_curve.html#
      af4679709df9d47b8f07fb7dbf82737b5',1,'Go::ftCurve::tesselate(double density, std::vector&lt;
      shared_ptr&lt; LineStrip &gt; &gt; &amp;meshes) const '],['../
      class_go_1_1_int_results_comp_cv.html#a0a2c6122f9a871bf7b9666d2e0ad2a2f',1,
      'Go::IntResultsCompCv::tesselate(std::vector&lt; shared_ptr&lt; LineStrip &gt
      ; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_int_results_comp_cv.html#aaa85f9ea710d6c6700b49456212c73ba',1,
      'Go::IntResultsCompCv::tesselate(int resolution, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_int_results_comp_cv.html#a679437896e0247ae64a4375234f1e270',1,
      'Go::IntResultsCompCv::tesselate(double density, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_int_results_model.html#af758fa08a1d9a2e291102486e4029128',1,'
      Go::IntResultsModel::tesselate(std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const =0'],['../
      class_go_1_1_int_results_model.html#a5cba20336f32b65cfd840edbf8f46bbd',1,'
      Go::IntResultsModel::tesselate(int resolution, std::vector&lt; shared_ptr&lt;
       LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const =0'],['../
      class_go_1_1_int_results_model.html#aa65af6225021c30ea430fc9287191cd9',1,'
      Go::IntResultsModel::tesselate(double density, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const =0'],['../
      class_go_1_1_int_results_sf_model.html#ab7833b7cdf1ab93b3635e2d68cea77e4'
      ,1,'Go::IntResultsSfModel::tesselate(std::vector&lt; shared_ptr&lt; LineStrip
       &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_int_results_sf_model.html#a0482f111c47cb1d5aa53dd87f7fa59f5'
      ,1,'Go::IntResultsSfModel::tesselate(int resolution, std::vector&lt;
      shared_ptr&lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_int_results_sf_model.html#a9f75cafb391badc9153f52c01393e207'
      ,1,'Go::IntResultsSfModel::tesselate(double density, std::vector&lt;
      shared_ptr&lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_surface_model.html#a499dcd53fc489e79193ec08a40000321',1,'
      Go::SurfaceModel::tesselate(std::vector&lt; shared_ptr&
      lt; GeneralMesh &gt; &gt; &amp;meshes) const '],['../
      class_go_1_1_surface_model.html#a0cfa68b53d7d7ba43270ac0370434da2',1,'
      Go::SurfaceModel::tesselate(int uv_res, std::vector&lt; shared_ptr&lt;
      GeneralMesh &gt; &gt; &amp;meshes) const '],['../class_go_1_1_surface_model.html#
      a388420dafc3080e6681f70b8eb0d4f33',1,'Go::SurfaceModel::tesselate(int resolution[],
      std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const '],['../
```

```
    class_go_1_1_surface_model.html#ac0c7f814bd5bbba9a376c490f0f06a85',1,'
    Go::SurfaceModel::tesselate(double density, std::vector&lt; shared_ptr&lt;
    GeneralMesh &gt; &gt; &amp;meshes) const '],['../class_go_1_1_surface_model.html#
    ad71862c93633533cf9b92fd3999c512c',1,'Go::SurfaceModel::tesselate(const std::vector&lt;
     shared_ptr&lt; ftFaceBase &gt; &gt; &amp;faces, int uv_res, std::vector&
    lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const '],['../
    class_go_1_1_surface_model.html#ab8a38d3b31d12e3db759bc29328dbcb9',1,'
    Go::SurfaceModel::tesselate(const std::vector&lt; shared_ptr&lt; ftFaceBase &gt;
     &gt; &amp;faces, int resolution[], std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const
    '],['../class_go_1_1_surface_model.html#a2ffe542d114f0ae72313b5f99fd2b3d9',1,'
    Go::SurfaceModel::tesselate(const std::vector&lt; shared_ptr&
    lt; ftFaceBase &gt; &gt; &amp;faces, double density, std::vector&lt; shared_ptr&
    lt; GeneralMesh &gt; &gt; &amp;meshes) const '],['../
    class_go_1_1_curve_tesselator.html#a2903e0b478f9c9bc52de4b78a2e58554',1,'
    Go::CurveTesselator::tesselate()'],['../
    class_go_1_1_line_cloud_tesselator.html#a741142d2fb183073f3999edbd0987490
    ',1,'Go::LineCloudTesselator::tesselate()'],['../
    class_go_1_1_noop_tesselator.html#a098bad44d4975404a9ecbf097a895423',1,'
    Go::NoopTesselator::tesselate()'],['../
    class_go_1_1_parametric_surface_tesselator.html#
    af0a157fa8039d15ed49d25eccf1d6d8b',1,'Go::ParametricSurfaceTesselator::tesselate()'
    ],['../class_go_1_1_rectangular_surface_tesselator.html#
    a98bc65dc65f847c17602033717c41843',1,'Go::RectangularSurfaceTesselator::tesselate
    ()'],['../class_go_1_1_rect_grid_tesselator.html#
    a37c7dac1717250aae0fe930161e4406b',1,'Go::RectGridTesselator::tesselate()'],['../
    class_go_1_1_tesselator.html#ac990c28ea9a36e37b26edd30cc523ac3',1,'
    Go::Tesselator::tesselate()'],['../
    class_go_1_1_rectangular_volume_tesselator.html#
    a81d00516682f244ebac9097b6de6da78',1,'Go::RectangularVolumeTesselator::tesselate()'
    ],['../class_go_1_1_volume_model.html#afc3da8a531cbd1a8e65853e2933abe00',1,'
    Go::VolumeModel::tesselate(std::vector&lt; shared_ptr&
    lt; GeneralMesh &gt; &gt; &amp;meshes) const '],['../
    class_go_1_1_volume_model.html#aeaf65bfbaa2e8f5a66fc0b23630861b3',1,'
    Go::VolumeModel::tesselate(int resolution[], std::vector&lt; shared_ptr&lt;
    GeneralMesh &gt; &gt; &amp;meshes) const '],['../class_go_1_1_volume_model.html#
    a3e034d7fa26dd97bb9cb8733e50c82c8',1,'Go::VolumeModel::tesselate(double density,
    std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const ']]],
['tesselatedctrpolygon',['tesselatedCtrPolygon',['../
    class_go_1_1_composite_curve.html#accf52036d9edefe396c90df496e8ea2e',1,'
    Go::CompositeCurve::tesselatedCtrPolygon(std::vector&lt; shared_ptr
    &lt; LineCloud &gt; &gt; &amp;ctr_pol) const '],['../class_go_1_1_composite_curve
    .html#a98d7786acc00fe2d2b642beaff493324',1,'
    Go::CompositeCurve::tesselatedCtrPolygon(const std::vector&lt;
    shared_ptr&lt; ParamCurve &gt; &gt; &amp;curves, std::vector&lt; shared_ptr&
    lt; LineCloud &gt; &gt; &amp;ctr_pol) const '],['../
    class_go_1_1_composite_model.html#a60e568eb9b8531f2bc5de60acb9d8fd7',1,'
    Go::CompositeModel::tesselatedCtrPolygon()'],['../
    class_go_1_1_curve_model.html#a0bc9f19a78ec7aaac8b655ea7e25bc7b',1,'
    Go::CurveModel::tesselatedCtrPolygon()'],['../
    class_go_1_1_surface_model.html#a42d3923e99fa793ca34de335767c53f1',1,'
    Go::SurfaceModel::tesselatedCtrPolygon(std::vector&lt; shared_ptr&
    lt; LineCloud &gt; &gt; &amp;ctr_pol) const '],['../
    class_go_1_1_surface_model.html#a81fc1beb1ddd467c6fd34f44a4351938',1,'
    Go::SurfaceModel::tesselatedCtrPolygon(const std::vector&lt;
    shared_ptr&lt; ftFaceBase &gt; &gt; &amp;faces, std::vector&lt; shared_ptr&lt; LineCloud &gt; &gt; &amp;ctr_pol)
    const '],['../class_go_1_1_volume_model.html#ad7cfeb7a9a77a4f4d1d40e7aedef0de3',1,'
    Go::VolumeModel::tesselatedCtrPolygon()']]],
['tesselator',['Tesselator',['../class_go_1_1_tesselator.html',1,'
    Go']]],
['tesselator',['tesselator',['../class_data_handler.html#
    ab7caedcbf1e13f7456ce14b84c3b6789',1,'DataHandler::tesselator()'],['../classgv_data.html#
    a56fb6a11bc06f0998bd20a67a9274836',1,'gvData::tesselator()']]],
['tesselator_2eh',['Tesselator.h',['../_tesselator_8h.html',1,'']]],
['tesselator_5f',['tesselator_',['../class_data_handler.html#
    ac6931f251770a4e9b125d18bb2711092',1,'DataHandler']]],
['tesselatorutils_2eh',['TesselatorUtils.h',['../_tesselator_utils_8h.html',1,'']]],
['test1',['test1',['../example_8cpp.html#ac0697ad85fb379446222fcc2df02c778',1,'
    example.cpp']]],
['test2',['test2',['../example_8cpp.html#ac7865afb3b9f6d710b1df18e501c94d6',1,'
    example.cpp']]],
['test3',['test3',['../example_8cpp.html#a727a32bdd7e2491824ca4acd62be9b1a',1,'
    example.cpp']]],
['test4',['test4',['../example_8cpp.html#acd897830273f9673b3894e831ceb3423',1,'
    example.cpp']]],
['test5',['test5',['../example_8cpp.html#aad4ba83ae697b892cf4711aa7170c1f3',1,'
    example.cpp']]],
['test_5fcyclic_5fknots',['TEST_CYCLIC_KNOTS',['../
    tstcyclknt_8c.html#a77b5bb7a941d583a9aee41d2be40d163',1,'
    TEST_CYCLIC_KNOTS(): 
```


Definition at line 8 of file all_10.js.

30.1376.1.2 sisIP h

Definition at line 8 of file all_10.js.

30.1376.1.3 StreamUtils int int idx int i int int i int int i int int num int int num int int num int int num int int int i int i [bound]

Definition at line 8 of file all_10.js.

30.1376.1.4 StreamUtils int idx [bound]

Definition at line 8 of file all_10.js.

30.1376.1.5 StreamUtils int int idx int i int int i int int i int int num int int num int int num int int num int num [bound]

Definition at line 8 of file all_10.js.

30.1376.1.6 var searchData

Initial value:

```
=
[
  ['o1',['o1','../struct_s_i_s_l_object.html#aa40c25309fff2ffd852103f2af7acd1f',1,'SISLObject']]],
  ['obj_5fint_5f',['obj_int_',['../class_go_1_1_intersector2_obj.html#ae87a91f8f4f95a31dc6a07678eabb132',1,
      'Go::Intersector2Obj']]],
  ['objcontainer',['ObjContainer',['../gv_application_8h.html#a930ed0f609554d54ba43b401b20d1f37',1,'
      gvApplication.h']]],
  ['object',['object',['../classgv_data.html#a13c47f9abfb21d7d5ef58957b229f70e',1,'gvData::object(int i)'],
      ['../classgv_data.html#a28402d21f6e677b96197b32feb40d8e4',1,'gvData::object(int i) const ']]],
  ['object_5fcolors_5f',['object_colors_',['../classgv_data.html#a4effc6f51ba7d6d6fbad2afe862d7aac',1,'
      gvData']]],
  ['object_5ffrom_5fstream',['object_from_stream',['
      ../_stream_utils_8h.html#a4894fce509ab613c659adfb8c6e4f3a4',1,'object_from_stream(std::istream &amp;is, T &amp;obj):&#1
```

Definition at line 1 of file all_10.js.

30.1377 doc/html/search/all_11.js File Reference

Variables

- var searchData
- jquery js

30.1377.1 Variable Documentation

30.1377.1.1 jquery js

Definition at line 3 of file all_11.js.

30.1377.1.2 var searchData

Initial value:

```
=
[
  ['p',['p',['../jquery_8js.html#a2335e57f79b6acfb6de59c235dc8a83e',1,'p(): 
```

Definition at line 1 of file all_11.js.

30.1378 doc/html/search/all_12.js File Reference

Variables

- var searchData
- hholder cpp

30.1378.1 Variable Documentation

30.1378.1.1 example sisl_view_demo cpp

Definition at line 3 of file all_12.js.

30.1378.1.2 var searchData

Initial value:

```
=
[
  ['qrz',['QRZ',['../namespace_n_e_w_m_a_t.html#ae1eac58bd06f44ae7f02b39163b2fd80',1,'NEWMAT::QRZ(Matrix
      &amp;, UpperTriangularMatrix &amp;)'],['../namespace_n_e_w_m_a_t.html#a3786173220a9e54601def50dc380b32f',1,'
     NEWMAT::QRZ(const Matrix &amp;, Matrix &amp;, Matrix &amp;)'],['
     ../hholder_8cpp.html#abf43bc890b60a01fda0c7db9631bcf64',1,'QRZ(Matrix &amp;X, UpperTriangularMatrix &amp;U): 
```

Definition at line 1 of file all_12.js.

30.1379 doc/html/search/all_13.js File Reference

Variables

- var searchData
- sislP h

30.1379.1 Variable Documentation

30.1379.1.1 sisIP h

Definition at line 18 of file all_13.js.

30.1379.1.2 var searchData

Initial value:

```
=
[
  ['r1_5f',['r1_',['../class_go_1_1_ellipse.html#a773aaeb5188d2e6d4e9034fbd4a30123',1,'Go::Ellipse::r1_()']
      ,['../class_go_1_1_hyperbola.html#ac624bd16d4a32d9b74361c141421dc81',1,'Go::Hyperbola::r1_()']]],
  ['r1_5fcol_5fi_5fd',['R1_Col_I_D',['../class_n_e_w_m_a_t_1_1_r1___col___i___d.html',1,'NEWMAT']]],
  ['r1_5fr1',['R1_R1',['../class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html',1,'RBD_COMMON']]],
  ['r1_5fr1',['R1_R1',['../class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a278e42bea46cadb3e7579f8357975e34',1,
      'RBD_COMMON::R1_R1']]],
  ['r2_5f',['r2_',['../class_go_1_1_ellipse.html#a2c90fff391d88f4349a96482c1e4d0fc',1,'Go::Ellipse::r2_()']
      ,['../class_go_1_1_hyperbola.html#aa0d052580ed57b97c4974580cdd4733c',1,'Go::Hyperbola::r2_()']]],
  ['r_5f',['r_',['../struct_go_1_1_param_surface_1_1degenerate__info.html#af2004242eeb813ed444c5fdb9b265071
      ',1,'Go::ParamSurface::degenerate_info']]],
  ['r_5fpath_5f',['r_path_',['../class_path_type.html#a6698f5a904d409bc6779015e5ef36aca',1,'PathType']]],
  ['radialedges',['radialEdges',['../class_go_1_1ft_volume.html#aef559a6497b829cf31faae6942263d97',1,'
      Go::ftVolume']]],
  ['radius',['radius',['../class_go_1_1_cylinder_int.html#a4493b91edd175e4166b7ab07a9b35c2c',1,'
      Go::CylinderInt::radius()'],['../class_go_1_1_sphere_int.html#abb8450f4ca8990149d73b1eea2f3015d',1,'
      Go::SphereInt::radius()']]],
  ['radius_5f',['radius_',['../class_go_1_1_circle.html#a9c349501a00ac666fb501c5a3360c0f9',1,'
      Go::Circle::radius_()'],['../class_go_1_1_cone.html#a5bd969d6fb325d1dcc994007031ef23f',1,'Go::Cone::radius_()'],['
      ../class_go_1_1_cylinder.html#a1fc104ecdfd7893897a5fbdb94e3f5f3',1,'Go::Cylinder::radius_()'],['
      ../class_go_1_1_sphere.html#a4e42c3da8d108c5ea687dcc4cf4652cc',1,'Go::Sphere::radius_()']]],
  ['radix',['Radix',['
      ../class_n_e_w_m_a_t_1_1_floating_point_precision.html#afb7383880d8bbd99bab8e25e3758aa7f',1,'NEWMAT::FloatingPointPrecis
  ['raiseorder',['raiseOrder',['../class_go_1_1_spline_curve.html#a53bcb9a51debc1441a4008cadb904dc2',1,'
      Go::SplineCurve::raiseOrder()'],['../class_go_1_1_spline_surface.html#a58f9393ed2771ce6167c4504a9df80e8',1,'
      Go::SplineSurface::raiseOrder()'],['../class_go_1_1_spline_volume.html#a306ad4a1f5ab97ab1087360331a51a26',1,'
      Go::SplineVolume::raiseOrder()']]],
  ['randomnoise_2eh',['randomnoise.h',['../randomnoise_8h.html',1,'']]],
  ['range_5ferror',['Range_error',['../class_r_b_d___c_o_m_m_o_n_1_1_range__error.html',1,'RBD_COMMON']]],
  ['range_5ferror',['Range_error',['
      ../class_r_b_d___c_o_m_m_o_n_1_1_range__error.html#a8bc12b7074abb363df50ddbd82c1c9db',1,'RBD_COMMON::Range_error']]],
  ['rank_5finfo',['rank_info',['../structrank__info.html',1,'rank_info'],['
      ../sisl_p_8h.html#ad075872fe80a1bd569afbd76ea3f2ae5',1,'rank_info(): 
```

Definition at line 1 of file all_13.js.

30.1380 doc/html/search/all_14.js File Reference

Variables

- var searchData
- s1001 c

30.1380.1 Variable Documentation

30.1380.1.1 s1001 c

Definition at line 5 of file all_14.js.

30.1380.1.2 var searchData

Initial value:

```
=
[
  ['s',['S',['../namespace_go.html#a95d383314d9ef7d277424ee672473063a9175c6d2bfb458461de6f564a532dda5',1,'
      Go']]],
  ['s1',['s1',['../struct_s_i_s_l_object.html#a932bc80aef806de501a097405e6c5422',1,'SISLObject']]],
  ['s1001',['S1001',['../s1001_8c.html#a56ccf110d6c3ffd6ec1bc77ba9bf017f',1,'S1001(): 
```

Definition at line 1 of file all_14.js.

30.1381 doc/html/search/all_15.js File Reference

Variables

- var searchData
- PrParamUtil h
- PrParamUtil std::vector & lt
- GeneralMesh & gt
- & amp
- meshes const
- tstcyclknt c

30.1381.1 Variable Documentation

30.1381.1.1 int & amp [property],[bound]

Definition at line 35 of file all_15.js.

30.1381.1.2 tstcyclknt c

Definition at line 47 of file all_15.js.

30.1381.1.3 meshes const

Initial value:

```
=0’],[’../class_go_1_1_composite_model.html#a1546764e88cba9c13fa2bea819e9fe2c’
      ,1,’Go::CompositeModel::tesselate(double density, std::vector&
      lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const =0’],[’../
      class_go_1_1_curve_model.html#a5aa6f99880fd5126485b39a59932a30f’,1,’
      Go::CurveModel::tesselate(std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &
      amp;meshes) const ’],[’../class_go_1_1_curve_model.html#
      a2cc71ae48a6d1024c8779c1fde08eb80’,1,’Go::CurveModel::tesselate(int resolution[], std::vector&lt;
      shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
      class_go_1_1_curve_model.html#a13361c5bf5d010aa4da56ae5569070e0’,1,’
      Go::CurveModel::tesselate(double density, std::vector&lt; shared_ptr&lt;
      GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../class_go_1_1ft_curve_segment.html#
      ad3a6be9011d0466686c7095dd6e54f85’,1,’Go::ftCurveSegment::tesselate()’],[’../
      class_go_1_1ft_curve.html#a3fa46cd0cd1b6301996463d9fc95589c’,1,’
      Go::ftCurve::tesselate(std::vector&lt; shared_ptr&lt; LineStrip &
      gt; &gt; &amp;meshes) const ’],[’../class_go_1_1ft_curve.html#
      a2305a44a658989280b9877ac04600a19’,1,’Go::ftCurve::tesselate(int resolution, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes) const ’],[’../class_go_1_1ft_curve.html#
      af4679709df9d47b8f07fb7dbf82737b5’,1,’Go::ftCurve::tesselate(double density, std::vector&lt;
      shared_ptr&lt; LineStrip &gt; &gt; &amp;meshes) const ’],[’../
      class_go_1_1_int_results_comp_cv.html#a0a2c6122f9a871bf7b9666d2e0ad2a2f’,1,
      ’Go::IntResultsCompCv::tesselate(std::vector&lt; shared_ptr&lt; LineStrip &gt
      ; &gt; &amp;meshes, PointCloud3D &amp;points) const ’],[’../
      class_go_1_1_int_results_comp_cv.html#aaa85f9ea710d6c6700b49456212c73ba’,1,
      ’Go::IntResultsCompCv::tesselate(int resolution, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const ’],[’../
      class_go_1_1_int_results_comp_cv.html#a679437896e0247ae64a4375234f1e270’,1,
      ’Go::IntResultsCompCv::tesselate(double density, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const ’],[’../
      class_go_1_1_int_results_model.html#af758fa08a1d9a2e291102486e4029128’,1,’
      Go::IntResultsModel::tesselate(std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const =0’],[’../
      class_go_1_1_int_results_model.html#a5cba20336f32b65cfd840edbf8f46bbd’,1,’
      Go::IntResultsModel::tesselate(int resolution, std::vector&lt; shared_ptr&lt;
       LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const =0’],[’../
      class_go_1_1_int_results_model.html#aa65af6225021c30ea430fc9287191cd9’,1,’
      Go::IntResultsModel::tesselate(double density, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const =0’],[’../
      class_go_1_1_int_results_sf_model.html#ab7833b7cdf1ab93b3635e2d68cea77e4’
      ,1,’Go::IntResultsSfModel::tesselate(std::vector&lt; shared_ptr&lt; LineStrip
       &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const ’],[’../
      class_go_1_1_int_results_sf_model.html#a0482f111c47cb1d5aa53dd87f7fa59f5’
      ,1,’Go::IntResultsSfModel::tesselate(int resolution, std::vector&lt;
      shared_ptr&lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const ’],[’../
      class_go_1_1_int_results_sf_model.html#a9f75cafb391badc9153f52c01393e207’
      ,1,’Go::IntResultsSfModel::tesselate(double density, std::vector&lt;
      shared_ptr&lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const ’],[’../
      class_go_1_1_surface_model.html#a499dcd53fc489e79193ec08a40000321’,1,’
      Go::SurfaceModel::tesselate(std::vector&lt; shared_ptr&
      lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
      class_go_1_1_surface_model.html#a0cfa68b53d7d7ba43270ac0370434da2’,1,’
      Go::SurfaceModel::tesselate(int uv_res, std::vector&lt; shared_ptr&lt;
      GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../class_go_1_1_surface_model.html#
      a388420dafc3080e6681f70b8eb0d4f33’,1,’Go::SurfaceModel::tesselate(int resolution[],
      std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
      class_go_1_1_surface_model.html#ac0c7f814bd5bbba9a376c490f0f06a85’,1,’
      Go::SurfaceModel::tesselate(double density, std::vector&lt; shared_ptr&lt;
      GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../class_go_1_1_surface_model.html#
      ad71862c93633533cf9b92fd3999c512c’,1,’Go::SurfaceModel::tesselate(const std::vector&lt;
       shared_ptr&lt; ftFaceBase &gt; &gt; &amp;faces, int uv_res, std::vector&
      lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
      class_go_1_1_surface_model.html#ab8a38d3b31d12e3db759bc29328dbcb9’,1,’
      Go::SurfaceModel::tesselate(const std::vector&lt; shared_ptr&lt; ftFaceBase &gt;
       &gt; &amp;faces, int resolution[], std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const
      ’],[’../class_go_1_1_surface_model.html#a2ffe542d114f0ae72313b5f99fd2b3d9’,1,’
      Go::SurfaceModel::tesselate(const std::vector&lt; shared_ptr&
      lt; ftFaceBase &gt; &gt; &amp;faces, double density, std::vector&lt; shared_ptr&
      lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
      class_go_1_1_curve_tesselator.html#a2903e0b478f9c9bc52de4b78a2e58554’,1,’
      Go::CurveTesselator::tesselate()’],[’../
      class_go_1_1_line_cloud_tesselator.html#a741142d2fb183073f3999edbd0987490
      ’,1,’Go::LineCloudTesselator::tesselate()’],[’../
      class_go_1_1_noop_tesselator.html#a098bad44d4975404a9ecbf097a895423’,1,’
      Go::NoopTesselator::tesselate()’],[’../
      class_go_1_1_parametric_surface_tesselator.html#
      af0a157fa8039d15ed49d25eccf1d6d8b’,1,’Go::ParametricSurfaceTesselator::tesselate()’
      ],[’../class_go_1_1_rectangular_surface_tesselator.html#
      a98bc65dc65f847c17602033717c41843’,1,’Go::RectangularSurfaceTesselator::tesselate
      ()’],[’../class_go_1_1_rect_grid_tesselator.html#
      a37c7dac1717250aae0fe930161e4406b’,1,’Go::RectGridTesselator::tesselate()’],[’../
      class_go_1_1_tesselator.html#ac990c28ea9a36e37b26edd30cc523ac3’,1,’
      Go::Tesselator::tesselate()’],[’../
      class_go_1_1_rectangular_volume_tesselator.html#
      a81d00516682f244ebac9097b6de6da78’,1,’Go::RectangularVolumeTesselator::tesselate()’
      ],[’../class_go_1_1_volume_model.html#afc3da8a531cbd1a8e65853e2933abe00’,1,’
      Go::VolumeModel::tesselate(std::vector&lt; shared_ptr&
      lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
      class_go_1_1_volume_model.html#aeaf65bfbaa2e8f5a66fc0b23630861b3’,1,’
```

```
    Go::VolumeModel::tesselate(int resolution[], std::vector&lt; shared_ptr&lt;
    GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../class_go_1_1_volume_model.html#
    a3e034d7fa26dd97bb9cb8733e50c82c8’,1,’Go::VolumeModel::tesselate(double density,
    std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const ’]]],
[’tesselatedctrpolygon’,[’tesselatedCtrPolygon’,[’../
    class_go_1_1_composite_curve.html#accf52036d9edefe396c90df496e8ea2e’,1,’
    Go::CompositeCurve::tesselatedCtrPolygon(std::vector&lt; shared_ptr
    &lt; LineCloud &gt; &gt; &amp;ctr_pol) const ’],[’../class_go_1_1_composite_curve
    .html#a98d7786acc00fe2d2b642beaff493324’,1,’
    Go::CompositeCurve::tesselatedCtrPolygon(const std::vector&lt;
    shared_ptr&lt; ParamCurve &gt; &gt; &amp;curves, std::vector&lt; shared_ptr&
    lt; LineCloud &gt; &gt; &amp;ctr_pol) const ’],[’../
    class_go_1_1_composite_model.html#a60e568eb9b8531f2bc5de60acb9d8fd7’,1,’
    Go::CompositeModel::tesselatedCtrPolygon()’],[’../
    class_go_1_1_curve_model.html#a0bc9f19a78ec7aaac8b655ea7e25bc7b’,1,’
    Go::CurveModel::tesselatedCtrPolygon()’],[’../
    class_go_1_1_surface_model.html#a42d3923e99fa793ca34de335767c53f1’,1,’
    Go::SurfaceModel::tesselatedCtrPolygon(std::vector&lt; shared_ptr&
    lt; LineCloud &gt; &gt; &amp;ctr_pol) const ’],[’../
    class_go_1_1_surface_model.html#a81fc1beb1ddd467c6fd34f44a4351938’,1,’
    Go::SurfaceModel::tesselatedCtrPolygon(const std::vector&lt;
    shared_ptr&lt; ftFaceBase &gt; &gt; &amp;faces, std::vector&lt; shared_ptr&lt; LineCloud &gt; &gt; &amp;ctr_pol)
    const ’],[’../class_go_1_1_volume_model.html#ad7cfeb7a9a77a4f4d1d40e7aedef0de3’,1,’
    Go::VolumeModel::tesselatedCtrPolygon()’]]],
[’tesselator’,[’Tesselator’,[’../class_go_1_1_tesselator.html’,1,’
    Go’]]],
[’tesselator’,[’tesselator’,[’../class_data_handler.html#
    ab7caedcbf1e13f7456ce14b84c3b6789’,1,’DataHandler::tesselator()’],[’../classgv_data.html#
    a56fb6a11bc06f0998bd20a67a9274836’,1,’gvData::tesselator()’]]],
[’tesselator_2eh’,[’Tesselator.h’,[’../_tesselator_8h.html’,1,’’]]],
[’tesselator_5f’,[’tesselator_’,[’../class_data_handler.html#
    ac6931f251770a4e9b125d18bb2711092’,1,’DataHandler’]]],
[’tesselatorutils_2eh’,[’TesselatorUtils.h’,[’../_tesselator_utils_8h.html’,1,’’]]],
[’test1’,[’test1’,[’../example_8cpp.html#ac0697ad85fb379446222fcc2df02c778’,1,’
    example.cpp’]]],
[’test2’,[’test2’,[’../example_8cpp.html#ac7865afb3b9f6d710b1df18e501c94d6’,1,’
    example.cpp’]]],
[’test3’,[’test3’,[’../example_8cpp.html#a727a32bdd7e2491824ca4acd62be9b1a’,1,’
    example.cpp’]]],
[’test4’,[’test4’,[’../example_8cpp.html#acd897830273f9673b3894e831ceb3423’,1,’
    example.cpp’]]],
[’test5’,[’test5’,[’../example_8cpp.html#aad4ba83ae697b892cf4711aa7170c1f3’,1,’
    example.cpp’]]],
[’test_5fcyclic_5fknots’,[’TEST_CYCLIC_KNOTS’,[’../
    tstcyclknt_8c.html#a77b5bb7a941d583a9aee41d2be40d163’,1,’
    TEST_CYCLIC_KNOTS(): 
```

Definition at line 35 of file all_15.js.

30.1381.1.4 double & gt

Definition at line 35 of file all_15.js.

30.1381.1.5 PrParamUtil h

Definition at line 27 of file all_15.js.

30.1381.1.6 std::vector & lt

Definition at line 27 of file all_15.js.

30.1381.1.7 var searchData

Initial value:

```
=
[
  ['the_20filter_20routines_20main_20page',['The filter routines main page',['../filters_mainpage.html',1,'
      ']]],
  ['the_20half_2dedge_20data_20structure_20and_20adaption_20to_20ttl',['The Half-Edge Data Structure and
       Adaption to TTL',['../halfedge.html',1,'']]],
  ['the_20g2_2dformat_2c_20gotools_20file_20format_20for_20geometry_20entities',['The g2-format, GoTools
       file format for geometry entities',['../streamable_doc.html',1,'']]],
  ['t',['t',['../class_n_e_w_m_a_t_1_1_matrix_type.html#a87734af76e2bd752f88e7b4976b52bbb',1,'
      NEWMAT::MatrixType::t()'],['../class_n_e_w_m_a_t_1_1_matrix_band_width.html#a9282c4ccc63ddeadc55483508c5c2794',1,'
      NEWMAT::MatrixBandWidth::t()'],['../class_n_e_w_m_a_t_1_1_base_matrix.html#a9b2e4b5ac85906a6c0007c40df340b33',1,'
      NEWMAT::BaseMatrix::t()'],['
      ../namespace_go.html#a95d383314d9ef7d277424ee672473063ad80deac00a5f9e9bea01b087b3bc6474',1,'Go::T()']]],
  ['t1',['t1',['../class_pr_triangle.html#a3c5e90139c8ad3fe42bf807f5a68b7ba',1,'PrTriangle::t1() const '],[
      '../class_pr_triangle.html#a3b7f193f51f1ba9aceeeae8d414f1d3a',1,'PrTriangle::t1()']]],
  ['t2',['t2',['../class_pr_triangle.html#a3b4affb990eb31ec311069ee83b5b01b',1,'PrTriangle::t2() const '],[
      '../class_pr_triangle.html#a41d3422b3e374cba8ed081021eb43fa7',1,'PrTriangle::t2()']]],
  ['t3',['t3',['../class_pr_triangle.html#a9aa253de3e236af87f94b8dc5c5cf19f',1,'PrTriangle::t3() const '],[
      '../class_pr_triangle.html#ac1063043a62da70ab3a33dfad452e1f2',1,'PrTriangle::t3()']]],
  ['t_5f',['t_',['../struct_go_1_1_param_surface_1_1degenerate__info.html#aa4a1b5a04e6f9581c46bf8c50ec6e408
      ',1,'Go::ParamSurface::degenerate_info::t_()'],['
      ../class_pr_filterbank.html#a8ba3a2c1b525d44832be09fc86afe136',1,'PrFilterbank::t_()'],['../class_pr_threshold.html#a569
      PrThreshold::t_()']]],
  ['tab_5fstring',['TAB_STRING',['../sisl__view__demo_8cpp.html#a0d3b5deaf6bcb60d1dfb8c6dbc234446',1,'
      sisl_view_demo.cpp']]],
  ['table_5f',['table_',['../class_go_1_1tp_topology_table.html#a144bdf017ad7970a1a1d85386652fbd7',1,'
      Go::tpTopologyTable']]],
  ['tag',['Tag',['../class_n_e_w_m_a_t_1_1_general_matrix.html#ac86f41d9beeda0ba938e8f777167bf47',1,'
      NEWMAT::GeneralMatrix::Tag() const '],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#acb8f3d5391d96487f1094e4914f88585',1,'NEWMAT::GeneralMatrix::tag()']]],
  ['tangent',['tangent',['../class_go_1_1ft_curve_segment.html#ad3cf5a26861e7ed344ccf146e59d0457',1,'
      Go::ftCurveSegment::tangent()'],['../class_go_1_1ft_curve.html#af97541ce68c9b3a6769d16d38b09267c',1,'
      Go::ftCurve::tangent()'],['../class_go_1_1ft_edge.html#a62badabe1bae46b1ba238ead31889f51',1,'Go::ftEdge::tangent()'],['
      ../class_go_1_1ft_edge_base.html#aed5b154957fdd7a97df9726053c32eef',1,'Go::ftEdgeBase::tangent()'],['
      ../class_go_1_1ft_s_sf_edge.html#aec5af9042c2a159c2b8dce97f88eb4ad',1,'Go::ftSSfEdge::tangent()'],['
      ../class_go_1_1tp_edge.html#ad854b7324cfe2d5ef2edc4342d97c267',1,'Go::tpEdge::tangent()']]],
  ['tangent_5f2d_5f1',['tangent_2d_1',['
      ../struct_go_1_1_second_order_properties.html#a2a04d22fd412a880614e77120022ed82',1,'Go::SecondOrderProperties']]],
  ['tangent_5f2d_5f2',['tangent_2d_2',['
      ../struct_go_1_1_second_order_properties.html#ae150a2eb73072238b54e2c3f5e130dff',1,'Go::SecondOrderProperties']]],
  ['tangent_5f2d_5fis_5fcached',['tangent_2d_is_cached',['
      ../struct_go_1_1_second_order_properties.html#a43338efc4bd449d02635099c6ae9e082',1,'Go::SecondOrderProperties']]],
  ['tangent_5f3d',['tangent_3d',['
      ../struct_go_1_1_second_order_properties.html#a186f4ccbf51d36ce342d1ab3ca1a7eda',1,'Go::SecondOrderProperties']]],
  ['tangent_5fis_5foriented',['tangent_is_oriented',['
      ../struct_go_1_1_second_order_properties.html#a77419f5e3c6b905374de860cf8713de6',1,'Go::SecondOrderProperties']]],
  ['tangent_5ftol',['tangent_tol',['
      ../class_go_1_1_intersection_point.html#a44981526bad57ccb080ad4735311d2d2',1,'Go::IntersectionPoint']]],
  ['tangentcone',['tangentCone',['../class_go_1_1_bounded_surface.html#ac311070548b96d789d21758e5ee7ec88',1
      ,'Go::BoundedSurface::tangentCone()'],['
      ../class_go_1_1_composite_surface.html#a9bfe05b31ca0bab1be6adb707586a18f',1,'Go::CompositeSurface::tangentCone()'],['../
      ',1,'Go::Cone::tangentCone()'],['../class_go_1_1_cylinder.html#a583676f3507e5b9e5cb8d3cd9f2772f0',1,'
      Go::Cylinder::tangentCone()'],['../class_go_1_1_disc.html#afa7b3943b053c0a274af05b8d5284cc9',1,'
      Go::Disc::tangentCone()'],['../class_go_1_1_param_surface.html#a0892308334265519c050b32f050e065e',1,'
      Go::ParamSurface::tangentCone()'],['../class_go_1_1_plane.html#a08c1d6807c5866963922e8265393fa62',1,'Go::Plane::tangentC
      ../class_go_1_1_sphere.html#a3f02936582bc72857d2af3b1b9962c63',1,'Go::Sphere::tangentCone()'],['
      ../class_go_1_1_spline_surface.html#ac4f32c873766da700a3f78ebf5d95c37',1,'Go::SplineSurface::tangentCone()'],['
      ../class_go_1_1_surface_of_linear_extrusion.html#ac9cf10e65169359291347f3569eeadb2',1,'
      Go::SurfaceOfLinearExtrusion::tangentCone()'],['../class_go_1_1_surface_of_revolution.html#a07bc005c7579121b29e4ef1e0ed1
      Go::SurfaceOfRevolution::tangentCone()'],['../class_go_1_1_torus.html#ac8849f0b6a5a7083c8286ebf83d8346f',1,'
      Go::Torus::tangentCone()'],['../class_go_1_1_l_r_spline_surface.html#acde98e9907ecaa6b5ba085540f50db94',1,'
      Go::LRSplineSurface::tangentCone()'],['../class_go_1_1_cone_volume.html#a1f7d1a81eae6e98a3422a2320aa932bd',1,'
      Go::ConeVolume::tangentCone()'],['../class_go_1_1_cylinder_volume.html#a4d5146512b6324e7616b54c3c7fb3a51',1,'
      Go::CylinderVolume::tangentCone()'],['../class_go_1_1_parallelepiped.html#a65b0a65033c8c65f6a2884fe2e6a11ca',1,'
      Go::Parallelepiped::tangentCone()'],['../class_go_1_1_param_volume.html#af5b51bc450da49f76b73f038618a57b6',1,'
      Go::ParamVolume::tangentCone()'],['../class_go_1_1_sphere_volume.html#a6f5a787cfa1abfd98de924e4dc36f262',1,'
      Go::SphereVolume::tangentCone()'],['../class_go_1_1_spline_volume.html#ac01dec30b44329e7cc9d97a02f9c85d7',1,'
      Go::SplineVolume::tangentCone()'],['../class_go_1_1_surface_on_volume.html#a346db16aaa51c7e3cf525d4f4918bc2d',1,
      'Go::SurfaceOnVolume::tangentCone()'],['../class_go_1_1_torus_volume.html#a4e5d384ca79038f368e5f447959407c2'
      ,1,'Go::TorusVolume::tangentCone()']]],
  ['tangentdomain',['TangentDomain',['../namespace_go.html#a683c7cd0653c849d16af423f40a6daf6',1,'Go']]],
  ['tangential_5fpoint',['TANGENTIAL_POINT',['
      ../namespace_go.html#a3f21d9ac1d33fe9bf8364573e0126af2a7a751867640d143dba6d355e3ad044ce',1,'Go']]],
  ['tangentisoriented',['tangentIsOriented',['
      ../class_go_1_1_intersection_point.html#a6de8bbeb86de15714906fb08e8469a27',1,'Go::IntersectionPoint']]],
  ['tangentpointinginwards',['tangentPointingInwards',['
      ../class_go_1_1_intersection_point.html#a7d2d0f72efc426b982994f0355860fda',1,'Go::IntersectionPoint']]],
  ['tanlenfromradius',['tanLenFromRadius',['../namespace_go.html#a87059cc6cddba0b64ae502b9c4d52a52',1,'Go']
      ]],
  ['tanthetaovertwo',['tanThetaOverTwo',['
```

```
../class_pr_prm_sym_mean_value.html#a9f07830f6d01f9430204d6b090da8823',1,'PrPrmSymMeanValue::tanThetaOverTwo()'],['
../class_pr_prm_wachspress.html#a3b09c67987bea5e0a6f2ac95755ca258',1,'PrPrmWachspress::tanThetaOverTwo()'],['
../_pr_param_util_8h.html#acf689ef17a246312b527f1c2b8fa1266',1,'tanThetaOverTwo(): 
```

Definition at line 1 of file all_15.js.

30.1382 doc/html/search/all_16.js File Reference

Variables

- var searchData

30.1382.1 Variable Documentation

30.1382.1.1 var searchData

Definition at line 1 of file all_16.js.

30.1383 doc/html/search/all_17.js File Reference

Variables

- var searchData
- & gt

30.1383.1 Variable Documentation

30.1383.1.1 & gt

Definition at line 14 of file all_17.js.

30.1383.1.2 var searchData

Initial value:

```
=
[
  ['v',['v',['../class_go_1_1ft_point.html#a5f721b935eeefed8e81d0cf416cf0f2a',1,'Go::ftPoint::v()'],['
      ../class_pr_nested_node.html#a4fb696c20bedfb1aa45377050dfc8509',1,'PrNestedNode::v() const '],['
      ../class_pr_nested_node.html#aa0688bdd1fcd5d49dd45e3cbb56e0cec',1,'PrNestedNode::v()'],['
      ../class_pr_node.html#a7001ff1832d48c579c1b69deddb00db9',1,'PrNode::v() const '],['../class_pr_node.html#a8b59204989f4b2
      PrNode::v()'],['../class_pr_p_g_node.html#adaa1f1049de852bdad29fdd715d39419',1,'PrPGNode::v() const '],['
      ../class_pr_p_g_node.html#a8476c3c6b52627b627a31ec7f0b0d046',1,'PrPGNode::v()']]],
  ['v_5f',['v_',['../class_go_1_1ft_point.html#ae66d28de47384fb0fd2f113281a83848',1,'Go::ftPoint::v_()'],['
      ../class_pr_prm_shp_pres.html#a1b91934fd02891b562a62a7def09b645',1,'PrPrmShpPres::v_()']]],
  ['v_5fmax',['v_max',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a6751c5eed5caa610e8dac5f3558b4702',1,'Go::LRSplineSurface::BSKey']]
  ['v_5fmin',['v_min',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a917055d1f2ba2783786ba6345d73cbd8',1,'Go::LRSplineSurface::BSKey::v
      ../struct_go_1_1_l_r_spline_surface_1_1_elem_key.html#a9f214ce7d7d8e22bd73c4f1bb3c93f42',1,'Go::LRSplineSurface::ElemKey
  ['v_5fmult1',['v_mult1',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#ac8f082b1e3b79de0d2531198fd3648af',1,'Go::LRSplineSurface::BSKey']]
  ['v_5fmult2',['v_mult2',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a04b64c2a027326729a138282d8015159',1,'Go::LRSplineSurface::BSKey']]
  ['val',['val',['../struct_go_1_1_inverse_factorial.html#ab0c85f28bd408da23e82368e710e1fa2',1,'
      Go::InverseFactorial']]],
  ['valid',['valid',['../class_go_1_1_bounding_box.html#a3082546a7b34a3dd3e51b7ae822f74c6',1,'
      Go::BoundingBox::valid()'],['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#af1adc0086f5d4c3328ad4a698fa57c90a0dad346d65e5540202aecf9f55dcdc0d',1,'NEWMAT
  ['validate',['validate',['../class_go_1_1_intersection_pool.html#ac09a6a264bdf2d5e8136774287a5293b',1,'
      Go::IntersectionPool::validate()'],['../class_go_1_1tp_topology_table.html#a82cf7ad03299185589e0ac28bf6c30a6',
      1,'Go::tpTopologyTable::Validate()']]],
  ['validatesiblingpools',['validateSiblingPools',['
      ../class_go_1_1_intersector.html#adc08c6934cb9c8289adf1a3762bdcb59',1,'Go::Intersector']]],
  ['validentity',['validEntity',['../struct_go_1_1_entity_list.html#a4579a25ef0627fd75736eec3082a5fc3',1,'
      Go::EntityList']]],
  ['value',['value',['
      ../struct_go_1_1_factorial.html#a579daed3b4275abe013c8f88077f888fa4acbf42abf2d3a50f62969f536eacb98',1,'Go::Factorial::va
      ../struct_go_1_1_factorial_3_011_01_4.html#a654cb8f1088a190314946d0cb460482caf04561aa2fcbf1fb66fbc964a355d268',1,'Go::Fa
```

Definition at line 1 of file all_17.js.

30.1384 doc/html/search/all_18.js File Reference

Variables

- var searchData
- garch cpp

30.1384.1 Variable Documentation

30.1384.1.1 garch cpp

Definition at line 3 of file all_18.js.

30.1384.1.2 var searchData

Initial value:

```
=
[
  ['want_5ffstream',['WANT_FSTREAM',['../garch_8cpp.html#a37d625862c54954e237886ad4bb5e75f',1,'
      WANT_FSTREAM(): 
```

Definition at line 1 of file all_18.js.

30.1385 doc/html/search/all_19.js File Reference

Variables

- var searchData
- transfutils cpp

30.1385.1 Variable Documentation

30.1385.1.1 transfutils cpp

Definition at line 6 of file all_19.js.

30.1385.1.2 var searchData

Initial value:

```
=
[
  ['x',['x',['../class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a4812b378711ea5f78a5441b96134f569',1,'
      RBD_COMMON::R1_R1::x()'],['../classhetriang_1_1_dart.html#a54e0bbd87448ac2b3e9bddc8db856c59',1,'hetriang::Dart::x()']
      ,['../class_go_1_1ttl_point.html#a2edfd5b3a2a64c8c3af3e02c06ae2357',1,'Go::ttlPoint::x()'],['
      ../classhetriang_1_1_node.html#a6d6619cfedeafeeaf9e468da7670da5f',1,'hetriang::Node::x()'],['
      ../class_go_1_1_array.html#a3c8aa548649a570e01713ce17c1d784c',1,'Go::Array::x() const '],['
      ../class_go_1_1_array.html#ac87b81b08bef59f57cc13c5531115110',1,'Go::Array::x()'],['../class_pr_nested_node.html#a69747e
      PrNestedNode::x() const '],['../class_pr_nested_node.html#a613b6c4885ec0097d356410119e8a4b9',1,'
      PrNestedNode::x()'],['../class_pr_node.html#a5a5865db2f78a4ccfd762634b4899e39',1,'PrNode::x() const '],['
      ../class_pr_node.html#af1089d11e7ee670efb2007351752c1b6',1,'PrNode::x()'],['
      ../class_pr_p_g_node.html#af56272e39fbc9e4b0273b83d9d9aa970',1,'PrPGNode::x() const '],['../class_pr_p_g_node.html#a373e
      PrPGNode::x()'],['../classvector3t.html#a85c1f558e7e9d6800afa25b4d95b4e1f',1,'vector3t::x(void) const '],['
      ../classvector3t.html#a4e3bd29a46ec1bc19dc4a06313829e6a',1,'vector3t::x(void)'],['
      ../classhed_1_1_dart.html#a39d20327f3eeaefbc53f06f79f53d840',1,'hed::Dart::x()'],['
      ../classhed_1_1_node.html#ae5240e90452911b4635f8668f2d4129c',1,'hed::Node::x()']]],
  ['x_5faxis_5f',['x_axis_',['../class_go_1_1_cone.html#a97719276e5e89fc874cee2df6327c46d',1,'
      Go::Cone::x_axis_()'],['../class_go_1_1_cylinder.html#aa070cf5deafb3498f2601d9a2847ffc5',1,'Go::Cylinder::x_axis_()'],['
      ../class_go_1_1_sphere.html#a6865f0ab0d027141c49dceb412a613b4',1,'Go::Sphere::x_axis_()'],['
      ../class_go_1_1_torus.html#ae07499b7a7a24f9c29bcf451ef48b14b',1,'Go::Torus::x_axis_()']]],
  ['xfixed',['XFIXED',['
      ../namespace_go.html#a821a750d4a6740898072cf759246eb87a1e4145becb15ce54486dd57c554a8716',1,'Go']]],
  ['xrot',['xrot',['../transfutils_8h.html#a5175ae8b353bb511616aec812502269d',1,'xrot(): 
```

Definition at line 1 of file all_19.js.

30.1386 doc/html/search/all_1a.js File Reference

Variables

- var searchData
- transfutils cpp

30.1386.1 Variable Documentation

30.1386.1.1 transfutils cpp

Definition at line 6 of file all_1a.js.

30.1386.1.2 var searchData

Initial value:

```
=
[
  ['y',['y',['../classhetriang_1_1_dart.html#af210f3f33a71b195c745e54cd7165070',1,'hetriang::Dart::y()'],['
      ../class_go_1_1ttl_point.html#aa68070e89bc646943dcfff514e3d194f',1,'Go::ttlPoint::y()'],['
      ../classhetriang_1_1_node.html#a9e14e02fa7d2ec93a21f26108a6d1b36',1,'hetriang::Node::y()'],['
      ../class_go_1_1_array.html#a7503e9570b4c3e5df9d7c6a2f2882df4',1,'Go::Array::y() const '],['
      ../class_go_1_1_array.html#ad343c6549d1fd8aae5abfb88ae509cf6',1,'Go::Array::y()'],['../class_pr_nested_node.html#ac2aa9
      PrNestedNode::y() const '],['../class_pr_nested_node.html#a437a7f299f4aeb739d3c86fd434a5673',1,'PrNestedNode::y()']
      ,['../class_pr_node.html#ae837126218bc3668de1896a232be37bf',1,'PrNode::y() const '],['
      ../class_pr_node.html#a5aa29384b673ee37acbd1cf7f95059e5',1,'PrNode::y()'],['
      ../class_pr_p_g_node.html#a73c1340c393a2d29be3ab2aca97dfb88',1,'PrPGNode::y() const '],['../class_pr_p_g_node.html#acf61
      PrPGNode::y()'],['../classvector3t.html#ab0f2c22060b6068c3104d8c6992a8b89',1,'vector3t::y(void) const '],['
      ../classvector3t.html#af88d3df5d1b648785874485afc10a876',1,'vector3t::y(void)'],['
      ../classhed_1_1_dart.html#a20849660f038888f05ba65daf0a99ae5',1,'hed::Dart::y()'],['../classhed_1_1_node.html#ab71715188
      1,'hed::Node::y()']]],
  ['y_5faxis_5f',['y_axis_',['../class_go_1_1_cone.html#a04725fd933cb2a6d53a58ae1ebd24f11',1,'
      Go::Cone::y_axis_()'],['../class_go_1_1_cylinder.html#aeaf20ee6ba23475fb4926e3c31274742',1,'Go::Cylinder::y_axis_()'],['
      ../class_go_1_1_sphere.html#a3b495bbd4eaa7a34ea93ad464b7c6c5a',1,'Go::Sphere::y_axis_()'],['
      ../class_go_1_1_torus.html#a045f285b84522d667f44f32cfc428810',1,'Go::Torus::y_axis_()']]],
  ['yfixed',['YFIXED',['
      ../namespace_go.html#a821a750d4a6740898072cf759246eb87a344e219d46e24ae18ec2ff7fe11afddd',1,'Go']]],
  ['yrot',['yrot',['../transfutils_8h.html#aa796e5a13fbe734d62adecbe1c549960',1,'yrot(): 
```

Definition at line 1 of file all_1a.js.

30.1387 doc/html/search/all_1b.js File Reference

Variables

- var searchData
- jquery js

30.1387.1 Variable Documentation

30.1387.1.1 jquery js

Definition at line 3 of file all_1b.js.

30.1387.1.2 var searchData

Initial value:

```
=
[
  ['z',['z',['../class_go_1_1ttl_point.html#ac3852f5d65cea6fc03ded418c52b1224',1,'Go::ttlPoint::z()'],['
      ../classhetriang_1_1_node.html#a3a3e75bffc96f2230699b7ec641afa70',1,'hetriang::Node::z()'],['
      ../class_go_1_1_array.html#aae59550f97c7b789f9fedfef6214fca4',1,'Go::Array::z() const '],['
      ../class_go_1_1_array.html#ab13fabb125a68879f994e0c0a492755b',1,'Go::Array::z()'],['
      ../class_pr_nested_node.html#ae5e6fab6058c33f1c08c5e7b335502ba',1,'PrNestedNode::z() const '],['../class_pr_nested_node
      PrNestedNode::z()'],['../class_pr_node.html#ad6eec21be11c8ba6ee3a0e4fe9d4693a',1,'PrNode::z() const '],['
      ../class_pr_node.html#a323e95d93b0be8200fbfb5cf0b98afc1',1,'PrNode::z()'],['
      ../class_pr_p_g_node.html#a302fb7445d4022c990244d61768aaa22',1,'PrPGNode::z() const '],['
      ../class_pr_p_g_node.html#aab8d9580b6112f5342804c503aa5aa78',1,'PrPGNode::z()'],['../classvector3t.html#ac756398d08e462
      '],['../classvector3t.html#a40e10484bca97074094c63c9ea3f458b',1,'vector3t::z(void)'],['
      ../classhed_1_1_node.html#a812130c3e029cdecbc9bc9a47a1e53a7',1,'hed::Node::z()'],['
      ../jquery_8js.html#adc18d83abfd9f87d396e8fd6b6ac0fe1',1,'Z(): 
```

Definition at line 1 of file all_1b.js.

30.1388 doc/html/search/all_1c.js File Reference

Variables

- var searchData

30.1388.1 Variable Documentation

30.1388.1.1 var searchData

Definition at line 1 of file all_1c.js.

30.1389 doc/html/search/all_2.js File Reference

Variables

- var searchData
- mouse cpp
- mouse int dim
- mouse int double aepsge
- mouse int double int constdir =0
- mouse int double int bool repar
- PrParamUtil h

30.1389.1 Variable Documentation

30.1389.1.1 mouse int double aepsge [property], [bound]

Definition at line 120 of file all_2.js.

30.1389.1.2 mouse int double int constdir =0 [property], [bound]

Definition at line 169 of file all_2.js.

30.1389.1.3 mouse cpp

Definition at line 120 of file all_2.js.

30.1389.1.4 mouse int dim [property], [bound]

Definition at line 120 of file all_2.js.

30.1389.1.5 PrParamUtil h

Definition at line 178 of file all_2.js.

30.1389.1.6 mouse int double int bool repar [property],[bound]

Initial value:

```
=true)'],['../class_go_1_1_approx_surf.html#ae046f4d99fff00a02c1707e92b5053dd',1,'
      Go::ApproxSurf::ApproxSurf(shared_ptr&lt; SplineSurface &
      gt; &amp;srf, const std::vector&lt; double &gt; &amp;points, const std::vector&
      lt; double &gt; &amp;parvals, int dim, double aepsge, int
      constdir=0, bool approx_orig=false, bool close_belt=false, int nmb_stabil=0, bool
      repar=true)'],['../class_go_1_1_approx_surf.html#
      a7781c1001f19a97499b193907d693b15',1,'Go::ApproxSurf::ApproxSurf()']]],
  ['approxsurf',['ApproxSurf',['../class_go_1_1_approx_surf.html',1,'
      Go']]],
  ['approxsurf_2eh',['ApproxSurf.h',['../_approx_surf_8h.html',1,'']]],
  ['approxtol_5f',['approxtol_',['../class_go_1_1ft_smooth_surf.html#
      aec9cdafc2633142a81e2fd4a8388ba45',1,'Go::ftSmoothSurf::approxtol_()'],['../
      class_go_1_1ft_surface_set.html#a6af113d25a69c498a856f7c1e5e7a2b3',1,'
      Go::ftSurfaceSet::approxtol_()'],['../
      class_go_1_1_surface_model.html#a6472ae026aa52cebc79d2f43f0917e64',1,'
      Go::SurfaceModel::approxtol_()']]],
  ['approxvolparamcurve',['approxVolParamCurve',['../namespace_go_1_1_volume_tools.html#
      aa500ad08b2e111caedb2c15ba3c6999f',1,'Go::VolumeTools']]],
  ['approxweight_5f',['approxweight_',['../class_go_1_1ft_surface_set.html#
      a0a15b621cc8fadbdb91909c748c5d4f1',1,'Go::ftSurfaceSet']]],
  ['aq',['aQ',['../jquery_8js.html#a79eb58dc6cdf0aef563d5dc1ded27df5',1,'jquery.js']]],
  ['ar_5f1d_5fft',['ar_1d_ft',['../class_n_e_w_m_a_t_1_1_f_f_t___controller.html#
      aa2d9e1babe11e9df86986a62dd93ebac',1,'NEWMAT::FFT_Controller']]],
  ['arclength',['arcLength',['../class_go_1_1ft_curve_segment.html#
      a953153d17ea3bff870bf270c716d487d',1,'Go::ftCurveSegment::arcLength()'],['../
      class_go_1_1ft_curve.html#a054c7514fc2e82eafcbfc8e1714061ea',1,'
      Go::ftCurve::arcLength()']]],
  ['area',['area',['../class_go_1_1ft_surface.html#
      aadc67b36ef653ff7e4c09ea06456a0d0',1,'Go::ftSurface::area()'],['../
      class_go_1_1_bounded_surface.html#a351925baa7e536730663a87ea0fce006',1,'
      Go::BoundedSurface::area()'],['../
      class_go_1_1_composite_surface.html#a6a68591f99fe0ce92a8442843a6e403b',1,'
      Go::CompositeSurface::area()'],['../
      class_go_1_1_elementary_surface.html#ab20ceab1a6924addf76e0d04850de566',1,'
      Go::ElementarySurface::area()'],['../
      class_go_1_1_param_surface.html#a0417c918e78108fb3a22f969fcc0498a',1,'
      Go::ParamSurface::area()'],['../
      class_go_1_1_spline_surface.html#ab0e8c17c1d43ddab2fd56ee045c2c183',1,'
      Go::SplineSurface::area()'],['../
      class_go_1_1_surface_of_linear_extrusion.html#
      af7839cc0ddb64b5033ae98b733e0ea14',1,'Go::SurfaceOfLinearExtrusion::area()'],['../
      class_go_1_1_surface_of_revolution.html#a6b877c9c54faa2f1fec69be7d303118c
      ',1,'Go::SurfaceOfRevolution::area()'],['../
      class_go_1_1_element2_d.html#a2321c59da3c5c143cfb2ccca7b791dbf',1,'
      Go::Element2D::area()'],['../class_go_1_1_l_r_spline_surface
      .html#aab242113dae866aa4e4abf04dfc8dc85',1,'Go::LRSplineSurface::area()'],['../
      class_go_1_1_surface_on_volume.html#ad16e1c297d24c01995f1c407a4f6d418',1,'
      Go::SurfaceOnVolume::area()'],['../namespace_go.html#
      a8cc8f744af2fc5541e493ffdd3d2e1f5',1,'Go::area(const Array&lt; T, 2 &gt; *c)'],['../
      namespace_go.html#a04f0f159a17bcc67285bb7349debd945',1,'Go::area(const Array&
      lt; T, 3 &gt; *c)'],['../_pr_param_util_8h.html#a88d3831b85d9d3912354527e5fe6d73c',1,'
      area(const double &amp;x0, const double &amp;y0, const double &amp;x1, const double &
      amp;y1, const double &amp;x2, const double &amp;y2): 
```

Definition at line 169 of file all_2.js.

30.1389.1.7 var searchData

Definition at line 1 of file all_2.js.

30.1390 doc/html/search/all_3.js File Reference

Variables

- var searchData
- jquery js

30.1390.1 Variable Documentation

30.1390.1.1 jquery js

Definition at line 3 of file all_3.js.

30.1390.1.2 var searchData

Initial value:

```
=
[
  ['b',['b',['../class_go_1_1_line2_d_int.html#a1bf14760b8c49e8b71cd24fa7a38cd35',1,'Go::Line2DInt::b()'],[
      '../class_go_1_1_plane_int.html#aa61eda35ce195ebbb59321069d0b20f1',1,'Go::PlaneInt::b()'],['
      ../jquery_8js.html#aa4026ad5544b958e54ce5e106fa1c805',1,'b(): 
```

Definition at line 1 of file all_3.js.

30.1391 doc/html/search/all_4.js File Reference

Variables

- var searchData
- jquery js
- jquery shared_ptr & lt
- IntersectionPoint & gt
- & amp
- pnt const
- dist
- cpos1
- double gpos2 [ ]
- pt_cv
- pt_su
- bool second_order
- newmat4 cpp
- basisValues
- basisDerivs_u
- basisDerivs_v
- bool evaluate_from_right
- s17702d c
- s17702d int nmb_cvs
- init_basis
- double tol
- double int double double degree

30.1391.1 Variable Documentation

30.1391.1.1 s17702d int const BsplineBasis& amp [property],[bound]

Definition at line 176 of file all_4.js.

30.1391.1.2 basisDerivs_u

Definition at line 289 of file all_4.js.

30.1391.1.3 basisDerivs_v

Definition at line 289 of file all_4.js.

30.1391.1.4 basisValues

Definition at line 289 of file all_4.js.

30.1391.1.5 s17702d c

Definition at line 384 of file all_4.js.

30.1391.1.6 pnt const

Definition at line 176 of file all_4.js.

30.1391.1.7 cpos1

Definition at line 193 of file all_4.js.

30.1391.1.8 newmat4 cpp

Definition at line 244 of file all_4.js.

30.1391.1.9 double int double double degree

Definition at line 516 of file all_4.js.

30.1391.1.10 dist

Definition at line 181 of file all_4.js.

30.1391.1.11 bool evaluate_from_right

Definition at line 289 of file all_4.js.

30.1391.1.12 double gpos2[ ]

Definition at line 193 of file all_4.js.

30.1391.1.13 double& gt

Definition at line 176 of file all_4.js.

30.1391.1.14 init_basis

Definition at line 516 of file all_4.js.

30.1391.1.15 jquery js

Definition at line 3 of file all_4.js.

30.1391.1.16 std::vector& lt [bound]

Definition at line 3 of file all_4.js.

30.1391.1.17 double int nmb_cvs [property],[bound]

Definition at line 384 of file all_4.js.

30.1391.1.18 pt_cv

Definition at line 193 of file all_4.js.

30.1391.1.19 pt_su

Definition at line 193 of file all_4.js.

30.1391.1.20 var searchData

Initial value:

```
=
[
  ['c',['c',['../class_go_1_1_line2_d_int.html#a267566d852799214325a5702eb5cef12',1,'Go::Line2DInt::c()'],[
      '../class_go_1_1_plane_int.html#a4f9d4c6288fb0ee151a466648816fca1',1,'Go::PlaneInt::c()'],['
      ../jquery_8js.html#abce695e0af988ece0826d9ad59b8160d',1,'c(): 
```

Definition at line 1 of file all_4.js.

30.1391.1.21 bool second_order

Definition at line 193 of file all_4.js.

30.1391.1.22 double int double tol

Definition at line 516 of file all_4.js.

30.1392 doc/html/search/all_5.js File Reference

Variables

- var searchData
- fft cpp

30.1392.1 Variable Documentation

30.1392.1.1 fft cpp

Definition at line 17 of file all_5.js.

30.1392.1.2 var searchData

Initial value:

```
=
[
  ['d',['d','../struct_go_1_1_l_r_spline_surface_1_1_refinement2_d.html#a8a68737e378b8daee92599fcb690ef3c'
      ,1,'Go::LRSplineSurface::Refinement2D::d()'],['
      ../class_go_1_1_plane_int.html#adbef9642db16186c9411dce8c3fd7c92',1,'Go::PlaneInt::d()'],['
      ../namespace_go.html#a95d383314d9ef7d277424ee672473063ada8cdab2225fa4f764ba2ff6d553f3d4',1,'Go::D()']]],
  ['dart',['Dart',['../classhetriang_1_1_dart.html',1,'hetriang']]],
  ['dart',['Dart',['../classhed_1_1_dart.html',1,'hed']]],
  ['dart',['Dart',['../classhetriang_1_1_dart.html#ab39198f2792ee004668b8fc7f6a2d54f',1,'
      hetriang::Dart::Dart()'],['../classhetriang_1_1_dart.html#ad19d89b2aed2b3a8d928be1625c41522',1,'hetriang::Dart::Dart(Ed
       *edge, bool dir=true)'],['../classhetriang_1_1_dart.html#a38272a3789a247be3b18bd270c7f7e0e',1,'
      hetriang::Dart::Dart(const Dart &amp;dart)'],['../classhed_1_1_dart.html#a141548d2908ef5847fd81370d57c07a0',1,'
      hed::Dart::Dart()'],['../classhed_1_1_dart.html#a40d2832ae9a9d61a1cc16c9b171a2d14',1,'hed::Dart::Dart(Edge *edge, bool
       dir=true)'],['../classhed_1_1_dart.html#a75fe6236394e8e039a1b3ad44582bf4f',1,'hed::Dart::Dart(const Dart
       &amp;dart)']]],
  ['data',['Data',['../class_n_e_w_m_a_t_1_1_simple_int_array.html#a224921d28dcde7d9131ae08d30adba79',1,'
      NEWMAT::SimpleIntArray::Data()'],['
      ../class_n_e_w_m_a_t_1_1_simple_int_array.html#aa2caf98cf436c591d84b0c4ffa1f95d2',1,'NEWMAT::SimpleIntArray::Data() cons
      ../class_matrix_row_col.html#a9900af353a47350b3346718cd4a6007f',1,'MatrixRowCol::Data()'],['../class_matrix_row_col.html
      MatrixRowCol::data()']]],
  ['data_5f',['data_',['../classgv_application.html#a15780eaf17a8bf73fece3f89300fd5b4',1,'
      gvApplication::data_()'],['../classgv_view.html#ae6f37f89a9bf67440090589d576924db',1,'gvView::data_()']]],
  ['data_5fpoints_5f',['data_points_',['
      ../struct_go_1_1_l_s_smooth_data.html#a48391b2e0bfef8d763a55015de021dee',1,'Go::LSSmoothData']]],
  ['datahandler',['DataHandler',['../class_data_handler.html',1,'DataHandler'],['
      ../class_data_handler.html#a51d845c1d9bbeef44607ec7592ba3c1d',1,'DataHandler::DataHandler()']]],
  ['datahandler_2eh',['DataHandler.h',['../_data_handler_8h.html',1,'']]],
  ['datahandlervolandlr',['DataHandlerVolAndLR',['../class_data_handler_vol_and_l_r.html',1,'
      DataHandlerVolAndLR'],['../class_data_handler_vol_and_l_r.html#aa9165829b2bcbfd4bbb5c2afbb4ea6c0',1,'
      DataHandlerVolAndLR::DataHandlerVolAndLR()']]],
  ['datahandlervolandlr_2eh',['DataHandlerVolAndLR.h',['../_data_handler_vol_and_l_r_8h.html',1,'']]],
  ['datalossok',['DataLossOK',['../class_n_e_w_m_a_t_1_1_matrix_type.html#a0e6e05568d71ac2843e99e7b4959b6e0
      ',1,'NEWMAT::MatrixType']]],
  ['datapointsize',['dataPointSize',['
      ../struct_go_1_1_l_s_smooth_data.html#a535cfb16e7a24d9389902429bbe5b64b',1,'Go::LSSmoothData']]],
  ['dbgqqq',['DBGqqq',['../sisl__aux_8cpp.html#a22e3c68f7ee44d24da231675c4aceafa',1,'sisl_aux.cpp']]],
  ['dct',['DCT',['../namespace_n_e_w_m_a_t.html#a8d6c3e8e2abaccf76b86956d403842cb',1,'NEWMAT::DCT()'],['
      ../fft_8cpp.html#a924dff49d847f7fc827760a9adad7f75',1,'DCT(): 
```

Definition at line 1 of file all_5.js.

30.1393 doc/html/search/all_6.js File Reference

Variables

- var searchData
- PrPathTriangleSeq h
- PrPathTriangleSeq const
- eval_2_crv c
- eval_2_crv Point & amp
- pnt int nder
- pnt int std::vector & lt
- Point & gt

30.1393.1 Variable Documentation

30.1393.1.1 der Point& amp [bound]

Definition at line 153 of file all_6.js.

30.1393.1.2 eval_2_crv c

Definition at line 153 of file all_6.js.

30.1393.1.3 pnt const [bound]

Initial value:

```
=0'],['../class_go_1_1_eval_curve_set.html#a6cad51d0922a7dedac3a31b2026ab0a4',1,
      'Go::EvalCurveSet::eval(double t)=0'],['../
      class_go_1_1_eval_curve_set.html#af94dfe476d9a31a9283263e1c7eb8bb3',1,'
      Go::EvalCurveSet::eval(double t, int n, std::vector&lt; std::vector&
      lt; Point &gt; &gt; &amp;der)=0'],['../
      class_go_1_1_eval_param_curve.html#a765082ce27f3a3ac77f9dbda11001cf1',1,'
      Go::EvalParamCurve::eval(double t) const '],['../
      class_go_1_1_eval_param_curve.html#ae053eebea18f9dbe4a3289a7aeb2563d',1,'
      Go::EvalParamCurve::eval(double t, int n, Point der[]) const '],['../
      class_go_1_1_eval_surface.html#a2048831767bc076026fb999eb2f1036c',1,'
      Go::EvalSurface::eval(double u, double v) const =0'],['../
      class_go_1_1_eval_surface.html#ac30c4ea3682ad3433ed510bebf64c968',1,'
      Go::EvalSurface::eval(double u, double v, int n, Point der[]) const =0'],['../
      class_go_1_1_int_crv_evaluator.html#ab9f4d31119d434a7399b4f57a99c7efb',1,'
      Go::IntCrvEvaluator::eval(double t)'],['../
      class_go_1_1_int_crv_evaluator.html#a212ac4e6d0896e12fef2d5a0bd895e58',1,'
      Go::IntCrvEvaluator::eval(double t, int n, std::vector&lt; std::vector&
      lt; Point &gt; &gt; &amp;der)'],['../class_go_1_1_lift_curve.html#
      ae512f443f85b1704a433e11bb8782af5',1,'Go::LiftCurve::eval(double t) const '],['../
      class_go_1_1_lift_curve.html#a2cb2e79f40e4d61f22303b5bcf2aeba3',1,'
      Go::LiftCurve::eval(double t, int n, Point der[]) const '],['../
      class_go_1_1_project_curve.html#af98b1ced4a661a5876e60db1d659f4fa',1,'
      Go::ProjectCurve::eval(double t) const '],['../
      class_go_1_1_project_curve.html#a96186d4cf98720c6777bfd7686f27f49',1,'
      Go::ProjectCurve::eval(double t, Go::Point seed) const '],['../
      class_go_1_1_project_curve.html#aa04bfd8be7761c82b715e59ab2537bc3',1,'
      Go::ProjectCurve::eval(double t, int n, Go::Point der[]) const '],['../
      class_go_1_1_project_curve_and_cross_tan.html#
      a2887b1adafc03d983eb8405ea079f828',1,'Go::ProjectCurveAndCrossTan::eval(double t)'],['../
      class_go_1_1_project_curve_and_cross_tan.html#
      afe33ce9e2590e0bfe7808194acce9ebb',1,'Go::ProjectCurveAndCrossTan::eval(double t, int n,
      std::vector&lt; std::vector&lt; Go::Point &gt; &gt; &amp;ders)'],['../
      class_go_1_1_project_intersection_curve.html#
      a6c51a345c6bc7eef9ad51c6a6af1a6a7',1,'Go::ProjectIntersectionCurve::eval(double t) const '],['../
      class_go_1_1_project_intersection_curve.html#
```

```
    ae83c55aba4c48f4f9e67ee10a469eebd',1,'Go::ProjectIntersectionCurve::eval(double t, int n,
    Point der[]) const '],['../class_go_1_1_smooth_transition.html#
    a9dec775aeea43960e2f31389536c020d',1,'Go::SmoothTransition::eval(double t)'],['../
    class_go_1_1_smooth_transition.html#a3014fd12933c038db7eb267fbed90b50',1,'
    Go::SmoothTransition::eval(double t, int n, std::vector&lt; std::vector&
    lt; Point &gt; &gt; &amp;der)'],['../class_go_1_1_space_int_crv.
    html#ab9a922c9e907889610ba88f507340ed3',1,'Go::SpaceIntCrv::eval(double t) const '],['../
    class_go_1_1_space_int_crv.html#a52581fc9d01325d625eff7e90fd5ad23',1,'
    Go::SpaceIntCrv::eval(double t, int n, Point der[]) const '],['../
    class_go_1_1_trim_curve.html#a383077ca958c414fc6c39ecde49df68f',1,'
    Go::TrimCurve::eval(double t)'],['../class_go_1_1_trim_curve.html
    #a94b8b25ba0369b8bf01a5e18caafa7da',1,'Go::TrimCurve::eval(double t, int n, std::vector&
    lt; std::vector&lt; Point &gt; &gt; &amp;der)'],['../
    class_go_1_1_bezier_triangle.html#a04e7a7850a4292cd300aac604e17efec',1,'
    Go::BezierTriangle::eval()'],['../
    class_go_1_1_eval_functor_curve.html#adc7d79d2ad002096776641323d421fc0',1,'
    Go::EvalFunctorCurve::eval(double t) const '],['../
    class_go_1_1_eval_functor_curve.html#ad765b1fdca8d47430a90b05d08358c42',1,'
    Go::EvalFunctorCurve::eval(double t, int n, Point der[]) const '],['../
    class_go_1_1_eval_functor_surface.html#a4bba1fd389a8a21408c76279077d8c98'
    ,1,'Go::EvalFunctorSurface::eval(double u, double v) const '],['../
    class_go_1_1_eval_functor_surface.html#a52a9888c724819231d867b5f8ecc9edb'
    ,1,'Go::EvalFunctorSurface::eval(double u, double v, int n,
    Point der[]) const '],['../class_go_1_1_l_r_b_spline2_d.html#
    af0a9b4ba330f30b6a7cceeaa8bd8e40b',1,'Go::LRBSpline2D::eval()'],['../
    class_go_1_1_volume_parameter_curve.html#
    a9fe5deedf6c920a026949df25a804eeb',1,'Go::VolumeParameterCurve::eval(double t) const '],['../
    class_go_1_1_volume_parameter_curve.html#
    a7a1967e05c656a34b29c9e455c6985d3',1,'Go::VolumeParameterCurve::eval(double t, int n,
    Point der[]) const '],['../class_go_1_1_volume_space_curve.html#
    a9c680f8db2892c4000e199d3591c4ec6',1,'Go::VolumeSpaceCurve::eval(double t) const '],['../
    class_go_1_1_volume_space_curve.html#adf40f504a4ffcd83d09f88dd023deb69',1,'
    Go::VolumeSpaceCurve::eval(double t, int n, Point der[]) const ']]],
['eval_5f2_5fcrv',['EVAL_2_CRV',['../eval__2__crv_8c.html#
    ae21399dc6a70f8168d0e3926598430cc',1,'EVAL_2_CRV(): 
```


Definition at line 26 of file all_6.js.

30.1393.1.4 Point& gt

Definition at line 185 of file all_6.js.

30.1393.1.5 PrPathTriangleSeq h

Definition at line 26 of file all_6.js.

30.1393.1.6 pnt int std::vector& lt

Definition at line 185 of file all_6.js.

30.1393.1.7 pnt int nder

Definition at line 185 of file all_6.js.

30.1393.1.8 var searchData

Initial value:

```
=
[
  ['e',['E',['../namespace_go.html#a95d383314d9ef7d277424ee672473063a67661f5f4694b7e01c81e2e32d5841d0',1,'
      Go']]],
  ['e1_5f',['e1_',['../struct_go_1_1_face_connectivity.html#a42876bc3d54e64697555761d3667382e',1,'
      Go::FaceConnectivity::e1_()'],['../class_go_1_1tp_table_entry.html#ab2e9e30e315ec2fd05d5d37114296884',1,'
      Go::tpTableEntry::e1_()']]],
  ['e2_5f',['e2_',['../struct_go_1_1_face_connectivity.html#a56d1d7a434f3fd07682e85488b369fb8',1,'
      Go::FaceConnectivity::e2_()'],['../class_go_1_1tp_table_entry.html#a2e23e6a84effa6180933fe8e6fa6e61c',1,'
      Go::tpTableEntry::e2_()']]],
  ['e2max',['e2max',['../struct_s_i_s_lbox.html#a669492a1c5428ae5d107e54a63052903',1,'SISLbox']]],
  ['e2min',['e2min',['../struct_s_i_s_lbox.html#ae83586cc85d8c03f69f07976bdd48e20',1,'SISLbox']]],
  ['each',['each',['../jquery_8js.html#a871ff39db627c54c710a3e9909b8234c',1,'jquery.js']]],
  ['eatwhite',['eatwhite',['../namespace_go_1_1_utils.html#a43780996b9bc44a2d902858e953f8050',1,'Go::Utils'
      ]]],
  ['ec',['ec',['../struct_s_i_s_l_point.html#aaab08c937d85029f5d86c469a21bf45d',1,'SISLPoint']]],
  ['ecoef',['ecoef',['../struct_s_i_s_ldir.html#a9cae019213555ec9a755671f7c12ba98',1,'SISLdir::ecoef()'],['
      ../struct_s_i_s_l_curve.html#ad8783e20499cc2468b34e22d322354ad',1,'SISLCurve::ecoef()'],['
      ../struct_s_i_s_l_surf.html#af123d50549798ffca464196d4bc6321e',1,'SISLSurf::ecoef()'],['
      ../struct_s_i_s_l_point.html#aa674e75fad6c907c12ade842728d6eb4',1,'SISLPoint::ecoef()']]],
  ['edg',['edg',['../struct_s_i_s_l_object.html#a3b5ff84d39e82a228481c7806a424ee7',1,'SISLObject']]],
  ['edg_5fidx_5f1_5f',['edg_idx_1_',['
      ../struct_go_1_1_volume_adjacency_info.html#ab19327268c61359eb382df49d03f9095',1,'Go::VolumeAdjacencyInfo']]],
  ['edg_5fidx_5f2_5f',['edg_idx_2_',['
      ../struct_go_1_1_volume_adjacency_info.html#a41ce7795661cc2ff8be7e16bcd260678',1,'Go::VolumeAdjacencyInfo']]],
  ['edge',['Edge',['../classhetriang_1_1_edge.html',1,'hetriang']]],
  ['edge',['edge',['../class_go_1_1_point_on_edge.html#aaae9baee52e5453776627caa2fa9f37c',1,'
      Go::PointOnEdge::edge()'],['../class_go_1_1_composite_box.html#a5f582420b4561b6bdb20f3c5d64d474e',1,'
      Go::CompositeBox::edge()'],['../classhetriang_1_1_edge.html#ac66aa8601c31b0f664fb020e02d5e0bc',1,'hetriang::Edge::Edge(
      ../classhed_1_1_edge.html#afcf345e2e15a83e18dbf14dd2eaecad7',1,'hed::Edge::Edge()']]],
  ['edge',['Edge',['../classhed_1_1_edge.html',1,'hed']]],
  ['edge_5f',['edge_',['../struct_go_1_1_sample_point_data.html#abba15d6076f86102c17f7c4bb857ac13',1,'
      Go::SamplePointData']]],
  ['edge_5f1',['edge_1',['../struct_s_i_s_l_intpt.html#a46dc1e8c213299854359e559636234b9',1,'SISLIntpt']]],
  ['edge_5f2',['edge_2',['../struct_s_i_s_l_intpt.html#a6a017813f6d6c57e694fdd3332a8a233',1,'SISLIntpt']]],
  ['edge_5facute_5fangle',['EDGE_ACUTE_ANGLE',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584ae81304fe056a752a83af4310b525b2e8',1,'Go']]],
  ['edge_5fcurves_5fequal',['edge_curves_equal',['
      ../namespace_go_1_1_coons_patch_volume_gen.html#af3266d664434db11a0a73a5ba524e652',1,'Go::CoonsPatchVolumeGen']]],
  ['edge_5fpar_5f',['edge_par_',['../struct_go_1_1_sample_point_data.html#ae50653d346158f4c60b5d7d1a4438422
      ',1,'Go::SamplePointData']]],
  ['edge_5fposition_5fdiscont',['EDGE_POSITION_DISCONT',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a8ae1a2b3ebb821b186678cda5a0459c6',1,'Go']]],
  ['edge_5fscales_5f',['edge_scales_',['
      ../class_go_1_1ft_chart_surface.html#a9212705a80c34a260750dc8c9126a15e',1,'Go::ftChartSurface']]],
  ['edge_5fsequence',['edge_sequence',['../_pr_path_triangle_seq_8h.html#ab5a2fa93378e83175ca952ed72782fa5'
      ,1,'edge_sequence(const std::vector&amp;lt; int &amp;gt; &amp;amp;tr_seq, const PrTriangulation_OP &amp;amp;t):&amp;#160
```

Definition at line 1 of file all_6.js.

30.1394 doc/html/search/all_7.js File Reference

Variables

- var searchData
- & gt

30.1394.1 Variable Documentation

30.1394.1.1 & gt

Definition at line 47 of file all_7.js.

30.1394.1.2 var searchData

Definition at line 1 of file all_7.js.

30.1395 doc/html/search/all_8.js File Reference

Variables

- var searchData
- generic_graph_algorithms_implementation h
- generic_graph_algorithms_implementation const int xs
- generic_graph_algorithms_implementation const int const int ys
- generic_graph_algorithms_implementation const int const int const int x0
- generic_graph_algorithms_implementation const int const int const int const int y0
- generic_graph_algorithms_implementation const int const int const int const int const int doubleBuffer
- generic_graph_algorithms_implementation const int const int const int const int const int const int two_sided
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int lighting
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int normalize
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int smooth
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double xtrans
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double ytrans
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double const double ztrans
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double const double const double xscale
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double const double const double const double yscale
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double const double const double const double const double zscale
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double const double const double const double const double int & amp
- tx
- ty
- const int texture_mode
- const int const char ∗const texfile =NULL):
- gl_aux cpp

30.1395.1 Variable Documentation

30.1395.1.1 int& amp [property],[bound],[constrained]

Definition at line 92 of file all_8.js.

30.1395.1.2 gl_aux cpp

Definition at line 620 of file all_8.js.

30.1395.1.3 gl_aux const int const int const int const int const int doubleBuffer [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.4 generic_graph_algorithms_implementation h

Definition at line 92 of file all_8.js.

30.1395.1.5 gl_aux const int const int const int const int const int const int const int lighting [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.6 gl_aux const int const int const int const int const int const int const int const int normalize [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.7 var searchData

Definition at line 1 of file all_8.js.

30.1395.1.8 gl_aux const int const int const int const int const int const int const int const int const int smooth [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.9 const int const char ∗const texfile =NULL):

Definition at line 620 of file all_8.js.

30.1395.1.10 const int texture_mode

Definition at line 620 of file all_8.js.

30.1395.1.11 gl_aux const int const int const int const int const int const int two_sided [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.12 tx

Definition at line 620 of file all_8.js.

30.1395.1.13 ty

Definition at line 620 of file all_8.js.

30.1395.1.14 gl_aux const int const int const int x0 [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.15 gl_aux const int xs [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.16 gl_aux const int const int const int const int const int const int const int const int const double const double const double const double xscale [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.17 gl_aux const int const int const int const int const int const int const int const int const double xtrans [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.18 gl_aux const int const int const int const int y0 [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.19 gl_aux const int const int ys [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.20 gl_aux const int const int const int const int const int const int const int const int const double const double const double const double const double yscale [property], [bound], [constrained]

Definition at line 92 of file all_8.js.

30.1395.1.21 gl_aux const int const int const int const int const int const int const int const int const int const double const double ytrans [property],[bound],[constrained]

Definition at line 92 of file all_8.js.

30.1395.1.22 gl_aux const int const int const int const int const int const int const int const int const int const double const double const double const double const double const double const double zscale [property],[bound],[constrained]

Definition at line 92 of file all_8.js.

30.1395.1.23 gl_aux const int const int const int const int const int const int const int const int const int const double const double const double ztrans [property],[bound],[constrained]

Definition at line 92 of file all_8.js.

30.1396 doc/html/search/all_9.js File Reference

Variables

- var searchData
- T & gt
- int n
- int double tolerance1
- int double double tolerance2
- int double double int mm
- int double double int double initpars_v [ ]
- int double double int double int nn
- int double double int double int double double int double double std::vector & lt
- dims
- double param_v [ ]

30.1396.1 Variable Documentation

30.1396.1.1 dims

Definition at line 68 of file all_9.js.

30.1396.1.2 int& gt

Definition at line 5 of file all_9.js.

30.1396.1.3 int double double int double initpars_v[ ] [bound]

Definition at line 5 of file all_9.js.

30.1396.1.4 int int std::vector& lt [bound]

Definition at line 5 of file all_9.js.

30.1396.1.5 double int mm [bound]

Definition at line 5 of file all_9.js.

30.1396.1.6 int int n [bound]

Definition at line 5 of file all_9.js.

30.1396.1.7 double int int nn [bound]

Definition at line 5 of file all_9.js.

30.1396.1.8 double param_v[ ]

Definition at line 75 of file all_9.js.

30.1396.1.9 var searchData

Initial value:

```
=
[
  ['hahnssurfacegen_2eh',['HahnsSurfaceGen.h',['../_hahns_surface_gen_8h.html',1,'']]],
  ['halfedgecollapse',['halfEdgeCollapse',['../class_pr_thin.html#a8562782f8ebd8645b6ef5dee869f913e',1,'
      PrThin']]],
  ['handle',['Handle',['../class_handle.html',1,'Handle&lt
```

Definition at line 1 of file all_9.js.

30.1396.1.10 int double double int double int double double int double tolerance1 [bound]

Definition at line 5 of file all_9.js.

30.1396.1.11 int double double int double int double double int double double tolerance2 [bound]

Definition at line 5 of file all_9.js.

30.1397 doc/html/search/all_a.js File Reference

Variables

- var searchData

30.1397.1 Variable Documentation

30.1397.1.1 var searchData

Initial value:

```
=
[
  ['i',['i',['../class_n_e_w_m_a_t_1_1_matrix_type.html#acb7b50521ae4e68a7cf332d180a19bc8',1,'
      NEWMAT::MatrixType::i()'],['../class_n_e_w_m_a_t_1_1_base_matrix.html#a4227de5c79ebbe72cb883dc44a4adc1f',1,'
      NEWMAT::BaseMatrix::i()']]],
  ['icopy',['icopy',['../struct_s_i_s_l_curve.html#a20f717dfda7626d2381b6d852aadc3b0',1,'SISLCurve::icopy()
      '],['../struct_s_i_s_l_surf.html#aa626e2db7658d0247f79c931ac118e56',1,'SISLSurf::icopy()'],['
      ../struct_s_i_s_l_point.html#abb277b543c1cfce82467725ead2544c2',1,'SISLPoint::icopy()']]],
  ['id'
```

Definition at line 1 of file all_a.js.

30.1398 doc/html/search/all_b.js File Reference

Variables

- var searchData
- jacobi cpp

30.1398.1 Variable Documentation

30.1398.1.1 jacobi cpp

Definition at line 3 of file all_b.js.

30.1398.1.2 var searchData

Initial value:

```
=
[
  ['jacobi',['Jacobi',['../namespace_n_e_w_m_a_t.html#a2836cabc2994eacfc0e7a3b5197d0e9a',1,'
      NEWMAT::Jacobi(const SymmetricMatrix &amp;, DiagonalMatrix &amp;)'],['
      ../namespace_n_e_w_m_a_t.html#a556f131206374d64bb896c8f815e8fd6',1,'NEWMAT::Jacobi(const SymmetricMatrix &amp;, Diagonal
      ../namespace_n_e_w_m_a_t.html#a84f3caafdd15a0749b7a11ff668866f7',1,'NEWMAT::Jacobi(const SymmetricMatrix
       &amp;, DiagonalMatrix &amp;, Matrix &amp;)'],['../namespace_n_e_w_m_a_t.html#ab7f1b7f360924503ff4e0a681602cbc0'
      ,1,'NEWMAT::Jacobi(const SymmetricMatrix &amp;, DiagonalMatrix &amp;, SymmetricMatrix &amp;, Matrix &amp;,
       bool=true)'],['../jacobi_8cpp.html#ad370e3456b419cfe2eae25f2300fd5b1',1,'Jacobi(const SymmetricMatrix &amp;X,
       DiagonalMatrix &amp;D, SymmetricMatrix &amp;A, Matrix &amp;V, bool eivec): 
```

Definition at line 1 of file all_b.js.

30.1399 doc/html/search/all_c.js File Reference

Variables

- var searchData
- newmat6 cpp

30.1399.1 Variable Documentation

30.1399.1.1 newmat6 cpp

Definition at line 26 of file all_c.js.

30.1399.1.2 var searchData

Initial value:

```
=
[
  ['k',['k',['../jquery_8js.html#ab26645c014aa005ecedef329ecf58c99',1,'jquery.js']]],
  ['kdim_5f',['kdim_',['../class_go_1_1_smooth_surf.html#aecbfa2bdb4142f2207c88249237cf358',1,'
      Go::SmoothSurf::kdim_()'],['../class_go_1_1_smooth_surf_set.html#a16650b6975a4aaf03bf49ccd70a973e1',1,'
      Go::SmoothSurfSet::kdim_()']]],
  ['keep_5fsing',['KEEP_SING',['
      ../namespace_go.html#a2d40b57e4fc6eed03a9fbeebe181e7c5a5950a0471c4dedf23ebab3d521693e9e',1,'Go']]],
  ['key',['Key',['../classmaterial__appearance.html#a74882356eb34bffa5a8683cccbee97bc',1,'
      material_appearance']]],
  ['key_5f',['key_',['../class_heap_node.html#ae07076e227f6a24b9a70d2dff7031110',1,'HeapNode::key_()'],['
      ../class_heap_node2.html#a5834899269c09b811d1f2cf807e41e22',1,'HeapNode2::key_()']]],
  ['kink',['kink',['../struct_go_1_1tp_tolerances.html#a587c6924aaf46d129e70defebf9cdf73',1,'
      Go::tpTolerances']]],
  ['kk1_5f',['kk1_',['../class_go_1_1_smooth_surf.html#ad616047930638a6351bdd0b2e82dc9d1',1,'Go::SmoothSurf
      ']]],
  ['kk2_5f',['kk2_',['../class_go_1_1_smooth_surf.html#a1e00323a454408b86c724dd46fbc1b9c',1,'Go::SmoothSurf
      ']]],
  ['kn1_5f',['kn1_',['../class_go_1_1_smooth_surf.html#a548dd3b669c60ffd8f971feac58a2053',1,'Go::SmoothSurf
      ']]],
  ['kn2_5f',['kn2_',['../class_go_1_1_smooth_surf.html#a1ab34f0fee55320b22914774b1e943c6',1,'Go::SmoothSurf
      ']]],
  ['kncond_5f',['kncond_',['../class_go_1_1_smooth_surf.html#a63899626d5ffddfc45f9d6aa22f44dd4',1,'
      Go::SmoothSurf::kncond_()'],['../class_go_1_1_smooth_surf_set.html#aa530cc21c18294d89efb3e986b5f1ad3',1,'
      Go::SmoothSurfSet::kncond_()']]],
  ['knconstraint_5f',['knconstraint_',['../class_go_1_1_smooth_surf.html#a9a80424597864d0adf36ef300ca2a41a'
      ,1,'Go::SmoothSurf::knconstraint_()'],['
      ../class_go_1_1_smooth_surf_set.html#ab4b15fa0722035377b4651a00d147e5f',1,'Go::SmoothSurfSet::knconstraint_()']]],
  ['knotepsilon',['knotEpsilon',['../class_go_1_1_go_tools.html#af44ef84796819b793f2b196a7b296b9c',1,'
      Go::GoTools']]],
  ['knotinterval',['knotInterval',['../class_go_1_1_bspline_basis.html#a305a7e9c5ded401fbb4de72c0e9d2693',1
      ,'Go::BsplineBasis']]],
  ['knotintervalfuzzy',['knotIntervalFuzzy',['
      ../class_go_1_1_bspline_basis.html#a0ae41ca8567fa19eaccdce8b228f1580',1,'Go::BsplineBasis::knotIntervalFuzzy()'],['
      ../class_go_1_1_param0_function_int.html#adf18f61ba3429e8337f680bc6ed9eb4a',1,'Go::Param0FunctionInt::knotIntervalFuzzy
      ../class_go_1_1_param1_function_int.html#a4cfe2132fa258b820edaf776f5383396',1,'Go::Param1FunctionInt::knotIntervalFuzzy
      ../class_go_1_1_param2_function_int.html#a751cf94d3a521e66fde43b34d920662a',1,'Go::Param2FunctionInt::knotIntervalFuzzy
      ../class_go_1_1_param_curve_int.html#ab7260dc6baf8fa87b13c773360cced24',1,'
      Go::ParamCurveInt::knotIntervalFuzzy()'],['../class_go_1_1_param_surface_int.html#af16dd54625073ebccc4cac921c9d6ac2',1,'
      Go::ParamSurfaceInt::knotIntervalFuzzy()'],['../class_go_1_1_spline1_function_int.html#ae54cff5b82d26a4171300d8fbb3de2d
      Go::Spline1FunctionInt::knotIntervalFuzzy()'],['
      ../class_go_1_1_spline2_function_int.html#a7229f63cd797e93f4aed7b4f3f8650ba',1,'Go::Spline2FunctionInt::knotIntervalFuz
      ../class_go_1_1_spline_curve_int.html#aaccc36c235ff72d3989818aa3d99b024',1,'Go::SplineCurveInt::knotIntervalFuzzy()'],['
      ../class_go_1_1_spline_surface_int.html#ab48552a70547a940f282bf4f9eec5adf',1,'Go::SplineSurfaceInt::knotIntervalFuzzy()'
      ../class_go_1_1_mesh2_d.html#a7038b8a5c1ea106fac4c1b5b0bbddc7e',1,'Go::Mesh2D::knotIntervalFuzzy()']]],
  ['knotmultiplicities',['knotMultiplicities',['
      ../class_go_1_1_bspline_basis.html#a91f3e774d6f812df432c2f38fcf44f8e',1,'Go::BsplineBasis']]],
  ['knotmultiplicity',['knotMultiplicity',['
      ../class_go_1_1_bspline_basis.html#aca0cff53a80af7a8cfd0cc64acea7c95',1,'Go::BsplineBasis']]],
  ['knots',['knots',['../class_go_1_1_block_solution.html#af0bdaab56a91706e89bcafe49ad2ae8f',1,'
      Go::BlockSolution::knots()'],['../class_go_1_1_isogeometric_block.html#ad515166c60c7e702dc9f27d48f7122d3',1,'
      Go::IsogeometricBlock::knots()'],['../class_go_1_1_sf_solution.html#a74a9a0c6cc3dc7e3ddfcab6ac8031cdc',1,'
      Go::SfSolution::knots()'],['../class_go_1_1_vol_solution.html#a9d6a56296f7300e21f6f371dcc5d08a0',1,'
```

```
    Go::VolSolution::knots()']]],
['knots_5fto_5finsert',['knots_to_insert',['
    ../namespace_go_1_1_l_r_spline_utils.html#a4f98f5746feb419caf049335e2b1eda7',1,'Go::LRSplineUtils']]],
['knotsbegin',['knotsBegin',['../class_go_1_1_spline_curve.html#a9617b6d88db3ed4e11ed498a40d89581',1,'
    Go::SplineCurve::knotsBegin()'],['../class_go_1_1_spline_curve.html#ab7cfb2dc285d0378062d55d18c0acac2',1,'
    Go::SplineCurve::knotsBegin() const '],['../class_go_1_1_mesh2_d.html#a752b5850413c524460efed453321a688',1,'
    Go::Mesh2D::knotsBegin()']]],
['knotsend',['knotsEnd',['../class_go_1_1_spline_curve.html#acf20e5283b690c8f22aae9fb147fc210',1,'
    Go::SplineCurve::knotsEnd()'],['../class_go_1_1_spline_curve.html#a9fe54c39a94b2c2575f6d0511f721145',1,'
    Go::SplineCurve::knotsEnd() const '],['../class_go_1_1_mesh2_d.html#a1cedb03145e626d0bd834ca339f091db',1,'
    Go::Mesh2D::knotsEnd()']]],
['knotspan',['knotSpan',['../class_go_1_1_spline_surface.html#a4ae188d833ba7e018a60361975ca1754',1,'
    Go::SplineSurface::knotSpan()'],['../class_go_1_1_spline_volume.html#affe28b54eaa1c97de1e2a3e2229b608f',1,'
    Go::SplineVolume::knotSpan()']]],
['knotssimple',['knotsSimple',['../class_go_1_1_bspline_basis.html#aa2e75ab7996534ff328f96d5b2cfadde',1,'
    Go::BsplineBasis']]],
['kp',['KP',['../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a5c67f2185e7691d2d8e85e7f209130',1,'
    NEWMAT::MatrixType::KP()'],['../class_n_e_w_m_a_t_1_1_k_p_matrix.html#a7b84f8e43bac4608bf225867306c9450',1,'
    NEWMAT::KPMatrix::KP()'],['../class_matrix_row_col.html#a8a788cf7179884e2100b77f845cea7dd',1,'MatrixRowCol::KP()'],['
    ../namespace_n_e_w_m_a_t.html#adac429a80804603f506371d42304b686',1,'NEWMAT::KP()'],['
    ../newmat6_8cpp.html#ae3166f1201bb79865ac1945a9ebc64d6',1,'KP(): 
```

Definition at line 1 of file all_c.js.

30.1400 doc/html/search/all_d.js File Reference

Variables

- var searchData
- mouse cpp
- mouse double epsge
- mouse double bool init_mba =false
- mouse double bool double mba_level =0.0
- mouse double bool double bool closest_dist =true
- mouse double bool double bool bool repar

30.1400.1 Variable Documentation

30.1400.1.1 mouse double bool double bool closest_dist =true [bound]

Definition at line 184 of file all_d.js.

30.1400.1.2 mouse cpp

Definition at line 20 of file all_d.js.

30.1400.1.3 mouse double epsge [bound]

Definition at line 20 of file all_d.js.

30.1400.1.4 mouse double bool init_mba =false [bound]

Definition at line 184 of file all_d.js.

30.1400.1.5 mouse double bool double mba_level =0.0 [bound]

Definition at line 184 of file all_d.js.

30.1400.1.6 mouse double bool double bool bool repar [bound]

Initial value:

```
=false)']]],
  ['lrsurfapprox',['LRSurfApprox',['../class_go_1_1_l_r_surf_approx.html',1,'
      Go']]],
  ['lrsurfapprox_2eh',['LRSurfApprox.h',['../_l_r_surf_approx_8h.html',1,'']]],
  ['lrsurfsmoothls',['LRSurfSmoothLS',['../class_go_1_1_l_r_surf_smooth_l_s
      .html#a8acba4937645e7d7c619ce67ae71c5b8',1,'Go::LRSurfSmoothLS::LRSurfSmoothLS
      (shared_ptr&lt; LRSplineSurface &gt; surf, std::vector&lt; int &gt; &amp;coef_known)'],['../
      class_go_1_1_l_r_surf_smooth_l_s.html#ad3d1d6e980d0818742352b8719702ac8',1,
      'Go::LRSurfSmoothLS::LRSurfSmoothLS()']]],
  ['lrsurfsmoothls',['LRSurfSmoothLS',['../class_go_1_1_l_r_surf_smooth_l_s
      .html',1,'Go']]],
  ['lrsurfsmoothls_2eh',['LRSurfSmoothLS.h',['../_l_r_surf_smooth_l_s_8h.html',1,''
      ]]],
  ['lrsurfstitch_2eh',['LRSurfStitch.h',['../_l_r_surf_stitch_8h.html',1,'']]],
  ['lsf',['LSF',['../newmatrc_8h.html#ae75c691eb2643cc7fe952b12f074040c',1,'newmatrc.h']]],
  ['lsmat_5f',['LSmat_',['../struct_go_1_1_l_s_smooth_data.html#
      ab548ff8514223b089b87c15a6c83199e',1,'Go::LSSmoothData']]],
  ['lsright_5f',['LSright_',['../struct_go_1_1_l_s_smooth_data.html#
      a58d1fcd7509e9686f9c8c7a7932c1646',1,'Go::LSSmoothData']]],
  ['lssmoothdata',['LSSmoothData',['../struct_go_1_1_l_s_smooth_data.html#
      adbe08d7ac0e51e41aad91021aaef8014',1,'Go::LSSmoothData']]],
  ['lssmoothdata',['LSSmoothData',['../struct_go_1_1_l_s_smooth_data.html',1,'
      Go']]],
  ['lt',['LT',['../class_n_e_w_m_a_t_1_1_matrix_type.html#
      a6a88aac41b54a529b61a9c9433f4b583a0edcd4d5f3d58272ad0e0a36f5da704a',1,'NEWMAT::MatrixType']]],
  ['ltlexpoint',['ltLexPoint',['../main_8cpp.html#a3ad6217edc1c1d915556be09a7a6e512',1,'
      main.cpp']]],
  ['lubksb',['lubksb',['../class_n_e_w_m_a_t_1_1_crout_matrix.html#
      afcfb1bcd9b105d4be4f13b9dc85a0f98',1,'NEWMAT::CroutMatrix::lubksb()'],['../
      class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#
      aa6b6344001665e9241bd7a3e6564c7da',1,'NEWMAT::BandLUMatrix::lubksb()']]],
  ['ludeco',['LUDeco',['../class_n_e_w_m_a_t_1_1_matrix_type.html#
      af1adc0086f5d4c3328ad4a698fa57c90ae624050aed576ddc4119f40c426cc61b',1,'NEWMAT::MatrixType']]],
  ['ludecomp',['LUDecomp',['../namespace_go.html#a77c8de2bdc12a47b62ef5c306ac0e46d',1,'
      Go']]],
  ['ludecomp_2eh',['LUDecomp.h',['../_l_u_decomp_8h.html',1,'']]],
  ['ludecomp_5fimplementation_2eh',['LUDecomp_implementation.h',['../
      _l_u_decomp__implementation_8h.html',1,'']]],
  ['lusolvesystem',['LUsolveSystem',['../namespace_go.html#
      afd9ea9a56159c9a5841819ebf13280b8',1,'Go']]],
  ['lw_5fset_5f',['lw_set_',['../class_go_1_1_param_curve_int.html#
      af38741b5ba619e02139aa5fa2b17d302',1,'Go::ParamCurveInt::lw_set_()'],['../
      class_go_1_1_param_surface_int.html#a13bd0a26899cdabc17854eb1b4c230aa',1,'
      Go::ParamSurfaceInt::lw_set_()']]]
]
```

Definition at line 184 of file all_d.js.

30.1400.1.7 var searchData

Initial value:

```
=
[
  ['l',['L',['../jquery_8js.html#a38ee4c0b5f4fe2a18d0c783af540d253',1,'jquery.js']]],
  ['l_5f',['l_',['../struct_go_1_1_param_surface_1_1degenerate__info.html#a9e9e4dd3a9bad4fc495e1ca428d1c4e9
      ',1,'Go::ParamSurface::degenerate_info']]],
  ['l_5fpath_5f',['l_path_',['../class_path_type.html#a3849d634c4440974a3e8664f0adf2c88',1,'PathType']]],
  ['label_5f',['label_',['../class_multi_dijkstra.html#a7e2736e3c6d24b2a5b451c5d6f4b02ff',1,'MultiDijkstra'
      ]]],
  ['label_5fdisplay',['label_display',['
      ../struct_go_1_1_i_g_e_sdirentry.html#a2b8d7c0041720a2cc10d1eab59d69171',1,'Go::IGESdirentry']]],
  ['labelbdynode',['labelBdyNode',['../class_pr_organized_points.html#acab5b170fefc327f7db0aac6dac3347b',1,
```

```
    'PrOrganizedPoints']]],
  ['labelnode',['labelNode',['../class_pr_organized_points.html#a02406e295c174e57548497a85e987988',1,'
    PrOrganizedPoints::labelNode(int i, int ic, std::vector&lt; int &gt; &amp;component) const '],['
    ../class_pr_organized_points.html#ae7d58624e3dabfac3af4a976ecd46ca2',1,'PrOrganizedPoints::labelNode(int i, int ic, int
     &amp;index, std::vector&lt; int &gt; &amp;component, std::vector&lt; int &gt; &amp;newIndex) const ']]],
  ['lackingparameter',['lackingParameter',['
    ../class_go_1_1_intersection_pool.html#a204c700b87c2881793dc64850c98ca03',1,'Go::IntersectionPool']]],
  ['lackingparametervalue',['lackingParameterValue',['
    ../class_go_1_1_intersection_pool.html#afd672f1d2375a2c42b178c9aa139363a',1,'Go::IntersectionPool']]],
  ['large_5fdistance_5f',['large_distance_',['../class_dijkstra.html#af7d4f8f644cdf1330bca5ce819fa58a2',1,'
    Dijkstra::large_distance_()'],['../class_multi_dijkstra.html#a4cc650703fd03dae2d075afb06563c2f',1,'
    MultiDijkstra::large_distance_()']]],
  ['largestmultinline',['largestMultInLine',['
    ../class_go_1_1_mesh2_d.html#a6f5984896001959aacf751265b29208c',1,'Go::Mesh2D']]],
  ['last',['last',['../class_r_b_d___c_o_m_m_o_n_1_1_tracer.html#a93a99ea96d8fc44d27b51629c2071cd1',1,'
    RBD_COMMON::Tracer']]],
  ['last_5fchange_5f',['last_change_',['
    ../struct_go_1_1_registration_result.html#a7df6e84c504a75d83f47aa2de92d747d',1,'Go::RegistrationResult']]],
  ['last_5ffile_5fname_5f',['last_file_name_',['
    ../classgv_application.html#a69d06231d8c542521ae2e638c7033a23',1,'gvApplication']]],
  ['last_5fmouse_5fpos_5f',['last_mouse_pos_',['../classgv_view.html#a08505548abe11069e5600ae0b17271a7',1,'
    gvView']]],
  ['last_5fnewton_5fiteration_5f',['last_newton_iteration_',['
    ../struct_go_1_1_registration_result.html#a0955123270a8c94b76919e794f6e8e67',1,'Go::RegistrationResult']]],
  ['last_5fnonlarger_5fknotvalue_5fix',['last_nonlarger_knotvalue_ix',['
    ../namespace_go_1_1_mesh2_d_utils.html#a8a567523d54d76c3a532ce9a9749f58e',1,'Go::Mesh2DUtils']]],
  ['last_5fx',['last_x',['../mouse_8h.html#abbf254766520cad4d7fe189eb184194c',1,'last_x(): 
```

Definition at line 1 of file all_d.js.

30.1401 doc/html/search/all_e.js File Reference

Variables

- var searchData
- glutils cpp

30.1401.1 Variable Documentation

30.1401.1.1 glutils sisl_view_demo cpp

Definition at line 10 of file all_e.js.

30.1401.1.2 var searchData

Initial value:

```
=
[
  ['m3_5fdet',['m3_det',['../gv_utilities_8h.html#a15f8dd61e74e6e8637e610a774df9607',1,'gvUtilities.h']]],
  ['m3_5fidentity',['m3_identity',['../gv_utilities_8h.html#a6091a5b9ab587c9a4b692565e6e1d6c6',1,'
    gvUtilities.h']]],
  ['m3_5finverse',['m3_inverse',['../gv_utilities_8h.html#a3347b853ddaa80d8f92360e764b433e8',1,'
    gvUtilities.h']]],
  ['m4_5fdet',['m4_det',['../gv_utilities_8h.html#acdaa244d22eb4f9c9c0bda4b5d94e5b3',1,'gvUtilities.h']]],
  ['m4_5finverse',['m4_inverse',['../gv_utilities_8h.html#a708f7916c5b2c579c1096435f8f481f4',1,'
    gvUtilities.h']]],
  ['m4_5fsubmat',['m4_submat',['../gv_utilities_8h.html#a94b4064202801e77aa5bd9b975b37d0c',1,'gvUtilities.h
    ']]],
  ['m_5f',['m_',['../class_go_1_1ft_chart_surface.html#a5a87666799aa8b8369f97049e534b943',1,'
    Go::ftChartSurface::m_()'],['../class_pr_mat.html#a4808d661baa0b26acc1c87a5647e18ab',1,'PrMat::m_()'],['
    ../class_go_1_1_solve_c_g.html#ac8ef49ab38d13d40f19874a80534d645',1,'Go::SolveCG::M_()']]],
  ['m_5fpi',['M_PI',['../glutils_8cpp.html#ae71449b1cc6e6250b91f539153a7a0d3',1,'M_PI(): 
```

Definition at line 1 of file all_e.js.

30.1402 doc/html/search/all_f.js File Reference

Variables

- var searchData
- sisl h

30.1402.1 Variable Documentation

30.1402.1.1 sisl h

Definition at line 38 of file all_f.js.

30.1402.1.2 var searchData

Definition at line 1 of file all_f.js.

30.1403 doc/html/search/classes_0.js File Reference

Variables

- var searchData
- double
- & gt

30.1403.1 Variable Documentation

30.1403.1.1 double

Definition at line 15 of file classes_0.js.

30.1403.1.2 & gt

Definition at line 15 of file classes_0.js.

30.1403.1.3 var searchData

Initial value:

```
=
[
  ['adaptcurve',['AdaptCurve',['../class_go_1_1_adapt_curve.html',1,'Go']]],
  ['addedmatrix',['AddedMatrix',['../class_n_e_w_m_a_t_1_1_added_matrix.html',1,'NEWMAT']]],
  ['adjacencyinfo',['AdjacencyInfo',['../struct_go_1_1_adjacency_info.html',1,'Go']]],
  ['alg2delem',['Alg2DElem',['../struct_go_1_1_alg2_d_elem.html',1,'Go']]],
  ['alg3delem',['Alg3DElem',['../struct_go_1_1_alg3_d_elem.html',1,'Go']]],
  ['algobj2dint',['AlgObj2DInt',['../class_go_1_1_alg_obj2_d_int.html',1,'Go']]],
  ['algobj3dint',['AlgObj3DInt',['../class_go_1_1_alg_obj3_d_int.html',1,'Go']]],
  ['algobjectint',['AlgObjectInt',['../class_go_1_1_alg_object_int.html',1,'Go']]],
  ['approxcrvtoseqs',['ApproxCrvToSeqs',['../class_go_1_1_approx_crv_to_seqs.html',1,'Go']]],
  ['approxcurve',['ApproxCurve',['../class_go_1_1_approx_curve.html',1,'Go']]],
  ['approxsurf',['ApproxSurf',['../class_go_1_1_approx_surf.html',1,'Go']]],
  ['array',['Array',['../class_go_1_1_array.html',1,'Go']]],
  ['array_3c_20double_2c_202_20_3e',['Array&lt
```

Definition at line 1 of file classes_0.js.

30.1404 doc/html/search/classes_1.js File Reference

Variables

- var searchData
- & gt

30.1404.1 Variable Documentation

30.1404.1.1 & gt

Definition at line 7 of file classes_1.js.

30.1404.1.2 var searchData

Initial value:

```
=
[
  ['bad_5falloc',['Bad_alloc','../class_r_b_d___c_o_m_m_o_n_1_1_bad__alloc.html',1,'RBD_COMMON']]],
  ['bandlumatrix',['BandLUMatrix','../class_n_e_w_m_a_t_1_1_band_l_u_matrix.html',1,'NEWMAT']]],
  ['bandmatrix',['BandMatrix','../class_n_e_w_m_a_t_1_1_band_matrix.html',1,'NEWMAT']]],
  ['barycoordsystem',['BaryCoordSystem','../class_go_1_1_bary_coord_system.html',1,'Go']]],
  ['barycoordsystem_3c_202_20_3e',['BaryCoordSystem&lt
```

Definition at line 1 of file classes_1.js.

30.1405 doc/html/search/classes_10.js File Reference

Variables

- var searchData

30.1405.1 Variable Documentation

30.1405.1.1 var searchData

Initial value:

```
=
[
  ['quadmesh',['QuadMesh','../class_go_1_1_quad_mesh.html',1,'Go']]],
  ['qualityresults',['QualityResults','../class_go_1_1_quality_results.html',1,'Go']]]
]
```

Definition at line 1 of file classes_10.js.

30.1406 doc/html/search/classes_11.js File Reference

Variables

- var searchData

30.1406.1 Variable Documentation

30.1406.1.1 var searchData

Definition at line 1 of file classes_11.js.

30.1407 doc/html/search/classes_12.js File Reference

Variables

- var searchData

30.1407.1 Variable Documentation

30.1407.1.1 var searchData

Definition at line 1 of file classes_12.js.

30.1408 doc/html/search/classes_13.js File Reference

Variables

- var searchData

30.1408.1 Variable Documentation

30.1408.1.1 var searchData

Initial value:

```
=
[
  ['tesselator',['Tesselator',['../class_go_1_1_tesselator.html',1,'Go']]],
  ['testclass',['TestClass',['../class_test_class.html',1,'']]],
  ['testindomain',['TestInDomain',['../class_go_1_1_test_in_domain.html',1,'Go']]],
  ['time_5flapse',['time_lapse',['../classtime__lapse.html',1,'']]],
  ['torus',['Torus',['../class_go_1_1_torus.html',1,'Go']]],
  ['torusvolume',['TorusVolume',['../class_go_1_1_torus_volume.html',1,'Go']]],
  ['tpedge',['tpEdge',['../class_go_1_1tp_edge.html',1,'Go']]],
  ['tpface',['tpFace',['../class_go_1_1tp_face.html',1,'Go']]],
  ['tpmarchpoint',['tpMarchPoint',['../class_go_1_1tp_march_point.html',1,'Go']]],
  ['tptableentry',['tpTableEntry',['../class_go_1_1tp_table_entry.html',1,'Go']]],
  ['tptolerances',['tpTolerances',['../struct_go_1_1tp_tolerances.html',1,'Go']]],
  ['tptopologicalinfo',['tpTopologicalInfo',['../struct_go_1_1tp_topological_info.html',1,'Go']]],
  ['tptopologytable',['tpTopologyTable',['../class_go_1_1tp_topology_table.html',1,'Go']]],
  ['tracer',['Tracer',['../class_r_b_d___c_o_m_m_o_n_1_1_tracer.html',1,'RBD_COMMON']]],
  ['transposedmatrix',['TransposedMatrix',['../class_n_e_w_m_a_t_1_1_transposed_matrix.html',1,'NEWMAT']]],
  ['triangle',['Triangle',['../class_go_1_1_triangle.html',1,'Go']]],
  ['triangulation',['Triangulation',['../classhed_1_1_triangulation.html',1,'hed']]],
  ['triangulation',['Triangulation',['../classhetriang_1_1_triangulation.html',1,'hetriang']]],
  ['trimcurve',['TrimCurve',['../class_go_1_1_trim_curve.html',1,'Go']]],
  ['ttlpoint',['ttlPoint',['../class_go_1_1ttl_point.html',1,'Go']]],
  ['ttltraits',['TTLtraits',['../structhed_1_1_t_t_ltraits.html',1,'hed']]],
  ['ttltraits',['TTLtraits',['../structhetriang_1_1_t_t_ltraits.html',1,'hetriang']]]
]
```

Definition at line 1 of file classes_13.js.

30.1409 doc/html/search/classes_14.js File Reference

Variables

- var searchData

30.1409.1 Variable Documentation

30.1409.1.1 var searchData

Initial value:

```
=
[
  ['unfnodetype',['UnfNodeType',['../class_unf_node_type.html',1,'']]],
  ['unknownerror',['UnKnownError',['../class_go_1_1_coons_patch_gen_1_1_un_known_error.html',1,'
      Go::CoonsPatchGen']]],
  ['upperbandmatrix',['UpperBandMatrix',['../class_n_e_w_m_a_t_1_1_upper_band_matrix.html',1,'NEWMAT']]],
  ['uppertriangularmatrix',['UpperTriangularMatrix',['../class_n_e_w_m_a_t_1_1_upper_triangular_matrix.html
      ',1,'NEWMAT']]]
]
```

Definition at line 1 of file classes_14.js.

30.1410 doc/html/search/classes_15.js File Reference

Variables

- var searchData

30.1410.1 Variable Documentation

30.1410.1.1 var searchData

Initial value:

```
=
[
  ['vector3t',['vector3t',['../classvector3t.html',1,'']]],
  ['vectorexception',['VectorException',['../class_n_e_w_m_a_t_1_1_vector_exception.html',1,'NEWMAT']]],
  ['vertex',['Vertex',['../class_go_1_1_vertex.html',1,'Go']]],
  ['volboundarycondition',['VolBoundaryCondition',['../class_go_1_1_vol_boundary_condition.html',1,'Go']]],
  ['volpointbdcond',['VolPointBdCond',['../class_go_1_1_vol_point_bd_cond.html',1,'Go']]],
  ['volsolution',['VolSolution',['../class_go_1_1_vol_solution.html',1,'Go']]],
  ['volumeadjacency',['VolumeAdjacency',['../class_go_1_1_volume_adjacency.html',1,'Go']]],
  ['volumeadjacencyinfo',['VolumeAdjacencyInfo',['../struct_go_1_1_volume_adjacency_info.html',1,'Go']]],
  ['volumemodel',['VolumeModel',['../class_go_1_1_volume_model.html',1,'Go']]],
  ['volumemodelfilehandler',['VolumeModelFileHandler',['../class_go_1_1_volume_model_file_handler.html',1,'
      Go']]],
  ['volumeparametercurve',['VolumeParameterCurve',['../class_go_1_1_volume_parameter_curve.html',1,'Go']]],
  ['volumespacecurve',['VolumeSpaceCurve',['../class_go_1_1_volume_space_curve.html',1,'Go']]]
]
```

Definition at line 1 of file classes_15.js.

30.1411 doc/html/search/classes_16.js File Reference

Variables

- var searchData

30.1411.1 Variable Documentation

30.1411.1.1 var searchData

Initial value:

```
=
[
  ['zero_5fparameter_5fspan_5ferror',['Zero_Parameter_Span_Error',['
      ../class_go_1_1_zero___parameter___span___error.html',1,'Go']]]
]
```

Definition at line 1 of file classes_16.js.

30.1412 doc/html/search/classes_2.js File Reference

Variables

- var searchData

30.1412.1 Variable Documentation

30.1412.1.1 var searchData

Definition at line 1 of file classes_2.js.

30.1413 doc/html/search/classes_3.js File Reference

Variables

- var searchData

30.1413.1 Variable Documentation

30.1413.1.1 var searchData

Initial value:

```
=
[
  ['dart',['Dart',['../classhed_1_1_dart.html',1,'hed']]],
  ['dart',['Dart',['../classhetriang_1_1_dart.html',1,'hetriang']]],
  ['datahandler',['DataHandler',['../class_data_handler.html',1,'']]],
  ['datahandlervolandlr',['DataHandlerVolAndLR',['../class_data_handler_vol_and_l_r.html',1,'']]],
  ['defaultdatahandler',['DefaultDataHandler',['../class_default_data_handler.html',1,'']]],
  ['degenerate_5finfo',['degenerate_info',['../struct_go_1_1_param_surface_1_1degenerate__info.html',1,'
      Go::ParamSurface']]],
  ['degeneratedintersectioncurve',['DegeneratedIntersectionCurve',['
      ../class_go_1_1_degenerated_intersection_curve.html',1,'Go']]],
  ['diagedmatrix',['DiagedMatrix',['../class_n_e_w_m_a_t_1_1_diaged_matrix.html',1,'NEWMAT']]],
  ['diagonalmatrix',['DiagonalMatrix',['../class_n_e_w_m_a_t_1_1_diagonal_matrix.html',1,'NEWMAT']]],
  ['dijkstra',['Dijkstra',['../class_dijkstra.html',1,'']]],
  ['directioncone',['DirectionCone',['../class_go_1_1_direction_cone.html',1,'Go']]],
  ['disc',['Disc',['../class_go_1_1_disc.html',1,'Go']]],
  ['domain',['Domain',['../class_go_1_1_domain.html',1,'Go']]],
  ['domain_5ferror',['Domain_error',['../class_r_b_d___c_o_m_m_o_n_1_1_domain__error.html',1,'RBD_COMMON']]
      ],
  ['double_5fpair_5fhash',['double_pair_hash',['
      ../struct_go_1_1_l_r_spline_surface_1_1double__pair__hash.html',1,'Go::LRSplineSurface']]]
]
```

Definition at line 1 of file classes_3.js.

30.1414 doc/html/search/classes_4.js File Reference

Variables

- var searchData

30.1414.1 Variable Documentation

30.1414.1.1 var searchData

Initial value:

```
=
[
  ['edge',['Edge',['../classhed_1_1_edge.html',1,'hed']]],
  ['edge',['Edge',['../classhetriang_1_1_edge.html',1,'hetriang']]],
  ['edgetype',['EdgeType',['../class_edge_type.html',1,'']]],
  ['edgevertex',['EdgeVertex',['../class_go_1_1_edge_vertex.html',1,'Go']]],
  ['element2d',['Element2D',['../class_go_1_1_element2_d.html',1,'Go']]],
  ['elementarycurve',['ElementaryCurve',['../class_go_1_1_elementary_curve.html',1,'Go']]],
  ['elementarysurface',['ElementarySurface',['../class_go_1_1_elementary_surface.html',1,'Go']]],
  ['elementaryvolume',['ElementaryVolume',['../class_go_1_1_elementary_volume.html',1,'Go']]],
  ['elemkey',['ElemKey',['../struct_go_1_1_l_r_spline_surface_1_1_elem_key.html',1,'Go::LRSplineSurface']]]
      ,
  ['ellipse',['Ellipse',['../class_go_1_1_ellipse.html',1,'Go']]],
  ['entitylist',['EntityList',['../struct_go_1_1_entity_list.html',1,'Go']]],
  ['eofexception',['EofException',['../class_go_1_1_streamable_1_1_eof_exception.html',1,'Go::Streamable']]
      ],
  ['evalcurve',['EvalCurve',['../class_go_1_1_eval_curve.html',1,'Go']]],
  ['evalcurveset',['EvalCurveSet',['../class_go_1_1_eval_curve_set.html',1,'Go']]],
  ['evalfunctorcurve',['EvalFunctorCurve',['../class_go_1_1_eval_functor_curve.html',1,'Go']]],
  ['evalfunctorsurface',['EvalFunctorSurface',['../class_go_1_1_eval_functor_surface.html',1,'Go']]],
  ['evaloffsetsurface',['EvalOffsetSurface',['../class_go_1_1_eval_offset_surface.html',1,'Go']]],
  ['evalparamcurve',['EvalParamCurve',['../class_go_1_1_eval_param_curve.html',1,'Go']]],
  ['evalsurface',['EvalSurface',['../class_go_1_1_eval_surface.html',1,'Go']]]
]
```

Definition at line 1 of file classes_4.js.

30.1415 doc/html/search/classes_5.js File Reference

Variables

- var searchData
- & gt

30.1415.1 Variable Documentation

30.1415.1.1 & gt

Definition at line 9 of file classes_5.js.

30.1415.1.2 var searchData

Initial value:

```
=
[
  ['faceadjacency',['FaceAdjacency',['../class_go_1_1_face_adjacency.html',1,'Go']]],
  ['faceconnectivity',['FaceConnectivity',['../struct_go_1_1_face_connectivity.html',1,'Go']]],
  ['faceconnectivityutils',['FaceConnectivityUtils',['../class_go_1_1_face_connectivity_utils.html',1,'Go']
    ]],
  ['facesetquality',['FaceSetQuality',['../class_go_1_1_face_set_quality.html',1,'Go']]],
  ['facesetrepair',['FaceSetRepair',['../class_go_1_1_face_set_repair.html',1,'Go']]],
  ['factorial',['Factorial',['../struct_go_1_1_factorial.html',1,'Go']]],
  ['factorial_3c_201_20_3e',['Factorial&lt
```

Definition at line 1 of file classes_5.js.

30.1416 doc/html/search/classes_6.js File Reference

Variables

- var searchData
- const T *& gt

30.1416.1 Variable Documentation

30.1416.1.1 const T* & gt

Definition at line 13 of file classes_6.js.

30.1416.1.2 var searchData

Initial value:

```
=
[
  ['garch11_5fll',['GARCH11_LL',['../class_g_a_r_c_h11___l_l.html',1,'']]],
  ['generalmatrix',['GeneralMatrix',['../class_n_e_w_m_a_t_1_1_general_matrix.html',1,'NEWMAT']]],
  ['generalmesh',['GeneralMesh',['../class_go_1_1_general_mesh.html',1,'Go']]],
  ['genericmatrix',['GenericMatrix',['../class_n_e_w_m_a_t_1_1_generic_matrix.html',1,'NEWMAT']]],
  ['generictrimesh',['GenericTriMesh',['../class_go_1_1_generic_tri_mesh.html',1,'Go']]],
  ['geomobject',['GeomObject',['../class_go_1_1_geom_object.html',1,'Go']]],
  ['geomobjectint',['GeomObjectInt',['../class_go_1_1_geom_object_int.html',1,'Go']]],
  ['geotol',['GeoTol',['../class_go_1_1_geo_tol.html',1,'Go']]],
  ['getsubmatrix',['GetSubMatrix',['../class_n_e_w_m_a_t_1_1_get_sub_matrix.html',1,'NEWMAT']]],
  ['go_5fiterator_5ftraits',['go_iterator_traits',['../struct_go_1_1go__iterator__traits.html',1,'Go']]],
  ['go_5fiterator_5ftraits_3c_20const_20t_20_2a_20_3e',['go_iterator_traits&lt
```

Definition at line 1 of file classes_6.js.

30.1417 doc/html/search/classes_7.js File Reference

Variables

- var searchData
- hed::Node & gt

30.1417.1 Variable Documentation

30.1417.1.1 hed::Node& gt

Definition at line 4 of file classes_7.js.

30.1417.1.2 var searchData

Initial value:

```
=
[
  ['handle',['Handle',['../class_handle.html',1,'']]],
  ['handle_3c_20hed_3a_3anode_20_3e',['Handle&lt
```

Definition at line 1 of file classes_7.js.

30.1418 doc/html/search/classes_8.js File Reference

Variables

- var searchData

30.1418.1 Variable Documentation

30.1418.1.1 var searchData

Definition at line 1 of file classes_8.js.

30.1419 doc/html/search/classes_9.js File Reference

Variables

- var searchData

30.1419.1 Variable Documentation

30.1419.1.1 var searchData

Initial value:

```
=
[
  ['janitor',['Janitor',['../class_r_b_d___c_o_m_m_o_n_1_1_janitor.html',1,'RBD_COMMON']]]
]
```

Definition at line 1 of file classes_9.js.

30.1420 doc/html/search/classes_a.js File Reference

Variables

- var searchData

30.1420.1 Variable Documentation

30.1420.1.1 var searchData

Initial value:

```
=
[
  ['kpmatrix',['KPMatrix',['../class_n_e_w_m_a_t_1_1_k_p_matrix.html',1,'NEWMAT']]]
]
```

Definition at line 1 of file classes_a.js.

30.1421 doc/html/search/classes_b.js File Reference

Variables

- var searchData

30.1421.1 Variable Documentation

30.1421.1.1 var searchData

Initial value:

```
=
[
  ['length_5ferror',['Length_error',['../class_r_b_d___c_o_m_m_o_n_1_1_length__error.html',1,'RBD_COMMON']]
      ],
  ['liftcurve',['LiftCurve',['../class_go_1_1_lift_curve.html',1,'Go']]],
  ['line',['Line',['../class_go_1_1_line.html',1,'Go']]],
  ['line2dint',['Line2DInt',['../class_go_1_1_line2_d_int.html',1,'Go']]],
  ['linearequationsolver',['LinearEquationSolver',['../class_n_e_w_m_a_t_1_1_linear_equation_solver.html',1
      ,'NEWMAT']]],
  ['linecloud',['LineCloud',['../class_go_1_1_line_cloud.html',1,'Go']]],
  ['linecloudtesselator',['LineCloudTesselator',['../class_go_1_1_line_cloud_tesselator.html',1,'Go']]],
  ['linestrip',['LineStrip',['../class_go_1_1_line_strip.html',1,'Go']]],
  ['ll_5fd_5ffi',['LL_D_FI',['../class_n_e_w_m_a_t_1_1_l_l___d___f_i.html',1,'NEWMAT']]],
  ['loadandstoreflag',['LoadAndStoreFlag',['../class_load_and_store_flag.html',1,'']]],
  ['lockeddirdistfunc',['LockedDirDistFunc',['../class_go_1_1_locked_dir_dist_func.html',1,'Go']]],
  ['logandsign',['LogAndSign',['../class_n_e_w_m_a_t_1_1_log_and_sign.html',1,'NEWMAT']]],
  ['logic_5ferror',['Logic_error',['../class_r_b_d___c_o_m_m_o_n_1_1_logic__error.html',1,'RBD_COMMON']]],
  ['loop',['Loop',['../class_go_1_1_loop.html',1,'Go']]],
  ['lowerbandmatrix',['LowerBandMatrix',['../class_n_e_w_m_a_t_1_1_lower_band_matrix.html',1,'NEWMAT']]],
  ['lowertriangularmatrix',['LowerTriangularMatrix',['../class_n_e_w_m_a_t_1_1_lower_triangular_matrix.html
      ',1,'NEWMAT']]],
  ['lrbspline2d',['LRBSpline2D',['../class_go_1_1_l_r_b_spline2_d.html',1,'Go']]],
  ['lrsplineevalgrid',['LRSplineEvalGrid',['../class_go_1_1_l_r_spline_eval_grid.html',1,'Go']]],
  ['lrsplinesurface',['LRSplineSurface',['../class_go_1_1_l_r_spline_surface.html',1,'Go']]],
  ['lrsurfapprox',['LRSurfApprox',['../class_go_1_1_l_r_surf_approx.html',1,'Go']]],
  ['lrsurfsmoothls',['LRSurfSmoothLS',['../class_go_1_1_l_r_surf_smooth_l_s.html',1,'Go']]],
  ['lssmoothdata',['LSSmoothData',['../struct_go_1_1_l_s_smooth_data.html',1,'Go']]]
]
```

Definition at line 1 of file classes_b.js.

30.1422 doc/html/search/classes_c.js File Reference

Variables

- var searchData
- double
- & gt

30.1422.1 Variable Documentation

30.1422.1.1 double

Definition at line 15 of file classes_c.js.

30.1422.1.2 & gt

Definition at line 15 of file classes_c.js.

30.1422.1.3 var searchData

Initial value:

```
=
[
  ['marchpoint',['MarchPoint','../class_go_1_1_march_point.html',1,'Go']]],
  ['matedmatrix',['MatedMatrix','../class_n_e_w_m_a_t_1_1_mated_matrix.html',1,'NEWMAT']]],
  ['material_5fappearance',['material_appearance','../classmaterial__appearance.html',1,'']]],
  ['matrix',['Matrix','../class_n_e_w_m_a_t_1_1_matrix.html',1,'NEWMAT']]],
  ['matrixbandwidth',['MatrixBandWidth','../class_n_e_w_m_a_t_1_1_matrix_band_width.html',1,'NEWMAT']]],
  ['matrixcol',['MatrixCol','../class_matrix_col.html',1,'']]],
  ['matrixcolx',['MatrixColX','../class_matrix_col_x.html',1,'']]],
  ['matrixinput',['MatrixInput','../class_n_e_w_m_a_t_1_1_matrix_input.html',1,'NEWMAT']]],
  ['matrixrow',['MatrixRow','../class_matrix_row.html',1,'']]],
  ['matrixrowcol',['MatrixRowCol','../class_matrix_row_col.html',1,'']]],
  ['matrixtype',['MatrixType','../class_n_e_w_m_a_t_1_1_matrix_type.html',1,'NEWMAT']]],
  ['matrixxd',['MatrixXD','../class_go_1_1_matrix_x_d.html',1,'Go']]],
  ['matrixxd_3c_20double_2c_202_20_3e',['MatrixXD&lt
```

Definition at line 1 of file classes_c.js.

30.1423 doc/html/search/classes_d.js File Reference

Variables

- var searchData

30.1423.1 Variable Documentation

30.1423.1.1 var searchData

Initial value:

```
=
[
  ['negatedmatrix',['NegatedMatrix','../class_n_e_w_m_a_t_1_1_negated_matrix.html',1,'NEWMAT']]],
  ['negshiftedmatrix',['NegShiftedMatrix','../class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html',1,'NEWMAT']]]
      ,
  ['node',['Node',['../classhetriang_1_1_node.html',1,'hetriang']]],
  ['node',['Node',['../classhed_1_1_node.html',1,'hed']]],
  ['nonevaluableintersectioncurve',['NonEvaluableIntersectionCurve',['
      ../class_go_1_1_non_evaluable_intersection_curve.html',1,'Go']]],
  ['nonlinearleastsquares',['NonLinearLeastSquares',['
      ../class_n_e_w_m_a_t_1_1_non_linear_least_squares.html',1,'NEWMAT']]],
  ['nooptesselator',['NoopTesselator',['../class_go_1_1_noop_tesselator.html',1,'Go']]],
  ['notdefinedexception',['NotDefinedException',['../class_n_e_w_m_a_t_1_1_not_defined_exception.html',1,'
      NEWMAT']]],
  ['notsquareexception',['NotSquareException',['../class_n_e_w_m_a_t_1_1_not_square_exception.html',1,'
      NEWMAT']]],
  ['npdexception',['NPDException',['../class_n_e_w_m_a_t_1_1_n_p_d_exception.html',1,'NEWMAT']]],
  ['nricmatrix',['nricMatrix',['../class_n_e_w_m_a_t_1_1nric_matrix.html',1,'NEWMAT']]]
]
```

Definition at line 1 of file classes_d.js.

30.1424 doc/html/search/classes_e.js File Reference

Variables

- var searchData

30.1424.1 Variable Documentation

30.1424.1.1 var searchData

Initial value:

```
=
[
  ['objectheader',['ObjectHeader',['../class_go_1_1_object_header.html',1,'Go']]],
  ['onedimsolve',['OneDimSolve',['../class_r_b_d___c_o_m_m_o_n_1_1_one_dim_solve.html',1,'RBD_COMMON']]],
  ['out_5fof_5frange',['Out_of_range',['../class_r_b_d___c_o_m_m_o_n_1_1_out__of__range.html',1,'RBD_COMMON
      ']]],
  ['overflow_5ferror',['Overflow_error',['../class_r_b_d___c_o_m_m_o_n_1_1_overflow__error.html',1,'
      RBD_COMMON']]],
  ['overflowexception',['OverflowException',['../class_n_e_w_m_a_t_1_1_overflow_exception.html',1,'NEWMAT']
      ]]
]
```

Definition at line 1 of file classes_e.js.

30.1425 doc/html/search/classes_f.js File Reference

Variables

- var searchData
- & gt

30.1425.1 Variable Documentation

30.1425.1.1 & gt

Definition at line 27 of file classes_f.js.

30.1425.1.2 var searchData

Initial value:

```
=
[
  ['par0funcintersector',['Par0FuncIntersector','../class_go_1_1_par0_func_intersector.html',1,'Go']]],
  ['par1funcintersector',['Par1FuncIntersector','../class_go_1_1_par1_func_intersector.html',1,'Go']]],
  ['par2funcintersector',['Par2FuncIntersector','../class_go_1_1_par2_func_intersector.html',1,'Go']]],
  ['parabola',['Parabola','../class_go_1_1_parabola.html',1,'Go']]],
  ['parallelepiped',['Parallelepiped','../class_go_1_1_parallelepiped.html',1,'Go']]],
  ['param0functionint',['Param0FunctionInt','../class_go_1_1_param0_function_int.html',1,'Go']]],
  ['param1functionint',['Param1FunctionInt','../class_go_1_1_param1_function_int.html',1,'Go']]],
  ['param2functionint',['Param2FunctionInt','../class_go_1_1_param2_function_int.html',1,'Go']]],
  ['paramcurve',['ParamCurve','../class_go_1_1_param_curve.html',1,'Go']]],
  ['paramcurveint',['ParamCurveInt','../class_go_1_1_param_curve_int.html',1,'Go']]],
  ['parametricsurfacepropertysheet',['ParametricSurfacePropertySheet','
      ../class_parametric_surface_property_sheet.html',1,'']]],
  ['parametricsurfacetesselator',['ParametricSurfaceTesselator','
      ../class_go_1_1_parametric_surface_tesselator.html',1,'Go']]],
  ['paramfunctionint',['ParamFunctionInt','../class_go_1_1_param_function_int.html',1,'Go']]],
  ['paramgeomint',['ParamGeomInt','../class_go_1_1_param_geom_int.html',1,'Go']]],
  ['paramobjectint',['ParamObjectInt','../class_go_1_1_param_object_int.html',1,'Go']]],
  ['parampointint',['ParamPointInt','../class_go_1_1_param_point_int.html',1,'Go']]],
  ['paramsurface',['ParamSurface','../class_go_1_1_param_surface.html',1,'Go']]],
  ['paramsurfaceint',['ParamSurfaceInt','../class_go_1_1_param_surface_int.html',1,'Go']]],
  ['paramvolume',['ParamVolume','../class_go_1_1_param_volume.html',1,'Go']]],
  ['pathtype',['PathType','../class_path_type.html',1,'']]],
  ['plane',['Plane','../class_go_1_1_plane.html',1,'Go']]],
  ['planeint',['PlaneInt','../class_go_1_1_plane_int.html',1,'Go']]],
  ['point',['Point','../class_go_1_1_point.html',1,'Go']]],
  ['pointcloud',['PointCloud','../class_go_1_1_point_cloud.html',1,'Go']]],
  ['pointcloud_3c_203_20_3e',['PointCloud&lt
```

Definition at line 1 of file classes_f.js.

30.1426 doc/html/search/defines_0.js File Reference

Variables

- var searchData

30.1426.1 Variable Documentation

30.1426.1.1 var searchData

Initial value:

```
=
[
  ['_5fcopyright_5fh',['_COPYRIGHT_H','
      ../gotools-core_2include_2_go_tools_2geometry_2copyright_8h.html#abdfb6b142e6341a6d5e35b87ccbfab07',1,'copyright.h']]],
  ['_5ferrormacros_5fh',['_ERRORMACROS_H','../aux2_8h.html#a3f97e52087e510f4d7c49c7eb28624c0',1,'aux2.h']]
      ],
  ['_5figeslib',['_IGESLIB','../igeslib__doxymain_8h.html#aa60f7acaa57d814a1403f7bb16981c1d',1,'
      igeslib_doxymain.h']]],
  ['_5flrsplineevavgrid_5fh',['_LRSPLINEEVAVGRID_H','
      ../_l_r_spline_eval_grid_8h.html#a861377e9079b564d42abe23579c6992b',1,'LRSplineEvalGrid.h']]],
  ['_5foffsetutils_5fh',['_OFFSETUTILS_H','
      ../_creators_offset_utils_8h.html#ad9fc2da1082c23bb539309710e76122f',1,'CreatorsOffsetUtils.h']]],
  ['_5fvolumefilehandler_5fh',['_VOLUMEFILEHANDLER_H','
      ../_volume_model_file_handler_8h.html#a1d5505728388942e4ea90d4be08daaea',1,'VolumeModelFileHandler.h']]]
]
```

Definition at line 1 of file defines_0.js.

30.1427 doc/html/search/defines_1.js File Reference

Variables

- var searchData
- errormacros h

30.1427.1 Variable Documentation

30.1427.1.1 errormacros h

Definition at line 7 of file defines_1.js.

30.1427.1.2 var searchData

Initial value:

```
=
[
  ['aepsco',['AEPSCO',['../sisl_p_8h.html#a431756bcd46dae9cee579fc4f8d482e9',1,'sislP.h']]],
  ['aepsge',['AEPSGE',['../sisl_p_8h.html#af789738847b509ac079cbab0963130b1',1,'sislP.h']]],
  ['always_5ferror_5fif',['ALWAYS_ERROR_IF',['../errormacros_8h.html#a86611c37e530eb06c9b077fed130b2dc',1,'
     errormacros.h']]],
  ['angular_5ftolerance',['ANGULAR_TOLERANCE',['../sisl_p_8h.html#ac74392922bc63d29f53a31ad9fff6fe8',1,'
     sislP.h']]],
  ['assert',['ASSERT',['../errormacros_8h.html#a0966b817b229d48e5ffc7feab19a0be6',1,'ASSERT(): 
```

Definition at line 1 of file defines_1.js.

30.1428 doc/html/search/defines_10.js File Reference

Variables

- var searchData

30.1428.1 Variable Documentation

30.1428.1.1 var searchData

Initial value:

```
=
[
  ['voidp',['VOIDP',['../sisl_p_8h.html#aa261d4359cc2e4f4df5dace402c1b809',1,'sislP.h']]]
]
```

Definition at line 1 of file defines_10.js.

30.1429 doc/html/search/defines_11.js File Reference

Variables

- var searchData
- garch cpp

30.1429.1 Variable Documentation

30.1429.1.1 garch cpp

Definition at line 3 of file defines_11.js.

30.1429.1.2 var searchData

Initial value:

```
=
[
  ['want_5ffstream',['WANT_FSTREAM',['../garch_8cpp.html#a37d625862c54954e237886ad4bb5e75f',1,'
      WANT_FSTREAM(): 
```

Definition at line 1 of file defines_11.js.

30.1430 doc/html/search/defines_2.js File Reference

Variables

- var searchData

30.1430.1 Variable Documentation

30.1430.1.1 var searchData

Initial value:

```
=
[
  ['bool_5flib',['bool_LIB',['../boolean_8h.html#ae034ee292f37bf7f1a5488c0afe12cfd',1,'boolean.h']]]
]
```

Definition at line 1 of file defines_2.js.

30.1431 doc/html/search/defines_3.js File Reference

Variables

- var searchData
- s17702d c

30.1431.1 Variable Documentation

30.1431.1.1 s17702d c

Definition at line 11 of file defines_3.js.

30.1431.1.2 var searchData

Initial value:

```
=
[
  ['catch',['Catch',['../myexcept_8h.html#af19f2de9b4bccab916654c258aa6f2d4',1,'myexcept.h']]],
  ['catchall',['CatchAll',['../myexcept_8h.html#a549ceb8bbab061440f4698483d6ad179',1,'myexcept.h']]],
  ['catchandthrow',['CatchAndThrow',['../myexcept_8h.html#a3a7fd3e342806240062de1b14ff917ca',1,'myexcept.h'
    ]]],
  ['check',['CHECK',['../_bspline_basis_8h.html#a70246e9ac30d8d3e1fba7ca97cd5f4e8',1,'BsplineBasis.h']]],
  ['const',['CONST',['../sisl_p_8h.html#a0c33b494a68ce28497e7ce8e5e95feff',1,'sislP.h']]],
  ['construct',['CONSTRUCT',['../construct_8c.html#a158cc7b98afd3caa1f2cf9c39be593b5',1,'construct.c']]],
  ['constvoidp',['CONSTVOIDP',['../sisl_p_8h.html#a3fe7ac8c946b70b8f70092b9921359a3',1,'sislP.h']]],
  ['control_5fword_5flib',['CONTROL_WORD_LIB',['../controlw_8h.html#ac3f4cc42dfc44a8de07e00956f1f192e',1,'
    controlw.h']]],
  ['copy2',['copy2',['../s17702d_8c.html#a94d298c6c82c75789d11ea2fad958ff1',1,'copy2(): 
```

Definition at line 1 of file defines_3.js.

30.1432 doc/html/search/defines_4.js File Reference

Variables

- var searchData
- s17702d c

30.1432.1 Variable Documentation

30.1432.1.1 s17702d c

Definition at line 5 of file defines_4.js.

30.1432.1.2 var searchData

Initial value:

```
=
[
  ['dbgqqq',['DBGqqq',['../sisl__aux_8cpp.html#a22e3c68f7ee44d24da231675c4aceafa',1,'sisl_aux.cpp']]],
  ['debug_5ferror_5fif',['DEBUG_ERROR_IF',['../errormacros_8h.html#ad369e2a5e24adc64ecb0e600750372f5',1,'
      errormacros.h']]],
  ['decr2',['decr2',['../s17702d_8c.html#aa8ea14f873c1bff5a2e825ff20759e33',1,'decr2(): 
```

Definition at line 1 of file defines_4.js.

30.1433 doc/html/search/defines_5.js File Reference

Variables

- var searchData

30.1433.1 Variable Documentation

30.1433.1.1 var searchData

Initial value:

```
=
[
  ['eps',['EPS',['../_pr_geodesics_8h.html#a6ebf6899d6c1c8b7b9d09be872c05aae',1,'PrGeodesics.h']]],
  ['error_5fif',['ERROR_IF',['../aux2_8h.html#a9553d62d235151ba08f888c15714d321',1,'aux2.h']]],
  ['esc_5fstring',['ESC_STRING',['../sisl__view__demo_8cpp.html#a3b6ad63436c143876aa93611c3328d8d',1,'
      sisl_view_demo.cpp']]],
  ['ev_5fcv_5foff',['EV_CV_OFF',['../ev__cv__off_8c.html#af570ffd133e823ba65e4594bbba6e69a',1,'ev_cv_off.c'
      ]]],
  ['eval_5f2_5fcrv',['EVAL_2_CRV',['../eval__2__crv_8c.html#ae21399dc6a70f8168d0e3926598430cc',1,'
      eval_2_crv.c']]],
  ['eval_5fcrv_5farc',['EVAL_CRV_ARC',['../evalcrvarc_8c.html#a8c6fa6c95e08223f26bb7f9a6ba8eecc',1,'
      evalcrvarc.c']]]
]
```

Definition at line 1 of file defines_5.js.

30.1434 doc/html/search/defines_6.js File Reference

Variables

- var searchData

30.1434.1 Variable Documentation

30.1434.1.1 var searchData

Initial value:

```
=
[
  ['free_5fcheck',['FREE_CHECK',['../myexcept_8h.html#a38496bbc880a5b060716ea39a9e67990',1,'myexcept.h']]]
]
```

Definition at line 1 of file defines_6.js.

30.1435 doc/html/search/defines_7.js File Reference

Variables

- var searchData
- config h

30.1435.1 Variable Documentation

30.1435.1.1 config h

Definition at line 5 of file defines_7.js.

30.1435.1.2 var searchData

Initial value:

```
=
[
  ['glut_5fdisable_5fatexit_5fhack',['GLUT_DISABLE_ATEXIT_HACK',['
      ../mouse_8cpp.html#ab07b3c93a1236fc83b162fb0a8945d72',1,'mouse.cpp']]],
  ['glutils_5fh_5fincluded',['GLUTILS_H_INCLUDED',['../glutils_8h.html#acd507b0c3c98dc8199ba953051d907ff',1
      ,'glutils.h']]],
  ['go_5fapi',['GO_API',['../config_8h.html#aa9fe0b1a0029021ae339602cdfc4d8dd',1,'GO_API(): 
```

Definition at line 1 of file defines_7.js.

30.1436 doc/html/search/defines_8.js File Reference

Variables

- var searchData

30.1436.1 Variable Documentation

30.1436.1.1 var searchData

Initial value:

```
=
[
  ['hp_5fs1880',['HP_S1880',['../hp__s1880_8c.html#ae6033f654b8655d58b42ee58d81bce23',1,'hp_s1880.c']]]
]
```

Definition at line 1 of file defines_8.js.

30.1437 doc/html/search/defines_9.js File Reference

Variables

- var searchData
- s17702d c

30.1437.1 Variable Documentation

30.1437.1.1 s17702d c

Definition at line 3 of file defines_9.js.

30.1437.1.2 var searchData

Initial value:

```
=
[
  ['incr2',['incr2',['../s17702d_8c.html#a66086fa9df80019f1e7929b6368f30dc',1,'incr2(): 
```

Definition at line 1 of file defines_9.js.

30.1438 doc/html/search/defines_a.js File Reference

Variables

- var searchData
- s1891 c

30.1438.1 Variable Documentation

30.1438.1.1 s1891 c

Definition at line 14 of file defines_a.js.

30.1438.1.2 var searchData

Initial value:

```
=
[
  ['m_5fpi',['M_PI',['../glutils_8cpp.html#ae71449b1cc6e6250b91f539153a7a0d3',1,'glutils.cpp']]],
  ['make3d',['MAKE3D',['../make3_d_8c.html#af73dcd2ed246a565df1162b610461e64',1,'make3D.c']]],
  ['make_5fcv_5fcyclic',['MAKE_CV_CYCLIC',['../mk__cv__cycl_8c.html#afd0d637cd833f1e12447d183a72bf1ee',1,'
      mk_cv_cycl.c']]],
  ['make_5fcv_5fkreg',['MAKE_CV_KREG',['../makecvkreg_8c.html#a3d78c8854b03c4e271f7fcdc2642aaaa',1,'
      makecvkreg.c']]],
  ['make_5fsf_5fkreg',['MAKE_SF_KREG',['../makesfkreg_8c.html#ab2dd7beaefa1b53540f56163621670cd',1,'
      makesfkreg.c']]],
  ['make_5ftracks',['MAKE_TRACKS',['../maketracks_8c.html#af500037a7945500574264d2dda094220',1,'
      maketracks.c']]],
  ['matrixtypeunsp',['MatrixTypeUnSp',['../newmat_8h.html#af54b3134157ba2977e1f765c2f15c01f',1,'newmat.h']]
      ],
  ['max',['MAX',['../aux2_8h.html#afa99ec4acc4ecb2dc3c2d05da15d0e3f',1,'aux2.h']]],
  ['max_5fcurves',['MAX_CURVES',['../sisl__view__demo_8cpp.html#a389f931619cd0eb55d3854c3556c3e93',1,'
      sisl_view_demo.cpp']]],
  ['max_5fik',['MAX_IK',['../s1897_8c.html#ac79ba5168f3ea53c51d1f9aa515cf7b3',1,'s1897.c']]],
  ['max_5flines',['MAX_LINES',['../sisl__view__demo_8cpp.html#a07e2b531c72985b064c431c05dfbc5fc',1,'
      sisl_view_demo.cpp']]],
  ['max_5fsize',['MAX_SIZE',['../s1891_8c.html#a0592dba56693fad79136250c11e5a7fe',1,'MAX_SIZE(): 
```

Definition at line 1 of file defines_a.js.

30.1439 doc/html/search/defines_b.js File Reference

Variables

- var searchData

30.1439.1 Variable Documentation

30.1439.1.1 var searchData

Initial value:

```
=
[
  ['ndequal',['NDEQUAL',['../aux2_8h.html#adcab733c45d4a4268b7adda3fb6296ef',1,'aux2.h']]],
  ['ndequal2',['NDEQUAL2',['../aux2_8h.html#a8511c5447adf91b377927225414d8303',1,'aux2.h']]],
  ['new_5fdelete',['NEW_DELETE',['../myexcept_8h.html#a7814d199e1da1e1a6255fa85f8e8c320',1,'myexcept.h']]],
  ['newknots',['NEWKNOTS',['../newknots_8c.html#a2cfe4b9fd93d72364a6776e3f87406b9',1,'newknots.c']]],
  ['newmat_5flib',['NEWMAT_LIB',['../newmat_8h.html#acc34192eabbef4cd977a4bab78a4bdd0',1,'newmat.h']]],
  ['newmatap_5flib',['NEWMATAP_LIB',['../newmatap_8h.html#a03f6ff4b2a9e34bb7de87024107995c9',1,'newmatap.h'
      ]]],
  ['newmatio_5flib',['NEWMATIO_LIB',['../newmatio_8h.html#a65fb8e2c45ceffd1871256a348617cbf',1,'newmatio.h'
      ]]],
  ['newmatnl_5flib',['NEWMATNL_LIB',['../newmatnl_8h.html#aed6d29a446241bb9799d3e281972c9c1',1,'newmatnl.h'
      ]]],
  ['newmatrc_5flib',['NEWMATRC_LIB',['../newmatrc_8h.html#a96d76d6bee402806b06fcce48adf34e0',1,'newmatrc.h'
      ]]],
  ['newmatrm_5flib',['NEWMATRM_LIB',['../newmatrm_8h.html#a57c1191464ba3297be3ac91c6a339c60',1,'newmatrm.h'
      ]]]
]
```

Definition at line 1 of file defines_b.js.

30.1440 doc/html/search/defines_c.js File Reference

Variables

- var searchData
- aux2 h

30.1440.1 Variable Documentation

30.1440.1.1 aux2 h

Definition at line 3 of file defines_c.js.

30.1440.1.2 var searchData

Initial value:

```
=
[
  ['pi',['PI',['../aux2_8h.html#a598a3330b3c21701223ee0ca14316eca',1,'PI(): 
```

Definition at line 1 of file defines_c.js.

30.1441 doc/html/search/defines_d.js File Reference

Variables

- var searchData
- errormacros h

30.1441.1 Variable Documentation

30.1441.1.1 errormacros h

Definition at line 7 of file defines_d.js.

30.1441.1.2 var searchData

Initial value:

```
=
[
  ['rasterutils_5fh_5fincluded',['RASTERUTILS_H_INCLUDED',['
      ../raster_8h.html#ae6d95c22bae73000aac0efdc2997c55d',1,'raster.h']]],
  ['refine_5fall',['REFINE_ALL',['../refine__all_8c.html#a7021f2e1b451a7d88475a011da9cffe9',1,'refine_all.c
      ']]],
  ['rel_5fcomp_5fres',['REL_COMP_RES',['../sisl_p_8h.html#a82d2181b25bb9fa66c5f5b705bff0915',1,'sislP.h']]]
      ,
  ['rel_5fpar_5fres',['REL_PAR_RES',['../sisl_p_8h.html#a673bad4c1fd60a19bda31bfbc9ab40fd',1,'sislP.h']]],
  ['report',['REPORT',['../errormacros_8h.html#a787099914a94ed31fa544b985b55752f',1,'REPORT(): 
```

Definition at line 1 of file defines_d.js.

30.1442 doc/html/search/defines_e.js File Reference

Variables

- var searchData
- s1366 c

30.1442.1 Variable Documentation

30.1442.1.1 s1366 c

Definition at line 109 of file defines_e.js.

30.1442.1.2 var searchData

Definition at line 1 of file defines_e.js.

30.1443 doc/html/search/defines_f.js File Reference

Variables

- var searchData
- myexcept h

30.1443.1 Variable Documentation

30.1443.1.1 myexcept h

Definition at line 6 of file defines_f.js.

30.1443.1.2 var searchData

Initial value:

```
=
[
  ['tab_5fstring',['TAB_STRING',['../sisl__view__demo_8cpp.html#a0d3b5deaf6bcb60d1dfb8c6dbc234446',1,'
      sisl_view_demo.cpp']]],
  ['test_5fcyclic_5fknots',['TEST_CYCLIC_KNOTS',['../tstcyclknt_8c.html#a77b5bb7a941d583a9aee41d2be40d163',
      1,'tstcyclknt.c']]],
  ['test_5fsuite_5fsize',['TEST_SUITE_SIZE',['../test_suite_8h.html#abbc02a22a96cfacb45964a8fd615181b',1,'
      testSuite.h']]],
  ['throw',['Throw',['../myexcept_8h.html#a7554028bfd929fe4391cb3f9ed7b9da1',1,'Throw(): 
```

Definition at line 1 of file defines_f.js.

30.1444 doc/html/search/enums_0.js File Reference

Variables

- var searchData

30.1444.1 Variable Documentation

30.1444.1.1 var searchData

Initial value:

```
=
[
  ['algorithmchoice',['AlgorithmChoice',['../namespace_go.html#a9ec4373c3aa2905cb547164492f510d1',1,'Go']]]
      ,
  ['attribute',['Attribute',['../class_n_e_w_m_a_t_1_1_matrix_type.html#af1adc0086f5d4c3328ad4a698fa57c90',
      1,'NEWMAT::MatrixType']]]
]
```

Definition at line 1 of file enums_0.js.

30.1445 doc/html/search/enums_1.js File Reference

Variables

- var searchData

30.1445.1 Variable Documentation

30.1445.1.1 var searchData

Initial value:

```
=
[
  ['bdconditiontype',['BdConditionType',['../namespace_go.html#a2ef4e46477cac9d1ab25de9fbe20fed7',1,'Go']]]
]
```

Definition at line 1 of file enums_1.js.

30.1446 doc/html/search/enums_2.js File Reference

Variables

- var searchData

30.1446.1 Variable Documentation

30.1446.1.1 var searchData

Initial value:

```
=
[
  ['classtype',['ClassType','../namespace_go.html#a105371b9620b32708c1de810631c2fe2',1,'Go']],
  ['closestpointlevel',['closestPointLevel',['../namespace_go.html#a64e7b23868d471d8f59b8e280437195e',1,'Go
      ']]],
  ['coefstatus',['CoefStatus',['../namespace_go.html#a24654e7a71d69eef31552a072adeecc4',1,'Go']]],
  ['condtype',['CondType',['../class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78',1,'
      Go::SplineInterpolator']]]
]
```

Definition at line 1 of file enums_2.js.

30.1447 doc/html/search/enums_3.js File Reference

Variables

- var searchData

30.1447.1 Variable Documentation

30.1447.1.1 var searchData

Initial value:

```
=
[
  ['direction2d',['Direction2D',['../namespace_go.html#a821a750d4a6740898072cf759246eb87',1,'Go']]]
]
```

Definition at line 1 of file enums_3.js.

30.1448 doc/html/search/enums_4.js File Reference

Variables

- var searchData

30.1448.1 Variable Documentation

30.1448.1.1 var searchData

Initial value:

```
=
[
  ['envmodeset',['EnvModeSet','../gv_texture_8h.html#abfb34fc206cb7e7d2ede80704c1fcc86',1,'gvTexture.h']]]
    ,
  ['estimatedirection',['EstimateDirection','../namespace_go.html#a73ae93efa43d949b788530375bae4a09',1,'Go
    ']]],
  ['evalkind',['EvalKind','../namespace_go.html#a11cd92eeab3979030879414ab681ae8f',1,'Go']]]
]
```

Definition at line 1 of file enums_4.js.

30.1449 doc/html/search/enums_5.js File Reference

Variables

- var searchData

30.1449.1 Variable Documentation

30.1449.1.1 var searchData

Initial value:

```
=
[
  ['fileformat',['FileFormat','../namespace_go.html#a1b060f2a0c10fd0bc766c070bf3f86d4',1,'Go']]],
  ['ftcurvetype',['ftCurveType','../namespace_go.html#ad80c2d41480925fa1892bb443097b4ae',1,'Go']]],
  ['ftmessages',['ftmessages','../namespace_go.html#aa919fb2218b20ac19a8f859200d69ca2',1,'Go']]],
  ['fttangpriority',['ftTangPriority','../namespace_go.html#ab182c80bd5555f4f7adee434150ede71',1,'Go']]]
]
```

Definition at line 1 of file enums_5.js.

30.1450 doc/html/search/enums_6.js File Reference

Variables

- var searchData

30.1450.1 Variable Documentation

30.1450.1.1 var searchData

Initial value:

```
=
[
  ['igessection',['IGESSection',['../namespace_go.html#a95d383314d9ef7d277424ee672473063',1,'Go']]],
  ['intersectiontype',['IntersectionType',['../namespace_go.html#a8dbaf65eacdc80d8d1714419e976ed2b',1,'Go']
      ]],
  ['intptclassification',['IntPtClassification',['../namespace_go.html#a96d472ee6c1174d35dc179b133c76bde',1
      ,'Go']]],
  ['intptlocation',['IntPtLocation',['../namespace_go.html#a7d692aaddd79b236fb05b5b4135cd0ad',1,'Go']]],
  ['iteratortype',['IteratorType',['../namespace_go.html#a241482b98287c4f940c75ef70671e05c',1,'Go']]]
]
```

Definition at line 1 of file enums_6.js.

30.1451 doc/html/search/enums_7.js File Reference

Variables

- var searchData

30.1451.1 Variable Documentation

30.1451.1.1 var searchData

Initial value:

```
=
[
  ['linktype',['LinkType',['../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556',1,'Go']]],
  ['lsf'
```

Definition at line 1 of file enums_7.js.

30.1452 doc/html/search/enums_8.js File Reference

Variables

- var searchData

30.1452.1 Variable Documentation

30.1452.1.1 var searchData

Initial value:

```
=
[
  ['magfilterset',['MagFilterSet',['../gv_texture_8h.html#abbb19582793c79e4ec8fe451f9e236e6',1,'gvTexture.h
      ']]],
  ['minfilterset',['MinFilterSet',['../gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2f',1,'gvTexture.h
      ']]]
]
```

Definition at line 1 of file enums_8.js.

30.1453 doc/html/search/enums_9.js File Reference

Variables

- var searchData

30.1453.1 Variable Documentation

30.1453.1.1 var searchData

Initial value:

```
=
[
  ['nodestatus',['NodeStatus',['
      ../generic__graph__algorithms__implementation_8h.html#a8c61272fccb797a8d283bb4ac2d86cdd',1,'generic_graph_algorithms_imp
  ['normalconemethod',['NormalConeMethod',['
      ../class_go_1_1_spline_surface.html#a60563fc410b940f853913f586cda19fc',1,'Go::SplineSurface']]]
]
```

Definition at line 1 of file enums_9.js.

30.1454 doc/html/search/enums_a.js File Reference

Variables

- var searchData

30.1454.1 Variable Documentation

30.1454.1.1 var searchData

Initial value:

```
=
[
  ['offsetsurfacestatus',['OffsetSurfaceStatus',['
      ../_offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589',1,'OffsetSurfaceUtils.h']]]
]
```

Definition at line 1 of file enums_a.js.

30.1455 doc/html/search/enums_b.js File Reference

Variables

- var searchData

30.1455.1 Variable Documentation

30.1455.1.1 var searchData

Initial value:

```
=
[
  ['pointsequencetype',['PointSequenceType',['../namespace_go.html#a8fd32afd3a4d4892e4020b0580de70e1',1,'Go
      ']]],
  ['prbdyparamkind',['PrBdyParamKind',['../_pr_parametrize_bdy_8h.html#ac4f0ea96d827517d164d141b76822905',1
      ,'PrParametrizeBdy.h']]],
  ['prparamstartvector',['PrParamStartVector',['
      ../_pr_parametrize_int_8h.html#ab93ec75afebf4127286a826175e2184e',1,'PrParametrizeInt.h']]]
]
```

Definition at line 1 of file enums_b.js.

30.1456 doc/html/search/enums_c.js File Reference

Variables

- var searchData

30.1456.1 Variable Documentation

30.1456.1.1 var searchData

Initial value:

```
=
[
  ['registrationreturntype',['RegistrationReturnType',['
      ../namespace_go.html#a4d9923f0997091e744526f5654084584',1,'Go']]]
]
```

Definition at line 1 of file enums_c.js.

30.1457 doc/html/search/enums_d.js File Reference

Variables

- var searchData

30.1457.1 Variable Documentation

30.1457.1.1 var searchData

Initial value:

```
=
[
  ['singularityclassification',['SingularityClassification',['
      ../namespace_go.html#a2d40b57e4fc6eed03a9fbeebe181e7c5',1,'Go']]],
  ['singularitytype',['SingularityType',['../namespace_go.html#a3f21d9ac1d33fe9bf8364573e0126af2',1,'Go']]]
      ,
  ['subdivisionclassification',['SubdivisionClassification',['
      ../namespace_go.html#a20f9976341cc350b6e0d38e92eca1583',1,'Go']]]
]
```

Definition at line 1 of file enums_d.js.

30.1458 doc/html/search/enums_e.js File Reference

Variables

- var searchData

30.1458.1 Variable Documentation

30.1458.1.1 var searchData

Initial value:

```
=
[
  ['tangentdomain',['TangentDomain',['../namespace_go.html#a683c7cd0653c849d16af423f40a6daf6',1,'Go']]],
  ['testsuite',['testSuite',['../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584',1,'Go']]],
  ['tpjointtype',['tpJointType',['../namespace_go.html#a1ff99d2b83bb317e5db42679477c31c2',1,'Go']]]
]
```

Definition at line 1 of file enums_e.js.

30.1459 doc/html/search/enums_f.js File Reference

Variables

- var searchData

30.1459.1 Variable Documentation

30.1459.1.1 var searchData

Initial value:

```
=
[
  ['wrapmodeset',['WrapModeSet',['../gv_texture_8h.html#adee2e25c021585161c4cab1b6751d90d',1,'gvTexture.h']
      ]]
]
```

Definition at line 1 of file enums_f.js.

30.1460 doc/html/search/enumvalues_0.js File Reference

Variables

- var searchData

30.1460.1 Variable Documentation

30.1460.1.1 var searchData

Initial value:

```
=
[
  ['areatoosmall',['AreaTooSmall',['
      ../namespace_go.html#a4d9923f0997091e744526f5654084584a8c50f932f2a5486c74f9faf803baf700',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_0.js.

30.1461 doc/html/search/enumvalues_1.js File Reference

Variables

- var searchData

30.1461.1 Variable Documentation

30.1461.1.1 var searchData

Initial value:

```
=
[
  ['backwards',['BACKWARDS',['
      ../namespace_go.html#a73ae93efa43d949b788530375bae4a09ab28d938a8509d39f43be6186d739198c',1,'Go']]],
  ['band'
```

Definition at line 1 of file enumvalues_1.js.

30.1462 doc/html/search/enumvalues_10.js File Reference

Variables

- var searchData

30.1462.1 Variable Documentation

30.1462.1.1 var searchData

Initial value:

```
=
[
  ['registrationok',['RegistrationOK',['
      ../namespace_go.html#a4d9923f0997091e744526f5654084584ad83c7e38a4aeb95705671d8fe4e7a0d6',1,'Go']]],
  ['repaired_5fmissing_5flink',['REPAIRED_MISSING_LINK',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a8ccee62554d8a8b6f78d16318027737f',1,'Go']]],
  ['rt',['Rt',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a88aac41b54a529b61a9c9433f4b583a4507ac17b08c3786d5394d8530b34492',1,'NEWMAT
  ['rv',['RV',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a88aac41b54a529b61a9c9433f4b583a8d78673b896275d6485cbfabd1645749',1,'NEWMAT
]
```

Definition at line 1 of file enumvalues_10.js.

30.1463 doc/html/search/enumvalues_11.js File Reference

Variables

- var searchData

30.1463.1 Variable Documentation

30.1463.1.1 var searchData

Definition at line 1 of file enumvalues_11.js.

30.1464 doc/html/search/enumvalues_12.js File Reference

Variables

- var searchData

30.1464.1 Variable Documentation

30.1464.1.1 var searchData

Initial value:

```
=
[
  ['t',['T',['../namespace_go.html#a95d383314d9ef7d277424ee672473063ad80deac00a5f9e9bea01b087b3bc6474',1,'
      Go']]],
  ['tangential_5fpoint',['TANGENTIAL_POINT',['
      ../namespace_go.html#a3f21d9ac1d33fe9bf8364573e0126af2a7a751867640d143dba6d355e3ad044ce',1,'Go']]],
  ['tolerance_5ferror',['TOLERANCE_ERROR',['
      ../_offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589a89c7beb3296ffda86f726e61362f7c9c',1,'OffsetSurfaceUt
  ['toofewpoints',['TooFewPoints',['
      ../namespace_go.html#a4d9923f0997091e744526f5654084584a409700864df743fb5ed29a95821ab1ad',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_12.js.

30.1465 doc/html/search/enumvalues_13.js File Reference

Variables

- var searchData

30.1465.1 Variable Documentation

30.1465.1.1 var searchData

Initial value:

```
=
[
  ['ub',['UB',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a88aac41b54a529b61a9c9433f4b583aadbf43fe9c465d39ca709c3abbbe41f2',1,'NEWMAT
  ['unknown',['UNKNOWN',['
      ../namespace_go.html#a2ef4e46477cac9d1ab25de9fbe20fed7a42f3d93048535945ea47f21d2c21dcc9',1,'Go']]],
  ['upper',['Upper',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#af1adc0086f5d4c3328ad4a698fa57c90ab75af65529b3ea6d5d92d1b750da8e43',1,'NEWMAT
  ['us',['US',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a88aac41b54a529b61a9c9433f4b583ad0a88c0bea4b361a84511383a9b2adf1',1,'NEWMAT
  ['ut',['UT',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a88aac41b54a529b61a9c9433f4b583ac0726b808a3ace193cd89bc93fe18ea6',1,'NEWMAT
]
```

Definition at line 1 of file enumvalues_13.js.

30.1466 doc/html/search/enumvalues_14.js File Reference

Variables

- var searchData
- & gt

30.1466.1 Variable Documentation

30.1466.1.1 & gt

Definition at line 4 of file enumvalues_14.js.

30.1466.1.2 var searchData

Initial value:

```
=
[
  ['valid',['Valid',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#af1adc0086f5d4c3328ad4a698fa57c90a0dad346d65e5540202aecf9f55dcdc0d',1,'NEWMAT
  ['value',['value',['
      ../struct_go_1_1_factorial.html#a579daed3b4275abe013c8f88077f888fa4acbf42abf2d3a50f62969f536eacb98',1,'Go::Factorial::va
      ../struct_go_1_1_factorial_3_011_01_4.html#a654cb8f1088a190314946d0cb460482caf04561aa2fcbf1fb66fbc964a355d268',1,'Go::Fa
```

Definition at line 1 of file enumvalues_14.js.

30.1467 doc/html/search/enumvalues_15.js File Reference

Variables

- var searchData

30.1467.1 Variable Documentation

30.1467.1.1 var searchData

Initial value:

```
=
[
  ['wrapclamp',['wrapClamp',['
      ../gv_texture_8h.html#adee2e25c021585161c4cab1b6751d90da81991e50cc3280139282b93608fa871d',1,'gvTexture.h']]],
  ['wraprepeat',['wrapRepeat',['
      ../gv_texture_8h.html#adee2e25c021585161c4cab1b6751d90da0004245ea176bc058284f0652a8416e9',1,'gvTexture.h']]]
]
```

Definition at line 1 of file enumvalues_15.js.

30.1468 doc/html/search/enumvalues_16.js File Reference

Variables

- var searchData

30.1468.1 Variable Documentation

30.1468.1.1 var searchData

Initial value:

```
=
[
  ['xfixed',['XFIXED',['
      ../namespace_go.html#a821a750d4a6740898072cf759246eb87a1e4145becb15ce54486dd57c554a8716',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_16.js.

30.1469 doc/html/search/enumvalues_17.js File Reference

Variables

- var searchData

30.1469.1 Variable Documentation

30.1469.1.1 var searchData

Initial value:

```
=
[
  ['yfixed',['YFIXED',['
      ../namespace_go.html#a821a750d4a6740898072cf759246eb87a344e219d46e24ae18ec2ff7fe11afddd',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_17.js.

30.1470 doc/html/search/enumvalues_18.js File Reference

Variables

- var searchData

30.1470.1 Variable Documentation

30.1470.1.1 var searchData

Initial value:

```
=
[
  ['zero_5fdirichlet',['ZERO_DIRICHLET',['
      ../namespace_go.html#a2ef4e46477cac9d1ab25de9fbe20fed7aec9786d0435848f55a9401da630edbaf',1,'Go']]],
  ['zero_5fneumann',['ZERO_NEUMANN',['
      ../namespace_go.html#a2ef4e46477cac9d1ab25de9fbe20fed7a5a1060dcd56fe6e7058351bcf342e1c5',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_18.js.

30.1471 doc/html/search/enumvalues_2.js File Reference

Variables

- var searchData

30.1471.1 Variable Documentation

30.1471.1.1 var searchData

Definition at line 1 of file enumvalues_2.js.

30.1472 doc/html/search/enumvalues_3.js File Reference

Variables

- var searchData

30.1472.1 Variable Documentation

30.1472.1.1 var searchData

Initial value:

```
=
[
  ['d',['D',['../namespace_go.html#a95d383314d9ef7d277424ee672473063ada8cdab2225fa4f764ba2ff6d553f3d4',1,'
      Go']]],
  ['deg_5ftriangle',['DEG_TRIANGLE',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a253a904e3add062958c2dfa385ee1ec2',1,'Go']]],
  ['degen_5fsrf_5fbd',['DEGEN_SRF_BD',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a2af23e45ea95a9c948c0511760750af0',1,'Go']]],
  ['degen_5fsrf_5fcorner',['DEGEN_SRF_CORNER',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a502f473df1998dd72f5102bf12275193',1,'Go']]],
  ['dg',['Dg',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a88aac41b54a529b61a9c9433f4b583a12503ce36500638199a2806d1f2473d1',1,'NEWMAT
  ['diagonal',['Diagonal',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#af1adc0086f5d4c3328ad4a698fa57c90a88d5e722097ab68f94a3c4795a8b3970',1,'NEWMAT
  ['dir_5fhighly_5fsingular',['DIR_HIGHLY_SINGULAR',['
      ../namespace_go.html#a96d472ee6c1174d35dc179b133c76bdea9aeed62bfaaeac96e0f966c90ef04f2c',1,'Go']]],
  ['dir_5fin',['DIR_IN',['
      ../namespace_go.html#a96d472ee6c1174d35dc179b133c76bdea2b229b86fc7c49a888f4c85de0fd0023',1,'Go']]],
  ['dir_5fout',['DIR_OUT',['
      ../namespace_go.html#a96d472ee6c1174d35dc179b133c76bdea867efb07d41953d6d8e3b6ee17a45772',1,'Go']]],
  ['dir_5fparallel',['DIR_PARALLEL',['
      ../namespace_go.html#a96d472ee6c1174d35dc179b133c76bdea28b39001ab0ad9baeb5e05efd209f940',1,'Go']]],
  ['dir_5fperpendicular',['DIR_PERPENDICULAR',['
      ../namespace_go.html#a96d472ee6c1174d35dc179b133c76bdea0f096a32edf421a2627ec6d6e20382e6',1,'Go']]],
  ['dir_5ftouch',['DIR_TOUCH',['
      ../namespace_go.html#a96d472ee6c1174d35dc179b133c76bdea734d14ac74f992b6632803bd13715769',1,'Go']]],
  ['dir_5fundef',['DIR_UNDEF',['
      ../namespace_go.html#a96d472ee6c1174d35dc179b133c76bdea820ac70fd33c863aebcf7a3b0bc691c9',1,'Go']]],
  ['directpart',['DirectPart',['
      ../newmatrc_8h.html#ae75c691eb2643cc7fe952b12f074040cac1dd577ab18fd18fcbe43d9654721c8f',1,'newmatrc.h']]],
  ['dirichlet',['DIRICHLET',['
      ../namespace_go.html#a2ef4e46477cac9d1ab25de9fbe20fed7a5c504f4a19f84fedb7d51aa7db55592e',1,'Go']]],
  ['disp',['disp',['../namespace_go.html#a1b060f2a0c10fd0bc766c070bf3f86d4afdb0b616372654f2b42dbf875f740077
      ',1,'Go']]],
  ['divide_5fcritical',['DIVIDE_CRITICAL',['
      ../namespace_go.html#a20f9976341cc350b6e0d38e92eca1583a5a94412a23dc475840ac49836f9acacc',1,'Go']]],
  ['divide_5fdeg',['DIVIDE_DEG',['
      ../namespace_go.html#a20f9976341cc350b6e0d38e92eca1583a7024a78dfc8b657dfcd157ef0e0b1886',1,'Go']]],
  ['divide_5fhigh_5fsing',['DIVIDE_HIGH_SING',['
      ../namespace_go.html#a20f9976341cc350b6e0d38e92eca1583a8c4ad2ea3ed668d02477f0b10b55d6ad',1,'Go']]],
  ['divide_5fint',['DIVIDE_INT',['
      ../namespace_go.html#a20f9976341cc350b6e0d38e92eca1583afc505e9630be475c3842fb7b43f30d94',1,'Go']]],
  ['divide_5fknot',['DIVIDE_KNOT',['
      ../namespace_go.html#a20f9976341cc350b6e0d38e92eca1583a261b563ba14323519361642ffd4fb8e6',1,'Go']]],
  ['divide_5fpar',['DIVIDE_PAR',['
      ../namespace_go.html#a20f9976341cc350b6e0d38e92eca1583a4ad3fd9c982e0d60e139cf3d8fc16ea8',1,'Go']]],
  ['divide_5fsing',['DIVIDE_SING',['
      ../namespace_go.html#a20f9976341cc350b6e0d38e92eca1583aff8eb5e454216f614a6f2debdde17b98',1,'Go']]],
  ['divided_5fsing',['DIVIDED_SING',['
      ../namespace_go.html#a2d40b57e4fc6eed03a9fbeebe181e7c5a98b637c26d37d470fcfbb5260774f8f9',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_3.js.

30.1473 doc/html/search/enumvalues_4.js File Reference

Variables

- var searchData

30.1473.1 Variable Documentation

30.1473.1.1 var searchData

Initial value:

```
=
[
  ['e',['E',['../namespace_go.html#a95d383314d9ef7d277424ee672473063a67661f5f4694b7e01c81e2e32d5841d0',1,'
      Go']]],
  ['edge_5facute_5fangle',['EDGE_ACUTE_ANGLE',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584ae81304fe056a752a83af4310b525b2e8',1,'Go']]],
  ['edge_5fposition_5fdiscont',['EDGE_POSITION_DISCONT',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a8ae1a2b3ebb821b186678cda5a0459c6',1,'Go']]],
  ['edge_5ftangential_5fdiscont',['EDGE_TANGENTIAL_DISCONT',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a9305fbfa4465cd36461b3e3b18e9c9b6',1,'Go']]],
  ['edge_5fvertex_5fdistance',['EDGE_VERTEX_DISTANCE',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a836f33ebe4d6e29ca350fd15ace55b10',1,'Go']]],
  ['embedded_5fedges',['EMBEDDED_EDGES',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584afceb4f2446a229605cf589c1500dd424',1,'Go']]],
  ['embedded_5ffaces',['EMBEDDED_FACES',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a375ed83c0a0939ff318aec5983653710',1,'Go']]],
  ['envblend',['envBlend',['
      ../gv_texture_8h.html#abfb34fc206cb7e7d2ede80704c1fcc86a66850f3a790c942c59dc2567c41cfebf',1,'gvTexture.h']]],
  ['envdecal',['envDecal',['
      ../gv_texture_8h.html#abfb34fc206cb7e7d2ede80704c1fcc86ae9b27fa588bfa1b339103a8f9cd7d92d',1,'gvTexture.h']]],
  ['envmodulate',['envModulate',['
      ../gv_texture_8h.html#abfb34fc206cb7e7d2ede80704c1fcc86a76402e7f3a9c65225ad37d3cd49ce1f3',1,'gvTexture.h']]],
  ['envreplace',['envReplace',['
      ../gv_texture_8h.html#abfb34fc206cb7e7d2ede80704c1fcc86a74718d64656d27245ca720852575e124',1,'gvTexture.h']]]
]
```

Definition at line 1 of file enumvalues_4.js.

30.1474 doc/html/search/enumvalues_5.js File Reference

Variables

- var searchData

30.1474.1 Variable Documentation

30.1474.1.1 var searchData

Definition at line 1 of file enumvalues_5.js.

30.1475 doc/html/search/enumvalues_6.js File Reference

Variables

- var searchData

30.1475.1 Variable Documentation

30.1475.1.1 var searchData

Initial value:

```
=
[
  ['g',['G',['../namespace_go.html#a95d383314d9ef7d277424ee672473063aa32eca3219a522f885088233d0cf8aa3',1,'
      Go']]],
  ['geom',['GEOM',['../namespace_go.html#a683c7cd0653c849d16af423f40a6daf6a2eab3dfbfcbb69fb143144ec699e952e
      ',1,'Go']]],
  ['geometrical',['GEOMETRICAL',['
      ../namespace_go.html#a9ec4373c3aa2905cb547164492f510d1a4877e954b6cbc33a24efca42fad0cb20',1,'Go']]],
  ['global_5fsearch',['GLOBAL_SEARCH',['
      ../namespace_go.html#a64e7b23868d471d8f59b8e280437195ea31db71b7b0faac9b18302d7d0b14a861',1,'Go']]],
  ['go',['go',['../namespace_go.html#a1b060f2a0c10fd0bc766c070bf3f86d4a727b71e7d5e25b99928ed913a31437f0',1,
      'Go']]]
]
```

Definition at line 1 of file enumvalues_6.js.

30.1476 doc/html/search/enumvalues_7.js File Reference

Variables

- var searchData

30.1476.1 Variable Documentation

30.1476.1.1 var searchData

Initial value:

```
=
[
  ['havestore',['HaveStore',['
      ../newmatrc_8h.html#ae75c691eb2643cc7fe952b12f074040ca53133c14cb06987614a1d83f0c44700c',1,'newmatrc.h']]],
  ['hermite',['Hermite',['
      ../class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78a51b46c3d3f007d4d2ef458f51d85610c',1,'Go::Spli
  ['higher_5forder_5fpoint',['HIGHER_ORDER_POINT',['
      ../namespace_go.html#a3f21d9ac1d33fe9bf8364573e0126af2a22f487388b26506dd36247ceb5747b41',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_7.js.

30.1477 doc/html/search/enumvalues_8.js File Reference

Variables

- var searchData

30.1477.1 Variable Documentation

30.1477.1.1 var searchData

Initial value:

```
=
[
  ['id',['Id',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a88aac41b54a529b61a9c9433f4b583a325261cf54ea1a0ca7228fdf8cd312db',1,'NEWMAT
  ['identical_5fedges',['IDENTICAL_EDGES',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a53806633e118165389ef85138f0ee02b',1,'Go']]],
  ['identical_5ffaces',['IDENTICAL_FACES',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584ad60ccf2fb14960d4649a164574749f8a',1,'Go']]],
  ['identical_5fvertices',['IDENTICAL_VERTICES',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a614b7fb3079450f43057f4e86b3e28ac',1,'Go']]],
  ['iges',['IGES',['../namespace_go.html#a1b060f2a0c10fd0bc766c070bf3f86d4ae0747afbdd38bb230962db3f51df27d5
      ',1,'Go']]],
  ['indistinct_5fknots',['INDISTINCT_KNOTS',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a03ad515756b74f616d75a5120a42510d',1,'Go']]],
  ['init_5fsing',['INIT_SING',['
      ../namespace_go.html#a2d40b57e4fc6eed03a9fbeebe181e7c5a490091ee185383778d6cd7293288d611',1,'Go']]],
  ['inside_5foutside_5fsingularity_5fbox',['INSIDE_OUTSIDE_SINGULARITY_BOX',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a9c821c88e8dc7ed1999ecd4746351587',1,'Go']]],
  ['isolated_5fpoint',['ISOLATED_POINT',['
      ../namespace_go.html#a3f21d9ac1d33fe9bf8364573e0126af2a1b8fe22dbe7702bdc99dd252ffc2ebc4',1,'Go']]],
  ['iterator_5fgeometric',['Iterator_geometric',['
      ../namespace_go.html#a241482b98287c4f940c75ef70671e05cacd4a1ab60b6688a79afb6336b99c936e',1,'Go']]],
  ['iterator_5fparametric',['Iterator_parametric',['
      ../namespace_go.html#a241482b98287c4f940c75ef70671e05cac62977f430391a4f0a8643ae07a5daf4',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_8.js.

30.1478 doc/html/search/enumvalues_9.js File Reference

Variables

- var searchData

30.1478.1 Variable Documentation

30.1478.1.1 var searchData

Initial value:

```
=
[
  ['joint_5fdisc',['JOINT_DISC',['
      ../namespace_go.html#a1ff99d2b83bb317e5db42679477c31c2a70a0cebf99fd902cf435fac73306b6e3',1,'Go']]],
  ['joint_5fg0',['JOINT_G0',['
      ../namespace_go.html#a1ff99d2b83bb317e5db42679477c31c2a7f5a6b29283bce2a3de4770df35da7d9',1,'Go']]],
  ['joint_5fg1',['JOINT_G1',['
      ../namespace_go.html#a1ff99d2b83bb317e5db42679477c31c2ada229f3349f036f74128f22b91778c5b',1,'Go']]],
  ['joint_5fgap',['JOINT_GAP',['
      ../namespace_go.html#a1ff99d2b83bb317e5db42679477c31c2a7a64be06e4c446d0ae5d82ef5dce4949',1,'Go']]],
  ['joint_5fkink',['JOINT_KINK',['
      ../namespace_go.html#a1ff99d2b83bb317e5db42679477c31c2ab918bde030f6bc020b44ec2422b39e25',1,'Go']]],
  ['joint_5fnone',['JOINT_NONE',['
      ../namespace_go.html#a1ff99d2b83bb317e5db42679477c31c2a45992da186ea931a1bf00b446280b433',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_9.js.

30.1479 doc/html/search/enumvalues_a.js File Reference

Variables

- var searchData

30.1479.1 Variable Documentation

30.1479.1.1 var searchData

Initial value:

```
=
[
  ['keep_5fsing',['KEEP_SING',['
      ../namespace_go.html#a2d40b57e4fc6eed03a9fbeebe181e7c5a5950a0471c4dedf23ebab3d521693e9e',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_a.js.

30.1480 doc/html/search/enumvalues_b.js File Reference

Variables

- var searchData

30.1480.1 Variable Documentation

30.1480.1.1 var searchData

Initial value:

```
=
[
  ['lb',['LB',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a88aac41b54a529b61a9c9433f4b583a5738046339887f72d6ecf0855b8ace66',1,'NEWMAT
  ['linear_5fcvcv',['LINEAR_CVCV',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a7f4243e6c2c1e5c7f51df461855d187c',1,'Go']]],
  ['linear_5fsfcv',['LINEAR_SFCV',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a5bde679ed6e9ce8890955ca90c1b1feb',1,'Go']]],
  ['linear_5fsfsf',['LINEAR_SFSF',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a884aa3c499cdf465b88d556a3997378a',1,'Go']]],
  ['link_5fundefined',['LINK_UNDEFINED',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a1f11495e24d6b64700ce8e345bf87494',1,'Go']]],
  ['loadonentry',['LoadOnEntry',['
      ../newmatrc_8h.html#ae75c691eb2643cc7fe952b12f074040caf82aaa0389ad880499aa17ee995acd62',1,'newmatrc.h']]],
  ['loc_5fcorner_5fboth',['LOC_CORNER_BOTH',['
      ../namespace_go.html#a7d692aaddd79b236fb05b5b4135cd0adad56be127936a25a10c7b50cfafaf85cc',1,'Go']]],
  ['loc_5fcorner_5fone',['LOC_CORNER_ONE',['
      ../namespace_go.html#a7d692aaddd79b236fb05b5b4135cd0ada65dc06de763e9db4a605a22c74ab0303',1,'Go']]],
  ['loc_5fedge_5fboth',['LOC_EDGE_BOTH',['
      ../namespace_go.html#a7d692aaddd79b236fb05b5b4135cd0ada3db4d0a9d71b8d50fd87fdc59664a13c',1,'Go']]],
  ['loc_5fedge_5fone',['LOC_EDGE_ONE',['
      ../namespace_go.html#a7d692aaddd79b236fb05b5b4135cd0ada0cc998fe7d568329a67a5af22270fae8',1,'Go']]],
  ['loc_5finside_5fboth',['LOC_INSIDE_BOTH',['
      ../namespace_go.html#a7d692aaddd79b236fb05b5b4135cd0ada7d4f28281cf301a763ffcfdf526f3ba2',1,'Go']]],
  ['loc_5foutside_5fboth',['LOC_OUTSIDE_BOTH',['
      ../namespace_go.html#a7d692aaddd79b236fb05b5b4135cd0ada91b8e290e0e2555d6b1e96dfae8e4bae',1,'Go']]],
```

```
  ['local_5fsearch',['LOCAL_SEARCH',['
      ../namespace_go.html#a64e7b23868d471d8f59b8e280437195ea67da27ebc2731782484f21d1d9acb8fd',1,'Go']]],
  ['loop_5fconsistency',['LOOP_CONSISTENCY',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a5cc09671c391910934656977a9658ec0',1,'Go']]],
  ['loop_5fintersection',['LOOP_INTERSECTION',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a69345c1de52ee52df57afe2037aade9c',1,'Go']]],
  ['loop_5forientation',['LOOP_ORIENTATION',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584af65e037e9f2b5131d88e15a3ed099081',1,'Go']]],
  ['loop_5fself_5fintersection',['LOOP_SELF_INTERSECTION',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584ae5291135054d75cd8a290a808f2b3b67',1,'Go']]],
  ['lower',['Lower',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#af1adc0086f5d4c3328ad4a698fa57c90a7179b6f363e7d4e90bd188392de924ba',1,'NEWMAT
  ['lt',['LT',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a88aac41b54a529b61a9c9433f4b583a0edcd4d5f3d58272ad0e0a36f5da704a',1,'NEWMAT
  ['ludeco',['LUDeco',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#af1adc0086f5d4c3328ad4a698fa57c90ae624050aed576ddc4119f40c426cc61b',1,'NEWMAT
]
```

Definition at line 1 of file enumvalues_b.js.

30.1481 doc/html/search/enumvalues_c.js File Reference

Variables

- var searchData

30.1481.1 Variable Documentation

30.1481.1.1 var searchData

Initial value:

```
=
[
  ['maglinear',['magLinear',['
      ../gv_texture_8h.html#abbb19582793c79e4ec8fe451f9e236e6abe6738841e17db775ec39e0479af16b8',1,'gvTexture.h']]],
  ['magnearest',['magNearest',['
      ../gv_texture_8h.html#abbb19582793c79e4ec8fe451f9e236e6a656ed1cddd73643821e62a1fdedc48b8',1,'gvTexture.h']]],
  ['merged_5fcoincidence_5fsfcv_5fsfcv',['MERGED_COINCIDENCE_SFCV_SFCV',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a845c0591e6522cbb1bd7d42a3d644c4e',1,'Go']]],
  ['merged_5fsimple_5fcone',['MERGED_SIMPLE_CONE',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a33c6ebf38c4366b2005b53d95baf936e',1,'Go']]],
  ['merged_5fsimple_5fcone_5fmonotone',['MERGED_SIMPLE_CONE_MONOTONE',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a3112ff1b70eed68acf85bc8f64045cd8',1,'Go']]],
  ['merged_5fsimple_5fmonotone',['MERGED_SIMPLE_MONOTONE',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a880855a6ca44f4c7dcdad21a476df516',1,'Go']]],
  ['merged_5fundefined',['MERGED_UNDEFINED',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a2a28c174c7b328eeb951148142dd2ba6',1,'Go']]],
  ['micro_5fcvcv',['MICRO_CVCV',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a4dfb177c5df6a14182f3bf999f0a4130',1,'Go']]],
  ['micro_5fpar1func',['MICRO_PAR1FUNC',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a02e6b5db18a29d921fac920122d304bc',1,'Go']]],
  ['micro_5fpar2func',['MICRO_PAR2FUNC',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a5963a3db65d693ff97246e5078994779',1,'Go']]],
  ['micro_5fsfcv',['MICRO_SFCV',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556ac885460e14ae384b04e728688ba62416',1,'Go']]],
  ['micro_5fsfpt',['MICRO_SFPT',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556afdfc0f39697f2e1a759cf5bcea991285',1,'Go']]],
  ['micro_5fsfsf',['MICRO_SFSF',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a26b61b3d6e6b8e2a66202f7c3900e2e2',1,'Go']]],
  ['mini_5fcurve',['MINI_CURVE',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584ad7c56a91bf38e4b2b1c294a9301ff68a',1,'Go']]],
  ['mini_5fedge',['MINI_EDGE',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584ae2427cc37fe955e7ede968ea3ceea7c0',1,'Go']]],
  ['mini_5fface',['MINI_FACE',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584ab640d2c0b4dde412a0a5cc233ed8574e',1,'Go']]],
  ['mini_5fsurface',['MINI_SURFACE',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584ac0239da67f77b2a85f3e1467eb2465ca',1,'Go']]],
  ['minlinear',['minLinear',['
      ../gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fa34564aeb9a54aec0ae6daa30d0ca5965',1,'gvTexture.h']]],
```

```
  ['minlinearmipmaplinear',['minLinearMipmapLinear',['
      ../gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fa5bf26bc6347132e8118dc0eda75dd2c9',1,'gvTexture.h']]],
  ['minlinearmipmapnearest',['minLinearMipmapNearest',['
      ../gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fa8579243951c8b2cd902ef07b1c94f84c',1,'gvTexture.h']]],
  ['minnearest',['minNearest',['
      ../gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fa529132446a8de28d302618413fd64095',1,'gvTexture.h']]],
  ['minnearestmipmaplinear',['minNearestMipmapLinear',['
      ../gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fae65a99cf93d997f52b3d3244e7e9e7a7',1,'gvTexture.h']]],
  ['minnearestmipmapnearest',['minNearestMipmapNearest',['
      ../gv_texture_8h.html#a22888cb2b2c0262ed85c7ac8aa7c1c2fa51d5f598d2c42800336631f9ca5d6b1f',1,'gvTexture.h']]]
]
```

Definition at line 1 of file enumvalues_c.js.

30.1482 doc/html/search/enumvalues_d.js File Reference

Variables

- var searchData

30.1482.1 Variable Documentation

30.1482.1.1 var searchData

Initial value:

```
=
[
  ['narrow_5fregion',['NARROW_REGION',['
      ../namespace_go.html#a2353a3d581dde8e8be2ad76914f0f584a7ce649f843503dab14b2319f52eaf41d',1,'Go']]],
  ['natural',['Natural',['
      ../class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78a97ae16f658015873c02850158cd655fd',1,'Go::Spli
  ['naturalatend',['NaturalAtEnd',['
      ../class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78a94a08e9e644774498ad7e091d8535415',1,'Go::Spli
  ['naturalatstart',['NaturalAtStart',['
      ../class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78a5b6b1f58b2d5ddefab7785b4e637e213',1,'Go::Spli
  ['neumann',['NEUMANN',['
      ../namespace_go.html#a2ef4e46477cac9d1ab25de9fbe20fed7aed6f828e7a7040280d06e6d5dc58f405',1,'Go']]],
  ['no_5fsing',['NO_SING',['
      ../namespace_go.html#a2d40b57e4fc6eed03a9fbeebe181e7c5ab1559d7dcf7654af2bcec501f5312732',1,'Go']]],
  ['no_5ftype',['No_Type',['
      ../namespace_go.html#a8dbaf65eacdc80d8d1714419e976ed2babcd670721a68d8943fefaf6f071c7ab7',1,'Go']]],
  ['non_5fiso_5fkink_5fcurve',['NON_ISO_KINK_CURVE',['
      ../_offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589a8f44525c3493edeef93a3948eabe7bee',1,'OffsetSurfaceUt
  ['none',['None',['
      ../class_go_1_1_spline_interpolator.html#aacf4f80d98ea6b554729125fafd24a78a02bef9ce6e415b73a3cd9fe89aace722',1,'Go::Spli
  ['not_5ffour_5fcorners',['NOT_FOUR_CORNERS',['
      ../_offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589a1db463f259d94e558afdf3af00a006af',1,'OffsetSurfaceUt
]
```

Definition at line 1 of file enumvalues_d.js.

30.1483 doc/html/search/enumvalues_e.js File Reference

Variables

- var searchData

30.1483.1 Variable Documentation

30.1483.1.1 var searchData

Initial value:

```
=
[
  ['offset_5ffailed',['OFFSET_FAILED',['
      ../_offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589adc3d327e65f0c46656bfc9e175fcc151',1,'OffsetSurfaceUt
  ['offset_5fok',['OFFSET_OK',['
      ../_offset_surface_utils_8h.html#a49c34a8a952371206ac5113543270589addc758c86d9a578e0dcb248819d592af',1,'OffsetSurfaceUt
  ['ones',['Ones',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#af1adc0086f5d4c3328ad4a698fa57c90a44547634c366280d11428cb090d33abd',1,'NEWMAT
  ['ordinary_5fpoint',['ORDINARY_POINT',['
      ../namespace_go.html#a3f21d9ac1d33fe9bf8364573e0126af2a1fdcba6fec487885e75718a98dd830b0',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_e.js.

30.1484 doc/html/search/enumvalues_f.js File Reference

Variables

- var searchData

30.1484.1 Variable Documentation

30.1484.1.1 var searchData

Initial value:

```
=
[
  ['p',['P',['../namespace_go.html#a95d383314d9ef7d277424ee672473063ad1ce8b353acf910f88713227844884 07',1,'
      Go']]],
  ['param1',['PARAM1',['
      ../namespace_go.html#a683c7cd0653c849d16af423f40a6daf6a44e72e0b76476af77c20052f24d3b5be',1,'Go']]],
  ['param2',['PARAM2',['
      ../namespace_go.html#a683c7cd0653c849d16af423f40a6daf6a7c4a6ef82dbc05c929c42e8d776d0afe',1,'Go']]],
  ['paramcurve_5f1',['PARAMCURVE_1',['
      ../namespace_go.html#a11cd92eeab3979030879414ab681ae8fab087de473bf3a94dfe7e5517ff3fca7e',1,'Go']]],
  ['paramcurve_5f2',['PARAMCURVE_2',['
      ../namespace_go.html#a11cd92eeab3979030879414ab681ae8fa5d0237f746518b9794e553b00c211c3d',1,'Go']]],
  ['pointsetsizediff',['PointSetSizeDiff',['
      ../namespace_go.html#a4d9923f0997091e744526f5654084584abcdec83ae9dd6bb083acac7e3b218dc3',1,'Go']]],
  ['post_5fiterate',['POST_ITERATE',['
      ../namespace_go.html#aeb8f1bba4a2e383337bd140d61a65556a7332a0add2807af6a1d8545ece9d7672',1,'Go']]],
  ['prbarycentre',['PrBARYCENTRE',['
      ../_pr_parametrize_int_8h.html#ab93ec75afebf4127286a826175e2184eac1e230601ee7949ef1e75f1a4439f4e7',1,'PrParametrizeInt.
  ['prcentripetal',['PrCENTRIPETAL',['
      ../_pr_parametrize_bdy_8h.html#ac4f0ea96d827517d164d141b76822905a9d8ef4f0fb695440e1e12f49b448ee1c',1,'PrParametrizeBdy.
  ['prchordlengthbdy',['PrCHORDLENGTHBDY',['
      ../_pr_parametrize_bdy_8h.html#ac4f0ea96d827517d164d141b76822905a01024afd7e94cb195b4956f794df5ea3',1,'PrParametrizeBdy.
  ['pretop_5fat',['pretop_AT',['
      ../namespace_go.html#a0589ebbe872cac278faf8159c61b8292ab0740d5b95cb39891d4fbc9e8ae72315',1,'Go']]],
  ['pretop_5fin',['pretop_IN',['
      ../namespace_go.html#a0589ebbe872cac278faf8159c61b8292a418cdf83cdf220855b9ed6eec2a3f68d',1,'Go']]],
  ['pretop_5fon',['pretop_ON',['
      ../namespace_go.html#a0589ebbe872cac278faf8159c61b8292a57715e2bd060af960bad6c7fa862d717',1,'Go']]],
  ['pretop_5fout',['pretop_OUT',['
      ../namespace_go.html#a0589ebbe872cac278faf8159c61b8292a6656387d8b452630d832f8a6ba20c79d',1,'Go']]],
  ['pretop_5fundef',['pretop_UNDEF',['
      ../namespace_go.html#a0589ebbe872cac278faf8159c61b8292a3ead4181c54e7d4f7e0add68c20ad134',1,'Go']]],
```

```
  ['prfromuv',['PrFROMUV',['
      ../_pr_parametrize_int_8h.html#ab93ec75afebf4127286a826175e2184ea2740fa09d2d03e4c2d55733fd8ec3e36',1,'PrParametrizeInt.h
  ['prunifbdy',['PrUNIFBDY',['
      ../_pr_parametrize_bdy_8h.html#ac4f0ea96d827517d164d141b76822905ac0af8acf5a5382cb8d17efec95c6f194',1,'PrParametrizeBdy.h
  ['pstpoint',['PSTPoint',['
      ../namespace_go.html#a8fd32afd3a4d4892e4020b0580de70e1a4eea7b565319ed23e1e46c7b519bcfe2',1,'Go']]],
  ['pstpointtangent',['PSTPointTangent',['
      ../namespace_go.html#a8fd32afd3a4d4892e4020b0580de70e1a44f2da44ddde83fedb06c67050ddc6e4',1,'Go']]],
  ['pstscattered',['PSTScattered',['
      ../namespace_go.html#a8fd32afd3a4d4892e4020b0580de70e1ae7ab6c2a6415887b29d8152b39a92f92',1,'Go']]]
]
```

Definition at line 1 of file enumvalues_f.js.

30.1485 doc/html/search/files_0.js File Reference

Variables

- var searchData

30.1485.1 Variable Documentation

30.1485.1.1 var searchData

Initial value:

```
=
[
  ['2dpoly_5ffor_5fs2m_2eh',['2dpoly_for_s2m.h',['../2dpoly__for__s2m_8h.html',1,'']]]
]
```

Definition at line 1 of file files_0.js.

30.1486 doc/html/search/files_1.js File Reference

Variables

- var searchData

30.1486.1 Variable Documentation

30.1486.1.1 var searchData

Initial value:

```
=
[
  ['adaptcurve_2eh',['AdaptCurve.h',['../_adapt_curve_8h.html',1,'']]],
  ['adaptsurface_2eh',['AdaptSurface.h',['../_adapt_surface_8h.html',1,'']]],
  ['algobj2dint_2eh',['AlgObj2DInt.h',['../_alg_obj2_d_int_8h.html',1,'']]],
  ['algobj3dint_2eh',['AlgObj3DInt.h',['../_alg_obj3_d_int_8h.html',1,'']]],
  ['algobjectint_2eh',['AlgObjectInt.h',['../_alg_object_int_8h.html',1,'']]],
  ['api_2eh',['api.h',['../api_8h.html',1,'']]],
  ['approxcrvtoseqs_2eh',['ApproxCrvToSeqs.h',['../_approx_crv_to_seqs_8h.html',1,'']]],
  ['approxcurve_2eh',['ApproxCurve.h',['../_approx_curve_8h.html',1,'']]],
  ['approxsurf_2eh',['ApproxSurf.h',['../_approx_surf_8h.html',1,'']]],
  ['array_2eh',['Array.h',['../_array_8h.html',1,'']]],
  ['aux2_2ecpp',['aux2.cpp',['../aux2_8cpp.html',1,'']]],
  ['aux2_2eh',['aux2.h',['../aux2_8h.html',1,'']]]
]
```

Definition at line 1 of file files_1.js.

30.1487 doc/html/search/files_10.js File Reference

Variables

- var searchData

30.1487.1 Variable Documentation

30.1487.1.1 var searchData

Initial value:

```
=
[
  ['quadmesh_2eh',['QuadMesh.h',['../_quad_mesh_8h.html',1,'']]],
  ['qualitymodule_2ddoxymain_2eh',['qualitymodule-doxymain.h',['../qualitymodule-doxymain_8h.html',1,'']]],
  ['qualityresults_2eh',['QualityResults.h',['../_quality_results_8h.html',1,'']]],
  ['qualityutils_2eh',['QualityUtils.h',['../_quality_utils_8h.html',1,'']]]
]
```

Definition at line 1 of file files_10.js.

30.1488 doc/html/search/files_11.js File Reference

Variables

- var searchData

30.1488.1 Variable Documentation

30.1488.1.1 var searchData

Initial value:

```
=
[
  ['randomnoise_2eh',['randomnoise.h',['../randomnoise_8h.html',1,'']]],
  ['raster_2eh',['raster.h',['../raster_8h.html',1,'']]],
  ['rational_2eh',['Rational.h',['../_rational_8h.html',1,'']]],
  ['rectangularsurfacepropertysheet_2eh',['RectangularSurfacePropertySheet.h',['
      ../_rectangular_surface_property_sheet_8h.html',1,'']]],
  ['rectangularsurfacetesselator_2eh',['RectangularSurfaceTesselator.h',['
      ../_rectangular_surface_tesselator_8h.html',1,'']]],
  ['rectangularvolumepropertysheet_2eh',['RectangularVolumePropertySheet.h',['
      ../_rectangular_volume_property_sheet_8h.html',1,'']]],
  ['rectangularvolumetesselator_2eh',['RectangularVolumeTesselator.h',['
      ../_rectangular_volume_tesselator_8h.html',1,'']]],
  ['rectdomain_2eh',['RectDomain.h',['../_rect_domain_8h.html',1,'']]],
  ['rectgrid_2eh',['RectGrid.h',['../_rect_grid_8h.html',1,'']]],
  ['rectgridtesselator_2eh',['RectGridTesselator.h',['../_rect_grid_tesselator_8h.html',1,'']]],
  ['refine_5fall_2ec',['refine_all.c',['../refine__all_8c.html',1,'']]],
  ['registrationutils_2eh',['RegistrationUtils.h',['../_registration_utils_8h.html',1,'']]],
  ['regularizeface_2eh',['RegularizeFace.h',['../_regularize_face_8h.html',1,'']]],
  ['regularizefaceset_2eh',['RegularizeFaceSet.h',['../_regularize_face_set_8h.html',1,'']]],
  ['regularizeutils_2eh',['RegularizeUtils.h',['../_regularize_utils_8h.html',1,'']]],
  ['regularmesh_2eh',['RegularMesh.h',['../_regular_mesh_8h.html',1,'']]],
  ['regularvolmesh_2eh',['RegularVolMesh.h',['../_regular_vol_mesh_8h.html',1,'']]],
  ['rotatedbox_2eh',['RotatedBox.h',['../_rotated_box_8h.html',1,'']]]
]
```

Definition at line 1 of file files_11.js.

30.1489 doc/html/search/files_12.js File Reference

Variables

- var searchData

30.1489.1 Variable Documentation

30.1489.1.1 var searchData

Definition at line 1 of file files_12.js.

30.1490 doc/html/search/files_13.js File Reference

Variables

- var searchData

30.1490.1 Variable Documentation

30.1490.1.1 var searchData

Definition at line 1 of file files_13.js.

30.1491 doc/html/search/files_14.js File Reference

Variables

- var searchData

30.1491.1 Variable Documentation

30.1491.1.1 var searchData

Initial value:

```
=
[
  ['utils_2eh',['Utils.h',['../_utils_8h.html',1,'']]]
]
```

Definition at line 1 of file files_14.js.

30.1492 doc/html/search/files_15.js File Reference

Variables

- var searchData

30.1492.1 Variable Documentation

30.1492.1.1 var searchData

Initial value:

```
=
[
  ['values_2eh',['Values.h',['../_values_8h.html',1,'']]],
  ['vertex_2eh',['Vertex.h',['../_vertex_8h.html',1,'']]],
  ['viewlib_5fdoxymain_2eh',['viewlib_doxymain.h',['../viewlib__doxymain_8h.html',1,'']]],
  ['volboundarycondition_2eh',['VolBoundaryCondition.h',['../_vol_boundary_condition_8h.html',1,'']]],
  ['volpointbdcond_2eh',['VolPointBdCond.h',['../_vol_point_bd_cond_8h.html',1,'']]],
  ['volsolution_2eh',['VolSolution.h',['../_vol_solution_8h.html',1,'']]],
  ['volumeadjacency_2eh',['VolumeAdjacency.h',['../_volume_adjacency_8h.html',1,'']]],
  ['volumeinterpolator_2eh',['VolumeInterpolator.h',['../_volume_interpolator_8h.html',1,'']]],
  ['volumemodel_2eh',['VolumeModel.h',['../_volume_model_8h.html',1,'']]],
  ['volumemodelcreator_2eh',['VolumeModelCreator.h',['../_volume_model_creator_8h.html',1,'']]],
  ['volumemodelfilehandler_2eh',['VolumeModelFileHandler.h',['../_volume_model_file_handler_8h.html',1,'']]
     ],
  ['volumeparametercurve_2eh',['VolumeParameterCurve.h',['../_volume_parameter_curve_8h.html',1,'']]],
  ['volumes_2eh',['Volumes.h',['../_volumes_8h.html',1,'']]],
  ['volumespacecurve_2eh',['VolumeSpaceCurve.h',['../_volume_space_curve_8h.html',1,'']]],
  ['volumetools_2eh',['VolumeTools.h',['../_volume_tools_8h.html',1,'']]]
]
```

Definition at line 1 of file files_15.js.

30.1493 doc/html/search/files_2.js File Reference

Variables

- var searchData

30.1493.1 Variable Documentation

30.1493.1.1 var searchData

Initial value:

```
=
[
  ['bandmat_2ecpp',['bandmat.cpp',['../bandmat_8cpp.html',1,'']]],
  ['barycoordsystem_2eh',['BaryCoordSystem.h',['../_bary_coord_system_8h.html',1,'']]],
  ['barycoordsystemtriangle3d_2eh',['BaryCoordSystemTriangle3D.h',['
      ../_bary_coord_system_triangle3_d_8h.html',1,'']]],
  ['bdcondfunctor_2eh',['BdCondFunctor.h',['../_bd_cond_functor_8h.html',1,'']]],
  ['bdconditiontype_2eh',['BdConditionType.h',['../_bd_condition_type_8h.html',1,'']]],
  ['bernsteinmulti_2eh',['BernsteinMulti.h',['../_bernstein_multi_8h.html',1,'']]],
  ['bernsteinpoly_2eh',['BernsteinPoly.h',['../_bernstein_poly_8h.html',1,'']]],
  ['bernsteintetrahedralpoly_2eh',['BernsteinTetrahedralPoly.h',['../_bernstein_tetrahedral_poly_8h.html',1
      ,'']]],
  ['bernsteintriangularpoly_2eh',['BernsteinTriangularPoly.h',['../_bernstein_triangular_poly_8h.html',1,''
      ]]],
  ['bernsteinutils_2eh',['BernsteinUtils.h',['../_bernstein_utils_8h.html',1,'']]],
  ['beziertriangle_2eh',['BezierTriangle.h',['../_bezier_triangle_8h.html',1,'']]],
  ['binom_2eh',['binom.h',['../binom_8h.html',1,'']]],
  ['binomial_2eh',['Binomial.h',['../_binomial_8h.html',1,'']]],
  ['blockboundarycondition_2eh',['BlockBoundaryCondition.h',['../_block_boundary_condition_8h.html',1,'']]]
      ,
  ['blockpointbdcond_2eh',['BlockPointBdCond.h',['../_block_point_bd_cond_8h.html',1,'']]],
  ['blocksolution_2eh',['BlockSolution.h',['../_block_solution_8h.html',1,'']]],
  ['body_2eh',['Body.h',['../_body_8h.html',1,'']]],
  ['boolean_2eh',['boolean.h',['../boolean_8h.html',1,'']]],
  ['boundaryfunctionint_2eh',['BoundaryFunctionInt.h',['../_boundary_function_int_8h.html',1,'']]],
  ['boundarygeomint_2eh',['BoundaryGeomInt.h',['../_boundary_geom_int_8h.html',1,'']]],
  ['boundedcurve_2eh',['BoundedCurve.h',['../_bounded_curve_8h.html',1,'']]],
  ['boundedsurface_2eh',['BoundedSurface.h',['../_bounded_surface_8h.html',1,'']]],
  ['boundedutils_2eh',['BoundedUtils.h',['../_bounded_utils_8h.html',1,'']]],
  ['boundingbox_2eh',['BoundingBox.h',['../_bounding_box_8h.html',1,'']]],
  ['brent_5fminimize_2eh',['brent_minimize.h',['../brent__minimize_8h.html',1,'']]],
  ['bsplinebasis_2eh',['BsplineBasis.h',['../_bspline_basis_8h.html',1,'']]]
]
```

Definition at line 1 of file files_2.js.

30.1494 doc/html/search/files_3.js File Reference

Variables

- var searchData

30.1494.1 Variable Documentation

30.1494.1.1 var searchData

Definition at line 1 of file files_3.js.

30.1495 doc/html/search/files_4.js File Reference

Variables

- var searchData

30.1495.1 Variable Documentation

30.1495.1.1 var searchData

Initial value:

```
=
[
  ['datahandler_2eh',['DataHandler.h',['../_data_handler_8h.html',1,'']]],
  ['datahandlervolandlr_2eh',['DataHandlerVolAndLR.h',['../_data_handler_vol_and_l_r_8h.html',1,'']]],
  ['defaultdatahandler_2eh',['DefaultDataHandler.h',['../_default_data_handler_8h.html',1,'']]],
  ['destruct_2ec',['destruct.c',['../destruct_8c.html',1,'']]],
  ['direction2d_2eh',['Direction2D.h',['../_direction2_d_8h.html',1,'']]],
  ['directioncone_2eh',['DirectionCone.h',['../_direction_cone_8h.html',1,'']]],
  ['disc_2eh',['Disc.h',['../_disc_8h.html',1,'']]],
  ['domain_2eh',['Domain.h',['../_domain_8h.html',1,'']]]
]
```

Definition at line 1 of file files_4.js.

30.1496 doc/html/search/files_5.js File Reference

Variables

- var searchData

30.1496.1 Variable Documentation

30.1496.1.1 var searchData

Definition at line 1 of file files_5.js.

30.1497 doc/html/search/files_6.js File Reference

Variables

- var searchData

30.1497.1 Variable Documentation

30.1497.1.1 var searchData

Definition at line 1 of file files_6.js.

30.1498 doc/html/search/files_7.js File Reference

Variables

- var searchData

30.1498.1 Variable Documentation

30.1498.1.1 var searchData

Definition at line 1 of file files_7.js.

30.1499 doc/html/search/files_8.js File Reference

Variables

- var searchData

30.1499.1 Variable Documentation

30.1499.1.1 var searchData

Initial value:

```
=
[
  ['hahnssurfacegen_2eh',['HahnsSurfaceGen.h',['../_hahns_surface_gen_8h.html',1,'']]],
  ['handle_2eh',['Handle.h',['../_handle_8h.html',1,'']]],
  ['handleid_2ecpp',['HandleId.cpp',['../_handle_id_8cpp.html',1,'']]],
  ['handleid_2eh',['HandleId.h',['../_handle_id_8h.html',1,'']]],
  ['hedart_2eh',['HeDart.h',['../_he_dart_8h.html',1,'']]],
  ['hermiteappc_2eh',['HermiteAppC.h',['../_hermite_app_c_8h.html',1,'']]],
  ['hermiteapprevalsurf_2eh',['HermiteApprEvalSurf.h',['../_hermite_appr_eval_surf_8h.html',1,'']]],
  ['hermiteapps_2eh',['HermiteAppS.h',['../_hermite_app_s_8h.html',1,'']]],
  ['hermitegrid1d_2eh',['HermiteGrid1D.h',['../_hermite_grid1_d_8h.html',1,'']]],
  ['hermitegrid1dmulti_2eh',['HermiteGrid1DMulti.h',['../_hermite_grid1_d_multi_8h.html',1,'']]],
  ['hermitegrid2d_2eh',['HermiteGrid2D.h',['../_hermite_grid2_d_8h.html',1,'']]],
  ['hermiteinterpolator_2eh',['HermiteInterpolator.h',['../_hermite_interpolator_8h.html',1,'']]],
  ['hetraits_2eh',['HeTraits.h',['../_he_traits_8h.html',1,'']]],
  ['hetriang_2ecpp',['HeTriang.cpp',['../_he_triang_8cpp.html',1,'']]],
  ['hetriang_2eh',['HeTriang.h',['../_he_triang_8h.html',1,'']]],
  ['hholder_2ecpp',['hholder.cpp',['../hholder_8cpp.html',1,'']]],
  ['hp_5fs1880_2ec',['hp_s1880.c',['../hp__s1880_8c.html',1,'']]],
  ['hyperbola_2eh',['Hyperbola.h',['../_hyperbola_8h.html',1,'']]]
]
```

Definition at line 1 of file files_8.js.

30.1500 doc/html/search/files_9.js File Reference

Variables

- var searchData

30.1500.1 Variable Documentation

30.1500.1.1 var searchData

Definition at line 1 of file files_9.js.

30.1501 doc/html/search/files_a.js File Reference

Variables

- var searchData

30.1501.1 Variable Documentation

30.1501.1.1 var searchData

Initial value:

```
=
[
  ['jacobi_2ecpp',['jacobi.cpp','../jacobi_8cpp.html',1,'']]],
  ['jonvec_2eh',['jonvec.h','../jonvec_8h.html',1,'']]],
  ['jquery_2ejs',['jquery.js','../jquery_8js.html',1,'']]]
]
```

Definition at line 1 of file files_a.js.

30.1502 doc/html/search/files_b.js File Reference

Variables

- var searchData

30.1502.1 Variable Documentation

30.1502.1.1 var searchData

Definition at line 1 of file files_b.js.

30.1503 doc/html/search/files_c.js File Reference

Variables

- var searchData

30.1503.1 Variable Documentation

30.1503.1.1 var searchData

Initial value:

```
=
[
  ['main_2ecpp',['main.cpp',['../main_8cpp.html',1,'']]],
  ['main_5fhe_5fref_2eh',['main_he_ref.h',['../main__he__ref_8h.html',1,'']]],
  ['mainpage_5fhed_2eh',['mainpage_hed.h',['../mainpage__hed_8h.html',1,'']]],
  ['mainpage_5fttl_2eh',['mainpage_ttl.h',['../mainpage__ttl_8h.html',1,'']]],
  ['make3d_2ec',['make3D.c',['../make3_d_8c.html',1,'']]],
  ['makecvkreg_2ec',['makecvkreg.c',['../makecvkreg_8c.html',1,'']]],
  ['makesfkreg_2ec',['makesfkreg.c',['../makesfkreg_8c.html',1,'']]],
  ['maketracks_2ec',['maketracks.c',['../maketracks_8c.html',1,'']]],
  ['matrixxd_2eh',['MatrixXD.h',['../_matrix_x_d_8h.html',1,'']]],
  ['mesh2d_2eh',['Mesh2D.h',['../_mesh2_d_8h.html',1,'']]],
  ['mesh2diterator_2eh',['Mesh2DIterator.h',['../_mesh2_d_iterator_8h.html',1,'']]],
  ['mesh2dutils_2eh',['Mesh2DUtils.h',['../_mesh2_d_utils_8h.html',1,'']]],
  ['mk_5fcv_5fcycl_2ec',['mk_cv_cycl.c',['../mk__cv__cycl_8c.html',1,'']]],
  ['modelquality_2eh',['ModelQuality.h',['../_model_quality_8h.html',1,'']]],
  ['modelrepair_2eh',['ModelRepair.h',['../_model_repair_8h.html',1,'']]],
  ['modifysurf_2eh',['ModifySurf.h',['../_modify_surf_8h.html',1,'']]],
  ['mouse_2ecpp',['mouse.cpp',['../mouse_8cpp.html',1,'']]],
  ['mouse_2eh',['mouse.h',['../mouse_8h.html',1,'']]],
  ['myexcept_2ecpp',['myexcept.cpp',['../myexcept_8cpp.html',1,'']]],
  ['myexcept_2eh',['myexcept.h',['../myexcept_8h.html',1,'']]]
]
```

Definition at line 1 of file files_c.js.

30.1504 doc/html/search/files_d.js File Reference

Variables

- var searchData

30.1504.1 Variable Documentation

30.1504.1.1 var searchData

Initial value:

```
=
[
  ['newfft_2ecpp',['newfft.cpp',['../newfft_8cpp.html',1,'']]],
  ['newknots_2ec',['newknots.c',['../newknots_8c.html',1,'']]],
  ['newmat_2eh',['newmat.h',['../newmat_8h.html',1,'']]],
  ['newmat1_2ecpp',['newmat1.cpp',['../newmat1_8cpp.html',1,'']]],
  ['newmat2_2ecpp',['newmat2.cpp',['../newmat2_8cpp.html',1,'']]],
  ['newmat3_2ecpp',['newmat3.cpp',['../newmat3_8cpp.html',1,'']]],
  ['newmat4_2ecpp',['newmat4.cpp',['../newmat4_8cpp.html',1,'']]],
  ['newmat5_2ecpp',['newmat5.cpp',['../newmat5_8cpp.html',1,'']]],
  ['newmat6_2ecpp',['newmat6.cpp',['../newmat6_8cpp.html',1,'']]],
  ['newmat7_2ecpp',['newmat7.cpp',['../newmat7_8cpp.html',1,'']]],
  ['newmat8_2ecpp',['newmat8.cpp',['../newmat8_8cpp.html',1,'']]],
  ['newmat9_2ecpp',['newmat9.cpp',['../newmat9_8cpp.html',1,'']]],
  ['newmatap_2eh',['newmatap.h',['../newmatap_8h.html',1,'']]],
  ['newmatex_2ecpp',['newmatex.cpp',['../newmatex_8cpp.html',1,'']]],
  ['newmatio_2eh',['newmatio.h',['../newmatio_8h.html',1,'']]],
  ['newmatnl_2ecpp',['newmatnl.cpp',['../newmatnl_8cpp.html',1,'']]],
  ['newmatnl_2eh',['newmatnl.h',['../newmatnl_8h.html',1,'']]],
  ['newmatrc_2eh',['newmatrc.h',['../newmatrc_8h.html',1,'']]],
  ['newmatrm_2ecpp',['newmatrm.cpp',['../newmatrm_8cpp.html',1,'']]],
  ['newmatrm_2eh',['newmatrm.h',['../newmatrm_8h.html',1,'']]],
  ['nl_5fex_2ecpp',['nl_ex.cpp',['../nl__ex_8cpp.html',1,'']]],
  ['nooptesselator_2eh',['NoopTesselator.h',['../_noop_tesselator_8h.html',1,'']]]
]
```

Definition at line 1 of file files_d.js.

30.1505 doc/html/search/files_e.js File Reference

Variables

- var searchData

30.1505.1 Variable Documentation

30.1505.1.1 var searchData

Initial value:

```
=
[
  ['objectheader_2eh',['ObjectHeader.h',['../_object_header_8h.html',1,'']]],
  ['offsetsurfaceutils_2eh',['OffsetSurfaceUtils.h',['../_offset_surface_utils_8h.html',1,'']]],
  ['orientcurves_2eh',['orientCurves.h',['../orient_curves_8h.html',1,'']]]
]
```

Definition at line 1 of file files_e.js.

30.1506 doc/html/search/files_f.js File Reference

Variables

- var searchData

30.1506.1 Variable Documentation

30.1506.1.1 var searchData

Definition at line 1 of file files_f.js.

30.1507 doc/html/search/functions_0.js File Reference

Variables

- var searchData

30.1507.1 Variable Documentation

30.1507.1.1 var searchData

Initial value:

```
=
[
  ['_5f_5fpower',['__power',['../namespacestd.html#a97b81ceb78c6f342eb91ad62ba86260f',1,'std::__power(_Tp
       __x, _Integer __n, _MonoidOperation __oper)'],['../namespacestd.html#ac866b28c409b5c4b6b613e17fd3b5c85',1,'
      std::__power(_Tp __x, _Integer __n)']]]
]
```

Definition at line 1 of file functions_0.js.

30.1508 doc/html/search/functions_1.js File Reference

Variables

- var searchData
- PrPathTriangleSeq h
- PrPathTriangleSeq int dim
- PrPathTriangleSeq int double aepsge
- PrPathTriangleSeq int double int constdir =0
- PrPathTriangleSeq int double int bool repar

30.1508.1 Variable Documentation

30.1508.1.1 PrPathTriangleSeq int double aepsge [property], [bound]

Definition at line 103 of file functions_1.js.

30.1508.1.2 PrPathTriangleSeq int double int constdir =0 [property], [bound]

Definition at line 123 of file functions_1.js.

30.1508.1.3 PrPathTriangleSeq int dim [property], [bound]

Definition at line 103 of file functions_1.js.

30.1508.1.4 PrParamUtil h

Definition at line 103 of file functions_1.js.

30.1508.1.5 PrPathTriangleSeq int double int bool repar [property],[bound]

Initial value:

```
=true)'],['../class_go_1_1_approx_surf.html#ae046f4d99fff00a02c1707e92b5053dd',1,'
      Go::ApproxSurf::ApproxSurf(shared_ptr&lt; SplineSurface &
      gt; &amp;srf, const std::vector&lt; double &gt; &amp;points, const std::vector&
      lt; double &gt; &amp;parvals, int dim, double aepsge, int
      constdir=0, bool approx_orig=false, bool close_belt=false, int nmb_stabil=0, bool
      repar=true)'],['../class_go_1_1_approx_surf.html#
      a7781c1001f19a97499b193907d693b15',1,'Go::ApproxSurf::ApproxSurf()']]],
  ['approxvolparamcurve',['approxVolParamCurve',['../namespace_go_1_1_volume_tools.html#
      aa500ad08b2e111caedb2c15ba3c6999f',1,'Go::VolumeTools']]],
  ['ar_5f1d_5fft',['ar_1d_ft',['../class_n_e_w_m_a_t_1_1_f_f_t___controller.html#
      aa2d9e1babe11e9df86986a62dd93ebac',1,'NEWMAT::FFT_Controller']]],
  ['arclength',['arcLength',['../class_go_1_1ft_curve_segment.html#
      a953153d17ea3bff870bf270c716d487d',1,'Go::ftCurveSegment::arcLength()'],['../
      class_go_1_1ft_curve.html#a054c7514fc2e82eafcbfc8e1714061ea',1,'
      Go::ftCurve::arcLength()']]],
  ['area',['area',['../class_go_1_1ft_surface.html#
      aadc67b36ef653ff7e4c09ea06456a0d0',1,'Go::ftSurface::area()'],['../
      class_go_1_1_bounded_surface.html#a351925baa7e536730663a87ea0fce006',1,'
      Go::BoundedSurface::area()'],['../
      class_go_1_1_composite_surface.html#a6a68591f99fe0ce92a8442843a6e403b',1,'
      Go::CompositeSurface::area()'],['../
      class_go_1_1_elementary_surface.html#ab20ceab1a6924addf76e0d04850de566',1,'
      Go::ElementarySurface::area()'],['../
      class_go_1_1_param_surface.html#a0417c918e78108fb3a22f969fcc0498a',1,'
      Go::ParamSurface::area()'],['../
      class_go_1_1_spline_surface.html#ab0e8c17c1d43ddab2fd56ee045c2c183',1,'
      Go::SplineSurface::area()'],['../
      class_go_1_1_surface_of_linear_extrusion.html#
      af7839cc0ddb64b5033ae98b733e0ea14',1,'Go::SurfaceOfLinearExtrusion::area()'],['../
      class_go_1_1_surface_of_revolution.html#a6b877c9c54faa2f1fec69be7d303118c
      ',1,'Go::SurfaceOfRevolution::area()'],['../
      class_go_1_1_element2_d.html#a2321c59da3c5c143cfb2ccca7b791dbf',1,'
      Go::Element2D::area()'],['../class_go_1_1_l_r_spline_surface
      .html#aab242113dae866aa4e4abf04dfc8dc85',1,'Go::LRSplineSurface::area()'],['../
      class_go_1_1_surface_on_volume.html#ad16e1c297d24c01995f1c407a4f6d418',1,'
      Go::SurfaceOnVolume::area()'],['../namespace_go.html#
      a8cc8f744af2fc5541e493ffdd3d2e1f5',1,'Go::area(const Array&lt; T, 2 &gt; *c)'],['../
      namespace_go.html#a04f0f159a17bcc67285bb7349debd945',1,'Go::area(const Array&
      lt; T, 3 &gt; *c)'],['../_pr_param_util_8h.html#a88d3831b85d9d3912354527e5fe6d73c',1,'
      area(const double &amp;x0, const double &amp;y0, const double &amp;x1, const double &
      amp;y1, const double &amp;x2, const double &amp;y2): 
```

Definition at line 123 of file functions_1.js.

30.1508.1.6 var searchData

Definition at line 1 of file functions_1.js.

30.1509 doc/html/search/functions_10.js File Reference

Variables

- var searchData
- sisIP h

30.1509.1 Variable Documentation

30.1509.1.1 sisIP h

Definition at line 67 of file functions_10.js.

30.1509.1.2 var searchData

Definition at line 1 of file functions_10.js.

30.1510 doc/html/search/functions_11.js File Reference

Variables

- var searchData
- hholder cpp

30.1510.1 Variable Documentation

30.1510.1.1 hholder cpp

Definition at line 3 of file functions_11.js.

30.1510.1.2 var searchData

Initial value:

```
=
[
  ['qrz',['QRZ',['../namespace_n_e_w_m_a_t.html#ae1eac58bd06f44ae7f02b39163b2fd80',1,'NEWMAT::QRZ(Matrix
      &amp;, UpperTriangularMatrix &amp;)'],['../namespace_n_e_w_m_a_t.html#a3786173220a9e54601def50dc380b32f',1,'
     NEWMAT::QRZ(const Matrix &amp;, Matrix &amp;, Matrix &amp;)'],['
     ../hholder_8cpp.html#abf43bc890b60a01fda0c7db9631bcf64',1,'QRZ(Matrix &amp;X, UpperTriangularMatrix &amp;U): 
```

Definition at line 1 of file functions_11.js.

30.1511 doc/html/search/functions_12.js File Reference

Variables

- var searchData
- gl_aux cpp

30.1511.1 Variable Documentation

30.1511.1.1 gl_aux cpp

Definition at line 17 of file functions_12.js.

30.1511.1.2 var searchData

Initial value:

```
=
[
  ['r1_5fr1',['R1_R1',['../class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a278e42bea46cadb3e7579f8357975e34',1,
      'RBD_COMMON::R1_R1']]],
  ['radialedges',['radialEdges',['../class_go_1_1ft_volume.html#aef559a6497b829cf31faae6942263d97',1,'
      Go::ftVolume']]],
  ['radius',['radius',['../class_go_1_1_cylinder_int.html#a4493b91edd175e4166b7ab07a9b35c2c',1,'
      Go::CylinderInt::radius()'],['../class_go_1_1_sphere_int.html#abb8450f4ca8990149d73b1eea2f3015d',1,'
      Go::SphereInt::radius()']]],
  ['radix',['Radix',['
      ../class_n_e_w_m_a_t_1_1_floating_point_precision.html#afb7383880d8bbd99bab8e25e3758aa7f',1,'NEWMAT::FloatingPrecis
  ['raiseorder',['raiseOrder',['../class_go_1_1_spline_curve.html#a53bcb9a51debc1441a4008cadb904dc2',1,'
      Go::SplineCurve::raiseOrder()'],['../class_go_1_1_spline_surface.html#a58f9393ed2771ce6167c4504a9df80e8',1,'
      Go::SplineSurface::raiseOrder()'],['../class_go_1_1_spline_volume.html#a306ad4a1f5ab97ab1087360331a51a26',1,'
      Go::SplineVolume::raiseOrder()']]],
  ['range_5ferror',['Range_error',['
      ../class_r_b_d___c_o_m_m_o_n_1_1_range__error.html#a8bc12b7074abb363df50ddbd82c1c9db',1,'RBD_COMMON::Range_error']]],
  ['rational',['rational',['../class_go_1_1_spline_curve.html#a243012e5d6b527a0e87cc07c6eac9378',1,'
      Go::SplineCurve::rational()'],['../class_go_1_1_spline_surface.html#a1cccecbf7d23b89a446af7698aebcacd',1,'
      Go::SplineSurface::rational()'],['../class_go_1_1_1_r_b_spline2_d.html#aae5e8bd36f5897c2dff2b334d342a54f',1,'
      Go::LRBSpline2D::rational()'],['../class_go_1_1_1_r_spline_surface.html#a03a776aacbe1428771bf0f88ca8d2f38',1,'
      Go::LRSplineSurface::rational()'],['../class_go_1_1_spline_volume.html#a094ddc31cbdcdede328579dc81de6ef6',1,'
      Go::SplineVolume::rational()'],['../class_go_1_1_rational.html#a986b1722c95bc708600cfc0114e0451a',1,'
      Go::Rational::Rational()'],['../class_go_1_1_rational.html#acadf8909244c77f7bb16036cd69d0700',1,'
      Go::Rational::Rational(int p)'],['../class_go_1_1_rational.html#a2bd8648917321cbfa7bb8b04279b582a',1,'Go::Rational::Rati
       int q)']]],
  ['raw',['raw',['../classvector3t.html#a9e486673106c5e00b4a50b7a9699082c',1,'vector3t']]],
  ['rawdata',['rawData',['../class_go_1_1_line_cloud.html#a3430f9f2b895c270e16190bdcc361a60',1,'
      Go::LineCloud::rawData()'],['../class_go_1_1_point_cloud.html#aeb184284d03948126f32911f9bc18300',1,'
      Go::PointCloud::rawData()'],['../class_go_1_1_point_cloud.html#a8d46240635ff22b7c3317c8a220a8eee',1,'Go::PointCloud::raw
       const '],['../class_go_1_1_rect_grid.html#a2228c05541484aeec6f376769db48a3f',1,'Go::RectGrid::rawData()'],['
      ../class_go_1_1_rect_grid.html#a8838e86fa3c332093ed997b3233b7102',1,'Go::RectGrid::rawData() const ']]],
  ['rawregistration',['rawRegistration',['../namespace_go.html#aac556b609d575079c24b6f3d3b768298',1,'Go']]]
      ,
  ['rcoefs_5fbegin',['rcoefs_begin',['../class_go_1_1_spline_curve.html#aafe4f32a475ec2d3aadf5d639a7ef8ca',
      1,'Go::SplineCurve::rcoefs_begin()'],['../class_go_1_1_spline_curve.html#a180d33d6fbf4c6f6fc258a40c16a3c19',
      1,'Go::SplineCurve::rcoefs_begin() const '],['
      ../class_go_1_1_spline_surface.html#a187f0d825f895dfa7c60f82c12156c4b',1,'Go::SplineSurface::rcoefs_begin()'],['
      ../class_go_1_1_spline_surface.html#ae1e69cbb383f4ec9e60e3f70fec6ed9c',1,'Go::SplineSurface::rcoefs_begin() const '],['
      ../class_go_1_1_spline_volume.html#a143461b2f89077c804bd5a5b81632714',1,'Go::SplineVolume::rcoefs_begin()'],['
      ../class_go_1_1_spline_volume.html#ab43772480d569bf1cb88e57490ffa11a',1,'Go::SplineVolume::rcoefs_begin() const ']]],
  ['rcoefs_5fend',['rcoefs_end',['../class_go_1_1_spline_curve.html#a0cec811f2d8121d2c89c280ba85efeec',1,'
      Go::SplineCurve::rcoefs_end()'],['../class_go_1_1_spline_curve.html#a0074323f14b7204e29b3263f0b13efc0',1,'
      Go::SplineCurve::rcoefs_end() const '],['../class_go_1_1_spline_surface.html#a5cb25201024ac7baa784358b3c8722bc'
      ,1,'Go::SplineSurface::rcoefs_end()'],['
      ../class_go_1_1_spline_surface.html#ab996b487c4746f2db272058be07fb52f',1,'Go::SplineSurface::rcoefs_end() const '],['
      ../class_go_1_1_spline_volume.html#a7d00b9d0862c03d1f5fc31948d9c5541',1,'Go::SplineVolume::rcoefs_end()'],['
      ../class_go_1_1_spline_volume.html#a6709620910ecd8c61bd990b0fc1a29d9',1,'Go::SplineVolume::rcoefs_end() const ']]],
  ['read',['read',['../class_go_1_1_bounded_curve.html#a3147ca8c72df42d4e2359b348dbc7803',1,'
      Go::BoundedCurve::read()'],['../class_go_1_1_bounded_surface.html#af40eb854cff758a1d69452c5fa7b046c',1,'
      Go::BoundedSurface::read(std::istream &amp;is)'],['../class_go_1_1_bounded_surface.html#a48659c768ba2ac439808ed09f997c40
      Go::BoundedSurface::read(std::istream &amp;is, bool fix_trim_cvs)'],['
      ../class_go_1_1_bspline_basis.html#a15751c6a8b9182e0a1f0dabe92af5643',1,'Go::BsplineBasis::read()'],['
      ../class_go_1_1_circle.html#a561b41187108e9b309d38f8241168a60',1,'Go::Circle::read()'],['
      ../class_go_1_1_composite_surface.html#af754175964543cbfa6ba6b1cd2ec94ec',1,'Go::CompositeSurface::read()'],['../class_g
      1,'Go::Cone::read()'],['../class_go_1_1_curve_on_surface.html#a87c10a0b1dea3892d3c5bcf8bb48f6ca',1,'
      Go::CurveOnSurface::read()'],['../class_go_1_1_cylinder.html#a0ab5b3d9f2b85fb8c24bcc7716739cb7',1,'
      Go::Cylinder::read()'],['../class_go_1_1_disc.html#a1e0d28eafc4fa5b62179b8076d1e60c8',1,'Go::Disc::read()'],['
      ../class_go_1_1_ellipse.html#a14658f7ce525fb91719c53ddc23f7145',1,'Go::Ellipse::read()'],['
      ../class_go_1_1_hyperbola.html#a4e5bcc0aeb7aa02730a57e8e9419eb90',1,'Go::Hyperbola::read()'],['
      ../class_go_1_1_line.html#a97b0741988ff9650df11191dfb1fc770',1,'Go::Line::read()'],['../class_go_1_1_line_cloud.html#a3
      ,'Go::LineCloud::read()'],['../class_go_1_1_object_header.html#a40795d9e4fa51548dfe133befd6085ac',1,'
      Go::ObjectHeader::read()'],['../class_go_1_1_parabola.html#ace279c2aa49604f4566605f9eceff9ea',1,'
      Go::Parabola::read()'],['../class_go_1_1_plane.html#a985561bf7b890544a1492d2e9dfa1262',1,'Go::Plane::read()'],['
      ../class_go_1_1_point_cloud.html#afc7e14c4ab1b7b37ec56314124a28d18',1,'Go::PointCloud::read()'],['
      ../class_go_1_1_rect_grid.html#ab674ee685f79f10cbf7513391c7b138f',1,'Go::RectGrid::read()'],['
      ../class_go_1_1_sphere.html#a6e8eed759544a2edd93421b797ad3782',1,'Go::Sphere::read()'],['
      ../class_go_1_1_spline_curve.html#a30aec6770815b9cc7aeb61fcd5d2a746',1,'Go::SplineCurve::read()'],['
      ../class_go_1_1_spline_surface.html#a9dfb256575fe82b1b472430672a29883',1,'Go::SplineSurface::read()'],['../class_go_1_1
      'Go::Streamable::read()'],['
      ../class_go_1_1_surface_of_linear_extrusion.html#a254286b8407ee48209ad91e70bc8607f',1,'Go::SurfaceOfLinearExtrusion::rea
      ../class_go_1_1_surface_of_revolution.html#a9d608e73a1b0e974dbad7078a1ac9020',1,'Go::SurfaceOfRevolution::read()'],['
      ../class_go_1_1_torus.html#a1cbf7eca85e957f0479938079b7f1f07',1,'Go::Torus::read()'],['../class_go_1_1_array.html#a19cee
      Go::Array::read()'],['../class_go_1_1_bary_coord_system.html#a91eb73692e0ae0c157e5aa749a3352bd',1,'
      Go::BaryCoordSystem::read()'],['../class_go_1_1_bounding_box.html#a357abf9122958f6d747d55883cf74277',1,'
      Go::BoundingBox::read()'],['../class_go_1_1_composite_box.html#a963b13d6cb9266e8c9c0c05117869b85',1,'Go::CompositeBox::r
      ['../class_go_1_1_direction_cone.html#a41d9c682879fec0ab8efae60c8b999e7',1,'Go::DirectionCone::read()'],['
      ../class_go_1_1_point.html#ac4306540b18e7ad1f7059c3370b17c83',1,'Go::Point::read()'],['
      ../class_go_1_1_bernstein_multi.html#a7767c00e78e5e2ad5a0be24b605a2583',1,'Go::BernsteinMulti::read()'],['
      ../class_go_1_1_bernstein_poly.html#a64c8fff3352f3958366b142e4edaaaa9',1,'Go::BernsteinPoly::read()'],['
```

```
      ../class_go_1_1_bernstein_tetrahedral_poly.html#af758b9a9c83aff8bd5c5f98906ddfb66',1,'Go::BernsteinTetrahedralPoly::read
      ../class_go_1_1_bernstein_triangular_poly.html#addef2d12c934d32868035bbbe005c948',1,'
      Go::BernsteinTriangularPoly::read()'],['../class_go_1_1_cylinder_int.html#ab9916e69cd910d06ad5f05b9f780c8fe',1,'Go::Cyl
      ../class_go_1_1_geo_tol.html#a9273319186522ead8f717dae87ae9b1f',1,'Go::GeoTol::read()'],['
      ../class_go_1_1_interpolated_intersection_curve.html#a91bc2564d6bc1f840f451e9850dcae5f',1,'
      Go::InterpolatedIntersectionCurve::read()'],['../class_go_1_1_intersection_point.html#a37f273cf45131cb1fb650d7e434e163f
      Go::IntersectionPoint::read()'],['../class_go_1_1_plane_int.html#affbfeab5d401db79d65ef540646358ce',1,'Go::PlaneInt::rea
      ../class_go_1_1_sphere_int.html#a0bfbff9d7fd3639303e1deb0fda46d57',1,'Go::SphereInt::read()'],['
      ../class_go_1_1_l_r_b_spline2_d.html#a7e31a499ff5b658193b8cdeaa7b5657d',1,'Go::LRBSpline2D::read()'],['
      ../class_go_1_1_l_r_spline_surface.html#a55061b561c5706ba922d2d9de3f5d4c1',1,'Go::LRSplineSurface::read()'],['
      ../class_go_1_1_mesh2_d.html#aac6ae2f050d06a1632e21a1297ccc3cb',1,'Go::Mesh2D::read()'],['
      ../class_pr_mat.html#a137fb40cee88e91211c2df1a90a0e62c',1,'PrMat::read()'],['../class_pr_matrix.html#afb99ca11e79ef2180
      PrMatrix::read()'],['../class_pr_mat_sparse.html#a6ae00848a5bb4eee4b6cc0460ec09721',1,'PrMatSparse::read()'],[
      '../class_pr_vec.html#a5bfbbe99e8a711b5d93908f4ce3255d8',1,'PrVec::read()'],['
      ../class_go_1_1_cone_volume.html#aace95efa8527024bd752680e37e92a9c',1,'Go::ConeVolume::read()'],['
      ../class_go_1_1_curve_on_volume.html#a791ab5ec72d311be1633713252faa70d',1,'Go::CurveOnVolume::read()'],['
      ../class_go_1_1_cylinder_volume.html#a065b3bab47de82c643de7ec5cb0f9f23',1,'Go::CylinderVolume::read()'],['
      ../class_go_1_1_parallelepiped.html#ada24cffb4496199778e5371de67f716a',1,'Go::Parallelepiped::read()'],['
      ../class_go_1_1_sphere_volume.html#a5c808dfd3cdab6319034a20cdc0b286b',1,'Go::SphereVolume::read()'],['
      ../class_go_1_1_spline_volume.html#a3b02ceb3c1f8cbb4aca26a1ab1e17a8c',1,'Go::SplineVolume::read()'],['
      ../class_go_1_1_surface_on_volume.html#a432a8cb6e45c46e05f3a2d7f202366c7',1,'Go::SurfaceOnVolume::read()'],['
      ../class_go_1_1_torus_volume.html#a1257580f5c26ae9ee6378065bbcf9bb3',1,'Go::TorusVolume::read()']]],
  ['read_5fbin',['read_bin',['../class_go_1_1_bspline_basis.html#a3e7de9080ad961e3f397ad1ed6bbb8fe',1,'
      Go::BsplineBasis']]],
  ['read_5fgl_5fmatrices',['read_gl_matrices',['../gl__aux_8h.html#aabb2eae1c53cf1b829442db5524cd900',1,'
      read_gl_matrices(FILE *f): 
```

Definition at line 1 of file functions_12.js.

30.1512 doc/html/search/functions_13.js File Reference

Variables

- var searchData
- sisl h

30.1512.1 Variable Documentation

30.1512.1.1 sisl h

Definition at line 3 of file functions_13.js.

30.1512.1.2 var searchData

Initial value:

```
=
[
  ['s1001',['s1001',['../sisl_8h.html#a1d7b3b4fe11df91a4b23bdd6995fda11',1,'s1001(): 
```

Definition at line 1 of file functions_13.js.

30.1513 doc/html/search/functions_14.js File Reference

Variables

- var searchData
- PrParamUtil h
- PrParamUtil std::vector & lt
- GeneralMesh & gt
- & amp
- meshes const

30.1513.1 Variable Documentation

30.1513.1.1 & amp

Definition at line 18 of file functions_14.js.

30.1513.1.2 meshes const

Initial value:

```
=0'],['../class_go_1_1_composite_model.html#a1546764e88cba9c13fa2bea819e9fe2c'
      ,1,'Go::CompositeModel::tesselate(double density, std::vector&
      lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const =0'],['../
      class_go_1_1_curve_model.html#a5aa6f99880fd5126485b39a59932a30f',1,'
      Go::CurveModel::tesselate(std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &
      amp;meshes) const '],['../class_go_1_1_curve_model.html#
      a2cc71ae48a6d1024c8779c1fde08eb80',1,'Go::CurveModel::tesselate(int resolution[], std::vector&lt;
      shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const '],['../
      class_go_1_1_curve_model.html#a13361c5bf5d010aa4da56ae5569070e0',1,'
      Go::CurveModel::tesselate(double density, std::vector&lt; shared_ptr&lt;
      GeneralMesh &gt; &gt; &amp;meshes) const '],['../class_go_1_1ft_curve_segment.html#
      ad3a6be9011d0466686c7095dd6e54f85',1,'Go::ftCurveSegment::tesselate()'],['../
      class_go_1_1ft_curve.html#a3fa46cd0cd1b6301996463d9fc95589c',1,'
      Go::ftCurve::tesselate(std::vector&lt; shared_ptr&lt; LineStrip &
      gt; &gt; &amp;meshes) const '],['../class_go_1_1ft_curve.html#
      a2305a44a658989280b9877ac04600a19',1,'Go::ftCurve::tesselate(int resolution, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes) const '],['../class_go_1_1ft_curve.html#
      af4679709df9d47b8f07fb7dbf82737b5',1,'Go::ftCurve::tesselate(double density, std::vector&lt;
      shared_ptr&lt; LineStrip &gt; &gt; &amp;meshes) const '],['../
      class_go_1_1_int_results_comp_cv.html#a0a2c6122f9a871bf7b9666d2e0ad2a2f',1,
      'Go::IntResultsCompCv::tesselate(std::vector&lt; shared_ptr&lt; LineStrip &gt
      ; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_int_results_comp_cv.html#aaa85f9ea710d6c6700b49456212c73ba',1,
      'Go::IntResultsCompCv::tesselate(int resolution, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_int_results_comp_cv.html#a679437896e0247ae64a4375234f1e270',1,
      'Go::IntResultsCompCv::tesselate(double density, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_int_results_model.html#af758fa08a1d9a2e291102486e4029128',1,'
      Go::IntResultsModel::tesselate(std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const =0'],['../
      class_go_1_1_int_results_model.html#a5cba20336f32b65cfd840edbf8f46bbd',1,'
      Go::IntResultsModel::tesselate(int resolution, std::vector&lt; shared_ptr&lt;
       LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const =0'],['../
      class_go_1_1_int_results_model.html#aa65af6225021c30ea430fc9287191cd9',1,'
      Go::IntResultsModel::tesselate(double density, std::vector&lt; shared_ptr&
      lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const =0'],['../
      class_go_1_1_int_results_sf_model.html#ab7833b7cdf1ab93b3635e2d68cea77e4'
      ,1,'Go::IntResultsSfModel::tesselate(std::vector&lt; shared_ptr&lt; LineStrip
       &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_int_results_sf_model.html#a0482f111c47cb1d5aa53dd87f7fa59f5'
      ,1,'Go::IntResultsSfModel::tesselate(int resolution, std::vector&lt;
      shared_ptr&lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_int_results_sf_model.html#a9f75cafb391badc9153f52c01393e207'
      ,1,'Go::IntResultsSfModel::tesselate(double density, std::vector&lt;
      shared_ptr&lt; LineStrip &gt; &gt; &amp;meshes, PointCloud3D &amp;points) const '],['../
      class_go_1_1_surface_model.html#a499dcd53fc489e79193ec08a40000321',1,'
```

```
    Go::SurfaceModel::tesselate(std::vector&lt; shared_ptr&
    lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
    class_go_1_1_surface_model.html#a0cfa68b53d7d7ba43270ac0370434da2’,1,’
    Go::SurfaceModel::tesselate(int uv_res, std::vector&lt; shared_ptr&lt;
    GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../class_go_1_1_surface_model.html#
    a388420dafc3080e6681f70b8eb0d4f33’,1,’Go::SurfaceModel::tesselate(int resolution[],
    std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
    class_go_1_1_surface_model.html#ac0c7f814bd5bbba9a376c490f0f06a85’,1,’
    Go::SurfaceModel::tesselate(double density, std::vector&lt; shared_ptr&lt;
    GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../class_go_1_1_surface_model.html#
    ad71862c93633533cf9b92fd3999c512c’,1,’Go::SurfaceModel::tesselate(const std::vector&lt;
     shared_ptr&lt; ftFaceBase &gt; &gt; &amp;faces, int uv_res, std::vector&
    lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
    class_go_1_1_surface_model.html#ab8a38d3b31d12e3db759bc29328dbcb9’,1,’
    Go::SurfaceModel::tesselate(const std::vector&lt; shared_ptr&lt; ftFaceBase &gt;
     &gt; &amp;faces, int resolution[], std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const
    ’],[’../class_go_1_1_surface_model.html#a2ffe542d114f0ae72313b5f99fd2b3d9’,1,’
    Go::SurfaceModel::tesselate(const std::vector&lt; shared_ptr&
    lt; ftFaceBase &gt; &gt; &amp;faces, double density, std::vector&lt; shared_ptr&
    lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
    class_go_1_1_curve_tesselator.html#a2903e0b478f9c9bc52de4b78a2e58554’,1,’
    Go::CurveTesselator::tesselate()’],[’../
    class_go_1_1_line_cloud_tesselator.html#a741142d2fb183073f3999edbd0987490
    ’,1,’Go::LineCloudTesselator::tesselate()’],[’../
    class_go_1_1_noop_tesselator.html#a098bad44d4975404a9ecbf097a895423’,1,’
    Go::NoopTesselator::tesselate()’],[’../
    class_go_1_1_parametric_surface_tesselator.html#
    af0a157fa8039d15ed49d25eccf1d6d8b’,1,’Go::ParametricSurfaceTesselator::tesselate()’
    ],[’../class_go_1_1_rectangular_surface_tesselator.html#
    a98bc65dc65f847c17602033717c41843’,1,’Go::RectangularSurfaceTesselator::tesselate
    ()’],[’../class_go_1_1_rect_grid_tesselator.html#
    a37c7dac1717250aae0fe930161e4406b’,1,’Go::RectGridTesselator::tesselate()’],[’../
    class_go_1_1_tesselator.html#ac990c28ea9a36e37b26edd30cc523ac3’,1,’
    Go::Tesselator::tesselate()’],[’../
    class_go_1_1_rectangular_volume_tesselator.html#
    a81d00516682f244ebac9097b6de6da78’,1,’Go::RectangularVolumeTesselator::tesselate()’
    ],[’../class_go_1_1_volume_model.html#afc3da8a531cbd1a8e65853e2933abe00’,1,’
    Go::VolumeModel::tesselate(std::vector&lt; shared_ptr&
    lt; GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../
    class_go_1_1_volume_model.html#aeaf65bfbaa2e8f5a66fc0b23630861b3’,1,’
    Go::VolumeModel::tesselate(int resolution[], std::vector&lt; shared_ptr&lt;
    GeneralMesh &gt; &gt; &amp;meshes) const ’],[’../class_go_1_1_volume_model.html#
    a3e034d7fa26dd97bb9cb8733e50c82c8’,1,’Go::VolumeModel::tesselate(double density,
    std::vector&lt; shared_ptr&lt; GeneralMesh &gt; &gt; &amp;meshes) const ’]]],
[’tesselatedctrpolygon’,[’tesselatedCtrPolygon’,[’../
    class_go_1_1_composite_curve.html#accf52036d9edefe396c90df496e8ea2e’,1,’
    Go::CompositeCurve::tesselatedCtrPolygon(std::vector&lt; shared_ptr
    &lt; LineCloud &gt; &gt; &amp;ctr_pol) const ’],[’../class_go_1_1_composite_curve
    .html#a98d7786acc00fe2d2b642beaff493324’,1,’
    Go::CompositeCurve::tesselatedCtrPolygon(const std::vector&lt;
    shared_ptr&lt; ParamCurve &gt; &gt; &amp;curves, std::vector&lt; shared_ptr&
    lt; LineCloud &gt; &gt; &amp;ctr_pol) const ’],[’../
    class_go_1_1_composite_model.html#a60e568eb9b8531f2bc5de60acb9d8fd7’,1,’
    Go::CompositeModel::tesselatedCtrPolygon()’],[’../
    class_go_1_1_curve_model.html#a0bc9f19a78ec7aaac8b655ea7e25bc7b’,1,’
    Go::CurveModel::tesselatedCtrPolygon()’],[’../
    class_go_1_1_surface_model.html#a42d3923e99fa793ca34de335767c53f1’,1,’
    Go::SurfaceModel::tesselatedCtrPolygon(std::vector&lt; shared_ptr&
    lt; LineCloud &gt; &gt; &amp;ctr_pol) const ’],[’../
    class_go_1_1_surface_model.html#a81fc1beb1ddd467c6fd34f44a4351938’,1,’
    Go::SurfaceModel::tesselatedCtrPolygon(const std::vector&lt;
    shared_ptr&lt; ftFaceBase &gt; &gt; &amp;faces, std::vector&lt; shared_ptr&lt; LineCloud &gt; &gt; &amp;ctr_pol)
    const ’],[’../class_go_1_1_volume_model.html#ad7cfeb7a9a77a4f4d1d40e7aedef0de3’,1,’
    Go::VolumeModel::tesselatedCtrPolygon()’]]],
[’tesselator’,[’tesselator’,[’../class_data_handler.html#
    ab7caedcbf1e13f7456ce14b84c3b6789’,1,’DataHandler::tesselator()’],[’../classgv_data.html#
    a56fb6a11bc06f0998bd20a67a9274836’,1,’gvData::tesselator()’]]],
[’test1’,[’test1’,[’../example_8cpp.html#ac0697ad85fb379446222fcc2df02c778’,1,’
    example.cpp’]]],
[’test2’,[’test2’,[’../example_8cpp.html#ac7865afb3b9f6d710b1df18e501c94d6’,1,’
    example.cpp’]]],
[’test3’,[’test3’,[’../example_8cpp.html#a727a32bdd7e2491824ca4acd62be9b1a’,1,’
    example.cpp’]]],
[’test4’,[’test4’,[’../example_8cpp.html#acd897830273f9673b3894e831ceb3423’,1,’
    example.cpp’]]],
[’test5’,[’test5’,[’../example_8cpp.html#aad4ba83ae697b892cf4711aa7170c1f3’,1,’
    example.cpp’]]],
[’test_5fcyclic_5fknots’,[’test_cyclic_knots’,[’../sisl_p_8h.html#
    aac1f746eeb564d7f5eb39e1c36b5b6d0’,1,’test_cyclic_knots(): 
```


Definition at line 18 of file functions_14.js.

30.1513.1.3 & gt

Definition at line 18 of file functions_14.js.

30.1513.1.4 sisIP h

Definition at line 13 of file functions_14.js.

30.1513.1.5 shared_ptr& lt

Definition at line 13 of file functions_14.js.

30.1513.1.6 var searchData

Initial value:

```
=
[
  ['t',['t',['../class_n_e_w_m_a_t_1_1_matrix_type.html#a87734af76e2bd752f88e7b4976b52bbb',1,'
      NEWMAT::MatrixType::t()'],['../class_n_e_w_m_a_t_1_1_matrix_band_width.html#a9282c4ccc63ddeadc55483508c5c2794',1,'
      NEWMAT::MatrixBandWidth::t()'],['../class_n_e_w_m_a_t_1_1_base_matrix.html#a9b2e4b5ac85906a6c0007c40df340b33',1,'
      NEWMAT::BaseMatrix::t()']]],
  ['t1',['t1',['../class_pr_triangle.html#a3c5e90139c8ad3fe42bf807f5a68b7ba',1,'PrTriangle::t1() const '],[
      '../class_pr_triangle.html#a3b7f193f51f1ba9aceeeae8d414f1d3a',1,'PrTriangle::t1()']]],
  ['t2',['t2',['../class_pr_triangle.html#a3b4affb990eb31ec311069ee83b5b01b',1,'PrTriangle::t2() const '],[
      '../class_pr_triangle.html#a41d3422b3e374cba8ed081021eb43fa7',1,'PrTriangle::t2()']]],
  ['t3',['t3',['../class_pr_triangle.html#a9aa253de3e236af87f94b8dc5c5cf19f',1,'PrTriangle::t3() const '],[
      '../class_pr_triangle.html#ac1063043a62da70ab3a33dfad452e1f2',1,'PrTriangle::t3()']]],
  ['tag',['Tag',['../class_n_e_w_m_a_t_1_1_general_matrix.html#ac86f41d9beeda0ba938e8f777167bf47',1,'
      NEWMAT::GeneralMatrix']]],
  ['tangent',['tangent',['../class_go_1_1ft_curve_segment.html#ad3cf5a26861e7ed344ccf146e59d0457',1,'
      Go::ftCurveSegment::tangent()'],['../class_go_1_1ft_curve.html#af97541ce68c9b3a6769d16d38b09267c',1,'
      Go::ftCurve::tangent()'],['../class_go_1_1ft_edge.html#a62badabe1bae46b1ba238ead31889f51',1,'Go::ftEdge::tangent()'],['
      ../class_go_1_1ft_edge_base.html#aed5b154957fdd7a97df9726053c32eef',1,'Go::ftEdgeBase::tangent()'],['
      ../class_go_1_1ft_s_sf_edge.html#aec5af9042c2a159c2b8dce97f88eb4ad',1,'Go::ftSSfEdge::tangent()'],['
      ../class_go_1_1tp_edge.html#ad854b7324cfe2d5ef2edc4342d97c267',1,'Go::tpEdge::tangent()']]],
  ['tangentcone',['tangentCone',['../class_go_1_1_bounded_surface.html#ac311070548b96d789d21758e5ee7ec88',1
      ,'Go::BoundedSurface::tangentCone()'],['
      ../class_go_1_1_composite_surface.html#a9bfe05b31ca0bab1be6adb707586a18f',1,'Go::CompositeSurface::tangentCone()'],['../
      ',1,'Go::Cone::tangentCone()'],['../class_go_1_1_cylinder.html#a583676f3507e5b9e5cb8d3cd9f2772f0',1,'
      Go::Cylinder::tangentCone()'],['../class_go_1_1_disc.html#afa7b3943b053c0a274af05b8d5284cc9',1,'
      Go::Disc::tangentCone()'],['../class_go_1_1_param_surface.html#a0892308334265519c050b32f050e065e',1,'
      Go::ParamSurface::tangentCone()'],['../class_go_1_1_plane.html#a08c1d6807c5866963922e8265393fa62',1,'Go::Plane::tangentC
      ../class_go_1_1_sphere.html#a3f02936582bc72857d2af3b1b9962c63',1,'Go::Sphere::tangentCone()'],['
      ../class_go_1_1_spline_surface.html#ac4f32c873766da700a3f78ebf5d95c37',1,'Go::SplineSurface::tangentCone()'],['
      ../class_go_1_1_surface_of_linear_extrusion.html#ac9cf10e65169359291347f3569eeadb2',1,'
      Go::SurfaceOfLinearExtrusion::tangentCone()'],['../class_go_1_1_surface_of_revolution.html#a07bc005c7579121b29e4ef1e0ed3
      Go::SurfaceOfRevolution::tangentCone()'],['../class_go_1_1_torus.html#ac8849f0b6a5a7083c8286ebf83d8346f',1,'
      Go::Torus::tangentCone()'],['../class_go_1_1_l_r_spline_surface.html#acde98e9907ecaa6b5ba085540f50db94',1,'
      Go::LRSplineSurface::tangentCone()'],['../class_go_1_1_cone_volume.html#a1f7d1a81eae6e98a3422a2320aa932bd',1,'
      Go::ConeVolume::tangentCone()'],['../class_go_1_1_cylinder_volume.html#a4d5146512b6324e7616b54c3c7fb3a51',1,'
      Go::CylinderVolume::tangentCone()'],['../class_go_1_1_parallelepiped.html#a65b0a65033c8c65f6a2884fe2e6a11ca',1,'
      Go::Parallelepiped::tangentCone()'],['../class_go_1_1_param_volume.html#af5b51bc450da49f76b73f038618a57b6',1,'
      Go::ParamVolume::tangentCone()'],['../class_go_1_1_sphere_volume.html#a6f5a787cfa1abfd98de924e4dc36f262',1,'
      Go::SphereVolume::tangentCone()'],['../class_go_1_1_spline_volume.html#ac01dec30b44329e7cc9d97a02f9c85d7',1,'
      Go::SplineVolume::tangentCone()'],['../class_go_1_1_surface_on_volume.html#a346db16aaa51c7e3cf525d4f4918bc2d',1,
      'Go::SurfaceOnVolume::tangentCone()'],['../class_go_1_1_torus_volume.html#a4e5d384ca79038f368e5f447959407c2'
      ,1,'Go::TorusVolume::tangentCone()']]],
  ['tangentisoriented',['tangentIsOriented',['
      ../class_go_1_1_intersection_point.html#a6de8bbeb86de15714906fb08e8469a27',1,'Go::IntersectionPoint']]],
  ['tangentpointinginwards',['tangentPointingInwards',['
      ../class_go_1_1_intersection_point.html#a7d2d0f72efc426b982994f0355860fda',1,'Go::IntersectionPoint']]],
  ['tanlenfromradius',['tanLenFromRadius',['../namespace_go.html#a87059cc6cddba0b64ae502b9c4d52a52',1,'Go']
      ]],
  ['tanthetaovertwo',['tanThetaOverTwo',['
      ../class_pr_prm_sym_mean_value.html#a9f07830f6d01f9430204d6b090da8823',1,'PrPrmSymMeanValue::tanThetaOverTwo()'],['
      ../class_pr_prm_wachspress.html#a3b09c67987bea5e0a6f2ac95755ca258',1,'PrPrmWachspress::tanThetaOverTwo()'],['
      ../_pr_param_util_8h.html#acf689ef17a246312b527f1c2b8fa1266',1,'tanThetaOverTwo(): 
```

Definition at line 1 of file functions_14.js.

30.1514 doc/html/search/functions_15.js File Reference

Variables

- var searchData

30.1514.1 Variable Documentation

30.1514.1.1 var searchData

Definition at line 1 of file functions_15.js.

30.1515 doc/html/search/functions_16.js File Reference

Variables

- var searchData

30.1515.1 Variable Documentation

30.1515.1.1 var searchData

Definition at line 1 of file functions_16.js.

30.1516 doc/html/search/functions_17.js File Reference

Variables

- var searchData
- gl_aux cpp

30.1516.1 Variable Documentation

30.1516.1.1 gl_aux cpp

Definition at line 21 of file functions_17.js.

30.1516.1.2 var searchData

Initial value:

```
=
[
  ['weakly_5fdecreasing',['weakly_decreasing',['../namespace_go.html#a9ef55b273f5d603669d73063e84a435c',1,'
      Go::weakly_decreasing(Iterator begin, Iterator end)'],['
      ../namespace_go.html#af88f2fc0b462e4d9bf12c1361cd362ec',1,'Go::weakly_decreasing(const Array &amp;amp;A)']]],
  ['weakly_5fincreasing',['weakly_increasing',['../namespace_go.html#af16aaec72dabb981744e338aef8c9748',1,'
      Go::weakly_increasing(Iterator begin, Iterator end)'],['
      ../namespace_go.html#ad520388adbe4b3719116f02ba3be0145',1,'Go::weakly_increasing(const Array &amp;amp;A)']]],
  ['weedoutclutterpoints',['weedOutClutterPoints',['
      ../class_go_1_1_intersection_pool.html#a7fa1a9d9968caefa52bb731b2b461451',1,'Go::IntersectionPool']]],
  ['weight',['weight',['../class_go_1_1_l_r_b_spline2_d.html#aab4dc5282223c9bd0d6a3e9ee255fcf2',1,'
      Go::LRBSpline2D::weight()'],['../class_go_1_1_l_r_b_spline2_d.html#a51952c9c7d4f2333392d465f8eaeddeb',1,'
      Go::LRBSpline2D::weight() const ']]],
  ['weightedl2norm',['weightedL2Norm',['../class_pr_threshold.html#a49faf4a4837b4986080824fe64df929c',1,'
      PrThreshold']]],
  ['wg',['WG',['../class_n_e_w_m_a_t_1_1_l_1___d___f_i.html#ae6376b9b2bed94af9ca3f16abcf7926b',1,'
      NEWMAT::LL_D_FI']]],
  ['what',['what',['../class_r_b_d___c_o_m_m_o_n_1_1_base_exception.html#aec4c2009cf2c58c624938fa307369812'
      ,1,'RBD_COMMON::BaseException']]],
  ['whichboundary',['whichBoundary',['
      ../class_go_1_1_curve_on_surface.html#a2fd1a9d6379d50a33c445de1e5a2da13',1,'Go::CurveOnSurface::whichBoundary()'],['
      ../class_go_1_1_rect_domain.html#a846d3147d576b8c7b1ddad3a5d282ee7',1,'Go::RectDomain::whichBoundary()'],['
      ../class_go_1_1_surface_on_volume.html#a1312bd05d7825d583db7c4a8b5656da5',1,'Go::SurfaceOnVolume::whichBoundary()']]],
  ['whichcell',['whichCell',['../class_pr_cell_structure.html#a029bd0e3caec3c0041f84d4fbc9fde07',1,'
      PrCellStructure']]],
  ['width',['width',['../classgv_texture.html#aa9078e4da5c899ca528cf48791788f71',1,'gvTexture']]],
  ['willnotconverge',['WillNotConverge',['../tmti_8cpp.html#a0f921978f9992fd411af3b20cca52c04',1,'tmti.cpp'
      ]]],
  ['wireframe',['wireframe',['../classgv_view.html#a063782599eaf127077e7fa3a824db0e9',1,'gvView']]],
  ['worstjointtype',['worstJointType',['../class_go_1_1ft_curve.html#ae852166efc18b7f0e8e5dbc53a980bce',1,'
      Go::ftCurve']]],
  ['worststatus',['WorstStatus',['../struct_go_1_1_face_connectivity.html#a71455fb59609e8d2356ad33f1bc637cb
      ',1,'Go::FaceConnectivity::WorstStatus()'],['
      ../struct_go_1_1tp_topological_info.html#a7ef71026619e890f6f54f1d349f780c9',1,'Go::tpTopologicalInfo::WorstStatus()']]],
  ['write',['write',['../class_go_1_1ft_curve.html#a28e19a4ecfb16faf241ea71be6fd0c94',1,'
      Go::ftCurve::write()'],['../class_go_1_1ft_point_set.html#ab934467685f4f9d4ed2717adeeeaa80a',1,'Go::ftPointSet::write()'
      ../class_go_1_1ft_surface.html#a9ae863e4a138a7c4f6583946d9e42309',1,'Go::ftSurface::write()'],['
      ../class_go_1_1_eval_curve.html#a4ff86322f9dc39ffc4620ee477a2ce1e',1,'Go::EvalCurve::write()'],['
      ../class_go_1_1_eval_param_curve.html#a1e4877d32b0ce7cac403583c1710511c',1,'Go::EvalParamCurve::write()'],['
      ../class_go_1_1_eval_surface.html#a04f0ae2e984ad26c9fea650a5f0f54f5',1,'Go::EvalSurface::write()'],['
      ../class_go_1_1_bounded_curve.html#aceacbec37aceea840a5fcc22768a2d51',1,'Go::BoundedCurve::write()'],['
      ../class_go_1_1_bounded_surface.html#a856ef400fd0c6d1cac0d7810dcae2895',1,'Go::BoundedSurface::write()'],['
      ../class_go_1_1_bspline_basis.html#af4fd78fee6e6e4b5d21a95b5b72643e9',1,'Go::BsplineBasis::write()'],['
      ../class_go_1_1_circle.html#a3c63191c45406a20fc2ab26416f141c7',1,'Go::Circle::write()'],['
      ../class_go_1_1_composite_surface.html#a709afaea27653a43009241ad48e3095c',1,'Go::CompositeSurface::write()'],['
      ../class_go_1_1_cone.html#ad26085ce7d959788b713269ce155d7d7',1,'Go::Cone::write()'],['../class_go_1_1_curve_on_surface.h
      Go::CurveOnSurface::write()'],['../class_go_1_1_cylinder.html#a7cfe9696a1e3b0254a1304f5594ba091',1,'
      Go::Cylinder::write()'],['../class_go_1_1_disc.html#a6e58f17e86868902f26a6e43727736b8',1,'Go::Disc::write()'],['
      ../class_go_1_1_ellipse.html#ad3984e926cad3799218ed3e9e3018eea',1,'Go::Ellipse::write()'],['
      ../class_go_1_1_hyperbola.html#abaa712776a6c103534bc95359a444cbf',1,'Go::Hyperbola::write()'],['
      ../class_go_1_1_line.html#a86230302a80829759af8cfe337bfe2c5',1,'Go::Line::write()'],['
      ../class_go_1_1_line_cloud.html#ad0108951f753e802c0deb441b83ec4b6',1,'Go::LineCloud::write()'],['../class_go_1_1_object_
      ,1,'Go::ObjectHeader::write()'],['../class_go_1_1_parabola.html#a68d31e1ede1f511c1ebc4fd4c5d47a65',1,'
      Go::Parabola::write()'],['../class_go_1_1_plane.html#ac2fea031c1034cd8f0b3b2c5a6880f95',1,'Go::Plane::write()'],['
      ../class_go_1_1_point_cloud.html#ad89fec212c58f01559025679842c0c1f',1,'Go::PointCloud::write()'],['
      ../class_go_1_1_rect_grid.html#aff9c01ccc35a6db444c68e8c62e31335',1,'Go::RectGrid::write()'],['
      ../class_go_1_1_sphere.html#aa7d16b5e1fb2b26c4534f923c2b4b2f7',1,'Go::Sphere::write()'],['
      ../class_go_1_1_spline_curve.html#a923930edaab997b412c189cf42fcffcf',1,'Go::SplineCurve::write()'],['
      ../class_go_1_1_spline_surface.html#abd6298134ce0e71ad562aac7bf320b0f',1,'Go::SplineSurface::write()'],['
      ../class_go_1_1_streamable.html#ae8180cc0ef0185251251e1e48714ad79',1,'Go::Streamable::write()'],['
      ../class_go_1_1_surface_of_linear_extrusion.html#a2c3db5e09491b23b5978063c3db8a01e',1,'Go::SurfaceOfLinearExtrusion::wri
      ../class_go_1_1_surface_of_revolution.html#a6fb097b8370423f05f42bb4b141583e5',1,'Go::SurfaceOfRevolution::write()'],['
      ../class_go_1_1_torus.html#ae82866130ed2fa422bd453ac87fea31e',1,'Go::Torus::write()'],['
      ../class_go_1_1_array.html#a521b4345783ea16d1e689408c464994b',1,'Go::Array::write()'],['
      ../class_go_1_1_bary_coord_system.html#a1cab0342adaec3d4a49009166490663b',1,'Go::BaryCoordSystem::write()'],['../class_
      ',1,'Go::BoundingBox::write()'],['../class_go_1_1_composite_box.html#abc9e743afa6168a129d765dc1b44014e',1,'
      Go::CompositeBox::write()'],['../class_go_1_1_direction_cone.html#aa60780e28b9bec47b945b0bf5b1e8764',1,'
      Go::DirectionCone::write()'],['../class_go_1_1_point.html#a0b569e805513613f8ad877b65756c523',1,'
      Go::Point::write()'],['../class_go_1_1_rational.html#ac7152300ba2fd30d30012851ae15feff',1,'Go::Rational::write()'],['
      ../class_go_1_1_bernstein_multi.html#a6eab04adb3bead441043dd3671d901c1',1,'Go::BernsteinMulti::write()'],['
      ../class_go_1_1_bernstein_poly.html#aeebff34e228191fac817504465db7e49',1,'Go::BernsteinPoly::write()'],['
      ../class_go_1_1_bernstein_tetrahedral_poly.html#ada7cd55f1820d75b14415a7f269e8acb',1,'
      Go::BernsteinTetrahedralPoly::write()'],['../class_go_1_1_bernstein_triangular_poly.html#ae9150fb59d5da6a36c8ab6510e8afa
      Go::BernsteinTriangularPoly::write()'],['../class_go_1_1_geo_tol.html#a4442a98b53da78dc97f9d82c27e8fce1',1,'
      Go::GeoTol::write()'],['../class_go_1_1_interpolated_intersection_curve.html#aa6f5f6040f556d1b2c85846ae264c15b',1,'
      Go::InterpolatedIntersectionCurve::write()'],['
      ../class_go_1_1_intersection_point.html#aa006203e0049242d58e006769b3d2d40',1,'Go::IntersectionPoint::write()'],['
      ../class_go_1_1_l_r_b_spline2_d.html#a449462ba765afcac0976afa68f2e2265',1,'Go::LRBSpline2D::write()'],['
      ../class_go_1_1_l_r_spline_surface.html#ab8bfbdd2d2931febdf7b71f659f693b8',1,'Go::LRSplineSurface::write()'],['../class_
      ,'Go::Mesh2D::write()'],['../class_go_1_1_cone_volume.html#ad8a963e0086079894fcb89e6d6eb86c7',1,'
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      Go::ConeVolume::write()'],['../class_go_1_1_curve_on_volume.html#a7dbdc8777f92ae2326b8f31c4f75b3cc',1,'
      Go::CurveOnVolume::write()'],['../class_go_1_1_cylinder_volume.html#a44d169907ccb3ff1a30daadd7bdc61bf',1,'
      Go::CylinderVolume::write()'],['../class_go_1_1_parallelepiped.html#ada46eff243691531b4b0885515be7e1b',1,'
      Go::Parallelepiped::write()'],['../class_go_1_1_sphere_volume.html#af39ffdf622b868ef6cc6d7915b28bade',1,'
      Go::SphereVolume::write()'],['../class_go_1_1_spline_volume.html#a3306204b720e8fb1a3ce6c23b03ef5b0',1,'Go::SplineVolume
      ['../class_go_1_1_surface_on_volume.html#a86cc60540a2a14233bd2485824f5bbe4',1,'Go::SurfaceOnVolume::write()'
      ],['../class_go_1_1_torus_volume.html#a6add375e29268f3fcfa51fb5335401b4',1,'Go::TorusVolume::write()']]],
  ['write2d',['write2D',['../class_go_1_1ft_point_set.html#adf8f9758c80d10b2eaf24dfe05f02468',1,'
      Go::ftPointSet']]],
  ['write2dval',['write2Dval',['../class_go_1_1ft_sample_point.html#a698415101e4d4bd3cca0ffddc6d8f282',1,'
      Go::ftSamplePoint::write2Dval()'],['
      ../class_go_1_1ft_surface_set_point.html#a92b64340d0c99eb8523bf9dca4777ee9',1,'Go::ftSurfaceSetPoint::write2Dval()']]],
  ['write_5fbin',['write_bin',['../class_go_1_1_bspline_basis.html#ab5d495e50702146c985bbe5af2420c34',1,'
      Go::BsplineBasis']]],
  ['write_5fgl_5fmatrices',['write_gl_matrices',['../gl__aux_8h.html#a9f517cb0717bfbc7c4374fb1fad9a450',1,'
      write_gl_matrices(FILE *f): 
```

Definition at line 1 of file functions_17.js.

30.1517 doc/html/search/functions_18.js File Reference

Variables

- var searchData

30.1517.1 Variable Documentation

30.1517.1.1 var searchData

Initial value:

```
=
[
  ['x',['x',['../classhetriang_1_1_dart.html#a54e0bbd87448ac2b3e9bddc8db856c59',1,'hetriang::Dart::x()'],['
      ../class_go_1_1ttl_point.html#a2edfd5b3a2a64c8c3af3e02c06ae2357',1,'Go::ttlPoint::x()'],['
      ../classhetriang_1_1_node.html#a6d6619cfedeafeeaf9e468da7670da5f',1,'hetriang::Node::x()'],['
      ../class_go_1_1_array.html#a3c8aa548649a570e01713ce17c1d784c',1,'Go::Array::x() const '],['
      ../class_go_1_1_array.html#ac87b81b08bef59f57cc13c5531115110',1,'Go::Array::x()'],['../class_pr_nested_node.html#a69747e
      PrNestedNode::x() const '],['../class_pr_nested_node.html#a613b6c4885ec0097d356410119e8a4b9',1,'PrNestedNode::x()']
      ,['../class_pr_node.html#a5a5865db2f78a4ccfd762634b4899e39',1,'PrNode::x() const '],['
      ../class_pr_node.html#af1089d11e7ee670efb2007351752c1b6',1,'PrNode::x()'],['
      ../class_pr_p_g_node.html#af56272e39fbc9e4b0273b83d9d9aa970',1,'PrPGNode::x() const '],['../class_pr_p_g_node.html#a373e
      PrPGNode::x()'],['../classvector3t.html#a85c1f558e7e9d6800afa25b4d95b4e1f',1,'vector3t::x(void) const '],['
      ../classvector3t.html#a4e3bd29a46ec1bc19dc4a06313829e6a',1,'vector3t::x(void)'],['
      ../classhed_1_1_dart.html#a39d20327f3eeaefbc53f06f79f53d840',1,'hed::Dart::x()'],['../classhed_1_1_node.html#ae5240e904
      1,'hed::Node::x()']]],
  ['xyzdata',['xyzData',['../class_pr_rectangular_grid___o_p.html#a13ccc3b90a2db2fd3622747f808ca320',1,'
      PrRectangularGrid_OP::xyzData()'],['../class_pr_rectangular_grid___o_p.html#a2638cc8d320b621128c9f7c8147dcb7d',
      1,'PrRectangularGrid_OP::xyzData() const ']]]
]
```

Definition at line 1 of file functions_18.js.

30.1518 doc/html/search/functions_19.js File Reference

Variables

- var searchData

30.1518.1 Variable Documentation

30.1518.1.1 var searchData

Initial value:

```
=
[
  ['y',['y',['../classhetriang_1_1_dart.html#af210f3f33a71b195c745e54cd7165070',1,'hetriang::Dart::y()'],['
      ../class_go_1_1ttl_point.html#aa68070e89bc646943dcfff514e3d194f',1,'Go::ttlPoint::y()'],['
      ../classhetriang_1_1_node.html#a9e14e02fa7d2ec93a21f26108a6d1b36',1,'hetriang::Node::y()'],['
      ../class_go_1_1_array.html#a7503e9570b4c3e5df9d7c6a2f2882df4',1,'Go::Array::y() const '],['
      ../class_go_1_1_array.html#ad343c6549d1fd8aae5abfb88ae509cf6',1,'Go::Array::y()'],['../class_pr_nested_node.html#ac2aa9
      PrNestedNode::y() const '],['../class_pr_nested_node.html#a437a7f299f4aeb739d3c86fd434a5673',1,'PrNestedNode::y()']
      ,['../class_pr_node.html#ae837126218bc3668de1896a232be37bf',1,'PrNode::y() const '],['
      ../class_pr_node.html#a5aa29384b673ee37acbd1cf7f95059e5',1,'PrNode::y()'],['
      ../class_pr_p_g_node.html#a73c1340c393a2d29be3ab2aca97dfb88',1,'PrPGNode::y() const '],['../class_pr_p_g_node.html#acf61
      PrPGNode::y()'],['../classvector3t.html#ab0f2c22060b6068c3104d8c6992a8b89',1,'vector3t::y(void) const '],['
      ../classvector3t.html#af88d3df5d1b648785874485afc10a876',1,'vector3t::y(void)'],['
      ../classhed_1_1_dart.html#a20849660f038888f05ba65daf0a99ae5',1,'hed::Dart::y()'],['../classhed_1_1_node.html#ab71715188
      1,'hed::Node::y()']]]
]
```

Definition at line 1 of file functions_19.js.

30.1519 doc/html/search/functions_1a.js File Reference

Variables

- var searchData

30.1519.1 Variable Documentation

30.1519.1.1 var searchData

Initial value:

```
=
[
  ['z',['z',['../class_go_1_1ttl_point.html#ac3852f5d65cea6fc03ded418c52b1224',1,'Go::ttlPoint::z()'],['
      ../classhetriang_1_1_node.html#a3a3e75bffc96f2230699b7ec641afa70',1,'hetriang::Node::z()'],['
      ../class_go_1_1_array.html#aae59550f97c7b789f9fedfef6214fca4',1,'Go::Array::z() const '],['
      ../class_go_1_1_array.html#ab13fabb125a68879f994e0c0a492755b',1,'Go::Array::z()'],['
      ../class_pr_nested_node.html#ae5e6fab6058c33f1c08c5e7b335502ba',1,'PrNestedNode::z() const '],['../class_pr_nested_node
      PrNestedNode::z()'],['../class_pr_node.html#ad6eec21be11c8ba6ee3a0e4fe9d4693a',1,'PrNode::z() const '],['
      ../class_pr_node.html#a323e95d93b0be8200fbfb5cf0b98afc1',1,'PrNode::z()'],['
      ../class_pr_p_g_node.html#a302fb7445d4022c990244d61768aaa22',1,'PrPGNode::z() const '],['
      ../class_pr_p_g_node.html#aab8d9580b6112f5342804c503aa5aa78',1,'PrPGNode::z()'],['../classvector3t.html#ac756398d08e462
      '],['../classvector3t.html#a40e10484bca97074094c63c9ea3f458b',1,'vector3t::z(void)'],['
      ../classhed_1_1_node.html#a812130c3e029cdecbc9bc9a47a1e53a7',1,'hed::Node::z()']]],
  ['zero',['zero',['../class_go_1_1_array.html#a23d28fcf202baff8a7c9f1aa5d9bfdd0',1,'Go::Array::zero()'],['
      ../class_go_1_1_matrix_x_d.html#ac360b2abe7e401969db7516ce266e416',1,'Go::MatrixXD::zero()'],['
      ../class_matrix_row_col.html#a1f6eebf4201d2b85d99c9273cb05b235',1,'MatrixRowCol::Zero()'],['
      ../class_rect_matrix_row_col.html#a935c0ec5f6ed575e62f2a52a3ce5ef12',1,'RectMatrixRowCol::Zero()']]],
  ['zerosegments',['zeroSegments',['../class_go_1_1_mesh2_d.html#a0a9bd1d4ae3374e0b17b60673b9507f4',1,'
      Go::Mesh2D']]]
]
```

Definition at line 1 of file functions_1a.js.

30.1520 doc/html/search/functions_1b.js File Reference

Variables

- var searchData

30.1520.1 Variable Documentation

30.1520.1.1 var searchData

Definition at line 1 of file functions_1b.js.

30.1521 doc/html/search/functions_2.js File Reference

Variables

- var searchData
- jquery js

30.1521.1 Variable Documentation

30.1521.1.1 jquery js

Definition at line 3 of file functions_2.js.

30.1521.1.2 var searchData

Initial value:

```
=
[
  ['b',['b',['../class_go_1_1_line2_d_int.html#a1bf14760b8c49e8b71cd24fa7a38cd35',1,'Go::Line2DInt::b()'],[
      '../class_go_1_1_plane_int.html#aa61eda35ce195ebbb59321069d0b20f1',1,'Go::PlaneInt::b()'],['
      ../jquery_8js.html#a2fa551895933fae935a0a6b87282241d',1,'b(): 
```

Definition at line 1 of file functions_2.js.

30.1522 doc/html/search/functions_3.js File Reference

Variables

- var searchData
- cholesky cpp
- cholesky shared_ptr & lt
- IntersectionPoint & gt
- & amp
- pnt const
- dist
- cpos1
- double gpos2 [ ]
- pt_cv
- pt_su
- bool second_order
- basisValues
- basisDerivs_u
- basisDerivs_v
- bool evaluate_from_right
- sisl h
- sisl int nmb_cvs
- init_basis
- double tol
- double int double double degree

30.1522.1 Variable Documentation

30.1522.1.1 sisl int const BsplineBasis& amp [property],[bound]

Definition at line 106 of file functions_3.js.

30.1522.1.2 basisDerivs_u

Definition at line 170 of file functions_3.js.

30.1522.1.3 basisDerivs_v

Definition at line 170 of file functions_3.js.

30.1522.1.4 basisValues

Definition at line 170 of file functions_3.js.

30.1522.1.5 pnt const

Definition at line 106 of file functions_3.js.

30.1522.1.6 cpos1

Definition at line 119 of file functions_3.js.

30.1522.1.7 newmat4 cpp

Definition at line 74 of file functions_3.js.

30.1522.1.8 double int double double degree

Initial value:

```
=3)'],['../namespace_go_1_1_curve_creators.html#a8dc25e7453ec9dcab07d0f51a868dea5',1,'
      Go::CurveCreators::curveApprox(shared_ptr&lt; ParamCurve &
      gt; cvs[], int nmb_cvs, const BsplineBasis &amp;init_basis, double
      tol)'],['../namespace_go_1_1_curve_creators.html#a7f3047d4b2671a0942d339addb2d3220',1,'
      Go::CurveCreators::curveApprox(shared_ptr&lt; ParamCurve &
      gt; cvs[], int nmb_cvs, double tol, double degree=3)']]],
  ['curveboundeddomain',['CurveBoundedDomain',['../
      class_go_1_1_curve_bounded_domain.html#a18a47f463be561c4b9159f9a48b75810'
      ,1,'Go::CurveBoundedDomain::CurveBoundedDomain()'],['../
      class_go_1_1_curve_bounded_domain.html#a64b7a200c859eed5197f0690322577f7'
      ,1,'Go::CurveBoundedDomain::CurveBoundedDomain(std::vector&
      lt; shared_ptr&lt; CurveLoop &gt; &gt; loops)'],['../
      class_go_1_1_curve_bounded_domain.html#af9d5bb9de6ebc645029186e7d60e8639'
      ,1,'Go::CurveBoundedDomain::CurveBoundedDomain(shared_ptr&lt;
      CurveLoop &gt; ccw_loop)']]],
  ['curvecreationmethod',['curveCreationMethod',['../
      class_go_1_1_curve_on_surface.html#a8ca063ce84c44382ec718fe17d149649',1,'
      Go::CurveOnSurface']]],
  ['curvekinks',['curveKinks',['../namespace_go_1_1_geometry_tools.html#
      adec58c3980fd345194b3d2c38cb5410f',1,'Go::GeometryTools']]],
  ['curveloop',['CurveLoop',['../class_go_1_1_curve_loop.html#
      a1e1cb95e731e6406e2e85ef158474f74',1,'Go::CurveLoop::CurveLoop()'],['../
      class_go_1_1_curve_loop.html#ade5272d85ed158bc981182df67c4aef4',1,'
      Go::CurveLoop::CurveLoop(const std::vector&lt; shared_ptr&
      lt; ParamCurve &gt; &gt; &amp;curves, double space_epsilon)']]],
  ['curvemodel',['CurveModel',['../class_go_1_1_curve_model.html#
      a28e80476530ffdfee76de33d447d385f',1,'Go::CurveModel']]],
  ['curveonelement',['curveOnElement',['../class_go_1_1_element2_d.html#
      a30f6705a5cb2c1ecf2d342b20290b903',1,'Go::Element2D']]],
  ['curveonsurface',['CurveOnSurface',['../class_go_1_1_curve_on_surface.html#
      acdf1e4079fb520f7b58ecf0f02b1e639',1,'Go::CurveOnSurface::CurveOnSurface()
      '],['../class_go_1_1_curve_on_surface.html#a36f4291f5a7488e0e7650d9e94ae8d7a'
      ,1,'Go::CurveOnSurface::CurveOnSurface(shared_ptr&lt; ParamSurface &
      gt; surf, shared_ptr&lt; ParamCurve &gt; curve, bool preferparameter)'],['../
      class_go_1_1_curve_on_surface.html#aac96baf244fd948975fb121ab9ba96ce',1,'
      Go::CurveOnSurface::CurveOnSurface(shared_ptr&lt; ParamSurface &gt; surf,
       shared_ptr&lt; ParamCurve &gt; curve, int constdir, double constpar, int boundary)'],['../
      class_go_1_1_curve_on_surface.html#af983a62292c58fe6ad3cb8c64a607031',1,'
      Go::CurveOnSurface::CurveOnSurface(shared_ptr&lt; ParamSurface &
      gt; surf, int constdir, double constpar, double par1, double par2, int boundary)'],['../
      class_go_1_1_curve_on_surface.html#ad08771990f783498eb9ba840bfb5e01a',1,'
      Go::CurveOnSurface::CurveOnSurface(shared_ptr&lt; ParamSurface &gt; surf,
       shared_ptr&lt; ParamCurve &gt; pcurve, shared_ptr&lt; ParamCurve &gt; spacecurve, bool preferparameter, int
       ccm, int constdir, double constpar, int boundary, bool same_orientation)'],['../
      class_go_1_1_curve_on_surface.html#a213980bda5fd3946878a81793805a929',1,'
      Go::CurveOnSurface::CurveOnSurface(shared_ptr&lt; ParamSurface &
      gt; surf, shared_ptr&lt; ParamCurve &gt; pcurve, shared_ptr&lt; ParamCurve &
      gt; spacecurve, bool preferparameter, int ccm=0)'],['../
      class_go_1_1_curve_on_surface.html#a59f4bd292ec36e5ad97c8458088bb1f1',1,'
      Go::CurveOnSurface::CurveOnSurface(const CurveOnSurface &
      amp;surface_curve)']]],
  ['curveonvolume',['CurveOnVolume',['../class_go_1_1_curve_on_volume.html#
      a7f86d41b6721769dde6f4cce99b97272',1,'Go::CurveOnVolume::CurveOnVolume()'],['../
      class_go_1_1_curve_on_volume.html#a7c1f620e6b106f8d99660a7d0a56f622',1,'
      Go::CurveOnVolume::CurveOnVolume(shared_ptr&lt; ParamVolume &
      gt; vol, shared_ptr&lt; ParamCurve &gt; curve, bool preferparameter)'],['../
      class_go_1_1_curve_on_volume.html#a226398d5c1319bfb0cc72759849328f1',1,'
      Go::CurveOnVolume::CurveOnVolume(shared_ptr&lt; ParamVolume &gt; vol,
      shared_ptr&lt; ParamCurve &gt; pcurve, shared_ptr&lt; ParamCurve &gt; spacecurve, bool preferparameter)'],['../
      class_go_1_1_curve_on_volume.html#a98e604b39927a02be47981cde9de89ea',1,'
      Go::CurveOnVolume::CurveOnVolume(const CurveOnVolume &
      amp;volume_curve)']]],
```

```
  ['curveresolutionsheet',['CurveResolutionSheet',['../
      class_curve_resolution_sheet.html#abc796a029f0fb49851c335326ad945eb',1,'
      CurveResolutionSheet']]],
  ['curvesum',['curveSum',['../namespace_go_1_1_geometry_tools.html#
      a0ce6c0626f27496cac39684f76e88d51',1,'Go::GeometryTools']]],
  ['curvetesselator',['CurveTesselator',['../class_go_1_1_curve_tesselator.
      html#aefe53d0a6b1795aefd01855793a80ffb',1,'Go::CurveTesselator']]],
  ['curvetype',['curveType',['../class_go_1_1ft_curve.html#
      a81f5700c76fe33118e3f0903870b8d5d',1,'Go::ftCurve']]],
  ['cvc1g1discontinuity',['cvC1G1Discontinuity',['../
      class_go_1_1_face_set_quality.html#af9e36bad3c4c3ffee440ed3a72433140',1,'
      Go::FaceSetQuality::cvC1G1Discontinuity()'],['../
      class_go_1_1_model_quality.html#ac31b1f14d4d87271276fa5c048a23055',1,'
      Go::ModelQuality::cvC1G1Discontinuity()']]],
  ['cvcurvatureradius',['cvCurvatureRadius',['../class_go_1_1_face_set_quality
      .html#a09bf24af1506c5d26becdb67afc0fa8e',1,'Go::FaceSetQuality::cvCurvatureRadius
      ()'],['../class_go_1_1_model_quality.html#a894e9d602c1ab82c6102b19f45498edf',1,'
      Go::ModelQuality::cvCurvatureRadius()']]],
  ['cvcvintersector',['CvCvIntersector',['../class_go_1_1_cv_cv_intersector.
      html#a537c5e9bc036e51d6cd9ef73868d1866',1,'Go::CvCvIntersector::CvCvIntersector
      (shared_ptr&lt; ParamGeomInt &gt; curve1, shared_ptr&lt; ParamGeomInt &gt; curve2, double
      epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0)'],['../
      class_go_1_1_cv_cv_intersector.html#ae8389b331a736a88309a72d3d17ac79e',1,'
      Go::CvCvIntersector::CvCvIntersector(shared_ptr&lt; ParamGeomInt &gt;
      curve1, shared_ptr&lt; ParamGeomInt &gt; curve2, shared_ptr&lt; GeoTol &gt; epsge, Intersector *prev=0, int
      eliminated_parameter=-1, double eliminated_value=0)']]],
  ['cvptintersector',['CvPtIntersector',['../class_go_1_1_cv_pt_intersector.
      html#afeedc2980f108a85ccaee64927e647a8',1,'Go::CvPtIntersector::CvPtIntersector
      (shared_ptr&lt; ParamGeomInt &gt; obj1, shared_ptr&lt; ParamGeomInt &gt; obj2, shared_ptr&
      lt; GeoTol &gt; epsge, Intersector *prev=0, int eliminated_parameter=-1, double eliminated_value=0
      )'],['../class_go_1_1_cv_pt_intersector.html#a2c2d2af25116cb8064076dc17a797c19
      ',1,'Go::CvPtIntersector::CvPtIntersector(shared_ptr&lt; ParamGeomInt &
      gt; obj1, shared_ptr&lt; ParamGeomInt &gt; obj2, double epsge, Intersector *prev=0, int eliminated_parameter=
      -1, double eliminated_value=0)']]],
  ['cvsetconstraint',['cvSetConstraint',['../struct_go_1_1cv_set_constraint.
      html#a941d33cdfeda3a108633b734725ebd83',1,'Go::cvSetConstraint']]],
  ['cworientation',['cwOrientation',['../namespace_go_1_1cm_utils.html#
      a0e8d24cd5737086fc3e72524d818d2d6',1,'Go::cmUtils']]],
  ['cworientation2',['cwOrientation2',['../namespace_go_1_1cm_utils.html#
      a08a484efc37055f021aa7673e9e751c6',1,'Go::cmUtils']]],
  ['cylinder',['Cylinder',['../class_go_1_1_cylinder.html#
      a8b175477b2d696563063e44b56ae094f',1,'Go::Cylinder::Cylinder()'],['../
      class_go_1_1_cylinder.html#a4dbfcfc7962f8c87d4e63ae2f93a3929',1,'
      Go::Cylinder::Cylinder(double radius, Point location,
      Point z_axis, Point x_axis, bool isSwapped=false)']]],
  ['cylinderint',['CylinderInt',['../class_go_1_1_cylinder_int.html#
      a2578453e0bbb9b5981ed8520be74eef4',1,'Go::CylinderInt::CylinderInt()'],['../
      class_go_1_1_cylinder_int.html#a9067b1a615e16beb0781fd491f2393f0',1,'
      Go::CylinderInt::CylinderInt(Point ax_pt, Point ax_dir, double radius
      )']]],
  ['cylindervolume',['CylinderVolume',['../class_go_1_1_cylinder_volume.html#
      a33ba420957082fdb531a2fff19a610d6',1,'Go::CylinderVolume::CylinderVolume()'
      ],['../class_go_1_1_cylinder_volume.html#a067ee920433858475d5d9f144be8564b',1,'
      Go::CylinderVolume::CylinderVolume(Point centre, double radius,
      Point normal, Point x_axis)']]]
]
```

Definition at line 308 of file functions_3.js.

30.1522.1.9 dist

Definition at line 111 of file functions_3.js.

30.1522.1.10 bool evaluate_from_right

Definition at line 170 of file functions_3.js.

30.1522.1.11 double gpos2[ ]

Definition at line 119 of file functions_3.js.

30.1522.1.12 double& gt

Definition at line 106 of file functions_3.js.

30.1522.1.13 sisl h

Definition at line 230 of file functions_3.js.

30.1522.1.14 init_basis

Definition at line 308 of file functions_3.js.

30.1522.1.15 std::vector& lt [bound]

Definition at line 74 of file functions_3.js.

30.1522.1.16 double int nmb_cvs [property],[bound]

Definition at line 230 of file functions_3.js.

30.1522.1.17 pt_cv

Definition at line 119 of file functions_3.js.

30.1522.1.18 pt_su

Definition at line 119 of file functions_3.js.

30.1522.1.19 var searchData

Definition at line 1 of file functions_3.js.

30.1522.1.20 bool second_order

Initial value:

```
=false)'],['../namespace_go_1_1_closest_point.html#afeee87804e5a35525c7017d7fcc95c03',1,'
      Go::ClosestPoint::closestPtCurveSurf(ParamCurve *pcurve, ParamSurface *
      psurf, double aepsge, double astart1, double estart2[], double aend1, double eend2[], double anext1,
      double enext2[], double &amp;cpos1, double gpos2[], double &amp;
      dist, Point &amp;pt_cv, Point &amp;pt_su, int &amp;istat, bool
      second_order=false)']]],
  ['closestptsurfsurfplane',['closestPtSurfSurfPlane',['../
      namespace_go_1_1_closest_point.html#afe9bbf94f33a5d46b1f7fda8aa0d6bea',1,'Go::ClosestPoint']]],
  ['closestptsurfsurfplanefunctional',['closestPtSurfSurfPlaneFunctional',[
      '../namespace_go_1_1_closest_point.html#a789a3fc2d43b9234327ebf3bbd3e88c3',1,'
      Go::ClosestPoint']]],
  ['closestptsurfsurfplanegeometrical',['closestPtSurfSurfPlaneGeometrical
      ',['../namespace_go_1_1_closest_point.html#a6788ce489922788dc484c43db18c94d4',1,'
      Go::ClosestPoint']]],
  ['closestsigneddistances',['closestSignedDistances',['../
      namespace_go.html#a8c08c7f6202af07431b1c5a39241e4a2',1,'Go']]],
  ['closestvectorsold',['closestVectorsOld',['../namespace_go.html#
      a26d674d4f146b5604e861ca42c7e4a1f',1,'Go']]],
  ['closetoscaledpoint',['closeToScaledPoint',['../class_go_1_1ft_line.html#
      a3d7867a61227b67f16c611e57fa38733',1,'Go::ftLine']]],
  ['closetounderlyingboundary',['closeToUnderlyingBoundary',['../
      class_go_1_1_bounded_surface.html#aa88b5aba06b7762233032a979c88478a',1,'
      Go::BoundedSurface']]],
  ['cndiscontinuities',['cNDiscontinuities',['../class_go_1_1_bspline_basis.html#
      aef46283739907138c5e742e911ba8b76',1,'Go::BsplineBasis']]],
  ['coef',['Coef',['../class_go_1_1_l_r_b_spline2_d.html#
      aa763179a5d7ae4d7eba2a7a9233695dd',1,'Go::LRBSpline2D::Coef()'],['../
      class_go_1_1_l_r_b_spline2_d.html#af30001b192b985a780aad33e8adf1cb6',1,'
      Go::LRBSpline2D::Coef() const ']]],
  ['coeffixed',['coefFixed',['../class_go_1_1_l_r_b_spline2_d.html#
      af4104a2d152fad9cb608843df01ec29a',1,'Go::LRBSpline2D']]],
  ['coefs_5fbegin',['coefs_begin',['../class_go_1_1_point_sequence.html#aa10ccbc7ab05c9a6bfd342c3f7107f9f',
      1,'Go::PointSequence::coefs_begin()'],['
      ../class_go_1_1_point_sequence.html#af8497ebb399a76f8f0e7dd75c729a34c',1,'Go::PointSequence::coefs_begin() const '],['
      ../class_go_1_1_spline_curve.html#aa599da56f08b4de93bdc63efe4dde54a',1,'Go::SplineCurve::coefs_begin()'],['
      ../class_go_1_1_spline_curve.html#a39d56e8f5f60cb45e573f704f03b260a',1,'Go::SplineCurve::coefs_begin() const '],['
      ../class_go_1_1_spline_surface.html#acfa63bacdec3037faafd2dc885cfac9f',1,'Go::SplineSurface::coefs_begin()'],['
      ../class_go_1_1_spline_surface.html#a2a31976341ded957536a675cc7bfa248',1,'Go::SplineSurface::coefs_begin() const '],['
      ../class_go_1_1_spline_volume.html#ad58da7291700f0575efa4c2762b216f2',1,'Go::SplineVolume::coefs_begin()'],['
      ../class_go_1_1_spline_volume.html#a42fd5d06ccc6d1ee23863bbade866bad',1,'Go::SplineVolume::coefs_begin() const ']]],
  ['coefs_5fend',['coefs_end',['../class_go_1_1_point_sequence.html#aa54646ece7c7152430533b333723d558',1,'
      Go::PointSequence::coefs_end()'],['../class_go_1_1_point_sequence.html#aa383d5038fecac721e34b4b133c4ee01',1,'
      Go::PointSequence::coefs_end() const '],['
      ../class_go_1_1_spline_curve.html#a3ab302156aa321d810c2ab6ba51c6c5a',1,'Go::SplineCurve::coefs_end()'],['../class_go_1_1
      1,'Go::SplineCurve::coefs_end() const '],['
      ../class_go_1_1_spline_surface.html#a3b9e715b5cb0272bf1f3f0d84c78b066',1,'Go::SplineSurface::coefs_end()'],['
      ../class_go_1_1_spline_surface.html#a30089d92c4050f5ca6a56faee540d1c2',1,'Go::SplineSurface::coefs_end() const '],['
      ../class_go_1_1_spline_volume.html#ac5326b49b3f3c3e673fd38ceae8d0c38',1,'Go::SplineVolume::coefs_end()'],['
      ../class_go_1_1_spline_volume.html#a3838b5e920ea61fa0619968bbe1ad1e7',1,'Go::SplineVolume::coefs_end() const ']]],
  ['coefsaffectingparam',['coefsAffectingParam',['
      ../class_go_1_1_bspline_basis.html#ac8837d81197dd7d714750dea076c6ea4',1,'Go::BsplineBasis']]],
  ['coefsbegin',['coefsBegin',['../class_go_1_1_bernstein_multi.html#ac83c6c6bb479263b626223b20f8ac4fc',1,'
      Go::BernsteinMulti::coefsBegin()'],['../class_go_1_1_bernstein_multi.html#a47d1d868c38c56c6910757afc94f7f61'
      ,1,'Go::BernsteinMulti::coefsBegin() const '],['
      ../class_go_1_1_bernstein_poly.html#a7dac78a3d206b3f26b605a44d9686de1',1,'Go::BernsteinPoly::coefsBegin()'],['
      ../class_go_1_1_bernstein_poly.html#abb3ad9d6283bf1ab52b5a22b21e6b419',1,'Go::BernsteinPoly::coefsBegin() const ']]],
  ['coefsend',['coefsEnd',['../class_go_1_1_bernstein_multi.html#a624861788f13f29d36e992b650a2b2a7',1,'
      Go::BernsteinMulti::coefsEnd()'],['../class_go_1_1_bernstein_multi.html#a2c9cb647e5d8822c8379d92dfe1f58b6',1,'
      Go::BernsteinMulti::coefsEnd() const '],['
      ../class_go_1_1_bernstein_poly.html#ace3dd87d2de438862b417d535d9149ae',1,'Go::BernsteinPoly::coefsEnd()'],['
      ../class_go_1_1_bernstein_poly.html#a50faef0b3b23a2758acea1598ba38756',1,'Go::BernsteinPoly::coefsEnd() const ']]],
  ['coeftimesgamma',['coefTimesGamma',['
      ../class_go_1_1_l_r_b_spline2_d.html#a3b075d57cb21d3a5efd1dd90e50d4e46',1,'Go::LRBSpline2D::coefTimesGamma()'],['
      ../class_go_1_1_l_r_b_spline2_d.html#a499edbee7c32a5994813185955be2a48',1,'Go::LRBSpline2D::coefTimesGamma() const ']]],
  ['col_5fscheme_5fselect',['col_scheme_select',['
      ../classmaterial__appearance.html#a9b42c9958f67223ed59b7957e5460ccd',1,'material_appearance']]],
  ['col_5fscheme_5fselected',['col_scheme_selected',['
      ../classmaterial__appearance.html#a6e3e961804250b37fb94fd4f8d9b91d4',1,'material_appearance']]],
  ['colmns',['colmns',['../class_pr_mat.html#aed80d11429e1c2a0566db0d806d80f3f',1,'PrMat::colmns()'],['
      ../class_pr_matrix.html#a8281ab6b6c20077323e3365c566e3df3',1,'PrMatrix::colmns()'],['
      ../class_pr_mat_sparse.html#a22e218eabe43458adaf7acac161da74a',1,'PrMatSparse::colmns()']]],
  ['color',['color',['../classgv_data.html#a20b594c0ecda0f29a2b0d67baf25c917',1,'gvData']]],
  ['column',['Column',['../class_n_e_w_m_a_t_1_1_base_matrix.html#a2642e545626b302f4b7f22793f7a1b70',1,'
      NEWMAT::BaseMatrix']]],
  ['columns',['Columns',['../class_n_e_w_m_a_t_1_1_base_matrix.html#a09b153845997e716109fc128573fce84',1,'
      NEWMAT::BaseMatrix']]],
  ['columnvector',['ColumnVector',['
      ../class_n_e_w_m_a_t_1_1_column_vector.html#a5b0c165a9ecee3313dbc0255579e0e8e',1,'NEWMAT::ColumnVector::ColumnVector()'
      ../class_n_e_w_m_a_t_1_1_column_vector.html#a625731389b21c037ea40516b2009fa30',1,'NEWMAT::ColumnVector::ColumnVector(Ar
      ../class_n_e_w_m_a_t_1_1_column_vector.html#a7dcc6e2dce014f0be26ff94e79c33994',1,'NEWMAT::ColumnVector::ColumnVector(co
```

```
      BaseMatrix &amp;amp;)’],[’../class_n_e_w_m_a_t_1_1_column_vector.html#a23e4d4faf5af6441fd7203e90c308288’,1,’
    NEWMAT::ColumnVector::ColumnVector(const ColumnVector &amp;amp;gm)’]]],
  [’common_5fedge’,[’common_edge’,[’../_pr_path_triangle_seq_8h.html#a85bcac6907dcecff7f8e855068efbb47’,1,’
    PrPathTriangleSeq.h’]]],
  [’commonisolinks’,[’commonIsoLinks’,[’
    ../class_go_1_1_intersection_point.html#a5b3b1e1ba9f54f8eb5fa0f3b663b34b8’,1,’Go::IntersectionPoint’]]],
  [’commonsplinespace’,[’commonSplineSpace’,[’
    ../class_go_1_1ft_surface.html#a12dcae6ce5e961c188aa65625c7d824e’,1,’Go::ftSurface::commonSplineSpace()’],[’
    ../class_go_1_1ft_volume.html#a0b8317992cd18e0ea62aecad584d36e9’,1,’Go::ftVolume::commonSplineSpace()’]]],
  [’commonvertex’,[’commonVertex’,[’../class_go_1_1ft_edge.html#a9b13cbe314c8101502dd34c5c6376e5a’,1,’
    Go::ftEdge’]]],
  [’compare’,[’Compare’,[’../namespace_n_e_w_m_a_t.html#a141c465f6d4643bdefd8e03865d244c5’,1,’
    NEWMAT::Compare()’],[’../newmat4_8cpp.html#afad59b9d5b29862e68144236e760ccb8’,1,’Compare(): 
```

Definition at line 119 of file functions_3.js.

30.1522.1.21 double int double tol

Definition at line 308 of file functions_3.js.

30.1523 doc/html/search/functions_4.js File Reference

Variables

- var searchData
- fft cpp

30.1523.1 Variable Documentation

30.1523.1.1 fft cpp

Definition at line 9 of file functions_4.js.

30.1523.1.2 var searchData

Initial value:

```
=
[
  [’d’,[’d’,[’../class_go_1_1_plane_int.html#adbef9642db16186c9411dce8c3fd7c92’,1,’Go::PlaneInt’]]],
  [’dart’,[’Dart’,[’../classhetriang_1_1_dart.html#ab39198f2792ee004668b8fc7f6a2d54f’,1,’
    hetriang::Dart::Dart()’],[’../classhetriang_1_1_dart.html#ad19d89b2aed2b3a8d928be1625c41522’,1,’hetriang::Dart::Dart(Edg
     *edge, bool dir=true)’],[’../classhetriang_1_1_dart.html#a38272a3789a247be3b18bd270c7f7e0e’,1,’
    hetriang::Dart::Dart(const Dart &amp;dart)’],[’../classhed_1_1_dart.html#a141548d2908ef5847fd81370d57c07a0’,1,’
    hed::Dart::Dart()’],[’../classhed_1_1_dart.html#a40d2832ae9a9d61a1cc16c9b171a2d14’,1,’hed::Dart::Dart(Edge *edge, bool
     dir=true)’],[’../classhed_1_1_dart.html#a75fe6236394e8e039a1b3ad44582bf4f’,1,’hed::Dart::Dart(const Dart
     &amp;dart)’]]],
  [’data’,[’Data’,[’../class_n_e_w_m_a_t_1_1_simple_int_array.html#a224921d28dcde7d9131ae08d30adba79’,1,’
    NEWMAT::SimpleIntArray::Data()’],[’
    ../class_n_e_w_m_a_t_1_1_simple_int_array.html#aa2caf98cf436c591d84b0c4ffa1f95d2’,1,’NEWMAT::SimpleIntArray::Data() cons
    ../class_matrix_row_col.html#a9900af353a47350b3346718cd4a6007f’,1,’MatrixRowCol::Data()’]]],
  [’datahandler’,[’DataHandler’,[’../class_data_handler.html#a51d845c1d9bbeef44607ec7592ba3c1d’,1,’
    DataHandler’]]],
  [’datahandlervolandlr’,[’DataHandlerVolAndLR’,[’
    ../class_data_handler_vol_and_l_r.html#aa9165829b2bcbfd4bbb5c2afbb4ea6c0’,1,’DataHandlerVolAndLR’]]],
  [’datapointsize’,[’dataPointSize’,[’
    ../struct_go_1_1_l_s_smooth_data.html#a535cfb16e7a24d9389902429bbe5b64b’,1,’Go::LSSmoothData’]]],
  [’dct’,[’DCT’,[’../namespace_n_e_w_m_a_t.html#a8d6c3e8e2abaccf76b86956d403842cb’,1,’NEWMAT::DCT()’],[’
    ../fft_8cpp.html#a924dff49d847f7fc827760a9adad7f75’,1,’DCT(): 
```

Definition at line 1 of file functions_4.js.

30.1524 doc/html/search/functions_5.js File Reference

Variables

- var searchData
- var const
- sislP h
- sislP Point & amp
- pnt int nder
- pnt int std::vector & lt
- Point & gt

30.1524.1 Variable Documentation

30.1524.1.1 der Point& amp [bound]

Definition at line 84 of file functions_5.js.

30.1524.1.2 pnt const [bound]

Initial value:

```
=0'],['../class_go_1_1_eval_curve_set.html#a6cad51d0922a7dedac3a31b2026ab0a4',1,
      'Go::EvalCurveSet::eval(double t)=0'],['../
      class_go_1_1_eval_curve_set.html#af94dfe476d9a31a9283263e1c7eb8bb3',1,'
      Go::EvalCurveSet::eval(double t, int n, std::vector&lt; std::vector&
      lt; Point &gt; &gt; &amp;der)=0'],['../
      class_go_1_1_eval_param_curve.html#a765082ce27f3a3ac77f9dbda11001cf1',1,'
      Go::EvalParamCurve::eval(double t) const '],['../
      class_go_1_1_eval_param_curve.html#ae053eebea18f9dbe4a3289a7aeb2563d',1,'
      Go::EvalParamCurve::eval(double t, int n, Point der[]) const '],['../
      class_go_1_1_eval_surface.html#a2048831767bc076026fb999eb2f1036c',1,'
      Go::EvalSurface::eval(double u, double v) const =0'],['../
      class_go_1_1_eval_surface.html#ac30c4ea3682ad3433ed510bebf64c968',1,'
      Go::EvalSurface::eval(double u, double v, int n, Point der[]) const =0'],['../
      class_go_1_1_int_crv_evaluator.html#ab9f4d31119d434a7399b4f57a99c7efb',1,'
      Go::IntCrvEvaluator::eval(double t)'],['../
      class_go_1_1_int_crv_evaluator.html#a212ac4e6d0896e12fef2d5a0bd895e58',1,'
      Go::IntCrvEvaluator::eval(double t, int n, std::vector&lt; std::vector&
      lt; Point &gt; &gt; &amp;der)'],['../class_go_1_1_lift_curve.html#
      ae512f443f85b1704a433e11bb8782af5',1,'Go::LiftCurve::eval(double t) const '],['../
      class_go_1_1_lift_curve.html#a2cb2e79f40e4d61f22303b5bcf2aeba3',1,'
      Go::LiftCurve::eval(double t, int n, Point der[]) const '],['../
      class_go_1_1_project_curve.html#af98b1ced4a661a5876e60db1d659f4fa',1,'
      Go::ProjectCurve::eval(double t) const '],['../
      class_go_1_1_project_curve.html#a96186d4cf98720c6777bfd7686f27f49',1,'
      Go::ProjectCurve::eval(double t, Go::Point seed) const '],['../
      class_go_1_1_project_curve.html#aa04bfd8be7761c82b715e59ab2537bc3',1,'
      Go::ProjectCurve::eval(double t, int n, Go::Point der[]) const '],['../
      class_go_1_1_project_curve_and_cross_tan.html#
      a2887b1adafc03d983eb8405ea079f828',1,'Go::ProjectCurveAndCrossTan::eval(double t)'],['../
      class_go_1_1_project_curve_and_cross_tan.html#
      afe33ce9e2590e0bfe7808194acce9ebb',1,'Go::ProjectCurveAndCrossTan::eval(double t, int n,
      std::vector&lt; std::vector&lt; Go::Point &gt; &gt; &amp;ders)'],['../
      class_go_1_1_project_intersection_curve.html#
      a6c51a345c6bc7eef9ad51c6a6af1a6a7',1,'Go::ProjectIntersectionCurve::eval(double t) const '],['../
      class_go_1_1_project_intersection_curve.html#
      ae83c55aba4c48f4f9e67ee10a469eebd',1,'Go::ProjectIntersectionCurve::eval(double t, int n,
      Point der[]) const '],['../class_go_1_1_smooth_transition.html#
      a9dec775aeea43960e2f31389536c020d',1,'Go::SmoothTransition::eval(double t)'],['../
      class_go_1_1_smooth_transition.html#a3014fd12933c038db7eb267fbed90b50',1,'
      Go::SmoothTransition::eval(double t, int n, std::vector&lt; std::vector&
      lt; Point &gt; &gt; &amp;der)'],['../class_go_1_1_space_int_crv.
      html#ab9a922c9e907889610ba88f507340ed3',1,'Go::SpaceIntCrv::eval(double t) const '],['../
      class_go_1_1_space_int_crv.html#a52581fc9d01325d625eff7e90fd5ad23',1,'
      Go::SpaceIntCrv::eval(double t, int n, Point der[]) const '],['../
      class_go_1_1_trim_curve.html#a383077ca958c414fc6c39ecde49df68f',1,'
```

```
      Go::TrimCurve::eval(double t)'],['../class_go_1_1_trim_curve.html
      #a94b8b25ba0369b8bf01a5e18caafa7da',1,'Go::TrimCurve::eval(double t, int n, std::vector&
      lt; std::vector&lt; Point &gt; &gt; &amp;der)'],['../
      class_go_1_1_bezier_triangle.html#a04e7a7850a4292cd300aac604e17efec',1,'
      Go::BezierTriangle::eval()'],['../
      class_go_1_1_eval_functor_curve.html#adc7d79d2ad002096776641323d421fc0',1,'
      Go::EvalFunctorCurve::eval(double t) const '],['../
      class_go_1_1_eval_functor_curve.html#ad765b1fdca8d47430a90b05d08358c42',1,'
      Go::EvalFunctorCurve::eval(double t, int n, Point der[]) const '],['../
      class_go_1_1_eval_functor_surface.html#a4bba1fd389a8a21408c76279077d8c98'
      ,1,'Go::EvalFunctorSurface::eval(double u, double v) const '],['../
      class_go_1_1_eval_functor_surface.html#a52a9888c724819231d867b5f8ecc9edb'
      ,1,'Go::EvalFunctorSurface::eval(double u, double v, int n,
      Point der[]) const '],['../class_go_1_1_l_r_b_spline2_d.html#
      af0a9b4ba330f30b6a7cceeaa8bd8e40b',1,'Go::LRBSpline2D::eval()'],['../
      class_go_1_1_volume_parameter_curve.html#
      a9fe5deedf6c920a026949df25a804eeb',1,'Go::VolumeParameterCurve::eval(double t) const '],['../
      class_go_1_1_volume_parameter_curve.html#
      a7a1967e05c656a34b29c9e455c6985d3',1,'Go::VolumeParameterCurve::eval(double t, int n,
      Point der[]) const '],['../class_go_1_1_volume_space_curve.html#
      a9c680f8db2892c4000e199d3591c4ec6',1,'Go::VolumeSpaceCurve::eval(double t) const '],['../
      class_go_1_1_volume_space_curve.html#adf40f504a4ffcd83d09f88dd023deb69',1,'
      Go::VolumeSpaceCurve::eval(double t, int n, Point der[]) const ']]],
  ['eval_5f2_5fcrv',['eval_2_crv',['../sisl_p_8h.html#a08942c76767d8172cc58da500917c959'
      ,1,'eval_2_crv(): 
```

Definition at line 1 of file functions_5.js.

30.1524.1.3 Point& gt

Definition at line 99 of file functions_5.js.

30.1524.1.4 sislP h

Definition at line 84 of file functions_5.js.

30.1524.1.5 pnt int std::vector& lt

Definition at line 99 of file functions_5.js.

30.1524.1.6 pnt int nder

Definition at line 99 of file functions_5.js.

30.1524.1.7 var searchData

Initial value:

```
=
[
  ['each',['each',['../jquery_8js.html#a871ff39db627c54c710a3e9909b8234c',1,'jquery.js']]],
  ['eatwhite',['eatwhite',['../namespace_go_1_1_utils.html#a43780996b9bc44a2d902858e953f8050',1,'Go::Utils'
      ]]],
  ['edge'
```

Definition at line 1 of file functions_5.js.

30.1525 doc/html/search/functions_6.js File Reference

Variables

- var searchData
- fft cpp

30.1525.1 Variable Documentation

30.1525.1.1 fft cpp

Definition at line 28 of file functions_6.js.

30.1525.1.2 var searchData

Initial value:

```
=
[
  ['face',['face','../class_go_1_1ft_cell.html#aa121981ee3b13d136e7d29b0ee4bcd77',1,'Go::ftCell::face()'],
      ['../class_go_1_1ft_curve_segment.html#af474a0ed29e5e7fb6dfdb8f80e5f38fb',1,'Go::ftCurveSegment::face()'],['
      ../class_go_1_1ft_edge.html#a3f58aed1bbe6f007f2c5f345279ed2e2',1,'Go::ftEdge::face()'],['
      ../class_go_1_1ft_edge_base.html#a31c097d1aebfbb34aedb37b4d2d60491',1,'Go::ftEdgeBase::face()'],['
      ../class_go_1_1ft_point.html#aa32c53f685602d17fa5e4f9a1e1f0c4d',1,'Go::ftPoint::face()'],['
      ../class_go_1_1ft_s_sf_edge.html#a2659c6f1a432256dab88ba2d2b110b84',1,'Go::ftSSfEdge::face()'],['
      ../class_go_1_1ft_surface_set_point.html#a882e43b4b07c97b22f9979ab5d0099ee',1,'Go::ftSurfaceSetPoint::face()'],['
      ../class_go_1_1tp_edge.html#a15014c47fb50b7246d467a7c877f22ed',1,'Go::tpEdge::face()']]],
  ['faceadjacency',['FaceAdjacency',['../class_go_1_1_face_adjacency.html#a3301eab6895130fcaa1924fff513361e
      ',1,'Go::FaceAdjacency::FaceAdjacency(double tol_gap, double tol_neighbour, double tol_kink, double
       tol_bend)'],['../class_go_1_1_face_adjacency.html#a586af6c2a4877a6fccadc369b1807d37',1,'
      Go::FaceAdjacency::FaceAdjacency(const tpTolerances &amp;tol)']]],
  ['facebox',['faceBox',['../class_go_1_1ft_cell.html#a5e5ae761c933390e66693af8ae239122',1,'Go::ftCell']]],
  ['faceconnectivity',['FaceConnectivity',['
      ../struct_go_1_1_face_connectivity.html#a296535b83af35ef3587335903306feb4',1,'Go::FaceConnectivity']]],
  ['faceedgedistance',['faceEdgeDistance',['
      ../class_go_1_1_face_set_quality.html#a49d75b7386f9ee37fae3811528a221ca',1,'Go::FaceSetQuality::faceEdgeDistance()'],['
      ../class_go_1_1_model_quality.html#a9b312ebb24d3dc34c760ea3729a1ae16',1,'Go::ModelQuality::faceEdgeDistance()']]],
  ['facenormalconsistency',['faceNormalConsistency',['
      ../class_go_1_1_face_set_quality.html#ad1d8907e97bafe46dbc9f63c00537f83',1,'Go::FaceSetQuality::faceNormalConsistency()'
      ../class_go_1_1_model_quality.html#a516625b64e95b6dfc521b621f7055daa',1,'Go::ModelQuality::faceNormalConsistency()']]],
  ['facenumber',['faceNumber',['
      ../class_go_1_1_vol_boundary_condition.html#a917407b5d8f423b026002d6b0f1dacc1',1,'Go::VolBoundaryCondition::faceNumber()
      ../class_go_1_1_vol_point_bd_cond.html#a64e1b684ea2f63c8eeb42a1e6219cd38',1,'Go::VolPointBdCond::faceNumber()']]],
  ['faceparameter',['faceParameter',['../class_go_1_1ft_edge.html#ab3e951684c4b19faa7e75b1ea3d600a4',1,'
      Go::ftEdge::faceParameter()'],['../class_go_1_1_curve_on_surface.html#a72cf294c8a3569e54f7469ea8ef30800',1,'
      Go::CurveOnSurface::faceParameter()']]],
  ['facepositiondiscontinuity',['facePositionDiscontinuity',['
      ../class_go_1_1_face_set_quality.html#abf6c4e2597c6c988dba8e410cb297c19',1,'Go::FaceSetQuality::facePositionDiscontinuit
      ../class_go_1_1_model_quality.html#a6449726206f9f5782a3eecf58fa44037',1,'Go::ModelQuality::facePositionDiscontinuity()']
  ['faces',['faces',['../class_go_1_1_vertex.html#aa4c5e30501c4d7bae0c10fc1c103b237',1,'Go::Vertex::faces()
       const '],['../class_go_1_1_vertex.html#afaa45ecc2c3a6ff2f839e150137c5540',1,'Go::Vertex::faces(Body *bd)
       const ']]],
  ['facesetquality',['FaceSetQuality',['
      ../class_go_1_1_face_set_quality.html#ab92daefb5beae4cf2d11fc10d387f342',1,'Go::FaceSetQuality::FaceSetQuality(double ga
      ../class_go_1_1_face_set_quality.html#a4108bff3378f81f49c8b9ce4411fc4a4',1,'Go::FaceSetQuality::FaceSetQuality(const
       tpTolerances &amp;toptol, double approx)'],['../class_go_1_1_face_set_quality.html#a80b64f2fd037fca7f37ab8d808456ala',1
      ,'Go::FaceSetQuality::FaceSetQuality(shared_ptr&lt; SurfaceModel &gt; sfmodel)']]],
  ['facesetrepair',['FaceSetRepair',['
      ../class_go_1_1_face_set_repair.html#a4ab24096dd61caa312afdd87dbad917c',1,'Go::FaceSetRepair::FaceSetRepair(shared_ptr&l
      ../class_go_1_1_face_set_repair.html#af9a1e4cdc65ea8fd3b6189f38bbca57c',1,'Go::FaceSetRepair::FaceSetRepair(shared_ptr&l
       FaceSetQuality &gt; quality)']]],
  ['facesinplane',['facesInPlane',['../class_go_1_1_surface_model.html#a3694b0cdf7688cd5f832ab14c2558579',1
      ,'Go::SurfaceModel']]],
  ['facetangentdiscontinuity',['faceTangentDiscontinuity',['
      ../class_go_1_1_face_set_quality.html#a61a7a9c95e1fa425fc8b860813af8ae7',1,'Go::FaceSetQuality::faceTangentDiscontinuity
      ../class_go_1_1_model_quality.html#acf5f2662524a1715908ebb06b3723262',1,'Go::ModelQuality::faceTangentDiscontinuity()']]
  ['facevertexdistance',['faceVertexDistance',['
      ../class_go_1_1_face_set_quality.html#ad832c76db79664cdeca3dec6235d35cd',1,'Go::FaceSetQuality::faceVertexDistance()'],
      ../class_go_1_1_model_quality.html#affdad4f29b9c9b7f642cd6a1db3efc82',1,'Go::ModelQuality::faceVertexDistance()']]],
  ['factorial',['factorial','../namespace_go.html#af2da1e127f042c70cdb76c5b48158f8d',1,'Go']]],
```

```
['feedback',['feedback','../classgv_view.html#a2ccd054a91d3f42596b3bfc1a752a3ee',1,'gvView']]],
['feedbackmode',['feedbackmode','../classgv_view.html#af284c1223a03cf29d864b8bbb2314922',1,'gvView']]],
['fetchassharedptr',['fetchAsSharedPtr',['
    ../class_go_1_1_surface_model.html#aafd3dbc037ce0c761de79b15e6f38c20',1,'Go::SurfaceModel::fetchAsSharedPtr()'],['
    ../class_go_1_1_volume_model.html#a963787be67a45107e3bbd39a0e1b37cc',1,'Go::VolumeModel::fetchAsSharedPtr()']]],
['fetchcompositecurves',['fetchCompositeCurves',['
    ../class_go_1_1_curve_model.html#a1f227f8d4d720f672925567f90eea029',1,'Go::CurveModel']]],
['fetchcorrespondingfaces',['fetchCorrespondingFaces',['
    ../class_go_1_1ft_surface.html#a153b817ffbe94c0dc06432706c527a4e',1,'Go::ftSurface']]],
['fetchedgecorners',['fetchEdgeCorners',['
    ../namespace_go_1_1_l_r_surf_stitch.html#a448922c6cf420b46b0e5008d85734979',1,'Go::LRSurfStitch']]],
['fetchloops',['fetchLoops',['../class_go_1_1_intersection_pool.html#a66197c013cde173beb92852e6f9a28ce',1
    ,'Go::IntersectionPool']]],
['fetchsamplepoints',['fetchSamplePoints',['
    ../class_go_1_1ft_surface_set.html#ac9988bb705b14ed04100f7ccb0f5965c',1,'Go::ftSurfaceSet::fetchSamplePoints()'],['
    ../class_go_1_1_surface_model.html#a3a59e2b123bc5ec4e16a4a119b9c4eca',1,'Go::SurfaceModel::fetchSamplePoints()']]],
['fetchvxpntcorr',['fetchVxPntCorr',['
    ../class_go_1_1_regularize_face.html#a919c13841fade539b38a4de946ba5de8',1,'Go::RegularizeFace::fetchVxPntCorr()'],['
    ../class_go_1_1_regularize_face_set.html#a8fd526b05f5e833e036b35954b16042b',1,'Go::RegularizeFaceSet::fetchVxPntCorr()']
['fft',['FFT',['../namespace_n_e_w_m_a_t.html#ac40dccf5f5f25e5280cb7acb5249ed01',1,'NEWMAT::FFT()'],['
    ../fft_8cpp.html#a52ecc4818418779fbd2d2e134625ec7d',1,'FFT(): 
```

Definition at line 1 of file functions_6.js.

30.1526 doc/html/search/functions_7.js File Reference

Variables

- var searchData
- generic_graph_algorithms_implementation h
- generic_graph_algorithms_implementation const int xs
- generic_graph_algorithms_implementation const int const int ys
- generic_graph_algorithms_implementation const int const int const int x0
- generic_graph_algorithms_implementation const int const int const int const int y0
- generic_graph_algorithms_implementation const int const int const int const int const int doubleBuffer
- generic_graph_algorithms_implementation const int const int const int const int const int const int two_sided
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int lighting
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int normalize
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int smooth
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double xtrans
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double ytrans
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double const double ztrans
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double const double const double xscale
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double const double const double const double yscale
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double const double const double const double const double zscale
- generic_graph_algorithms_implementation const int const int const int const int const int const int const int const int const int const double const double const double const double const double const double int & amp
- tx
- ty
- const int texture_mode
- const int const char *const texfile =NULL):
- gl_aux cpp

30.1526.1 Variable Documentation

30.1526.1.1 int& amp [property],[bound],[constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.2 gl_aux cpp

Definition at line 559 of file functions_7.js.

30.1526.1.3 gl_aux const int const int const int const int const int doubleBuffer [property],[bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.4 generic_graph_algorithms_implementation h

Definition at line 35 of file functions_7.js.

30.1526.1.5 gl_aux const int const int const int const int const int const int const int lighting [property], [bound],[constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.6 gl_aux const int const int const int const int const int const int const int const int normalize [property],[bound],[constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.7 var searchData

Definition at line 1 of file functions_7.js.

30.1526.1.8 gl_aux const int const int const int const int const int const int const int const int smooth [property],[bound],[constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.9 const int const char* const texfile =NULL):

Definition at line 559 of file functions_7.js.

30.1526.1.10 const int texture_mode

Definition at line 559 of file functions_7.js.

30.1526.1.11 gl_aux const int const int const int const int const int const int two_sided [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.12 tx

Definition at line 559 of file functions_7.js.

30.1526.1.13 ty

Definition at line 559 of file functions_7.js.

30.1526.1.14 gl_aux const int const int const int x0 [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.15 gl_aux const int xs [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.16 gl_aux const int const int const int const int const int const int const int const int const int const double const double const double const double xscale [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.17 gl_aux const int const int const int const int const int const int const int const int const int const double xtrans [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.18 gl_aux const int const int const int const int y0 [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.19 gl_aux const int const int ys [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.20 gl_aux const int const int const int const int const int const int const int const int const double const double const double const double const double yscale [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.21 gl_aux const int const int const int const int const int const int const int const int const double const double ytrans [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.22 gl_aux const int const int const int const int const int const int const int const int const double const double const double const double const double const double zscale [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1526.1.23 gl_aux const int const int const int const int const int const int const int const int const double const double const double ztrans [property], [bound], [constrained]

Definition at line 35 of file functions_7.js.

30.1527 doc/html/search/functions_8.js File Reference

Variables

- var searchData
- sisIP h

30.1527.1 Variable Documentation

30.1527.1.1 sisIP h

Definition at line 61 of file functions_8.js.

30.1527.1.2 var searchData

Definition at line 1 of file functions_8.js.

30.1528 doc/html/search/functions_9.js File Reference

Variables

- var searchData
- jquery js

30.1528.1 Variable Documentation

30.1528.1.1 jquery js

Definition at line 20 of file functions_9.js.

30.1528.1.2 var searchData

Initial value:

```
=
[
  ['i',['i',['../class_n_e_w_m_a_t_1_1_matrix_type.html#acb7b50521ae4e68a7cf332d180a19bc8',1,'
      NEWMAT::MatrixType::i()'],['../class_n_e_w_m_a_t_1_1_base_matrix.html#a4227de5c79ebbe72cb883dc44a4adc1f',1,'
      NEWMAT::BaseMatrix::i()']]],
  ['id',['id',['../classhed_1_1_node.html#ae0ae30c021c0e665b409db77bf604afa',1,'hed::Node::id()'],['
      ../classgv_paintable.html#a7a31121be20df12925c3aac0e838d598',1,'gvPaintable::id()']]],
  ['identicalandembeddedfaces',['identicalAndEmbeddedFaces',['
      ../class_go_1_1_face_set_repair.html#ab30952f5cfc5281414f1c90af73de25e',1,'Go::FaceSetRepair::identicalAndEmbeddedFaces
      ../class_go_1_1_model_repair.html#a966573f66568b95f898e4e2d6bd0517f',1,'Go::ModelRepair::identicalAndEmbeddedFaces()']]
  ['identicalcvs',['identicalCvs',['../class_go_1_1_identity.html#acf3fc01c2e37aa833e398ad4d81d9fee',1,'
      Go::Identity']]],
  ['identicalorembeddededges',['identicalOrEmbeddedEdges',['
      ../class_go_1_1_face_set_quality.html#adec9ce087118da601948c1d7c220f861',1,'Go::FaceSetQuality::identicalOrEmbeddedEdges
      ../class_go_1_1_model_quality.html#a586915380134 38d3e8812f23a42b0bee',1,'Go::ModelQuality::identicalOrEmbeddedEdges()']]
  ['identicalorembeddedfaces',['identicalOrEmbeddedFaces',['
      ../class_go_1_1_face_set_quality.html#aa7bb010c6e9b4040645015843d0d6c19',1,'Go::FaceSetQuality::identicalOrEmbeddedFaces
      ../class_go_1_1_model_quality.html#aabf8ba0d9a44fc491c8204a7d5754ba1',1,'Go::ModelQuality::identicalOrEmbeddedFaces()']]
  ['identicalsfs',['identicalSfs',['../class_go_1_1_identity.html#a14ba65d23ce10a0689f5f353aff2d25a',1,'
      Go::Identity']]],
  ['identicalvertices',['identicalVertices',['
      ../class_go_1_1_face_set_quality.html#a7d0ab3adb89a04a011120e8c4bdd9491',1,'Go::FaceSetQuality::identicalVertices()'],['
      ../class_go_1_1_face_set_repair.html#a06b2af4b37d3fe6dd6c26fca17d150e3',1,'Go::FaceSetRepair::identicalVertices()'],['
      ../class_go_1_1_model_quality.html#a415888bf6f57c852849e4f2ee719dfa6',1,'Go::ModelQuality::identicalVertices()'],['
      ../class_go_1_1_model_repair.html#acb862290dbbc7a5a0045e771baa03c53',1,'Go::ModelRepair::identicalVertices()']]],
  ['identify_5felements_5ffrom_5fmesh',['identify_elements_from_mesh',['
      ../namespace_go_1_1_l_r_spline_utils.html#a0df66adf1511debd6e5042d890989278',1,'Go::LRSplineUtils']]],
  ['identify_5fpatch_5flower_5fleft',['identify_patch_lower_left',['
      ../namespace_go_1_1_mesh2_d_utils.html#a70ff355fcf2aa04dabab17c8387ce6d3',1,'Go::Mesh2DUtils']]],
  ['identify_5fpatch_5fupper_5fright',['identify_patch_upper_right',['
      ../namespace_go_1_1_mesh2_d_utils.html#a118220e0b56c3f07a13dc8ba42a393cb',1,'Go::Mesh2DUtils']]],
  ['identifybdpnts',['identifyBdPnts',['../class_go_1_1ft_point_set.html#ab8e8c73cdf2c3a939c5574f487365330'
      ,1,'Go::ftPointSet']]],
  ['identifyloop',['identifyLoop',['../namespace_go_1_1_path.html#a12301ef59c50bee8128a06243290bdfb',1,'
      Go::Path']]],
  ['identity',['identity',['../class_go_1_1_matrix_x_d.html#a69ef9806148e42baf80b86cf813022b5',1,'
      Go::MatrixXD']]],
  ['identity_5felement',['identity_element',['../namespacestd.html#a78e37a8fb419e182957f4be0adac1d03',1,'
      std::identity_element(plus&lt; _Tp &gt;)'],['../namespacestd.html#a0f2e93c7362c26ce388c62a5abc1be52',1,'
      std::identity_element(multiplies&lt; _Tp &gt;)']]],
  ['identitymatrix',['IdentityMatrix',['
      ../class_n_e_w_m_a_t_1_1_identity_matrix.html#acd9124ff1b21a69afd415a9e68d073b8',1,'NEWMAT::IdentityMatrix::IdentityMat
      ../class_n_e_w_m_a_t_1_1_identity_matrix.html#ad9a24dff9b08f41cda062438666d942f',1,'NEWMAT::IdentityMatrix::IdentityMat
      ../class_n_e_w_m_a_t_1_1_identity_matrix.html#a4f3706dc33b285d3a8706b945a4dfc17',1,'
      NEWMAT::IdentityMatrix::IdentityMatrix(const IdentityMatrix &amp;gm)'],['
      ../class_n_e_w_m_a_t_1_1_identity_matrix.html#aeed6ff0975f66d11b1ce9f2464e10b32',1,'NEWMAT::IdentityMatrix::IdentityMat
  ['ieqnd',['IEQND',['../class_n_e_w_m_a_t_1_1_base_matrix.html#a3e76a73d4cb17962fc9d99e8ba8fec27',1,'
      NEWMAT::BaseMatrix']]],
  ['if',['if',['../jquery_8js.html#a9db6d45a025ad692282fe23e69eeba43',1,'if(!b.support.opacity): 
```

Definition at line 1 of file functions_9.js.

30.1529 doc/html/search/functions_a.js File Reference

Variables

- var searchData
- jacobi cpp

30.1529.1 Variable Documentation

30.1529.1.1 jacobi cpp

Definition at line 3 of file functions_a.js.

30.1529.1.2 var searchData

Initial value:

```
=
[
  ['jacobi',['Jacobi',['../namespace_n_e_w_m_a_t.html#a2836cabc2994eacfc0e7a3b5197d0e9a',1,'
      NEWMAT::Jacobi(const SymmetricMatrix &amp;, DiagonalMatrix &amp;)'],['
      ../namespace_n_e_w_m_a_t.html#a556f131206374d64bb896c8f815e8fd6',1,'NEWMAT::Jacobi(const SymmetricMatrix &amp;, Diagonal
      ../namespace_n_e_w_m_a_t.html#a84f3caafdd15a0749b7a11ff668866f7',1,'NEWMAT::Jacobi(const SymmetricMatrix
       &amp;, DiagonalMatrix &amp;, Matrix &amp;)'],['../namespace_n_e_w_m_a_t.html#ab7f1b7f360924503ff4e0a681602cbc0'
      ,1,'NEWMAT::Jacobi(const SymmetricMatrix &amp;, DiagonalMatrix &amp;, SymmetricMatrix &amp;, Matrix &amp;,
       bool=true)'],['../jacobi_8cpp.html#ad370e3456b419cfe2eae25f2300fd5b1',1,'Jacobi(const SymmetricMatrix &amp;X,
       DiagonalMatrix &amp;D, SymmetricMatrix &amp;A, Matrix &amp;V, bool eivec): 
```

Definition at line 1 of file functions_a.js.

30.1530 doc/html/search/functions_b.js File Reference

Variables

- var searchData
- newmat6 cpp

30.1530.1 Variable Documentation

30.1530.1.1 newmat6 cpp

Definition at line 15 of file functions_b.js.

30.1530.1.2 var searchData

Initial value:

```
=
[
  ['key',['Key',['../classmaterial__appearance.html#a74882356eb34bffa5a8683cccbee97bc',1,'
      material_appearance']]],
  ['knotepsilon',['knotEpsilon',['../class_go_1_1_go_tools.html#af44ef84796819b793f2b196a7b296b9c',1,'
      Go::GoTools']]],
  ['knotinterval',['knotInterval',['../class_go_1_1_bspline_basis.html#a305a7e9c5ded401fbb4de72c0e9d2693',1
      ,'Go::BsplineBasis']]],
  ['knotintervalfuzzy',['knotIntervalFuzzy',['
      ../class_go_1_1_bspline_basis.html#a0ae41ca8567fa19eaccdce8b228f1580',1,'Go::BsplineBasis::knotIntervalFuzzy()'],['
      ../class_go_1_1_param0_function_int.html#adf18f61ba3429e8337f680bc6ed9eb4a',1,'Go::Param0FunctionInt::knotIntervalFuzzy
      ../class_go_1_1_param1_function_int.html#a4cfe2132fa258b820edaf776f5383396',1,'Go::Param1FunctionInt::knotIntervalFuzzy
      ../class_go_1_1_param2_function_int.html#a751cf94d3a521e66fde43b34d920662a',1,'Go::Param2FunctionInt::knotIntervalFuzzy
      ../class_go_1_1_param_curve_int.html#ab7260dc6baf8fa87b13c773360cced24',1,'
      Go::ParamCurveInt::knotIntervalFuzzy()'],['../class_go_1_1_param_surface_int.html#af16dd54625073ebccc4cac921c9d6ac2',1,'
      Go::ParamSurfaceInt::knotIntervalFuzzy()'],['../class_go_1_1_spline1_function_int.html#ae54cff5b82d26a4171300d8fbb3de2d8
      Go::Spline1FunctionInt::knotIntervalFuzzy()'],['
      ../class_go_1_1_spline2_function_int.html#a7229f63cd797e93f4aed7b4f3f8650ba',1,'Go::Spline2FunctionInt::knotIntervalFuzz
      ../class_go_1_1_spline_curve_int.html#aaccc36c235ff72d3989818aa3d99b024',1,'Go::SplineCurveInt::knotIntervalFuzzy()'],['
      ../class_go_1_1_spline_surface_int.html#ab48552a70547a940f282bf4f9eec5adf',1,'Go::SplineSurfaceInt::knotIntervalFuzzy()'
      ../class_go_1_1_mesh2_d.html#a7038b8a5c1ea106fac4c1b5b0bbddc7e',1,'Go::Mesh2D::knotIntervalFuzzy()']]],
  ['knotmultiplicities',['knotMultiplicities',['
      ../class_go_1_1_bspline_basis.html#a91f3e774d6f812df432c2f38fcf44f8e',1,'Go::BsplineBasis']]],
  ['knotmultiplicity',['knotMultiplicity',['
      ../class_go_1_1_bspline_basis.html#aca0cff53a80af7a8cfd0cc64acea7c95',1,'Go::BsplineBasis']]],
  ['knots',['knots',['../class_go_1_1_block_solution.html#af0bdaab56a91706e89bcafe49ad2ae8f',1,'
      Go::BlockSolution::knots()'],['../class_go_1_1_isogeometric_block.html#ad515166c60c7e702dc9f27d48f7122d3',1,'
      Go::IsogeometricBlock::knots()'],['../class_go_1_1_sf_solution.html#a74a9a0c6cc3dc7e3ddfcab6ac8031cdc',1,'
      Go::SfSolution::knots()'],['../class_go_1_1_vol_solution.html#a9d6a56296f7300e21f6f371dcc5d08a0',1,'
      Go::VolSolution::knots()']]],
  ['knots_5fto_5finsert',['knots_to_insert',['
      ../namespace_go_1_1_l_r_spline_utils.html#a4f98f5746feb419caf049335e2b1eda7',1,'Go::LRSplineUtils']]],
  ['knotsbegin',['knotsBegin',['../class_go_1_1_spline_curve.html#a9617b6d88db3ed4e11ed498a40d89581',1,'
      Go::SplineCurve::knotsBegin()'],['../class_go_1_1_spline_curve.html#ab7cfb2dc285d0378062d55d18c0acac2',1,'
      Go::SplineCurve::knotsBegin() const '],['../class_go_1_1_mesh2_d.html#a752b5850413c524460efed453321a688',1,'
      Go::Mesh2D::knotsBegin()']]],
  ['knotsend',['knotsEnd',['../class_go_1_1_spline_curve.html#acf20e5283b690c8f22aae9fb147fc210',1,'
      Go::SplineCurve::knotsEnd()'],['../class_go_1_1_spline_curve.html#a9fe54c39a94b2c2575f6d0511f721145',1,'
      Go::SplineCurve::knotsEnd() const '],['../class_go_1_1_mesh2_d.html#a1cedb03145e626d0bd834ca339f091db',1,'
      Go::Mesh2D::knotsEnd()']]],
  ['knotspan',['knotSpan',['../class_go_1_1_spline_surface.html#a4ae188d833ba7e018a60361975ca1754',1,'
      Go::SplineSurface::knotSpan()'],['../class_go_1_1_spline_volume.html#affe28b54eaa1c97de1e2a3e2229b608f',1,'
      Go::SplineVolume::knotSpan()']]],
  ['knotssimple',['knotsSimple',['../class_go_1_1_bspline_basis.html#aa2e75ab7996534ff328f96d5b2cfadde',1,'
      Go::BsplineBasis']]],
  ['kp',['KP',['../class_n_e_w_m_a_t_1_1_matrix_type.html#a6a5c67f2185e7691d2d8e85e7f209130',1,'
      NEWMAT::MatrixType::KP()'],['../class_matrix_row_col.html#a8a788cf7179884e2100b77f845cea7dd',1,'MatrixRowCol::KP()'],['
      ../namespace_n_e_w_m_a_t.html#adac429a80804603f506371d42304b686',1,'NEWMAT::KP()'],['
      ../newmat6_8cpp.html#ae3166f1201bb79865ac1945a9ebc64d6',1,'KP(): 
```

Definition at line 1 of file functions_b.js.

30.1531 doc/html/search/functions_c.js File Reference

Variables

- var searchData
- PrGeodesics h
- PrGeodesics double epsge
- PrGeodesics double bool init_mba =false
- PrGeodesics double bool double mba_level =0.0
- PrGeodesics double bool double bool closest_dist =true
- PrGeodesics double bool double bool bool repar

30.1531.1 Variable Documentation

30.1531.1.1 PrGeodesics double bool double bool closest_dist =true [bound]

Definition at line 88 of file functions_c.js.

30.1531.1.2 PrGeodesics double epsge [bound]

Definition at line 17 of file functions_c.js.

30.1531.1.3 PrGeodesics h

Definition at line 17 of file functions_c.js.

30.1531.1.4 PrGeodesics double bool init_mba =false [bound]

Definition at line 88 of file functions_c.js.

30.1531.1.5 PrGeodesics double bool double mba_level =0.0 [bound]

Definition at line 88 of file functions_c.js.

30.1531.1.6 PrGeodesics double bool double bool bool repar [bound]

Initial value:

```
=false)']]],
  ['lrsurfsmoothls',['LRSurfSmoothLS',['../class_go_1_1_l_r_surf_smooth_l_s
      .html#a8acba4937645e7d7c619ce67ae71c5b8',1,'Go::LRSurfSmoothLS::LRSurfSmoothLS
      (shared_ptr&lt; LRSplineSurface &gt; surf, std::vector&lt; int &gt; &amp;coef_known)'],['../
      class_go_1_1_l_r_surf_smooth_l_s.html#ad3d1d6e980d0818742352b8719702ac8',1,
      'Go::LRSurfSmoothLS::LRSurfSmoothLS()']]],
  ['lssmoothdata',['LSSmoothData',['../struct_go_1_1_l_s_smooth_data.html#
      adbe08d7ac0e51e41aad91021aaef8014',1,'Go::LSSmoothData']]],
  ['ltlexpoint',['ltLexPoint',['../main_8cpp.html#a3ad6217edc1c1d915556be09a7a6e512',1,'
      main.cpp']]],
  ['lubksb',['lubksb',['../class_n_e_w_m_a_t_1_1_crout_matrix.html#
      afcfb1bcd9b105d4be4f13b9dc85a0f98',1,'NEWMAT::CroutMatrix::lubksb()'],['../
      class_n_e_w_m_a_t_1_1_band_l_u_matrix.html#
      aa6b6344001665e9241bd7a3e6564c7da',1,'NEWMAT::BandLUMatrix::lubksb()']]],
  ['ludecomp',['LUDecomp',['../namespace_go.html#a77c8de2bdc12a47b62ef5c306ac0e46d',1,'
      Go']]],
  ['lusolvesystem',['LUsolveSystem',['../namespace_go.html#
      afd9ea9a56159c9a5841819ebf13280b8',1,'Go']]]
]
```

Definition at line 88 of file functions_c.js.

30.1531.1.7 var searchData

Initial value:

```
=
[
  ['labelbdynode',['labelBdyNode',['../class_pr_organized_points.html#acab5b170fefc327f7db0aac6dac3347b',1,
      'PrOrganizedPoints']]],
  ['labelnode',['labelNode',['../class_pr_organized_points.html#a02406e295c174e57548497a85e987988',1,'
      PrOrganizedPoints::labelNode(int i, int ic, std::vector&lt; int &gt; &amp;component) const '],['
      ../class_pr_organized_points.html#ae7d58624e3dabfac3af4a976ecd46ca2',1,'PrOrganizedPoints::labelNode(int i, int ic, int
       &amp;index, std::vector&lt; int &gt; &amp;component, std::vector&lt; int &gt; &amp;newIndex) const ']]],
  ['lackingparameter',['lackingParameter',['
      ../class_go_1_1_intersection_pool.html#a204c700b87c2881793dc64850c98ca03',1,'Go::IntersectionPool']]],
  ['lackingparametervalue',['lackingParameterValue',['
      ../class_go_1_1_intersection_pool.html#afd672f1d2375a2c42b178c9aa139363a',1,'Go::IntersectionPool']]],
  ['largestmultinline',['largestMultInLine',['
      ../class_go_1_1_mesh2_d.html#a6f5984896001959aacf751265b29208c',1,'Go::Mesh2D']]],
  ['last_5fnonlarger_5fknotvalue_5fix',['last_nonlarger_knotvalue_ix',['
      ../namespace_go_1_1_mesh2_d_utils.html#a8a567523d54d76c3a532ce9a9749f58e',1,'Go::Mesh2DUtils']]],
  ['lastadded',['lastAdded',['../class_go_1_1ft_point_set.html#adb78acd38e793f16f100844363fec50d',1,'
      Go::ftPointSet']]],
  ['lastknotinterval',['lastKnotInterval',['
      ../class_go_1_1_bspline_basis.html#a5f899f19d8953ff88810150adc2777b7',1,'Go::BsplineBasis']]],
  ['lastmeshvecix',['lastMeshVecIx',['../class_go_1_1_mesh2_d.html#ad5473996d004e4f93f357f2a1049333c',1,'
      Go::Mesh2D']]],
  ['leavelevel',['leaveLevel',['../class_pr_threshold.html#a816cdbad25faf259db527bf3c302bc5e',1,'
      PrThreshold']]],
  ['left',['Left',['../class_rect_matrix_row.html#a459e0abe296fe1d3dc3000eda2e5a8f4',1,'
      RectMatrixRow::Left()'],['../class_rect_matrix_col.html#a749656e672061aca5b6be61cb2ce1f2d',1,'RectMatrixCol::Left()']]],
  ['length',['length',['../class_go_1_1_bounded_curve.html#a52dff472a3423061bf038ce69699b380',1,'
      Go::BoundedCurve::length()'],['../class_go_1_1_circle.html#a50ca38850dcfdadc2d7fd76e8571dd57',1,'Go::Circle::length()'
      ],['../class_go_1_1_curve_on_surface.html#a86222695e99d89c9e6931fd1c56fca69',1,'Go::CurveOnSurface::length()
      '],['../class_go_1_1_ellipse.html#ab462f16f96d55a31758668ced9529eb2',1,'Go::Ellipse::length()'],['
      ../class_go_1_1_hyperbola.html#adfe71112434a8ac87efe0d62aa0138b1',1,'Go::Hyperbola::length()'],['
      ../class_go_1_1_line.html#a71b60c4fe361df79b87a187580b60723',1,'Go::Line::length()'],['
      ../class_go_1_1_parabola.html#a0d5884e48828c244112446d4861468f5',1,'Go::Parabola::length()'],['
      ../class_go_1_1_param_curve.html#a03c0c3d367d97ce42b0d71ff4f2e3ccc',1,'Go::ParamCurve::length(double tol)=0'],['
      ../class_go_1_1_param_curve.html#ae67c1874cfe426ea988e51bae328bbf4',1,'Go::ParamCurve::length(double tol, double tstart,
      ../class_go_1_1_spline_curve.html#ac752958b03163ea580ff752d184f73bc',1,'Go::SplineCurve::length()'],['
      ../class_go_1_1_array.html#a1602961ef1753005f8bb4602f2f6e6dd',1,'Go::Array::length()'],['
      ../class_go_1_1_point.html#a4b22f412d01dfa566f973ae2f52ffbd5',1,'Go::Point::length()'],['../classvector3t.html#ad4f2c442
      vector3t::length()'],['../class_go_1_1_curve_on_volume.html#ad58a92a8b5899727209bdbe9ee0fce21',1,'
      Go::CurveOnVolume::length()'],['../class_matrix_row_col.html#a0219c2695986db07f74871eb2ff6b24f',1,'MatrixRowCol::Length
      ,['../class_matrix_row_col.html#a244b92e34d0e34fe4dff2cffb19ef23d',1,'MatrixRowCol::Length(int i)']]],
  ['length2',['length2',['../class_go_1_1_array.html#a54cb2bbf81e87d380fb58716d11660ff',1,'
      Go::Array::length2()'],['../class_go_1_1_point.html#a9b757aefb2094e95efc92a2e46e0c108',1,'Go::Point::length2()']]],
  ['length_5ferror',['Length_error',['
      ../class_r_b_d___c_o_m_m_o_n_1_1_length__error.html#aaa6de69c775aee8e7fbf15521ffa5733',1,'RBD_COMMON::Length_error']]],
  ['length_5fpolygonal_5fpath',['length_polygonal_path',['
      ../_pr_geodesics_8h.html#ab184bcc756b99d5c32bf480c0aea576d',1,'length_polygonal_path(const vector&lt; Vector3D &gt; &amp
```

Definition at line 1 of file functions_c.js.

30.1532 doc/html/search/functions_d.js File Reference

Variables

- var searchData
- example cpp

30.1532.1 Variable Documentation

30.1532.1.1 example sisl_view_demo cpp

Definition at line 9 of file functions_d.js.

30.1532.1.2 var searchData

Initial value:

```
=
[
  ['m3_5fdet',['m3_det',['../gv_utilities_8h.html#a15f8dd61e74e6e8637e610a774df9607',1,'gvUtilities.h']]],
  ['m3_5fidentity',['m3_identity',['../gv_utilities_8h.html#a6091a5b9ab587c9a4b692565e6e1d6c6',1,'
      gvUtilities.h']]],
  ['m3_5finverse',['m3_inverse',['../gv_utilities_8h.html#a3347b853ddaa80d8f92360e764b433e8',1,'
      gvUtilities.h']]],
  ['m4_5fdet',['m4_det',['../gv_utilities_8h.html#acdaa244d22eb4f9c9c0bda4b5d94e5b3',1,'gvUtilities.h']]],
  ['m4_5finverse',['m4_inverse',['../gv_utilities_8h.html#a708f7916c5b2c579c1096435f8f481f4',1,'
      gvUtilities.h']]],
  ['m4_5fsubmat',['m4_submat',['../gv_utilities_8h.html#a94b4064202801e77aa5bd9b975b37d0c',1,'gvUtilities.h
      ']]],
  ['main',['main',['../example_8cpp.html#ae66f6b31b5ad750f1fe042a706a4e3d4',1,'main(): 
```

Definition at line 1 of file functions_d.js.

30.1533 doc/html/search/functions_e.js File Reference

Variables

- var searchData
- sisl h

30.1533.1 Variable Documentation

30.1533.1.1 sisl h

Definition at line 21 of file functions_e.js.

30.1533.1.2 var searchData

Initial value:

```
=
[
  ['n1',['n1',['../class_pr_triangle.html#a96449b1505011a047203fc32e8f58df7',1,'PrTriangle::n1() const '],[
      '../class_pr_triangle.html#a9acbd361babe718867639b75e9f88edd',1,'PrTriangle::n1()']]],
  ['n2',['n2',['../class_pr_triangle.html#a28836174b41f58634b030ca78a9df0f8',1,'PrTriangle::n2() const '],[
      '../class_pr_triangle.html#a74e37eb7e0d02c4f33bb80db4a282eb2',1,'PrTriangle::n2()']]],
  ['n3',['n3',['../class_pr_triangle.html#ac5c483c7358d77184ae21b9120b664fe',1,'PrTriangle::n3() const '],[
      '../class_pr_triangle.html#ad38195d658ed67a5493c31cb3bded64f',1,'PrTriangle::n3()']]],
  ['n_5fboxes',['n_boxes',['
      ../class_go_1_1box_structuring_1_1_bounding_box_structure.html#a60971e92b7351db884394bb924002f99',1,'Go::boxStructuring
  ['n_5fsurfaces',['n_surfaces',['
      ../class_go_1_1box_structuring_1_1_bounding_box_structure.html#aa51b875860291f92adb86b4034bdef4e',1,'Go::boxStructuring
  ['n_5fvoxels_5fx',['n_voxels_x',['
      ../class_go_1_1box_structuring_1_1_bounding_box_structure.html#af796d20691409c02d3d3831106917bba',1,'Go::boxStructuring
  ['n_5fvoxels_5fy',['n_voxels_y',['
      ../class_go_1_1box_structuring_1_1_bounding_box_structure.html#a70d433f73cb7086fd851e190a3ede696',1,'Go::boxStructuring
  ['n_5fvoxels_5fz',['n_voxels_z',['
      ../class_go_1_1box_structuring_1_1_bounding_box_structure.html#a6e6bec0d1412870fabcf13a14c244e3d',1,'Go::boxStructuring
  ['name',['name',['../classgv_group.html#a6032ce853c50bb71260ecf96d90720cc',1,'gvGroup']]],
  ['narrowregion',['narrowRegion',['../class_go_1_1_face_set_quality.html#a57cdf98fc6cc7eb3b1e8c9890208c6d2
      ',1,'Go::FaceSetQuality::narrowRegion()'],['
      ../class_go_1_1_model_quality.html#a0279066977434f3f9abc88676a8b7d3a',1,'Go::ModelQuality::narrowRegion()']]],
  ['ncols',['Ncols',['../class_n_e_w_m_a_t_1_1_general_matrix.html#a1f41c8345ef34da8de3ebce655874564',1,'
      NEWMAT::GeneralMatrix']]],
```

```
['negadd',['NegAdd',['../class_n_e_w_m_a_t_1_1_general_matrix.html#a34d6cfbafa85353e633e591aea41b9ec',1,'
    NEWMAT::GeneralMatrix::NegAdd(GeneralMatrix *, Real)'],['
    ../class_n_e_w_m_a_t_1_1_general_matrix.html#a89c69d4e1cec85b64092c9849b564466',1,'NEWMAT::GeneralMatrix::NegAdd(Real)'
    ../class_matrix_row_col.html#a41b3194775a1a1dcfd560ec52b3eeffa',1,'MatrixRowCol::NegAdd()']]],
['negate',['Negate',['../class_n_e_w_m_a_t_1_1_general_matrix.html#aec996470a2a281ab1dfa83a04395ab15',1,'
    NEWMAT::GeneralMatrix::Negate(GeneralMatrix *)'],['
    ../class_n_e_w_m_a_t_1_1_general_matrix.html#a65732aecbb9e92b9fb3cfcf828542dca',1,'NEWMAT::GeneralMatrix::Negate()'],['
    ../class_matrix_row_col.html#a85aedb535b4ac31d17b3991093eccdb3',1,'MatrixRowCol::Negate()'],['
    ../class_rect_matrix_row_col.html#a5c6d68fb80759c68d09a0b5d12b84822',1,'RectMatrixRowCol::Negate()']]],
['negatedmatrix',['NegatedMatrix',['
    ../class_n_e_w_m_a_t_1_1_negated_matrix.html#a701a017652a4ec29860401e3f2292a30',1,'NEWMAT::NegatedMatrix']]],
['negativeproj',['negativeProj',['
    ../namespace_go_1_1_geometry_tools.html#a4a00d270de7dc569dd5649d41283b847',1,'Go::GeometryTools']]],
['negshiftedmatrix',['NegShiftedMatrix',['
    ../class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#a759d2cc85daee8a6f22f9f07559fc272',1,'NEWMAT::NegShiftedMatrix']]],
['new',['New',['../class_n_e_w_m_a_t_1_1_matrix_type.html#a7cec58150cf70497bbe0dc9807d8aa7d',1,'
    NEWMAT::MatrixType::New() const '],['../class_n_e_w_m_a_t_1_1_matrix_type.html#adab87f8bdd8f148819ea880e303f9ea8',1,'
    NEWMAT::MatrixType::New(int, int, BaseMatrix *) const ']]],
['new_5fparametrize3d',['new_parametrize3d',['
    ../class_pr_parametrize_int.html#ac6e89a09aba3bf0918ce57ed3a4d453a',1,'PrParametrizeInt']]],
['newbox',['newbox',['../sisl_8h.html#aa6461e5f7144bbaf22c9f76da8aa1b57',1,'newbox(): 
```

Definition at line 1 of file functions_e.js.

30.1534 doc/html/search/functions_f.js File Reference

Variables

- var searchData
- StreamUtils h
- StreamUtils int idx
- StreamUtils int int idx const
- StreamUtils int int idx int i int i
- StreamUtils int int idx int i int int i int int i int int num int num

30.1534.1 Variable Documentation

30.1534.1.1 StreamUtils int int idx int i int int i int int i int int num int int num int int num int int num int int int i int int i const [bound]

Definition at line 4 of file functions_f.js.

30.1534.1.2 StreamUtils h

Definition at line 4 of file functions_f.js.

30.1534.1.3 StreamUtils int int idx int i int int i int int i int int num int int num int int num int int num int int int i int i [bound]

Definition at line 4 of file functions_f.js.

30.1534.1.4 StreamUtils int idx [bound]

Definition at line 4 of file functions_f.js.

30.1534.1.5 StreamUtils int int idx int i int int i int int i int int num int int num int int num int int num int num [bound]

Definition at line 4 of file functions_f.js.

30.1534.1.6 var searchData

Initial value:

```
=
[
  ['object',['object',['../classgv_data.html#a13c47f9abfb21d7d5ef58957b229f70e',1,'gvData::object(int i)'],
      ['../classgv_data.html#a28402d21f6e677b96197b32feb40d8e4',1,'gvData::object(int i) const ']]],
  ['object_5ffrom_5fstream',['object_from_stream',['
      ../_stream_utils_8h.html#a4894fce509ab613c659adfb8c6e4f3a4',1,'object_from_stream(std::istream &amp;is, T &amp;obj):&#1
```

Definition at line 1 of file functions_f.js.

30.1535 doc/html/search/groups_0.js File Reference

Variables

- var searchData

30.1535.1 Variable Documentation

30.1535.1.1 var searchData

Initial value:

```
=
[
  ['rbd_20common_20library',['RBD common library',['../group__rbd__common.html',1,'']]]
]
```

Definition at line 1 of file groups_0.js.

30.1536 doc/html/search/namespaces_0.js File Reference

Variables

- var searchData

30.1536.1 Variable Documentation

30.1536.1.1 var searchData

Definition at line 1 of file namespaces_0.js.

30.1537 doc/html/search/namespaces_1.js File Reference

Variables

- var searchData

30.1537.1 Variable Documentation

30.1537.1.1 var searchData

Initial value:

```
=
[
  ['hed',['hed',['../namespacehed.html',1,'']]],
  ['hetriang',['hetriang',['../namespacehetriang.html',1,'']]]
]
```

Definition at line 1 of file namespaces_1.js.

30.1538 doc/html/search/namespaces_2.js File Reference

Variables

- var searchData

30.1538.1 Variable Documentation

30.1538.1.1 var searchData

Initial value:

```
=
[
  ['newmat',['NEWMAT',['../namespace_n_e_w_m_a_t.html',1,'']]]
]
```

Definition at line 1 of file namespaces_2.js.

30.1539 doc/html/search/namespaces_3.js File Reference

Variables

- var searchData

30.1539.1 Variable Documentation

30.1539.1.1 var searchData

Initial value:

```
=
[
  ['rbd_5fcommon',['RBD_COMMON',['../namespace_r_b_d___c_o_m_m_o_n.html',1,'']]],
  ['rbd_5flibraries',['RBD_LIBRARIES',['../namespace_r_b_d___l_i_b_r_a_r_i_e_s.html',1,'']]]
]
```

Definition at line 1 of file namespaces_3.js.

30.1540 doc/html/search/namespaces_4.js File Reference

Variables

- var searchData

30.1540.1 Variable Documentation

30.1540.1.1 var searchData

Initial value:

```
=
[
  ['std',['std',['../namespacestd.html',1,'']]]
]
```

Definition at line 1 of file namespaces_4.js.

30.1541 doc/html/search/namespaces_5.js File Reference

Variables

- var searchData

30.1541.1 Variable Documentation

30.1541.1.1 var searchData

Initial value:

```
=
[
  ['ttl',['ttl',['../namespacettl.html',1,'']]],
  ['ttl_5fconstr',['ttl_constr',['../namespacettl__constr.html',1,'']]],
  ['ttl_5futil',['ttl_util',['../namespacettl__util.html',1,'']]]
]
```

Definition at line 1 of file namespaces_5.js.

30.1542 doc/html/search/pages_0.js File Reference

Variables

- var searchData

30.1542.1 Variable Documentation

30.1542.1.1 var searchData

Initial value:

```
=
[
  ['application_20programming_20interface_20to_20ttl_20_28api_29',['Application Programming Interface to
      TTL (API)',['../api.html',1,'']]]
]
```

Definition at line 1 of file pages_0.js.

30.1543 doc/html/search/pages_1.js File Reference

Variables

- var searchData

30.1543.1 Variable Documentation

30.1543.1.1 var searchData

Initial value:

```
=
[
  ['bug_20list',['Bug List',['../bug.html',1,'']]]
]
```

Definition at line 1 of file pages_1.js.

30.1544 doc/html/search/pages_2.js File Reference

Variables

- var searchData

30.1544.1 Variable Documentation

30.1544.1.1 var searchData

Initial value:

```
=
[
  ['example_20using_20ttl_20and_20the_20half_2dedge_20data_20structure',['Example using TTL and the
      half-edge data structure',['../hesimplest.html',1,'']]]
]
```

Definition at line 1 of file pages_2.js.

30.1545 doc/html/search/pages_3.js File Reference

Variables

- var searchData

30.1545.1 Variable Documentation

30.1545.1.1 var searchData

Initial value:

```
=
[
  ['gotools_20compositemodel',['GoTools CompositeModel',['../compositemodel.html',1,'']]],
  ['gotools_20core',['GoTools Core',['../geometry_doc.html',1,'']]],
  ['gotools_20example_20files',['GoTools example files',['../gotools_examples.html',1,'']]],
  ['gotools_20igeslib',['GoTools Igeslib',['../igeslib.html',1,'']]],
  ['gotools_20implicitization',['GoTools Implicitization',['../implicitization.html',1,'']]],
  ['gotools_20library',['GoTools Library',['../index.html',1,'']]],
  ['gotools_20intersections',['GoTools Intersections',['../intersections.html',1,'']]],
  ['gotools_20isogeometricmodel',['GoTools IsogeometricModel',['../isogeometric_model.html',1,'']]],
  ['gotools_20lrsplines2d',['GoTools LRsplines2D',['../lrsplines2d.html',1,'']]],
  ['gotools_20parametrization',['GoTools Parametrization',['../parametrization.html',1,'']]],
  ['gotools_20qualitymodule',['GoTools QualityModule',['../qualitymodule.html',1,'']]],
  ['gotools_20topology',['GoTools Topology',['../topology.html',1,'']]],
  ['gotools_20trivariate',['GoTools Trivariate',['../trivariate.html',1,'']]],
  ['gotools_20trivariatemodel',['GoTools Trivariatemodel',['../trivariatemodel.html',1,'']]],
  ['gotools_20viewlib',['GoTools Viewlib',['../viewlib.html',1,'']]]
]
```

Definition at line 1 of file pages_3.js.

30.1546 doc/html/search/pages_4.js File Reference

Variables

- var searchData

30.1546.1 Variable Documentation

30.1546.1.1 var searchData

Initial value:

```
=
[
  ['the_20filter_20routines_20main_20page',['The filter routines main page',['../filters_mainpage.html',1,'
      ']]],
  ['the_20half_2dedge_20data_20structure_20and_20adaption_20to_20ttl',['The Half-Edge Data Structure and
       Adaption to TTL',['../halfedge.html',1,'']]],
  ['the_20g2_2dformat_2c_20gotools_20file_20format_20for_20geometry_20entities',['The g2-format, GoTools
       file format for geometry entities',['../streamable_doc.html',1,'']]]
]
```

Definition at line 1 of file pages_4.js.

30.1547 doc/html/search/related_0.js File Reference

Variables

- var searchData

30.1547.1 Variable Documentation

30.1547.1.1 var searchData

Initial value:

```
=
[
  ['addedmatrix',['AddedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#aa69c602d29e1d8c3cddcb3279bab7fa8',1,'NEWMAT::BaseMatrix::AddedMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#aa69c602d29e1d8c3cddcb3279bab7fa8',1,'NEWMAT::GeneralMatrix::AddedMatrix()'
]
```

Definition at line 1 of file related_0.js.

30.1548 doc/html/search/related_1.js File Reference

Variables

- var searchData

30.1548.1 Variable Documentation

30.1548.1.1 var searchData

Initial value:

```
=
[
  ['bandmatrix',['BandMatrix','../class_n_e_w_m_a_t_1_1_base_matrix.html#a86c113dda73d85b0f706f1978e86e541
      ',1,'NEWMAT::BaseMatrix::BandMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a86c113dda73d85b0f706f1978e86e541',1,'NEWMAT::GeneralMatrix::BandMatrix()']
  ['baseexception',['BaseException',['
      ../class_r_b_d___c_o_m_m_o_n_1_1_tracer.html#acc29c9a717ece42fb764f4a48a04b6cb',1,'RBD_COMMON::Tracer']]],
  ['basematrix',['BaseMatrix',['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::GeneralMatrix::BaseMatrix()']
      ../class_n_e_w_m_a_t_1_1_generic_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::GenericMatrix::BaseMatrix()']
      ../class_n_e_w_m_a_t_1_1_multiplied_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::MultipliedMatrix::BaseMatr
      ../class_n_e_w_m_a_t_1_1_added_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::AddedMatrix::BaseMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_s_p_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::SPMatrix::BaseMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_k_p_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::KPMatrix::BaseMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_concatenated_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'
      NEWMAT::ConcatenatedMatrix::BaseMatrix()'],['../class_n_e_w_m_a_t_1_1_stacked_matrix.html#afcc50b811bd45d547cae53941018
      NEWMAT::StackedMatrix::BaseMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_solved_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::SolvedMatrix::BaseMatrix()'],
      ../class_n_e_w_m_a_t_1_1_subtracted_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::SubtractedMatrix::BaseMatr
      ../class_n_e_w_m_a_t_1_1_shifted_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::ShiftedMatrix::BaseMatrix()']
      ../class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::NegShiftedMatrix::BaseMat
      ['../class_n_e_w_m_a_t_1_1_scaled_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'
      NEWMAT::ScaledMatrix::BaseMatrix()'],['../class_n_e_w_m_a_t_1_1_negated_matrix.html#afcc50b811bd45d547cae53941018fdde',1
      NEWMAT::NegatedMatrix::BaseMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_transposed_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::TransposedMatrix::BaseMatr
      ../class_n_e_w_m_a_t_1_1_reversed_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::ReversedMatrix::BaseMatrix()
      ../class_n_e_w_m_a_t_1_1_inverted_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::InvertedMatrix::BaseMatrix()
      ../class_n_e_w_m_a_t_1_1_rowed_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::RowedMatrix::BaseMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_coled_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::ColedMatrix::BaseMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_diaged_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'
      NEWMAT::DiagedMatrix::BaseMatrix()'],['../class_n_e_w_m_a_t_1_1_mated_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'
      NEWMAT::MatedMatrix::BaseMatrix()'],['../class_n_e_w_m_a_t_1_1_return_matrix_x.html#afcc50b811bd45d547cae53941018fdde',1
      NEWMAT::ReturnMatrixX::BaseMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_get_sub_matrix.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::GetSubMatrix::BaseMatrix()'],
      ../class_n_e_w_m_a_t_1_1_linear_equation_solver.html#afcc50b811bd45d547cae53941018fdde',1,'NEWMAT::LinearEquationSolver
]
```

Definition at line 1 of file related_1.js.

30.1549 doc/html/search/related_2.js File Reference

Variables

- var searchData

30.1549.1 Variable Documentation

30.1549.1.1 var searchData

Initial value:

```
=
[
  ['coledmatrix',['ColedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#adfa43567d33d5b9a9882734cddc5e143',1,'NEWMAT::BaseMatrix::ColedMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#adfa43567d33d5b9a9882734cddc5e143',1,'NEWMAT::GeneralMatrix::ColedMatrix()'
  ['columnvector',['ColumnVector',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a2a47af7bd92cf6d5a8d67ffa3957db2b',1,'NEWMAT::BaseMatrix::ColumnVector()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a2a47af7bd92cf6d5a8d67ffa3957db2b',1,'NEWMAT::GeneralMatrix::ColumnVector()
  ['compare',['Compare',['../class_n_e_w_m_a_t_1_1_matrix_type.html#a6ba54373b9b6c990f86c20c24764f8a7',1,'
      NEWMAT::MatrixType']]],
  ['complexscale',['ComplexScale',['../class_rect_matrix_row_col.html#ae131888d49cb5f48944aa641f5998af5',1,
      'RectMatrixRowCol::ComplexScale()'],['../class_rect_matrix_col.html#ae131888d49cb5f48944aa641f5998af5',1,'
      RectMatrixCol::ComplexScale()']]],
  ['concatenatedmatrix',['ConcatenatedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a18c145a190fdba65a61170be5585dc89',1,'NEWMAT::BaseMatrix::ConcatenatedMatrix()
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a18c145a190fdba65a61170be5585dc89',1,'NEWMAT::GeneralMatrix::ConcatenatedMa
  ['constructintersectioncurve',['constructIntersectionCurve',['
      ../class_go_1_1_intersection_curve.html#a6ab34095fc2901f18aff0d440f5f9ea5',1,'Go::IntersectionCurve::constructIntersecti
      ../class_go_1_1_degenerated_intersection_curve.html#a6ab34095fc2901f18aff0d440f5f9ea5',1,'
      Go::DegeneratedIntersectionCurve::constructIntersectionCurve()'],['
      ../class_go_1_1_non_evaluable_intersection_curve.html#a6ab34095fc2901f18aff0d440f5f9ea5',1,'Go::NonEvaluableIntersectio
      ../class_go_1_1_isoparametric_intersection_curve.html#a6ab34095fc2901f18aff0d440f5f9ea5',1,'
      Go::IsoparametricIntersectionCurve::constructIntersectionCurve()'],['
      ../class_go_1_1_interpolated_intersection_curve.html#a6ab34095fc2901f18aff0d440f5f9ea5',1,'Go::InterpolatedIntersectionC
  ['conv2',['conv2',['../classvector3t.html#a305b357d7ef8a52418e1e04c137ed1b8',1,'vector3t']]],
  ['cosangle',['cosangle',['../classvector3t.html#ac7f417d59352ac50bb3dce6c0c054879',1,'vector3t']]],
  ['croutmatrix',['CroutMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a260688c58e06fb98f68aa624c865c435',1,'NEWMAT::BaseMatrix::CroutMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a260688c58e06fb98f68aa624c865c435',1,'NEWMAT::GeneralMatrix::CroutMatrix()'
]
```

Definition at line 1 of file related_2.js.

30.1550 doc/html/search/related_3.js File Reference

Variables

- var searchData

30.1550.1 Variable Documentation

30.1550.1.1 var searchData

Initial value:

```
=
[
  ['diagedmatrix',['DiagedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#ae98438838c66748c639f9646a8658a8f',1,'NEWMAT::BaseMatrix::DiagedMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#ae98438838c66748c639f9646a8658a8f',1,'NEWMAT::GeneralMatrix::DiagedMatrix()
  ['diagonalmatrix',['DiagonalMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a9abdda7fd7cf3908adadd1587f4ed77e',1,'NEWMAT::BaseMatrix::DiagonalMatrix()'],
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a9abdda7fd7cf3908adadd1587f4ed77e',1,'NEWMAT::GeneralMatrix::DiagonalMatri
  ['dotprod',['DotProd',['../class_matrix_row_col.html#a453803ca6490cb877d3a0dc3fe802c63',1,'MatrixRowCol']
      ]],
  ['dotproduct',['DotProduct',['../class_n_e_w_m_a_t_1_1_matrix.html#a9e8ce3d9f963c09ee55fd8e84d540973',1,'
      NEWMAT::Matrix']]]
]
```

Definition at line 1 of file related_3.js.

30.1551 doc/html/search/related_4.js File Reference

Variables

- var searchData

30.1551.1 Variable Documentation

30.1551.1.1 var searchData

Initial value:

```
=
[
  ['facesetquality',['FaceSetQuality',['
      ../class_go_1_1_quality_results.html#ae820d513170db3b6b7ce7887b8a0d4dc',1,'Go::QualityResults']]],
  ['facesetrepair',['FaceSetRepair',['
      ../class_go_1_1_quality_results.html#a18e8ba52e738ee5a12e03dab6f012c27',1,'Go::QualityResults']]]
]
```

Definition at line 1 of file related_4.js.

30.1552 doc/html/search/related_5.js File Reference

Variables

- var searchData

30.1552.1 Variable Documentation

30.1552.1.1 var searchData

Initial value:

```
=
[
  ['generalmatrix',['GeneralMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#abaf0969f44c36896ac567a558a330771',1,'NEWMAT::BaseMatrix::GeneralMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_multiplied_matrix.html#abaf0969f44c36896ac567a558a330771',1,'NEWMAT::MultipliedMatrix::GeneralM
      ../class_n_e_w_m_a_t_1_1_added_matrix.html#abaf0969f44c36896ac567a558a330771',1,'NEWMAT::AddedMatrix::GeneralMatrix()'],
      ../class_n_e_w_m_a_t_1_1_s_p_matrix.html#abaf0969f44c36896ac567a558a330771',1,'NEWMAT::SPMatrix::GeneralMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_k_p_matrix.html#abaf0969f44c36896ac567a558a330771',1,'NEWMAT::KPMatrix::GeneralMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_concatenated_matrix.html#abaf0969f44c36896ac567a558a330771',1,'
      NEWMAT::ConcatenatedMatrix::GeneralMatrix()'],['../class_n_e_w_m_a_t_1_1_stacked_matrix.html#abaf0969f44c36896ac567a558a
      ,'NEWMAT::StackedMatrix::GeneralMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_subtracted_matrix.html#abaf0969f44c36896ac567a558a330771',1,'NEWMAT::SubtractedMatrix::GeneralM
      ../class_n_e_w_m_a_t_1_1_shifted_matrix.html#abaf0969f44c36896ac567a558a330771',1,'NEWMAT::ShiftedMatrix::GeneralMatrix
      ../class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#abaf0969f44c36896ac567a558a330771',1,'NEWMAT::NegShiftedMatrix::Genera
      ],['../class_n_e_w_m_a_t_1_1_scaled_matrix.html#abaf0969f44c36896ac567a558a330771',1,'
      NEWMAT::ScaledMatrix::GeneralMatrix()'],['../class_n_e_w_m_a_t_1_1_matrix_input.html#abaf0969f44c36896ac567a558a330771',
      NEWMAT::MatrixInput::GeneralMatrix()']]],
  ['genericmatrix',['GenericMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237',1,'NEWMAT::BaseMatrix::GenericMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237',1,'NEWMAT::GeneralMatrix::GenericMatrix
      ../class_n_e_w_m_a_t_1_1_multiplied_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237',1,'NEWMAT::MultipliedMatrix::GenericM
      ../class_n_e_w_m_a_t_1_1_added_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237',1,'NEWMAT::AddedMatrix::GenericMatrix()'],
      ../class_n_e_w_m_a_t_1_1_s_p_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237',1,'
      NEWMAT::SPMatrix::GenericMatrix()'],['../class_n_e_w_m_a_t_1_1_k_p_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237',1,'
```

```
      NEWMAT::KPMatrix::GenericMatrix()’],[’../class_n_e_w_m_a_t_1_1_concatenated_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd72
      NEWMAT::ConcatenatedMatrix::GenericMatrix()’],[’
      ../class_n_e_w_m_a_t_1_1_stacked_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237’,1,’NEWMAT::StackedMatrix::GenericMatrix
      ../class_n_e_w_m_a_t_1_1_subtracted_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237’,1,’NEWMAT::SubtractedMatrix::GenericM
      ../class_n_e_w_m_a_t_1_1_shifted_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237’,1,’NEWMAT::ShiftedMatrix::GenericMatrix
      ../class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd7237’,1,’
      NEWMAT::NegShiftedMatrix::GenericMatrix()’],[’../class_n_e_w_m_a_t_1_1_scaled_matrix.html#a4ecabb4ff1be9d3dd3fd895b25fd
      NEWMAT::ScaledMatrix::GenericMatrix()’]]],
  [’getsubmatrix’,[’GetSubMatrix’,[’
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a99a4375b34d3548efc90d13431a4d54f’,1,’NEWMAT::BaseMatrix::GetSubMatrix()’],[’
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a99a4375b34d3548efc90d13431a4d54f’,1,’NEWMAT::GeneralMatrix::GetSubMatrix(
  [’setparameterdomain’,[’setParameterDomain’,[’
      ../class_go_1_1_bounded_surface.html#a9fa33bdf92930ca56ca7e882c8e0180a’,1,’Go::BoundedSurface’]]]
]
```

Definition at line 1 of file related_5.js.

30.1553 doc/html/search/related_6.js File Reference

Variables

- var searchData

30.1553.1 Variable Documentation

30.1553.1.1 var searchData

Initial value:

```
=
[
  [’intersectionpool’,[’IntersectionPool’,[’
      ../class_go_1_1_intersector.html#aaf8c0751b08d6f7243931a07947a594e’,1,’Go::Intersector::IntersectionPool()’],[’
      ../class_go_1_1_sf_sf_intersector.html#aaf8c0751b08d6f7243931a07947a594e’,1,’Go::SfSfIntersector::IntersectionPool()’]]
  [’intersectoralgpar’,[’IntersectorAlgPar’,[’
      ../class_go_1_1_intersector_func_const.html#ae0bce107ca8435c4f869edb948b496cf’,1,’Go::IntersectorFuncConst’]]],
  [’invertedmatrix’,[’InvertedMatrix’,[’
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#ae361bc8ebdc01f511bb97ab6516e2e34’,1,’NEWMAT::BaseMatrix::InvertedMatrix()’],
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#ae361bc8ebdc01f511bb97ab6516e2e34’,1,’NEWMAT::GeneralMatrix::InvertedMatri
      ../class_n_e_w_m_a_t_1_1_solved_matrix.html#ae361bc8ebdc01f511bb97ab6516e2e34’,1,’NEWMAT::SolvedMatrix::InvertedMatrix(
]
```

Definition at line 1 of file related_6.js.

30.1554 doc/html/search/related_7.js File Reference

Variables

- var searchData

30.1554.1 Variable Documentation

30.1554.1.1 var searchData

Initial value:

```
=
[
  ['kp',['KP',['../class_n_e_w_m_a_t_1_1_k_p_matrix.html#a7b84f8e43bac4608bf225867306c9450',1,'
      NEWMAT::KPMatrix']]],
  ['kpmatrix',['KPMatrix',['../class_n_e_w_m_a_t_1_1_base_matrix.html#ad4980f118f2c21b78c50f76b6891a166',1,
      'NEWMAT::BaseMatrix::KPMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#ad4980f118f2c21b78c50f76b6891a166',1,'NEWMAT::GeneralMatrix::KPMatrix()']]]
]
```

Definition at line 1 of file related_7.js.

30.1555 doc/html/search/related_8.js File Reference

Variables

- var searchData

30.1555.1 Variable Documentation

30.1555.1.1 var searchData

Initial value:

```
=
[
  ['linearequationsolver',['LinearEquationSolver',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a44143f61f0e4670c28163293df71583f',1,'NEWMAT::BaseMatrix::LinearEquationSolver
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a44143f61f0e4670c28163293df71583f',1,'NEWMAT::GeneralMatrix::LinearEquation
  ['lowerbandmatrix',['LowerBandMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a4d3e29bfb45ba278e5257ede2b4e020d',1,'NEWMAT::BaseMatrix::LowerBandMatrix()'],
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a4d3e29bfb45ba278e5257ede2b4e020d',1,'NEWMAT::GeneralMatrix::LowerBandMatr
  ['lowertriangularmatrix',['LowerTriangularMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#aa17a07bb642f9d28f6a6b9f50c43c41a',1,'NEWMAT::BaseMatrix::LowerTriangularMatr
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#aa17a07bb642f9d28f6a6b9f50c43c41a',1,'NEWMAT::GeneralMatrix::LowerTriangul
]
```

Definition at line 1 of file related_8.js.

30.1556 doc/html/search/related_9.js File Reference

Variables

- var searchData

30.1556.1 Variable Documentation

30.1556.1.1 var searchData

Initial value:

```
=
[
  ['matedmatrix',['MatedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a74e701028481006374af8538416b7217',1,'NEWMAT::BaseMatrix::MatedMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a74e701028481006374af8538416b7217',1,'NEWMAT::GeneralMatrix::MatedMatrix()'
  ['matrix',['Matrix',['../class_n_e_w_m_a_t_1_1_base_matrix.html#a34913a9261681f734171a6da06bd56fe',1,'
      NEWMAT::BaseMatrix::Matrix()'],['../class_n_e_w_m_a_t_1_1_general_matrix.html#a34913a9261681f734171a6da06bd56fe
      ',1,'NEWMAT::GeneralMatrix::Matrix()']]],
  ['modelquality',['ModelQuality',['../class_go_1_1_quality_results.html#a8b28ece74f17b35d5d93ee5b4e8bb3a1'
      ,1,'Go::QualityResults']]],
  ['modelrepair',['ModelRepair',['../class_go_1_1_quality_results.html#adbeec2dc762f5b47140d310dbba07cf8',1
      ,'Go::QualityResults']]],
  ['multipliedmatrix',['MultipliedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#adf9d5633a1bc685e4eacf58768b99201',1,'NEWMAT::BaseMatrix::MultipliedMatrix()'
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#adf9d5633a1bc685e4eacf58768b99201',1,'NEWMAT::GeneralMatrix::MultipliedMatri
]
```

Definition at line 1 of file related_9.js.

30.1557 doc/html/search/related_a.js File Reference

Variables

- var searchData

30.1557.1 Variable Documentation

30.1557.1.1 var searchData

Initial value:

```
=
[
  ['negatedmatrix',['NegatedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a339246a27fdf960873e646538f0245ad',1,'NEWMAT::BaseMatrix::NegatedMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a339246a27fdf960873e646538f0245ad',1,'NEWMAT::GeneralMatrix::NegatedMatrix
  ['negshiftedmatrix',['NegShiftedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a437c0b9876f15d7f060627f8fc463313',1,'NEWMAT::BaseMatrix::NegShiftedMatrix()'
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a437c0b9876f15d7f060627f8fc463313',1,'NEWMAT::GeneralMatrix::NegShiftedMatri
  ['nricmatrix',['nricMatrix',['../class_n_e_w_m_a_t_1_1_base_matrix.html#ab755e1343fa84fbbea94979d734af82a
      ',1,'NEWMAT::BaseMatrix::nricMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#ab755e1343fa84fbbea94979d734af82a',1,'NEWMAT::GeneralMatrix::nricMatrix()'
]
```

Definition at line 1 of file related_a.js.

30.1558 doc/html/search/related_b.js File Reference

Variables

- var searchData
- & lt

30.1558.1 Variable Documentation

30.1558.1.1 & lt

Definition at line 6 of file related_b.js.

30.1558.1.2 var searchData

Initial value:

```
=
[
  ['operator_2a',['operator*',['
      ../class_n_e_w_m_a_t_1_1_scaled_matrix.html#ab1d04e45670e7e54332437ab81f69f69',1,'NEWMAT::ScaledMatrix::operator*()'],['
      vector3t::operator*()']]],
  ['operator_2b',['operator+',['
      ../class_n_e_w_m_a_t_1_1_shifted_matrix.html#afc960ce11532a76ca986ec75542bca02',1,'NEWMAT::ShiftedMatrix::operator+()'],
      vector3t::operator+()'],['../classvector3t.html#a7572339e888c5262a1418d17f46c473c',1,'vector3t::operator+()']
      ]],
  ['operator_2d',['operator-',['
      ../class_n_e_w_m_a_t_1_1_neg_shifted_matrix.html#a12197e802fd1e5829c78adcaccb57840',1,'NEWMAT::NegShiftedMatrix']]],
  ['operator_3c_3c',['operator&lt
```

Definition at line 1 of file related_b.js.

30.1559 doc/html/search/related_c.js File Reference

Variables

- var searchData

30.1559.1 Variable Documentation

30.1559.1.1 var searchData

Initial value:

```
=
[
  ['rectangular',['Rectangular',['
      ../class_n_e_w_m_a_t_1_1_matrix_type.html#a858f15c5cad7d2271c38bc54fbca9b5c',1,'NEWMAT::MatrixType']]],
  ['returnmatrixx',['ReturnMatrixX',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#aa5d5751eb6bb90341d5dd65e404ad716',1,'NEWMAT::BaseMatrix::ReturnMatrixX()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#aa5d5751eb6bb90341d5dd65e404ad716',1,'NEWMAT::GeneralMatrix::ReturnMatrixX
  ['reversedmatrix',['ReversedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a59874012f358719fe00f1d48bb93d932',1,'NEWMAT::BaseMatrix::ReversedMatrix()'],
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a59874012f358719fe00f1d48bb93d932',1,'NEWMAT::GeneralMatrix::ReversedMatri
  ['rotate',['Rotate',['../class_rect_matrix_row_col.html#a23acf0c66955f76462c923517f1f64be',1,'
      RectMatrixRowCol::Rotate()'],['../class_rect_matrix_col.html#a23acf0c66955f76462c923517f1f64be',1,'
      RectMatrixCol::Rotate()']]],
  ['rowedmatrix',['RowedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a744f5ba295f31416bef930e9490866b8',1,'NEWMAT::BaseMatrix::RowedMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a744f5ba295f31416bef930e9490866b8',1,'NEWMAT::GeneralMatrix::RowedMatrix()
  ['rowvector',['RowVector',['../class_n_e_w_m_a_t_1_1_base_matrix.html#a575e505f29f178875eb92d4f000c4f30',
      1,'NEWMAT::BaseMatrix::RowVector()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a575e505f29f178875eb92d4f000c4f30',1,'NEWMAT::GeneralMatrix::RowVector()']
]
```

Definition at line 1 of file related_c.js.

30.1560 doc/html/search/related_d.js File Reference

Variables

- var searchData

30.1560.1 Variable Documentation

30.1560.1.1 var searchData

Initial value:

```
=
[
  ['scaledmatrix',['ScaledMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a4e95604e6eadabba787161333e03d8ec',1,'NEWMAT::BaseMatrix::ScaledMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a4e95604e6eadabba787161333e03d8ec',1,'NEWMAT::GeneralMatrix::ScaledMatrix()
  ['sfselfintersector',['SfSelfIntersector',['
      ../class_go_1_1_sf_sf_intersector.html#a4ab896dd725973ca14b23d6247eeae9a',1,'Go::SfSfIntersector']]],
  ['sfsfintersector',['SfSfIntersector',['
      ../class_go_1_1_intersection_pool.html#a3f55857a10bc333ba09f54817cfa86ed',1,'Go::IntersectionPool::SfSfIntersector()'],
      ../class_go_1_1_intersector.html#a3f55857a10bc333ba09f54817cfa86ed',1,'Go::Intersector::SfSfIntersector()']]],
  ['shiftedmatrix',['ShiftedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#aee80d8e7b06578973d61d715f0aedf08',1,'NEWMAT::BaseMatrix::ShiftedMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#aee80d8e7b06578973d61d715f0aedf08',1,'NEWMAT::GeneralMatrix::ShiftedMatrix
  ['solvedmatrix',['SolvedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a4e4a4a256dec48fcd44bc30348ca4ee4',1,'NEWMAT::BaseMatrix::SolvedMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a4e4a4a256dec48fcd44bc30348ca4ee4',1,'NEWMAT::GeneralMatrix::SolvedMatrix()
  ['sp',['SP',['../class_n_e_w_m_a_t_1_1_s_p_matrix.html#a2490eace871fe6269a3511e64cbba7e5',1,'
      NEWMAT::SPMatrix']]],
  ['spmatrix',['SPMatrix',['../class_n_e_w_m_a_t_1_1_base_matrix.html#a7ec92c6ad15f0f152685c44c5d92237f',1,
      'NEWMAT::BaseMatrix::SPMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a7ec92c6ad15f0f152685c44c5d92237f',1,'NEWMAT::GeneralMatrix::SPMatrix()']]
  ['stackedmatrix',['StackedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a486cdaca18b02f92f6a7323ddc03a028',1,'NEWMAT::BaseMatrix::StackedMatrix()'],['
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a486cdaca18b02f92f6a7323ddc03a028',1,'NEWMAT::GeneralMatrix::StackedMatrix
  ['subtractedmatrix',['SubtractedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#aea3e12cdd2ab8257c89e397c8f79be73',1,'NEWMAT::BaseMatrix::SubtractedMatrix()'
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#aea3e12cdd2ab8257c89e397c8f79be73',1,'NEWMAT::GeneralMatrix::SubtractedMat
  ['symmetricbandmatrix',['SymmetricBandMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#aad958a8a0c4264f8b3a0972e8d40fc3d',1,'NEWMAT::BaseMatrix::SymmetricBandMatrix
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#aad958a8a0c4264f8b3a0972e8d40fc3d',1,'NEWMAT::GeneralMatrix::SymmetricBandM
  ['symmetricmatrix',['SymmetricMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a363bd98d69c9aceacb215c76cba271b4',1,'NEWMAT::BaseMatrix::SymmetricMatrix()'],
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a363bd98d69c9aceacb215c76cba271b4',1,'NEWMAT::GeneralMatrix::SymmetricMatr
]
```

Definition at line 1 of file related_d.js.

30.1561 doc/html/search/related_e.js File Reference

Variables

- var searchData

30.1561.1 Variable Documentation

30.1561.1.1 var searchData

Initial value:

```
=
[
  ['transposedmatrix',['TransposedMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#a2c776a0940d99a0576d2a1bc8784101f',1,'NEWMAT::BaseMatrix::TransposedMatrix()']
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#a2c776a0940d99a0576d2a1bc8784101f',1,'NEWMAT::GeneralMatrix::TransposedMatr
]
```

Definition at line 1 of file related_e.js.

30.1562 doc/html/search/related_f.js File Reference

Variables

- var searchData

30.1562.1 Variable Documentation

30.1562.1.1 var searchData

Initial value:

```
=
[
  ['upperbandmatrix',['UpperBandMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#af6af70a4a2780f63283c5311240939a8',1,'NEWMAT::BaseMatrix::UpperBandMatrix()'],
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#af6af70a4a2780f63283c5311240939a8',1,'NEWMAT::GeneralMatrix::UpperBandMatr
  ['uppertriangularmatrix',['UpperTriangularMatrix',['
      ../class_n_e_w_m_a_t_1_1_base_matrix.html#aee395f7c6d3ec58abdf66ce548376c20',1,'NEWMAT::BaseMatrix::UpperTriangularMatr
      ../class_n_e_w_m_a_t_1_1_general_matrix.html#aee395f7c6d3ec58abdf66ce548376c20',1,'NEWMAT::GeneralMatrix::UpperTriangul
]
```

Definition at line 1 of file related_f.js.

30.1563 doc/html/search/search.js File Reference

Functions

- function convertToId (search)
- function getXPos (item)
- function getYPos (item)
- function SearchBox (name, resultsPath, inFrame, label)
- function SearchResults (name)
- function setKeyActions (elem, action)
- function setClassAttr (elem, attr)
- function createResults ()
- function init_search ()

30.1563.1 Function Documentation

30.1563.1.1 function convertToId (*search*)

Definition at line 1 of file search.js.

30.1563.1.2 function createResults ( )

Definition at line 722 of file search.js.

30.1563.1.3 function getXPos (*item*)

Definition at line 24 of file search.js.

30.1563.1.4 function getYPos (*item*)

Definition at line 38 of file search.js.

30.1563.1.5 function init_search ( )

Definition at line 777 of file search.js.

30.1563.1.6 function SearchBox (*name, resultsPath, inFrame, label*)

Definition at line 59 of file search.js.

30.1563.1.7 function SearchResults (*name*)

Definition at line 404 of file search.js.

30.1563.1.8 function setClassAttr (*elem, attr*)

Definition at line 716 of file search.js.

30.1563.1.9 function setKeyActions (*elem, action*)

Definition at line 709 of file search.js.

30.1564 doc/html/search/searchdata.js File Reference

Variables

- var indexSectionsWithContent
- var indexSectionNames
- var indexSectionLabels

30.1564.1 Variable Documentation

30.1564.1.1 var indexSectionLabels

Initial value:

```
=
{
  0: "All",
  1: "Classes",
  2: "Namespaces",
  3: "Files",
  4: "Functions",
  5: "Variables",
  6: "Typedefs",
  7: "Enumerations",
  8: "Enumerator",
  9: "Friends",
  10: "Macros",
  11: "Modules",
  12: "Pages"
}
```

Definition at line 35 of file searchdata.js.

30.1564.1.2 var indexSectionNames

Initial value:

```
=
{
  0: "all",
  1: "classes",
  2: "namespaces",
  3: "files",
  4: "functions",
  5: "variables",
  6: "typedefs",
  7: "enums",
  8: "enumvalues",
  9: "related",
  10: "defines",
  11: "groups",
  12: "pages"
}
```

Definition at line 18 of file searchdata.js.

30.1564.1.3 var indexSectionsWithContent

Initial value:

```
=
{
  0: "2_abcdefghijklmnopqrstuvwxyz~",
  1: "abcdefghijklmnopqrstuvz",
  2: "ghnrst",
  3: "2abcdefghijlmnopqrstuv",
  4: "_abcdefghijklmnopqrstuvwxyz~",
  5: "abcdefghijklmnopqrstuvwxyz",
  6: "abcdefghilmoprsv",
  7: "abcdefilmnoprstw",
  8: "abcdefghijklmnoprstuvwxyz",
  9: "abcdfgiklmnorstu",
  10: "_abcdefghimnprstvw",
  11: "r",
  12: "abegt"
}
```

Definition at line 1 of file searchdata.js.

30.1565 doc/html/search/typedefs_0.js File Reference

Variables

- var searchData

30.1565.1 Variable Documentation

30.1565.1.1 var searchData

Initial value:

```
=
[
  ['argument_5ftype',['argument_type',['
      ../class_go_1_1_crosses_value.html#aae9be45a2093dec324dea50127163874',1,'Go::CrossesValue::argument_type()'],['
      ../class_go_1_1_test_in_domain.html#a5190b2f25aa4dd7d98dffa5ffc306291',1,'Go::TestInDomain::argument_type()']]]
]
```

Definition at line 1 of file typedefs_0.js.

30.1566 doc/html/search/typedefs_1.js File Reference

Variables

- var searchData

30.1566.1 Variable Documentation

30.1566.1.1 var searchData

Initial value:

```
=
[
  ['barycoordsystem2d',['BaryCoordSystem2D',['../namespace_go.html#a12cca84099b202b44209f71f6c9dd20c',1,'Go
      ']]],
  ['barycoordsystem3d',['BaryCoordSystem3D',['../namespace_go.html#a4fd447cf6cb7a456837fe15c599f8077',1,'Go
      ']]],
  ['boundarypiece',['BoundaryPiece',['../namespace_go.html#a5ffb8f679caa5a03117315a175a828b5',1,'Go']]],
  ['bsplineindexmap',['BsplineIndexMap',['../namespace_go.html#a4b15ecc9104dfd8fd5bc9cd2a0e525f1',1,'Go']]]
      ,
  ['bsplinemap',['BSplineMap',['../class_go_1_1_l_r_spline_surface.html#a22753c1f579698a35503a78c18dbe3a6',
      1,'Go::LRSplineSurface']]]
]
```

Definition at line 1 of file typedefs_1.js.

30.1567 doc/html/search/typedefs_2.js File Reference

Variables

- var searchData

30.1567.1 Variable Documentation

30.1567.1.1 var searchData

Initial value:

```
=
[
  ['colcontainer',['ColContainer',['../gv_application_8h.html#a4fb71c3010e59d6637a56f27a1d9d57d',1,'
      gvApplication.h']]],
  ['const_5fiterator',['const_iterator',['
      ../class_go_1_1_scratch_vect.html#a3ec1bec2fc393949be4a21c24d98f87a',1,'Go::ScratchVect']]]
]
```

Definition at line 1 of file typedefs_2.js.

30.1568 doc/html/search/typedefs_3.js File Reference

Variables

- var searchData
- T *& gt

30.1568.1 Variable Documentation

30.1568.1.1 T∗ & gt

Definition at line 3 of file typedefs_3.js.

30.1568.1.2 var searchData

Initial value:

```
=
[
  ['difference_5ftype',['difference_type',['
      ../struct_go_1_1go__iterator__traits.html#a60ff0cd0a7bea11271baf9e731e38668',1,'Go::go_iterator_traits::difference_type
      ../struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4.html#a5e7177e826be4b2f9f5d096498718dd0',1,'Go::go_iterator_traits&
```

Definition at line 1 of file typedefs_3.js.

30.1569 doc/html/search/typedefs_4.js File Reference

Variables

- var searchData

30.1569.1 Variable Documentation

30.1569.1.1 var searchData

Initial value:

```
=
[
  ['elementmap',['ElementMap',['../class_go_1_1_l_r_spline_surface.html#ae21adad701eb6a1be6d9880485c1cd87',
      1,'Go::LRSplineSurface']]],
  ['exception',['Exception',['../namespace_r_b_d___c_o_m_m_o_n.html#abbff87b4655088a6fd923859d2a6a8d2',1,'
      RBD_COMMON']]]
]
```

Definition at line 1 of file typedefs_4.js.

30.1570 doc/html/search/typedefs_5.js File Reference

Variables

- var searchData
- s1786 c

30.1570.1 Variable Documentation

30.1570.1.1 s1786 c

Definition at line 3 of file typedefs_5.js.

30.1570.1.2 var searchData

Initial value:

```
=
[
  ['fevalcproc',['fevalcProc','../s1786_8c.html#a6f5d68d6da132de46dd79668ba91bb37',1,'fevalcProc(): 
```

Definition at line 1 of file typedefs_5.js.

30.1571 doc/html/search/typedefs_6.js File Reference

Variables

- var searchData

30.1571.1 Variable Documentation

30.1571.1.1 var searchData

Initial value:

```
=
[
  ['genmesh',['genMesh','../gv_parametric_surface_paintable_8h.html#a97b8df4fe8839d115decc99c9eda4a35',1,'
      gvParametricSurfacePaintable.h']]],
  ['graphiter',['GraphIter','../namespace_go.html#a428f052620c22896093395bb8d6ddcae',1,'Go']]]
]
```

Definition at line 1 of file typedefs_6.js.

30.1572 doc/html/search/typedefs_7.js File Reference

Variables

- var searchData

30.1572.1 Variable Documentation

30.1572.1.1 var searchData

Initial value:

```
=
[
  ['heaptype',['HeapType',['../_pr_dijkstra_8h.html#afb8a42e8b8299d2995279be8fdaa601d',1,'PrDijkstra.h']]],
  ['heaptype2',['HeapType2',['../_pr_multi_dijkstra_8h.html#a07dcabcf75f750257e24dd71571ec318',1,'
      PrMultiDijkstra.h']]]
]
```

Definition at line 1 of file typedefs_7.js.

30.1573 doc/html/search/typedefs_8.js File Reference

Variables

- var searchData

30.1573.1 Variable Documentation

30.1573.1.1 var searchData

Initial value:

```
=
[
  ['initproc',['initProc',['../sh1461_8c.html#a6d9a3f0bc40bd855afe60e6376874834',1,'sh1461.c']]],
  ['iter'
```

Definition at line 1 of file typedefs_8.js.

30.1574 doc/html/search/typedefs_9.js File Reference

Variables

- var searchData

30.1574.1 Variable Documentation

30.1574.1.1 var searchData

Initial value:

```
=
[
  ['long_5freal',['long_Real',['../namespace_r_b_d___c_o_m_m_o_n.html#ab577ec287616d0a76ae90f9b579f43c1',1,
      'RBD_COMMON']]]
]
```

Definition at line 1 of file typedefs_9.js.

30.1575 doc/html/search/typedefs_a.js File Reference

Variables

- var searchData

30.1575.1 Variable Documentation

30.1575.1.1 var searchData

Initial value:

```
=
[
  ['matrix',['Matrix',['../class_go_1_1_coordinate_system.html#a01318b17e30343e7b38c6dd129c5ae57',1,'
      Go::CoordinateSystem']]],
  ['matrix3',['MATRIX3',['../gv_utilities_8h.html#a5277c85f00358938e80963e1f28bd448',1,'gvUtilities.h']]],
  ['matrix4',['MATRIX4',['../gv_utilities_8h.html#a17ca410317577d99816160c68b070fc7',1,'gvUtilities.h']]]
]
```

Definition at line 1 of file typedefs_a.js.

30.1576 doc/html/search/typedefs_b.js File Reference

Variables

- var searchData

30.1576.1 Variable Documentation

30.1576.1.1 var searchData

Initial value:

```
=
[
  ['objcontainer',['ObjContainer',['../gv_application_8h.html#a930ed0f609554d54ba43b401b20d1f37',1,'
      gvApplication.h']]]
]
```

Definition at line 1 of file typedefs_b.js.

30.1577 doc/html/search/typedefs_c.js File Reference

Variables

- var searchData
- T *& gt

30.1577.1 Variable Documentation

30.1577.1.1 T∗ & gt

Definition at line 6 of file typedefs_c.js.

30.1577.1.2 var searchData

Initial value:

```
=
[
  ['param_5ffloat_5ftype',['param_float_type',['
      ../class_go_1_1_l_r_spline_eval_grid.html#a054a8a1a64ac866831717daf34aef80c',1,'Go::LRSplineEvalGrid']]],
  ['pointcloud3d',['PointCloud3D',['../namespace_go.html#aca0adb8106a4ffc358eeffeeb11ef851',1,'Go']]],
  ['pointcloud4d',['PointCloud4D',['../namespace_go.html#ac0a110c4920004f774150b3e9ccbfe64',1,'Go']]],
  ['pointer',['pointer',['../struct_go_1_1go__iterator__traits.html#abbc7c10f9ef14171c490acf122004524',1,'
      Go::go_iterator_traits::pointer()'],['
      ../struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4.html#a11eab6473cd0d43eb5df24534c0079b4',1,'Go::go_iterator_traits&
```

Definition at line 1 of file typedefs_c.js.

30.1578 doc/html/search/typedefs_d.js File Reference

Variables

- var searchData

30.1578.1 Variable Documentation

30.1578.1.1 var searchData

Initial value:

```
=
[
  ['rank_5finfo',['rank_info',['../sisl_p_8h.html#ad075872fe80a1bd569afbd76ea3f2ae5',1,'sislP.h']]],
  ['real'
```

Definition at line 1 of file typedefs_d.js.

30.1579 doc/html/search/typedefs_e.js File Reference

Variables

- var searchData

30.1579.1 Variable Documentation

30.1579.1.1 var searchData

Initial value:

```
=
[
  ['short_5flist',['short_list',['../2dpoly__for__s2m_8h.html#a8b138f733256652f3d5086d3c2245247',1,'
      2dpoly_for_s2m.h']]],
  ['short_5flist_5fshort_5flist',['short_list_short_list',['
      ../2dpoly__for__s2m_8h.html#acf0d185d8fcc5467cf3c7db6bb337659',1,'2dpoly_for_s2m.h']]],
  ['sideconstraint',['sideConstraint',['../namespace_go.html#ab5e42d330d6c5ac6e51b604a52c0d4d7',1,'Go']]],
  ['sideconstraintset',['sideConstraintSet',['../namespace_go.html#aff57c06077dc46e0ee165b4f9c38280e',1,'Go
      ']]],
  ['simpleelement',['simpleElement',['../namespace_go.html#a046535108edecaad94e9960634734291',1,'Go']]],
  ['sislbox',['SISLbox',['../sisl_8h.html#ab44a7bbd80df4092a56bf8251a49ebd7',1,'sisl.h']]],
  ['sislcurve',['SISLCurve',['../sisl_8h.html#ae14493c7c28658c0d5d85868fb6f5c41',1,'sisl.h']]],
  ['sisldir',['SISLdir',['../sisl_8h.html#a2dffd3de5a9808bf9ca53c4b435e949d',1,'sisl.h']]],
  ['sisledge',['SISLEdge',['../sisl_p_8h.html#a543d75a1190a84caf5c7775bf23fc037',1,'sislP.h']]],
  ['sislintcurve',['SISLIntcurve',['../sisl_8h.html#a835d444731761a886799f1f94ca3381d',1,'sisl.h']]],
  ['sislintdat',['SISLIntdat',['../sisl_p_8h.html#ad98eb9fe1088a0154e676d28889f008e',1,'sislP.h']]],
  ['sislintlist',['SISLIntlist',['../sisl_p_8h.html#ae0e318a6057716c7d541e8818b713d7d',1,'sislP.h']]],
  ['sislintpt',['SISLIntpt',['../sisl_p_8h.html#a96a4b4e682039a36b690f85ba24699af',1,'sislP.h']]],
  ['sislintsurf',['SISLIntsurf',['../sisl_p_8h.html#a43f6c0ad06ddb8dff509780784397a4a',1,'sislP.h']]],
  ['sislobject',['SISLObject',['../sisl_p_8h.html#a03e483ef55998a5bade12cea81ba2561',1,'sislP.h']]],
  ['sislpoint',['SISLPoint',['../sisl_p_8h.html#a77a679c87802f0bc0cb13c871692de90',1,'sislP.h']]],
  ['sislptedge',['SISLPtedge',['../sisl_p_8h.html#ae836f16d4793e103a7ceb97dabe2f6b4',1,'sislP.h']]],
  ['sislsurf',['SISLSurf',['../sisl_8h.html#af69927d4ce24935580acae03f3b61048',1,'sisl.h']]],
  ['sisltrack',['SISLTrack',['../sisl_p_8h.html#ad674ab4ceceb5c56cedf406b84bd315d',1,'sislP.h']]],
  ['sisltrimpar',['SISLTrimpar',['../sisl_p_8h.html#a374219250c15b439345efce1fd3ac19e',1,'sislP.h']]]
]
```

Definition at line 1 of file typedefs_e.js.

30.1580 doc/html/search/typedefs_f.js File Reference

Variables

- var searchData
- T *& gt

30.1580.1 Variable Documentation

30.1580.1.1 T* & gt

Definition at line 3 of file typedefs_f.js.

30.1580.1.2 var searchData

Initial value:

```
=
[
  ['value_5ftype',['value_type',['
      ../struct_go_1_1go__iterator__traits.html#aca25ce118093b91e456e2982fb419bb8',1,'Go::go_iterator_traits::value_type()'],
      ../struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4.html#a0ee41a5f38a4f3fe31c01d158afda111',1,'Go::go_iterator_traits&
```

Definition at line 1 of file typedefs_f.js.

30.1581 doc/html/search/variables_0.js File Reference

Variables

- var searchData
- mouse cpp

30.1581.1 Variable Documentation

30.1581.1.1 mouse cpp

Definition at line 14 of file variables_0.js.

30.1581.1.2 var searchData

Initial value:

```
=
[
  ['a',['a',['../class_n_e_w_m_a_t_1_1_simple_int_array.html#af8aa7920093ee4bde2aa7dfb272cb403',1,'
      NEWMAT::SimpleIntArray']]],
  ['a_5f',['a_',['../class_pr_mat.html#adc5bf006d2b3c60eb45bc6f374992a3d',1,'PrMat::a_()'],['
      ../class_pr_vec.html#afda074f05b8bb9e81086ba29f31f2762',1,'PrVec::a_()'],['
      ../class_go_1_1_solve_c_g.html#a3de1a62612cb883f2f7af53f13057fd7',1,'Go::SolveCG::A_()']]],
  ['aang',['aang',['../struct_s_i_s_ldir.html#aa799f5940d835206e64ba17ac835a34e',1,'SISLdir']]],
  ['accumulated_5ferror_5f',['accumulated_error_',['
      ../struct_go_1_1_l_s_smooth_data.html#a1ff92be11bc1ff771731c50a17120dba',1,'Go::LSSmoothData']]],
  ['actionform',['actionForm',['../classgv_application.html#ae8bb2d69bd0bb028897047e28f062f77',1,'
      gvApplication']]],
  ['ad',['aD',['../jquery_8js.html#ad223f5fba68c41c1236671ac5c5b0fcb',1,'jquery.js']]],
  ['additional_5fcorner_5fpts_5f',['additional_corner_pts_',['
      ../class_go_1_1ft_surface_set.html#a15f9f8d23a9bc31138cc584a65515e61',1,'Go::ftSurfaceSet']]],
  ['adist',['adist',['../struct_s_i_s_l_intpt.html#a8693e35392ccbdfb93e6669a2bcdc4af',1,'SISLIntpt']]],
  ['adjacency_5ffound_5f',['adjacency_found_',['
      ../struct_go_1_1_adjacency_info.html#a3ac7dc366593e8dacac6ecfc3dab3e16',1,'Go::AdjacencyInfo::adjacency_found_()'],['
      ../struct_go_1_1_volume_adjacency_info.html#a1456ba763024182354bdc7b0293a8006',1,'Go::VolumeAdjacencyInfo::adjacency_fou
  ['algobj_5fint_5f',['algobj_int_',['
      ../class_go_1_1_intersector_alg_par.html#a6e26ce4d645ba59581bcfd4863522bb8',1,'Go::IntersectorAlgPar']]],
  ['allneighbours_5f',['allNeighbours_',['
      ../class_pr_parametrize_int.html#a376adea9f4931c23acf517e5d06bf7d7',1,'PrParametrizeInt']]],
  ['allow_5fzrot',['allow_zrot',['../mouse_8h.html#a506eb7695cd87667f501cfd89fe29839',1,'allow_zrot(): 
```

Definition at line 1 of file variables_0.js.

30.1582 doc/html/search/variables_1.js File Reference

Variables

- var searchData

30.1582.1 Variable Documentation

30.1582.1.1 var searchData

Definition at line 1 of file variables_1.js.

30.1583 doc/html/search/variables_10.js File Reference

Variables

- var searchData

30.1583.1 Variable Documentation

30.1583.1.1 var searchData

Initial value:

```
=
[
  ['quads_5f',['quads_',['../classgv_quads_paintable.html#a80b1bdf3b938aee5229b96ba7a5959b0',1,'
      gvQuadsPaintable']]],
  ['queue_5f',['queue_',['../class_dijkstra.html#af2a9d922323cb2849a2256b53f3df903',1,'Dijkstra::queue_()']
      ,['../class_multi_dijkstra.html#a0c4bdac62aa04c86ef015a9c2c3a5507',1,'MultiDijkstra::queue_()']]]
]
```

Definition at line 1 of file variables_10.js.

30.1584 doc/html/search/variables_11.js File Reference

Variables

- var searchData

30.1584.1 Variable Documentation

30.1584.1.1 var searchData

Initial value:

```
=
[
  ['r1_5f',['r1_',['../class_go_1_1_ellipse.html#a773aaeb5188d2e6d4e9034fbd4a30123',1,'Go::Ellipse::r1_()']
      ,['../class_go_1_1_hyperbola.html#ac624bd16d4a32d9b74361c141421dc81',1,'Go::Hyperbola::r1_()']]],
  ['r2_5f',['r2_',['../class_go_1_1_ellipse.html#a2c90fff391d88f4349a96482c1e4d0fc',1,'Go::Ellipse::r2_()']
      ,['../class_go_1_1_hyperbola.html#aa0d052580ed57b97c4974580cdd4733c',1,'Go::Hyperbola::r2_()']]],
  ['r_5f',['r_',['../struct_go_1_1_param_surface_1_1degenerate__info.html#af2004242eeb813ed444c5fdb9b265071
      ',1,'Go::ParamSurface::degenerate_info']]],
  ['r_5fpath_5f',['r_path_',['../class_path_type.html#a6698f5a904d409bc6779015e5ef36aca',1,'PathType']]],
  ['radius_5f',['radius_',['../class_go_1_1_circle.html#a9c349501a00ac666fb501c5a3360c0f9',1,'
      Go::Circle::radius_()'],['../class_go_1_1_cone.html#a5bd969d6fb325d1dcc994007031ef23f',1,'Go::Cone::radius_()'],['
      ../class_go_1_1_cylinder.html#a1fc104ecdfd7893897a5fbdb94e3f5f3',1,'Go::Cylinder::radius_()'],['
      ../class_go_1_1_sphere.html#a4e42c3da8d108c5ea687dcc4cf4652cc',1,'Go::Sphere::radius_()']]],
  ['rational_5f',['rational_',['../class_go_1_1_smooth_surf.html#a1bc65bd1716252f9b3c695cf922be1f0',1,'
      Go::SmoothSurf']]],
  ['rcoef',['rcoef',['../struct_s_i_s_l_curve.html#a61db2260a12ff723c165b0c2a42d2382',1,'SISLCurve::rcoef()
      '],['../struct_s_i_s_l_surf.html#a03e61d32e600e946e2ba0a15ee9181a6',1,'SISLSurf::rcoef()']]],
  ['recdel',['recdel',['../struct_go_1_1_i_g_e_sheader.html#a3d57b617cb021be08b63a5f2f7e9ae8c',1,'
      Go::IGESheader']]],
  ['receiving_5fsystem_5fprodid',['receiving_system_prodid',['
      ../struct_go_1_1_i_g_e_sheader.html#a3fd3c246e86e529940fdff520775eed8',1,'Go::IGESheader']]],
  ['refcount',['refcount',['../class_handle_id.html#aafccc3f78cf1734743a9c0a4c85e731d',1,'HandleId']]],
  ['rescaling_5f',['rescaling_',['
      ../struct_go_1_1_registration_result.html#a507fbaaf0d1eab2a0512885808a182b3',1,'Go::RegistrationResult']]],
```

```
  ['result_5ftype_5f',['result_type_',['
      ../struct_go_1_1_registration_result.html#a0c2bd34528ab3fdee72d2ea9fb2ac10d',1,'Go::RegistrationResult']]],
  ['results_5f',['results_',['../class_go_1_1_model_quality.html#a2b8e1a1ad7ba37f0157c6e09901cb969',1,'
      Go::ModelQuality::results_()'],['../class_go_1_1_model_repair.html#a4e0074ebcc8f570fa3b15ae1b7c53560',1,'
      Go::ModelRepair::results_()']]],
  ['rgba',['rgba',['../structgv_color.html#ac897899ae348ba30cfd7bf158ec967f8',1,'gvColor']]],
  ['right_5fobj_5f1',['right_obj_1',['../struct_s_i_s_l_intpt.html#aa0709dea69d6e8d3cfdef881fdca74f9',1,'
      SISLIntpt']]],
  ['right_5fobj_5f2',['right_obj_2',['../struct_s_i_s_l_intpt.html#af5c85d9c7929f4c1f9320c1e307e3ff8',1,'
      SISLIntpt']]],
  ['rot_5fangle_5f',['rot_angle_',['../struct_go_1_1_rotation_info.html#a3db6ec36284fa5acbac073cf25ec8d62',
      1,'Go::RotationInfo']]],
  ['rot_5faxis_5f',['rot_axis_',['../struct_go_1_1_rotation_info.html#a2798f84d097d7cf10a29384d43f4be10',1,
      'Go::RotationInfo']]],
  ['rotation_5fmatrix_5f',['rotation_matrix_',['
      ../struct_go_1_1_registration_result.html#a1a9d598ac5b634684c0195091c3e4b0c',1,'Go::RegistrationResult']]],
  ['rowcol',['rowcol',['../class_matrix_row_col.html#ae8586ad3df230474f71d91c9b3304154',1,'MatrixRowCol']]]
]
```

Definition at line 1 of file variables_11.js.

30.1585 doc/html/search/variables_12.js File Reference

Variables

- var searchData

30.1585.1 Variable Documentation

30.1585.1.1 var searchData

Definition at line 1 of file variables_12.js.

30.1586 doc/html/search/variables_13.js File Reference

Variables

- var searchData

30.1586.1 Variable Documentation

30.1586.1.1 var searchData

Initial value:

```
=
[
  ['t_5f',['t_',['../struct_go_1_1_param_surface_1_1degenerate__info.html#aa4a1b5a04e6f9581c46bf8c50ec6e408
      ',1,'Go::ParamSurface::degenerate_info::t_()'],['
      ../class_pr_filterbank.html#a8ba3a2c1b525d44832be09fc86afe136',1,'PrFilterbank::t_()'],['../class_pr_threshold.html#a56
      PrThreshold::t_()']]],
  ['table_5f',['table_',['../class_go_1_1tp_topology_table.html#a144bdf017ad7970a1a1d85386652fbd7',1,'
      Go::tpTopologyTable']]],
  ['tag'
```

Definition at line 1 of file variables_13.js.

30.1587 doc/html/search/variables_14.js File Reference

Variables

- var searchData

30.1587.1 Variable Documentation

30.1587.1.1 var searchData

Initial value:

```
=
[
  ['u_5f',['u_',['../class_go_1_1ft_point.html#a3a514101ecd669aeb1feb67bf095a176',1,'Go::ftPoint::u_()'],['
      ../class_pr_prm_shp_pres.html#ae67db719b7c94fed334b2d6711c224d7',1,'PrPrmShpPres::u_()']]],
  ['u_5fmax',['u_max',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a5cb5e8c6fbbfe331603f97c20d1ccc69',1,'Go::LRSplineSurface::BSKey']]
  ['u_5fmin',['u_min',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a59296b191fcad4e9c7c7034a2967ae3f',1,'Go::LRSplineSurface::BSKey::u
      ../struct_go_1_1_l_r_spline_surface_1_1_elem_key.html#a585692254199d6a43db9f961acdf51c5',1,'Go::LRSplineSurface::ElemKey
  ['u_5fmult1',['u_mult1',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a0dd8a6a75f9f5f7404616f5c970c9285',1,'Go::LRSplineSurface::BSKey']]
  ['u_5fmult2',['u_mult2',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#ac4082082e914b3bf54b9cc1115f4bfd2',1,'Go::LRSplineSurface::BSKey']]
  ['underlying_5fface_5f',['underlying_face_',['
      ../class_go_1_1ft_curve_segment.html#a032a49673a073b3ddf2dc3f073d2c4cd',1,'Go::ftCurveSegment']]],
  ['unit_5fdescription',['unit_description',['
      ../struct_go_1_1_i_g_e_sheader.html#a438baf6ecd3e387591afb93736b68bfa',1,'Go::IGESheader']]],
  ['unit_5fflag',['unit_flag',['../struct_go_1_1_i_g_e_sheader.html#a11a1e75ae4fd53f5e72c2f30ba80bc87',1,'
      Go::IGESheader']]],
  ['unitx_5f',['unitx_',['../classgv_view.html#aec8d22e5e735f138a4d68059e14b0653',1,'gvView']]],
  ['unity_5f',['unity_',['../classgv_view.html#a0acc955f7dc6577247d77966286835c4',1,'gvView']]],
  ['upper',['upper',['../class_n_e_w_m_a_t_1_1_matrix_band_width.html#a6b13bddfdaa1318d25610484b8504e74',1,
      'NEWMAT::MatrixBandWidth::upper()'],['
      ../class_n_e_w_m_a_t_1_1_band_matrix.html#ad6f9d1c9d3e2e49f5bd4b3205b7ff68a',1,'NEWMAT::BandMatrix::upper()']]],
  ['ures_5f',['ures_',['../classgv_resolution_dialog.html#a80928c1c8369d3a57c58dc7c3f45b4e4',1,'
      gvResolutionDialog']]],
  ['use_5fcount',['use_count',['../struct_s_i_s_l_surf.html#ac378f7abff1662f5b75820dc4de4c2ca',1,'SISLSurf'
      ]]],
  ['uslide_5f',['uslide_',['../classgv_resolution_dialog.html#ad1d66a6de7b9177c1a871720cdeda823',1,'
      gvResolutionDialog']]],
  ['uv_5f',['uv_',['../class_go_1_1ft_sample_point.html#a10e7313208a2bb894f16ed8308e4a657',1,'
      Go::ftSamplePoint']]]
]
```

Definition at line 1 of file variables_14.js.

30.1588 doc/html/search/variables_15.js File Reference

Variables

- var searchData

30.1588.1 Variable Documentation

30.1588.1.1 var searchData

Initial value:

```
=
[
  ['v_5f',['v_',['../class_go_1_1ft_point.html#ae66d28de47384fb0fd2f113281a83848',1,'Go::ftPoint::v_()'],['
      ../class_pr_prm_shp_pres.html#a1b91934fd02891b562a62a7def09b645',1,'PrPrmShpPres::v_()']]],
  ['v_5fmax',['v_max',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a6751c5eed5caa610e8dac5f3558b4702',1,'Go::LRSplineSurface::BSKey']]
  ['v_5fmin',['v_min',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a917055d1f2ba2783786ba6345d73cbd8',1,'Go::LRSplineSurface::BSKey::v
      ../struct_go_1_1_l_r_spline_surface_1_1_elem_key.html#a9f214ce7d7d8e22bd73c4f1bb3c93f42',1,'Go::LRSplineSurface::ElemKey
  ['v_5fmult1',['v_mult1',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#ac8f082b1e3b79de0d2531198fd3648af',1,'Go::LRSplineSurface::BSKey']]
  ['v_5fmult2',['v_mult2',['
      ../struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a04b64c2a027326729a138282d8015159',1,'Go::LRSplineSurface::BSKey']]
  ['vec1_5f',['vec1_',['../class_go_1_1_circle.html#a97750bd585d4b0ff6db5823e54ee6ef9',1,'
      Go::Circle::vec1_()'],['../class_go_1_1_ellipse.html#a7823410f8d1df9190ee4de6ebc0d8066',1,'Go::Ellipse::vec1_()'],['
      ../class_go_1_1_hyperbola.html#a2114f3b3f1a9364090d14ed763cda4a0',1,'Go::Hyperbola::vec1_()'],['
      ../class_go_1_1_parabola.html#acd2810f249bcce3e2d3cd2d6a68af7b3',1,'Go::Parabola::vec1_()'],['
      ../class_go_1_1_plane.html#abcffa580eef7b1e36b79a492dde66feb',1,'Go::Plane::vec1_()']]],
  ['vec2_5f',['vec2_',['../class_go_1_1_circle.html#ada637174c69fc9e212011e9562b90c5a',1,'
      Go::Circle::vec2_()'],['../class_go_1_1_ellipse.html#a42184e9707b1a7b9607e525016ae8730',1,'Go::Ellipse::vec2_()'],['
      ../class_go_1_1_hyperbola.html#a102ce0310d2723234bed346ced8fd40f',1,'Go::Hyperbola::vec2_()'],['
      ../class_go_1_1_parabola.html#a50c8d1ac6330013d735787d96d76a7fd',1,'Go::Parabola::vec2_()'],['
      ../class_go_1_1_plane.html#acd191a7cb7d89ba4bd5d3011121a0759',1,'Go::Plane::vec2_()']]],
  ['vert_5ftranslation_5f',['vert_translation_',['
      ../class_go_1_1_general_mesh.html#a1acf92dd244f23728a0a59d9e8517ed8',1,'Go::GeneralMesh::vert_translation_()'],['
      ../classgv_point_cloud_paintable.html#a377d65530f2f4b7fb754d9b6232171a4',1,'gvPointCloudPaintable::vert_translation_()']
  ['vertex_5f',['vertex_',['../class_edge_type.html#a90544457b28ef5bc656953195dd129f0',1,'EdgeType']]],
  ['vertices_5f',['vertices_',['
      ../class_go_1_1_composite_model_file_handler.html#a53723c2dab9c1d5fa1c75a5cec117c25',1,'Go::CompositeModelFileHandler']]
  ['view',['view',['../struct_go_1_1_i_g_e_sdirentry.html#a302fe7f59f59804f3b0b81c258dfe234',1,'
      Go::IGESdirentry']]],
  ['view_5f',['view_',['../classgv_application.html#a9fdb679574dd8740e2d0621fe6d9e90a',1,'gvApplication']]]
      ,
  ['view_5fmenu_5f',['view_menu_',['../classgv_application.html#a6c70c7760fa87d3a1f92a76699c3ce52',1,'
      gvApplication']]],
  ['viewfield_5f',['viewfield_',['../classgv_camera.html#aae3344bf9ae0bc20cc5cf5ac0a8425ee',1,'gvCamera']]]
      ,
  ['viewheight_5f',['viewheight_',['../classgv_camera.html#abb88858c5588187a48fbc5f9346d73e9',1,'gvCamera']
      ]],
  ['viewwidth_5f',['viewwidth_',['../classgv_camera.html#a74aac1e98e45e0f99fea252e987205bc',1,'gvCamera']]]
      ,
  ['viewx_5f',['viewx_',['../classgv_camera.html#ab8ea6a94ed38592cdc57876cd8b40139',1,'gvCamera']]],
  ['viewy_5f',['viewy_',['../classgv_camera.html#a49837938b247011aab8949070b9713f3',1,'gvCamera']]],
  ['visible_5f',['visible_',['../classgv_paintable.html#a629c8d39d5467e02154457ee1c7dde41',1,'gvPaintable']
      ]],
  ['vlist',['vlist',['../struct_s_i_s_l_intdat.html#aad63f961bf24bb54af199e9018af1979',1,'SISLIntdat']]],
  ['volume_5f',['volume_',['../class_go_1_1_curve_on_volume.html#aed6a72f4c6073d4b30cf0c36c4e35587',1,'
      Go::CurveOnVolume']]],
  ['vpoint',['vpoint',['../struct_s_i_s_l_intdat.html#aedd63d0f344d9481f9d86c3bbffb5e1e',1,'SISLIntdat']]],
  ['vres_5f',['vres_',['../classgv_resolution_dialog.html#a09508da0c8d1c00b9da9493802a5be51',1,'
      gvResolutionDialog']]],
  ['vslide_5f',['vslide_',['../classgv_resolution_dialog.html#a967e9ab226b8ee2a6ed004306ef8d6e9',1,'
      gvResolutionDialog']]]
]
```

Definition at line 1 of file variables_15.js.

30.1589 doc/html/search/variables_16.js File Reference

Variables

- var searchData

30.1589.1 Variable Documentation

30.1589.1.1 var searchData

Initial value:

```
=
[
  ['weights_5f',['weights_',['../class_pr_parametrize_int.html#ae212bbd37bc09f289a0dbe076dab9b77',1,'
      PrParametrizeInt']]],
  ['wg'
```

Definition at line 1 of file variables_16.js.

30.1590 doc/html/search/variables_17.js File Reference

Variables

- var searchData

30.1590.1 Variable Documentation

30.1590.1.1 var searchData

Initial value:

```
=
[
  ['x',['x',['../class_r_b_d___c_o_m_m_o_n_1_1_r1___r1.html#a4812b378711ea5f78a5441b96134f569',1,'
      RBD_COMMON::R1_R1']]],
  ['x_5faxis_5f',['x_axis_',['../class_go_1_1_cone.html#a97719276e5e89fc874cee2df6327c46d',1,'
      Go::Cone::x_axis_()'],['../class_go_1_1_cylinder.html#aa070cf5deafb3498f2601d9a2847ffc5',1,'Go::Cylinder::x_axis_()'],['
      ../class_go_1_1_sphere.html#a6865f0ab0d027141c49dceb412a613b4',1,'Go::Sphere::x_axis_()'],['
      ../class_go_1_1_torus.html#ae07499b7a7a24f9c29bcf451ef48b14b',1,'Go::Torus::x_axis_()']]],
  ['xrot'
```

Definition at line 1 of file variables_17.js.

30.1591 doc/html/search/variables_18.js File Reference

Variables

- var searchData

30.1591.1 Variable Documentation

30.1591.1.1 var searchData

Initial value:

```
=
[
  ['y_5faxis_5f',['y_axis_',['../class_go_1_1_cone.html#a04725fd933cb2a6d53a58ae1ebd24f11',1,'
      Go::Cone::y_axis_()'],['../class_go_1_1_cylinder.html#aeaf20ee6ba23475fb4926e3c31274742',1,'Go::Cylinder::y_axis_()'],['
      ../class_go_1_1_sphere.html#a3b495bbd4eaa7a34ea93ad464b7c6c5a',1,'Go::Sphere::y_axis_()'],['
      ../class_go_1_1_torus.html#a045f285b84522d667f44f32cfc428810',1,'Go::Torus::y_axis_()']]],
  ['yrot'
```

Definition at line 1 of file variables_18.js.

30.1592 doc/html/search/variables_19.js File Reference

Variables

- var searchData

30.1592.1 Variable Documentation

30.1592.1.1 var searchData

Initial value:

```
=
[
  ['z',['Z',['../jquery_8js.html#adc18d83abfd9f87d396e8fd6b6ac0fe1',1,'jquery.js']]],
  ['z_5faxis_5f',['z_axis_',['../class_go_1_1_cone.html#a3612c2930148f97c8bec289873b38969',1,'
      Go::Cone::z_axis_()'],['../class_go_1_1_cylinder.html#ab641d4a68415d0a4b42ef7a1f6ea066a',1,'Go::Cylinder::z_axis_()'],['
      ../class_go_1_1_sphere.html#aca74e80cf0cd2925fa715b9ac5bc30e9',1,'Go::Sphere::z_axis_()'],['
      ../class_go_1_1_torus.html#a9baa1d5ae9abfb4ffe3bfc9658f90139',1,'Go::Torus::z_axis_()']]],
  ['zrot'
```

Definition at line 1 of file variables_19.js.

30.1593 doc/html/search/variables_2.js File Reference

Variables

- var searchData

30.1593.1 Variable Documentation

30.1593.1.1 var searchData

Definition at line 1 of file variables_2.js.

30.1594 doc/html/search/variables_3.js File Reference

Variables

- var searchData

30.1594.1 Variable Documentation

30.1594.1.1 var searchData

Definition at line 1 of file variables_3.js.

30.1595 doc/html/search/variables_4.js File Reference

Variables

- var searchData

30.1595.1 Variable Documentation

30.1595.1.1 var searchData

Definition at line 1 of file variables_4.js.

30.1596 doc/html/search/variables_5.js File Reference

Variables

- var searchData

30.1596.1 Variable Documentation

30.1596.1.1 var searchData

Initial value:

```
=
[
  ['f',['f',['../class_n_e_w_m_a_t_1_1_shifted_matrix.html#ab5a72558c082fafe0a11a708df102156',1,'
      NEWMAT::ShiftedMatrix']]],
  ['f_5f',['f_',['../class_go_1_1_parabola.html#a72ad82de25d1106b5120bec75efcab10',1,'Go::Parabola']]],
  ['face_5f',['face_',['../struct_go_1_1_sample_point_data.html#a465f4888fbb14ceecbcee972212ab7c6',1,'
      Go::SamplePointData']]],
  ['face_5fboxes_5f',['face_boxes_',['../class_go_1_1ft_cell.html#a9947e2f9b0e6a893dc537205c65c8442',1,'
      Go::ftCell']]],
  ['face_5fchecked_5f',['face_checked_',['
      ../class_go_1_1_surface_model.html#adc1642ae9fa9022fd01fa84cb124c43f',1,'Go::SurfaceModel']]],
  ['face_5fpar_5f',['face_par_',['../struct_go_1_1_sample_point_data.html#a76366a7f8bc6787cd792f4802a3de4ae
      ',1,'Go::SamplePointData']]],
  ['faces2_5f',['faces2_',['
      ../class_go_1_1_composite_model_file_handler.html#adaff19f041113e05f5accf5f53040b20',1,'Go::CompositeModelFileHandler']]
  ['faces_5f',['faces_',['../class_go_1_1ft_cell.html#a1818339a8ddd910cf35a2953c311b4af',1,'
      Go::ftCell::faces_()'],['../class_go_1_1_composite_model_file_handler.html#a3a495e311f122a041cddae2f4917dfe5',1,'
      Go::CompositeModelFileHandler::faces_()'],['../class_go_1_1ft_surface_set.html#a8a324f6042d0a525ee108e4fafa7d0c1',1,'
      Go::ftSurfaceSet::faces_()'],['../class_go_1_1_surface_model.html#a4b5ecf76e4cc91acf78886d5fa0cfe3c',1,'
      Go::SurfaceModel::faces_()']]],
  ['factor_5f',['factor_',['../struct_go_1_1side_constraint.html#a96f76c21dd13a3cbf2cc957b645894c7',1,'
      Go::sideConstraint::factor_()'],['../struct_go_1_1side_constraint_set.html#af7f3d4a1dd8b604945f562e958684188',1,
      'Go::sideConstraintSet::factor_()'],['../struct_go_1_1_alg2_d_elem.html#af716c43434f3b63fe96ac23765c33a58',1
      ,'Go::Alg2DElem::factor_()'],['../struct_go_1_1_alg3_d_elem.html#aa1beae70718c23de5e2b5bfd258b3998',1,'
      Go::Alg3DElem::factor_()']]],
  ['false',['false',['../boolean_8h.html#aa9a4c04243afddc8f2274245a5d39635',1,'boolean.h']]],
  ['feedback_5fmode_5f',['feedback_mode_',['../classgv_view.html#a680a104c5df070cdf3496de05a947090',1,'
      gvView']]],
  ['finetex_5f',['fineTex_',['../classgv_view.html#ac480b98c2f1b29febdb96a6e7df3972b',1,'gvView']]],
  ['first_5f',['first_',['../class_go_1_1ft_point_set.html#a5c1c2f93ee3fd048bfbd0f84bc4d1aa0',1,'
      Go::ftPointSet']]],
  ['flags_5f',['flags_',['../class_dijkstra.html#a21e1b614db2ae36d5af65313b0780334',1,'Dijkstra::flags_()']
      ,['../class_multi_dijkstra.html#a0d6da2fa60a1854c199275fc1218e63f',1,'MultiDijkstra::flags_()']]],
  ['focal_5fpoint_5f',['focal_point_',['../classgv_camera.html#ae4a942409e3ad7fd12c744ce9e94b4ef',1,'
      gvCamera']]],
  ['focus_5fon_5forigin_5f',['focus_on_origin_',['../classgv_view.html#a531e25ac8d4e553ccd64c8c405a9c9b0',1
      ,'gvView']]],
  ['form',['form',['../struct_go_1_1_i_g_e_sdirentry.html#a8606d475e0ffca150e9946c5308de47e',1,'
      Go::IGESdirentry']]],
  ['form_5f',['form_',['../classgv_action_sheet.html#aeaf5f0304b7c950f719f027fd6999792',1,'gvActionSheet']]
      ],
  ['fractionrendered_5f',['fractionrendered_',['
      ../classgv_line_cloud_paintable.html#a090b222902dd687ec00d31dda642327c',1,'gvLineCloudPaintable::fractionrendered_()'],
      ../classgv_point_cloud_paintable.html#a1a860092e7b53459ea85b06b3b605f49',1,'gvPointCloudPaintable::fractionrendered_()'
  ['frames_5fwithout_5fmovement',['frames_without_movement',['
      ../sisl__view__demo_8cpp.html#a184c97d15071596397d8f23902ec3fa9',1,'sisl_view_demo.cpp']]],
  ['func_5fint_5f',['func_int_',['
      ../class_go_1_1_intersector_func_const.html#abc8f68ae80af7bc1a741a24c728d61aa',1,'Go::IntersectorFuncConst']]],
  ['funnel_5f',['funnel_',['../class_path_type.html#aa494c02211096f0fb748cc6e41002b01',1,'PathType']]]
]
```

Definition at line 1 of file variables_5.js.

30.1597 doc/html/search/variables_6.js File Reference

Variables

- var searchData

30.1597.1 Variable Documentation

30.1597.1.1 var searchData

Initial value:

```
=
[
  ['g_5f',['g_',['../class_pr_parametrize_bdy.html#af1ee487b52611457d3a81147f130021a',1,'
      PrParametrizeBdy::g_()'],['../class_pr_parametrize_int.html#a36919da9715f5f1625e062c6e6b27176',1,'PrParametrizeInt::g_()
  ['gap',['gap',['../struct_go_1_1tp_tolerances.html#a62617afddb73267fdc536da40b3932cc',1,'Go::tpTolerances
      ']]],
  ['gauss_5fpar1_5f',['gauss_par1_',['
      ../struct_go_1_1pre_evaluation_sf.html#a0393353862a463947fde80079d490cce',1,'Go::preEvaluationSf::gauss_par1_()'],['
      ../struct_go_1_1pre_evaluation_vol.html#a9b92c9130ab7bdf6f0a264cafb05a876',1,'Go::preEvaluationVol::gauss_par1_()']]],
  ['gauss_5fpar2_5f',['gauss_par2_',['
      ../struct_go_1_1pre_evaluation_sf.html#ace1d1bd2b24ca88754fdeb7ea99bd4d9',1,'Go::preEvaluationSf::gauss_par2_()'],['
      ../struct_go_1_1pre_evaluation_vol.html#a8a9d745ba22ef7316928f5708f7c2218',1,'Go::preEvaluationVol::gauss_par2_()']]],
  ['gauss_5fpar3_5f',['gauss_par3_',['
      ../struct_go_1_1pre_evaluation_vol.html#a12bc6c681b912d957caef1efa6c1fed5',1,'Go::preEvaluationVol']]],
  ['geo_5fdata_5f1',['geo_data_1',['../struct_s_i_s_l_intpt.html#ad4083a64bc31371f487e7943157aa92b',1,'
      SISLIntpt']]],
  ['geo_5fdata_5f2',['geo_data_2',['../struct_s_i_s_l_intpt.html#ae48801801ddc36807cf6885b69c9002d',1,'
      SISLIntpt']]],
  ['geo_5ftrack_5f2d_5f1',['geo_track_2d_1',['
      ../struct_s_i_s_l_intpt.html#acde072bd6f03b86ec5b894fc7f65144d',1,'SISLIntpt']]],
  ['geo_5ftrack_5f2d_5f2',['geo_track_2d_2',['
      ../struct_s_i_s_l_intpt.html#a08a00fed068ef573184fc50537408adc',1,'SISLIntpt']]],
  ['geo_5ftrack_5f3d',['geo_track_3d',['../struct_s_i_s_l_intpt.html#a643bd8d87fb2dc110022a57994c42e74',1,'
      SISLIntpt']]],
  ['geom_5fobjects2_5f',['geom_objects2_',['
      ../class_go_1_1_composite_model_file_handler.html#a9bf5291a1f1aee5a9c54939077faa1d8',1,'Go::CompositeModelFileHandler']]
  ['geom_5fobjects_5f',['geom_objects_',['
      ../class_go_1_1_composite_model_file_handler.html#a99d727511608d3d40666537f0cd0ac49',1,'Go::CompositeModelFileHandler']]
  ['geomobj_5f',['geomobj_',['../class_go_1_1ft_group_geom.html#a777549837a91518c25e875647a5b4280',1,'
      Go::ftGroupGeom']]],
  ['get_5fclick_5fmode_5f',['get_click_mode_',['../classgv_view.html#af4a6ddfe77052651d7292dd41846e0ad',1,'
      gvView']]],
  ['ghost_5fpoints_5f',['ghost_points_',['
      ../struct_go_1_1_l_s_smooth_data.html#a60a41bf1e1bfe6360960ec740d1dd55e',1,'Go::LSSmoothData']]],
  ['gl_5finitialized_5f',['gl_initialized_',['../classgv_view.html#a491842e1784e955d1e5566823620e50a',1,'
      gvView']]],
  ['gm',['gm',['../class_n_e_w_m_a_t_1_1_shifted_matrix.html#a19701ca94daecd6cdf5f137df145de8f',1,'
      NEWMAT::ShiftedMatrix::gm()'],['../class_n_e_w_m_a_t_1_1_negated_matrix.html#a52bb6ea0a318be83c029bfa48346884a',1,'
      NEWMAT::NegatedMatrix::gm()'],['../class_matrix_row_col.html#ac4f08deedb6355adb62e04f7acf7fc17',1,'
      MatrixRowCol::gm()']]],
  ['gm1',['gm1',['../class_n_e_w_m_a_t_1_1_multiplied_matrix.html#a7803a6d673c5d8761701a9bccbe8c91d',1,'
      NEWMAT::MultipliedMatrix']]],
  ['gm2',['gm2',['../class_n_e_w_m_a_t_1_1_multiplied_matrix.html#ab52429edb38c4019ebec3accd2806115',1,'
      NEWMAT::MultipliedMatrix']]],
  ['gmat_5f',['gmat_',['../class_go_1_1_smooth_surf.html#aff59b5eec6dee89daff37ea7bb017223',1,'
      Go::SmoothSurf::gmat_()'],['../class_go_1_1_smooth_surf_set.html#ad1e20276ff25cfde6a017b252adf9a0d',1,'
      Go::SmoothSurfSet::gmat_()']]],
  ['graph_5f',['graph_',['../class_go_1_1ft_chart_surface.html#ae9f9c4172b0540eca8a2a4d19bc15d6b',1,'
      Go::ftChartSurface::graph_()'],['../class_dijkstra.html#a35ec62ac1573a9a6a74b4b53fdf70dad',1,'Dijkstra::graph_()']
      ,['../class_multi_dijkstra.html#a01cba4633b91a539cb4b663016db6d70',1,'MultiDijkstra::graph_()']]],
  ['grid_5fdistr_5ffunctions_5f',['grid_distr_functions_',['
      ../class_go_1_1ft_chart_surface.html#a3d6a267675eca4961d6f0e572e02a5d5',1,'Go::ftChartSurface']]],
  ['grid_5fpts_5f',['grid_pts_',['../class_go_1_1ft_chart_surface.html#a016eedbcc6a8bb3c6e73b983d89a08d0',1
      ,'Go::ftChartSurface']]],
  ['gright_5f',['gright_',['../class_go_1_1_smooth_surf.html#a33241dea8f6b1dadc9b700de910a5bae',1,'
      Go::SmoothSurf::gright_()'],['../class_go_1_1_smooth_surf_set.html#abb8d17ab393b7f693037d20085d694cd',1,'
      Go::SmoothSurfSet::gright_()']]],
  ['group_5fmenu_5f',['group_menu_',['../classgv_application.html#a9471d39cad8ee5486beada02c57265f2',1,'
      gvApplication']]],
  ['groups',['groups',['../structrank__info.html#a73fee02c95e70e58861325236285ad37',1,'rank_info']]]
]
```

Definition at line 1 of file variables_6.js.

30.1598 doc/html/search/variables_7.js File Reference

Variables

- var searchData

30.1598.1 Variable Documentation

30.1598.1.1 var searchData

Initial value:

```
=
[
  ['heap_5f',['heap_',['../class_pr_thin.html#a6c903d183c116bcf9c8efde3a7e1d1d1',1,'PrThin']]],
  ['highest_5fface_5fchecked_5f',['highest_face_checked_',['
      ../class_go_1_1_surface_model.html#ab7a360504bcdb200709539d79cab886b',1,'Go::SurfaceModel']]]
]
```

Definition at line 1 of file variables_7.js.

30.1599 doc/html/search/variables_8.js File Reference

Variables

- var searchData

30.1599.1 Variable Documentation

30.1599.1.1 var searchData

Definition at line 1 of file variables_8.js.

30.1600 doc/html/search/variables_9.js File Reference

Variables

- var searchData

30.1600.1 Variable Documentation

30.1600.1.1 var searchData

Initial value:

```
=
[
  ['jcol_5f',['jcol_',['../class_go_1_1_solve_c_g.html#a5718e8d392c16f9adfc2b1c2147b8c8f',1,'Go::SolveCG']]
      ],
  ['joint_5f',['joint_',['../class_go_1_1ft_curve_segment.html#afc24962e36a118cdb6a9950374410b03',1,'
      Go::ftCurveSegment']]],
  ['jon_5ftimer',['jon_timer',['../aux2_8cpp.html#ab6b3a0f92f7304c85e25c9422c4c959c',1,'aux2.cpp']]]
]
```

Definition at line 1 of file variables_9.js.

30.1601 doc/html/search/variables_a.js File Reference

Variables

- var searchData

30.1601.1 Variable Documentation

30.1601.1.1 var searchData

Initial value:

```
=
[
  ['k',['k',['../jquery_8js.html#ab26645c014aa005ecedef329ecf58c99',1,'jquery.js']]],
  ['kdim_5f',['kdim_',['../class_go_1_1_smooth_surf.html#aecbfa2bdb4142f2207c88249237cf358',1,'
      Go::SmoothSurf::kdim_()'],['../class_go_1_1_smooth_surf_set.html#a16650b6975a4aaf03bf49ccd70a973e1',1,'
      Go::SmoothSurfSet::kdim_()']]],
  ['key_5f',['key_',['../class_heap_node.html#ae07076e227f6a24b9a70d2dff7031110',1,'HeapNode::key_()'],['
      ../class_heap_node2.html#a5834899269c09b811d1f2cf807e41e22',1,'HeapNode2::key_()']]],
  ['kink',['kink',['../struct_go_1_1tp_tolerances.html#a587c6924aaf46d129e70defebf9cdf73',1,'
      Go::tpTolerances']]],
  ['kk1_5f',['kk1_',['../class_go_1_1_smooth_surf.html#ad616047930638a6351bdd0b2e82dc9d1',1,'Go::SmoothSurf
      ']]],
  ['kk2_5f',['kk2_',['../class_go_1_1_smooth_surf.html#a1e00323a454408b86c724dd46fbc1b9c',1,'Go::SmoothSurf
      ']]],
  ['kn1_5f',['kn1_',['../class_go_1_1_smooth_surf.html#a548dd3b669c60ffd8f971feac58a2053',1,'Go::SmoothSurf
      ']]],
  ['kn2_5f',['kn2_',['../class_go_1_1_smooth_surf.html#a1ab34f0fee55320b22914774b1e943c6',1,'Go::SmoothSurf
      ']]],
  ['kncond_5f',['kncond_',['../class_go_1_1_smooth_surf.html#a63899626d5ffddfc45f9d6aa22f44dd4',1,'
      Go::SmoothSurf::kncond_()'],['../class_go_1_1_smooth_surf_set.html#aa530cc21c18294d89efb3e986b5f1ad3',1,'
      Go::SmoothSurfSet::kncond_()']]],
  ['knconstraint_5f',['knconstraint_',['../class_go_1_1_smooth_surf.html#a9a80424597864d0adf36ef300ca2a41a'
      ,1,'Go::SmoothSurf::knconstraint_()'],['
      ../class_go_1_1_smooth_surf_set.html#ab4b15fa0722035377b4651a00d147e5f',1,'Go::SmoothSurfSet::knconstraint_()']]],
  ['kpointer_5f',['kpointer_',['../class_go_1_1_smooth_surf.html#a475e1db2336e9bc042f739d4a74a2917',1,'
      Go::SmoothSurf']]],
  ['kval',['kval',['
      ../struct_go_1_1_l_r_spline_surface_1_1_refinement2_d.html#ad68d760801298c71f45dd219074943ea',1,'Go::LRSplineSurface::Re
]
```

Definition at line 1 of file variables_a.js.

30.1602 doc/html/search/variables_b.js File Reference

Variables

- var searchData
- mouse cpp

30.1602.1 Variable Documentation

30.1602.1.1 mouse cpp

Definition at line 14 of file variables_b.js.

30.1602.1.2 var searchData

Initial value:

```
=
[
  ['l',['L',['../jquery_8js.html#a38ee4c0b5f4fe2a18d0c783af540d253',1,'jquery.js']]],
  ['l_5f',['l_',['../struct_go_1_1_param_surface_1_1degenerate__info.html#a9e9e4dd3a9bad4fc495e1ca428d1c4e9
      ',1,'Go::ParamSurface::degenerate_info']]],
  ['l_5fpath_5f',['l_path_',['../class_path_type.html#a3849d634c4440974a3e8664f0adf2c88',1,'PathType']]],
  ['label_5f',['label_',['../class_multi_dijkstra.html#a7e2736e3c6d24b2a5b451c5d6f4b02ff',1,'MultiDijkstra'
      ]]],
  ['label_5fdisplay',['label_display',['
      ../struct_go_1_1_i_g_e_sdirentry.html#a2b8d7c0041720a2cc10d1eab59d69171',1,'Go::IGESdirentry']]],
  ['large_5fdistance_5f',['large_distance_',['../class_dijkstra.html#af7d4f8f644cdf1330bca5ce819fa58a2',1,'
      Dijkstra::large_distance_()'],['../class_multi_dijkstra.html#a4cc650703fd03dae2d075afb06563c2f',1,'
      MultiDijkstra::large_distance_()']]],
  ['last',['last',['../class_r_b_d___c_o_m_m_o_n_1_1_tracer.html#a93a99ea96d8fc44d27b51629c2071cd1',1,'
      RBD_COMMON::Tracer']]],
  ['last_5fchange_5f',['last_change_',['
      ../struct_go_1_1_registration_result.html#a7df6e84c504a75d83f47aa2de92d747d',1,'Go::RegistrationResult']]],
  ['last_5ffile_5fname_5f',['last_file_name_',['
      ../classgv_application.html#a69d06231d8c542521ae2e638c7033a23',1,'gvApplication']]],
  ['last_5fmouse_5fpos_5f',['last_mouse_pos_',['../classgv_view.html#a08505548abe11069e5600ae0b17271a7',1,'
      gvView']]],
  ['last_5fnewton_5fiteration_5f',['last_newton_iteration_',['
      ../struct_go_1_1_registration_result.html#a0955123270a8c94b76919e794f6e8e67',1,'Go::RegistrationResult']]],
  ['last_5fx',['last_x',['../mouse_8h.html#abbf254766520cad4d7fe189eb184194c',1,'last_x(): 
```

Definition at line 1 of file variables_b.js.

30.1603 doc/html/search/variables_c.js File Reference

Variables

- var searchData
- mouse cpp

30.1603.1 Variable Documentation

30.1603.1.1 mouse cpp

Definition at line 39 of file variables_c.js.

30.1603.1.2 var searchData

Definition at line 1 of file variables_c.js.

30.1604 doc/html/search/variables_d.js File Reference

Variables

- var searchData

30.1604.1 Variable Documentation

30.1604.1.1 var searchData

Definition at line 1 of file variables_d.js.

30.1605 doc/html/search/variables_e.js File Reference

Variables

- var searchData

30.1605.1 Variable Documentation

30.1605.1.1 var searchData

Initial value:

```
=
[
  ['o1',['o1',['../struct_s_i_s_l_object.html#aa40c25309fff2ffd852103f2af7acd1f',1,'SISLObject']]],
  ['obj_5fint_5f',['obj_int_',['../class_go_1_1_intersector2_obj.html#ae87a91f8f4f95a31dc6a07678eabb132',1,
      'Go::Intersector2Obj']]],
  ['object_5fcolors_5f',['object_colors_',['../classgv_data.html#a4effc6f51ba7d6d6fbad2afe862d7aac',1,'
      gvData']]],
  ['object_5fmenu_5f',['object_menu_',['../classgv_application.html#af224575df535f0d2d9cce3dd6201d86e',1,'
      gvApplication']]],
  ['objects_5f',['objects_',['../classgv_data.html#ac73db2f252c3d82c40f4b8049f6b9c2c',1,'gvData']]],
  ['omega_5f',['omega_',['../class_go_1_1_solve_c_g.html#a895bee6e49c4b8bfefdde37741693433',1,'Go::SolveCG'
      ]]],
  ['onlyoldfft',['OnlyOldFFT',['
      ../class_n_e_w_m_a_t_1_1_f_f_t___controller.html#aa5d0a0c2808fe16510e683f0f8283a95',1,'NEWMAT::FFT_Controller']]],
  ['opp_5f',['opp_',['../struct_go_1_1cv_set_constraint.html#a1596f6a4ffd640d10699ac01d5b179a4',1,'
      Go::cvSetConstraint']]],
  ['organisation',['organisation',['../struct_go_1_1_i_g_e_sheader.html#a28f1fe259948ad7be77a9233b9a31e58',
      1,'Go::IGESheader']]],
  ['orientation_5f',['orientation_',['
      ../struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.html#a37202c0c673bb47d999ee7391da3dd92',1,'Go::CompositeModelF
  ['orientation_5finconsist_5f',['orientation_inconsist_',['
      ../class_go_1_1tp_topology_table.html#af611ebf3e740eef65964c53e827cb463',1,'Go::tpTopologyTable']]],
  ['orienteddomain_5f',['orientedDomain_',['../class_go_1_1_cone.html#a7fdf1219e6a965d4a1d45090ded24d11',1,
      'Go::Cone::orientedDomain_()'],['../class_go_1_1_cylinder.html#aa8367eca5239f784a015d95f6a4a9df3',1,'
      Go::Cylinder::orientedDomain_()'],['../class_go_1_1_plane.html#a33aa83fede5fa4caf78aba009d52f749',1,'
      Go::Plane::orientedDomain_()'],['../class_go_1_1_sphere.html#a8a94511a68da84ba37b7a156e7e47f46',1,'
      Go::Sphere::orientedDomain_()'],['../class_go_1_1_torus.html#ac69373ff0df20e0598490de1e8f86479',1,'Go::Torus::orientedDo
      ,
  ['orig_5fsurf_5f',['orig_surf_',['../class_go_1_1ft_smooth_surf.html#a99cfc4c9acec4aa03bb3a1d080c0d734',1
      ,'Go::ftSmoothSurf']]],
  ['original_5ffilename',['original_filename',['
      ../struct_go_1_1_i_g_e_sheader.html#aa26adfff0cf4e3200a5153af8a748e1e',1,'Go::IGESheader']]],
  ['origine_5f',['origine_',['../class_unf_node_type.html#a6473043efe97dd34ceb497ee310efb63',1,'UnfNodeType
      ']]],
  ['outside',['outside',['../struct_go_1_1_cached_interval.html#aa3934c163e9e6f7234e8b62e28c01fe5',1,'
      Go::CachedInterval']]]
]
```

Definition at line 1 of file variables_e.js.

30.1606 doc/html/search/variables_f.js File Reference

Variables

- var searchData
- gl_aux cpp

30.1606.1 Variable Documentation

30.1606.1.1 gl_aux cpp

Definition at line 48 of file variables_f.js.

30.1606.1.2 var searchData

Definition at line 1 of file variables_f.js.

30.1607 doc/html/sh1260_8c.js File Reference

Variables

- var sh1260_8c

30.1607.1 Variable Documentation

30.1607.1.1 var sh1260_8c

Initial value:

```
=
[
    [ "SH1260", "sh1260_8c.html#abe5f60c3fac3e45a4405c2e84275e337", null ],
    [ "sh1260", "sh1260_8c.html#a8362f46565d3a936348c4dedd1e67d3e", null ]
]
```

Definition at line 1 of file sh1260_8c.js.

30.1608 doc/html/sh1261_8c.js File Reference

Variables

- var sh1261_8c

30.1608.1 Variable Documentation

30.1608.1.1 var sh1261_8c

Initial value:

```
=
[
    [ "SH1261", "sh1261_8c.html#a99a509c3d36da28fa785ffded0aca919", null ],
    [ "sh1261", "sh1261_8c.html#a46dd0fc16373e6d975ad69e306ed98a2", null ]
]
```

Definition at line 1 of file sh1261_8c.js.

30.1609 doc/html/sh1262_8c.js File Reference

Variables

- var sh1262_8c

30.1609.1 Variable Documentation

30.1609.1.1 var sh1262_8c

Initial value:

```
=
[
    [ "SH1262", "sh1262_8c.html#aa4845fb276046edaaabe9bc64f18fa42", null ],
    [ "sh1262", "sh1262_8c.html#aa57527251fed4b3aca7e2f92dfed5c4b", null ]
]
```

Definition at line 1 of file sh1262_8c.js.

30.1610 doc/html/sh1263_8c.js File Reference

Variables

- var sh1263_8c

30.1610.1 Variable Documentation

30.1610.1.1 var sh1263_8c

Initial value:

```
=
[
    [ "SH1263", "sh1263_8c.html#aa9894233541563a3b02b46b941fcf3c2e", null ],
    [ "sh1263", "sh1263_8c.html#a9b5ccb8970b802a6bd77f5b43cd2962e", null ]
]
```

Definition at line 1 of file sh1263_8c.js.

30.1611 doc/html/sh1365_8c.js File Reference

Variables

- var sh1365_8c

30.1611.1 Variable Documentation

30.1611.1.1 var sh1365_8c

Initial value:

```
=
[
    [ "SH1365", "sh1365_8c.html#a305dc6a00b79de55ebaaf313302bbe26", null ],
    [ "sh1365", "sh1365_8c.html#a7db1ce4d838b67c7811ff17f10cde851", null ]
]
```

Definition at line 1 of file sh1365_8c.js.

30.1612 doc/html/sh1369_8c.js File Reference

Variables

- var sh1369_8c

30.1612.1 Variable Documentation

30.1612.1.1 var sh1369_8c

Initial value:

```
=
[
    [ "SH1369", "sh1369_8c.html#aecff2d90ea6f5cbf78e043f719bc0ad7", null ],
    [ "sh1369", "sh1369_8c.html#aa4e206f7275423c07544bc63965c32ad", null ]
]
```

Definition at line 1 of file sh1369_8c.js.

30.1613 doc/html/sh1371_8c.js File Reference

Variables

- var sh1371_8c

30.1613.1 Variable Documentation

30.1613.1.1 var sh1371_8c

Initial value:

```
=
[
    [ "SH1371", "sh1371_8c.html#adcc1c9251c9be4978f34e7c36a6e1a99", null ],
    [ "sh1371", "sh1371_8c.html#aa78c74e33f7a0ce1d74d152fda8be064", null ]
]
```

Definition at line 1 of file sh1371_8c.js.

30.1614 doc/html/sh1372_8c.js File Reference

Variables

- var sh1372_8c

30.1614.1 Variable Documentation

30.1614.1.1 var sh1372_8c

Initial value:

```
=
[
    [ "SH1372", "sh1372_8c.html#a794ffa03ab41b372531107ac16e14808", null ],
    [ "sh1372", "sh1372_8c.html#a3506e2ece13ed65351981e872250c872", null ]
]
```

Definition at line 1 of file sh1372_8c.js.

30.1615 doc/html/sh1373_8c.js File Reference

Variables

- var sh1373_8c

30.1615.1 Variable Documentation

30.1615.1.1 var sh1373_8c

Initial value:

```
=
[
    [ "SH1373", "sh1373_8c.html#a64655426580e2f263f3eb2e8010b93a4", null ],
    [ "sh1373", "sh1373_8c.html#ac79ddddce554c1e8e268701f957ef8d1", null ]
]
```

Definition at line 1 of file sh1373_8c.js.

30.1616 doc/html/sh1374_8c.js File Reference

Variables

- var sh1374_8c

30.1616.1 Variable Documentation

30.1616.1.1 var sh1374_8c

Initial value:

```
=
[
    [ "SH1374", "sh1374_8c.html#a4c65a85d1c85e267ee8796a8ca84e352", null ],
    [ "sh1374", "sh1374_8c.html#a160347d59a1ae6c1c7604489cae8d421", null ]
]
```

Definition at line 1 of file sh1374_8c.js.

30.1617 doc/html/sh1375_8c.js File Reference

Variables

- var sh1375_8c

30.1617.1 Variable Documentation

30.1617.1.1 var sh1375_8c

Initial value:

```
=
[
    [ "SH1375", "sh1375_8c.html#a26b1fd1ed78e0f27a5d0d55126ea2ad4", null ],
    [ "sh1375", "sh1375_8c.html#a3258c9f42e1344006302641c8e854f23", null ]
]
```

Definition at line 1 of file sh1375_8c.js.

30.1618 doc/html/sh1460_8c.js File Reference

Variables

- var sh1460_8c

30.1618.1 Variable Documentation

30.1618.1.1 var sh1460_8c

Initial value:

```
=
[
    [ "SH1460", "sh1460_8c.html#a390d45a22918c5fbe1ec4506cb0806d1", null ],
    [ "fevalmidProc", "sh1460_8c.html#ad75504a98b85ca170c1038cb52b6ae3f", null ],
    [ "fshapeProc", "sh1460_8c.html#a23a1402d8877b20ca4dec1197f85940c", null ],
    [ "sh1460", "sh1460_8c.html#a62f89b5fa4886ce4180901dc831cd1c1", null ]
]
```

Definition at line 1 of file sh1460_8c.js.

30.1619 doc/html/sh1461_8c.js File Reference

Variables

- var sh1461_8c

30.1619.1 Variable Documentation

30.1619.1.1 var sh1461_8c

Initial value:

```
=
[
    [ "SH1461", "sh1461_8c.html#a659bf97e55788e16f2b68b5bdb99f8fa", null ],
    [ "fshapeProc", "sh1461_8c.html#a23a1402d8877b20ca4dec1197f85940c", null ],
    [ "initProc", "sh1461_8c.html#a6d9a3f0bc40bd855afe60e6376874834", null ],
    [ "sh1461", "sh1461_8c.html#a737aa3f1124035f889ce642747d7e446", null ]
]
```

Definition at line 1 of file sh1461_8c.js.

30.1620 doc/html/sh1462_8c.js File Reference

Variables

- var sh1462_8c

30.1620.1 Variable Documentation

30.1620.1.1 var sh1462_8c

Initial value:

```
=
[
    [ "SH1462", "sh1462_8c.html#a1d1411d6ef8dbc2ebc01dbcad9fcd384", null ],
    [ "fshapeProc", "sh1462_8c.html#a23a1402d8877b20ca4dec1197f85940c", null ],
    [ "sh1462", "sh1462_8c.html#ae140df5610ea0cbcc92a89c5c457f8af", null ]
]
```

Definition at line 1 of file sh1462_8c.js.

30.1621 doc/html/sh1463_8c.js File Reference

Variables

- var sh1463_8c

30.1621.1 Variable Documentation

30.1621.1.1 var sh1463_8c

Initial value:

```
=
[
    [ "SH1463", "sh1463_8c.html#a5968742ce2b7a8eabec0a90ac63afc06", null ],
    [ "fshapeProc", "sh1463_8c.html#a23a1402d8877b20ca4dec1197f85940c", null ],
    [ "sh1463", "sh1463_8c.html#af792c61e308e48ae80a25568d9bf088c", null ]
]
```

Definition at line 1 of file sh1463_8c.js.

30.1622 doc/html/sh1464_8c.js File Reference

Variables

- var sh1464_8c

30.1622.1 Variable Documentation

30.1622.1.1 var sh1464_8c

Initial value:

```
=
[
    [ "SH1464", "sh1464_8c.html#a79b0e269d264c1924d95779ffe90dd60", null ],
    [ "fshapeProc", "sh1464_8c.html#a23a1402d8877b20ca4dec1197f85940c", null ],
    [ "sh1464", "sh1464_8c.html#aad008c2f86869eb80850f5bc3ed599f0", null ]
]
```

Definition at line 1 of file sh1464_8c.js.

30.1623 doc/html/sh1465_8c.js File Reference

Variables

- var sh1465_8c

30.1623.1 Variable Documentation

30.1623.1.1 var sh1465_8c

Initial value:

```
=
[
    [ "SH1465", "sh1465_8c.html#a2b8a452cc5bd01b5f01b514442506f50", null ],
    [ "fshapeProc", "sh1465_8c.html#a23a1402d8877b20ca4dec1197f85940c", null ],
    [ "sh1465", "sh1465_8c.html#a122be3d1a9ec3e190df13e8c1326cace", null ]
]
```

Definition at line 1 of file sh1465_8c.js.

30.1624 doc/html/sh1466_8c.js File Reference

Variables

- var sh1466_8c

30.1624.1 Variable Documentation

30.1624.1.1 var sh1466_8c

Initial value:

```
=
[
    [ "SH1466", "sh1466_8c.html#a6558865b299f80f4f025ce4e93a6ceae", null ],
    [ "sh1466", "sh1466_8c.html#a8c80931206fdc217ec8a018fe596fef6", null ]
]
```

Definition at line 1 of file sh1466_8c.js.

30.1625 doc/html/sh1467_8c.js File Reference

Variables

- var sh1467_8c

30.1625.1 Variable Documentation

30.1625.1.1 var sh1467_8c

Initial value:

```
=
[
    [ "SH1467", "sh1467_8c.html#a1d0a80034ec2b8d43b80fb5d851a0697", null ],
    [ "sh1467", "sh1467_8c.html#a989ec87a690d7c2f606d1350af881fa7", null ]
]
```

Definition at line 1 of file sh1467_8c.js.

30.1626 doc/html/sh1502_8c.js File Reference

Variables

- var sh1502_8c

30.1626.1 Variable Documentation

30.1626.1.1 var sh1502_8c

Initial value:

```
=
[
    [ "SH1502", "sh1502_8c.html#a77974de8a546cd7fd5b04e857a7d2c2c", null ],
    [ "sh1502", "sh1502_8c.html#ac627be8cf40a48ae96f758b19ee87b10", null ]
]
```

Definition at line 1 of file sh1502_8c.js.

30.1627 doc/html/sh1503_8c.js File Reference

Variables

- var sh1503_8c

30.1627.1 Variable Documentation

30.1627.1.1 var sh1503_8c

Initial value:

```
=
[
    [ "SH1503", "sh1503_8c.html#a1449809df05ba26721f71c4a1dae41fa", null ],
    [ "sh1503", "sh1503_8c.html#adfe7973592d367603215ecca17dcd10b", null ]
]
```

Definition at line 1 of file sh1503_8c.js.

30.1628 doc/html/sh1510_8c.js File Reference

Variables

- var sh1510_8c

30.1628.1 Variable Documentation

30.1628.1.1 var sh1510_8c

Initial value:

```
=
[
    [ "SH1510", "sh1510_8c.html#ab9dc6b621a55229d321a371427ebf481", null ],
    [ "sh1510", "sh1510_8c.html#ae917347e4401ed2d74a38eeb007474a6", null ]
]
```

Definition at line 1 of file sh1510_8c.js.

30.1629 doc/html/sh1511_8c.js File Reference

Variables

- var sh1511_8c

30.1629.1 Variable Documentation

30.1629.1.1 var sh1511_8c

Initial value:

```
=
[
    [ "SH1511", "sh1511_8c.html#a365a01a237c007e42add6fe64dc3b3d5", null ],
    [ "sh1511", "sh1511_8c.html#ad23cffd359644069b7dc53d48ca5ff42", null ]
]
```

Definition at line 1 of file sh1511_8c.js.

30.1630 doc/html/sh1761_8c.js File Reference

Variables

- var sh1761_8c

30.1630.1 Variable Documentation

30.1630.1.1 var sh1761_8c

Initial value:

```
=
[
    [ "SH1761", "sh1761_8c.html#a403dc78655e2f8bd272df85bf01aad5f", null ],
    [ "sh1761", "sh1761_8c.html#a9e614a6235f0ddff0557c04167d3151a", null ]
]
```

Definition at line 1 of file sh1761_8c.js.

30.1631 doc/html/sh1762_8c.js File Reference

Variables

- var sh1762_8c

30.1631.1 Variable Documentation

30.1631.1.1 var sh1762_8c

Initial value:

```
=
[
    [ "SH1762", "sh1762_8c.html#a45c9c699ca514464cceb3777aa77295c", null ],
    [ "sh1762", "sh1762_8c.html#a778406bc5487cf97f09bc3f9a57b572f", null ]
]
```

Definition at line 1 of file sh1762_8c.js.

30.1632 doc/html/sh1779_8c.js File Reference

Variables

- var sh1779_8c

30.1632.1 Variable Documentation

30.1632.1.1 var sh1779_8c

Initial value:

```
=
[
    [ "SH1779", "sh1779_8c.html#a5c4ff4aa2d70f71b3f1581864480753d", null ],
    [ "sh1779", "sh1779_8c.html#a556c59fca88dc63f9034707c338372d3", null ]
]
```

Definition at line 1 of file sh1779_8c.js.

30.1633 doc/html/sh1779__at_8c.js File Reference

Variables

- var sh1779__at_8c

30.1633.1 Variable Documentation

30.1633.1.1 var sh1779__at_8c

Initial value:

```
=
[
    [ "SH1779_AT", "sh1779__at_8c.html#aea1f61ef0d72e41ba6536b91aeddfa3f", null ],
    [ "sh1779_at", "sh1779__at_8c.html#aa6a1f7ac01c38e3e99808f4c53d50df2", null ]
]
```

Definition at line 1 of file sh1779__at_8c.js.

30.1634 doc/html/sh1780_8c.js File Reference

Variables

- var sh1780_8c

30.1634.1 Variable Documentation

30.1634.1.1 var sh1780_8c

Initial value:

```
=
[
    [ "SH1780", "sh1780_8c.html#aa765c64e5a9014ac6df3571bd1ee12b0", null ],
    [ "sh1780", "sh1780_8c.html#a315c6078afaa9b07373dbae20679115b", null ]
]
```

Definition at line 1 of file sh1780_8c.js.

30.1635 doc/html/sh1780__at_8c.js File Reference

Variables

- var sh1780__at_8c

30.1635.1 Variable Documentation

30.1635.1.1 var sh1780__at_8c

Initial value:

```
=
[
    [ "SH1780_AT", "sh1780__at_8c.html#aa54a684d7c33261f9682f6d0e59155bf", null ],
    [ "sh1780_at", "sh1780__at_8c.html#ac7bac4645fc95d09e2c98cd07987a656", null ]
]
```

Definition at line 1 of file sh1780__at_8c.js.

30.1636 doc/html/sh1781_8c.js File Reference

Variables

- var sh1781_8c

30.1636.1 Variable Documentation

30.1636.1.1 var sh1781_8c

Initial value:

```
=
[
    [ "SH1781", "sh1781_8c.html#afbf59192fdd9ee79c689db0895d9722f", null ],
    [ "sh1781", "sh1781_8c.html#a973391a93780bb9a609b840c4dd8d7eb", null ]
]
```

Definition at line 1 of file sh1781_8c.js.

30.1637 doc/html/sh1781__at_8c.js File Reference

Variables

- var sh1781__at_8c

30.1637.1 Variable Documentation

30.1637.1.1 var sh1781__at_8c

Initial value:

```
=
[
    [ "SH1781_AT", "sh1781__at_8c.html#ad30ab2e8ad73184a8e83f9d593916aec", null ],
    [ "sh1781_at", "sh1781__at_8c.html#a77f75556737c687f76620ee2c8d84e3e", null ]
]
```

Definition at line 1 of file sh1781__at_8c.js.

30.1638 doc/html/sh1782_8c.js File Reference

Variables

- var sh1782_8c

30.1638.1 Variable Documentation

30.1638.1.1 var sh1782_8c

Initial value:

```
=
[
    [ "SH1782", "sh1782_8c.html#ac555cd187c66475a5f4481b5f80ad308", null ],
    [ "sh1782", "sh1782_8c.html#a30aa2182ab1bb55905aa267dbf81f696", null ]
]
```

Definition at line 1 of file sh1782_8c.js.

30.1639 doc/html/sh1783_8c.js File Reference

Variables

- var sh1783_8c

30.1639.1 Variable Documentation

30.1639.1.1 var sh1783_8c

Initial value:

```
=
[
    [ "SH1783", "sh1783_8c.html#ab7efd95528b4e99c58fa6ce3b8f96eb2", null ],
    [ "fevalProc", "sh1783_8c.html#a4a4af84d2cfe37d7fbd54664e8ed45f5", null ],
    [ "sh1783", "sh1783_8c.html#ae45da0720fb215c8c012bc7e0977163d", null ]
]
```

Definition at line 1 of file sh1783_8c.js.

30.1640 doc/html/sh1784_8c.js File Reference

Variables

- var sh1784_8c

30.1640.1 Variable Documentation

30.1640.1.1 var sh1784_8c

Initial value:

```
=
[
    [ "SH1784", "sh1784_8c.html#a72bbccf449f305fb42ce095de29267df", null ],
    [ "fevalcProc", "sh1784_8c.html#a6f5d68d6da132de46dd79668ba91bb37", null ],
    [ "sh1784", "sh1784_8c.html#ac7302e661a4b5849fadfdc011c4b15eb", null ]
]
```

Definition at line 1 of file sh1784_8c.js.

30.1641 doc/html/sh1786_8c.js File Reference

Variables

- var sh1786_8c

30.1641.1 Variable Documentation

30.1641.1.1 var sh1786_8c

Initial value:

```
=
[
    [ "SH1786", "sh1786_8c.html#a4e6cc8c34fceb6ccb3ca8acd3efb4751", null ],
    [ "sh1786", "sh1786_8c.html#a0ae84082ea71cf254404f77cfee1127f", null ]
]
```

Definition at line 1 of file sh1786_8c.js.

30.1642 doc/html/sh1787_8c.js File Reference

Variables

- var sh1787_8c

30.1642.1 Variable Documentation

30.1642.1.1 var sh1787_8c

Initial value:

```
=
[
    [ "SH1787", "sh1787_8c.html#a343d9842ed1789fb2ff06fbbdbb9fdb9", null ],
    [ "sh1787", "sh1787_8c.html#a28c411b099be86c8309b28ccca60b2e7", null ]
]
```

Definition at line 1 of file sh1787_8c.js.

30.1643 doc/html/sh1790_8c.js File Reference

Variables

- var sh1790_8c

30.1643.1 Variable Documentation

30.1643.1.1 var sh1790_8c

Initial value:

```
=
[
    [ "SH1790", "sh1790_8c.html#a49d05ff9e45e3342e1ddbb5fd453cf4d", null ],
    [ "sh1790", "sh1790_8c.html#ad96d9ffc6d64fedb2906c630081dfd7c", null ]
]
```

Definition at line 1 of file sh1790_8c.js.

30.1644 doc/html/sh1830_8c.js File Reference

Variables

- var sh1830_8c

30.1644.1 Variable Documentation

30.1644.1.1 var sh1830_8c

Initial value:

```
=
[
    [ "SH1830", "sh1830_8c.html#a716fe99613d568ebf73b617b59a5e154", null ],
    [ "sh1830", "sh1830_8c.html#aa8fee20fb84faf51b8637a3d77062070", null ]
]
```

Definition at line 1 of file sh1830_8c.js.

30.1645 doc/html/sh1831_8c.js File Reference

Variables

- var sh1831_8c

30.1645.1 Variable Documentation

30.1645.1.1 var sh1831_8c

Initial value:

```
=
[
    [ "SH1831", "sh1831_8c.html#aa0251ca46661459ecbb46b85e6736786", null ],
    [ "sh1831", "sh1831_8c.html#a4c451867aec5246e1a2db31f018c3e82", null ]
]
```

Definition at line 1 of file sh1831_8c.js.

30.1646 doc/html/sh1834_8c.js File Reference

Variables

- var sh1834_8c

30.1646.1 Variable Documentation

30.1646.1.1 var sh1834_8c

Initial value:

```
=
[
    [ "SH1834", "sh1834_8c.html#a9996ad38a319ccde558e99f4aec5301f", null ],
    [ "sh1834", "sh1834_8c.html#a81c1699cd3f0178b5a743b5b7867fac2", null ]
]
```

Definition at line 1 of file sh1834_8c.js.

30.1647 doc/html/sh1839_8c.js File Reference

Variables

- var sh1839_8c

30.1647.1 Variable Documentation

30.1647.1.1 var sh1839_8c

Initial value:

```
=
[
    [ "SH1839", "sh1839_8c.html#a36cc0c25253eeb609bcfc94b16a7e8c8", null ],
    [ "sh1839", "sh1839_8c.html#ad7d4cfccf8bafaf60d82e7179aa88cbf", null ]
]
```

Definition at line 1 of file sh1839_8c.js.

30.1648 doc/html/sh1850_8c.js File Reference

Variables

- var sh1850_8c

30.1648.1 Variable Documentation

30.1648.1.1 var sh1850_8c

Initial value:

```
=
[
    [ "SH1850", "sh1850_8c.html#a7519f66203d5f4b10f67aa52dac07493", null ],
    [ "sh1850", "sh1850_8c.html#ae9189f0e1d8afa324dbe96a53976c23e", null ]
]
```

Definition at line 1 of file sh1850_8c.js.

30.1649 doc/html/sh1851_8c.js File Reference

Variables

- var sh1851_8c

30.1649.1 Variable Documentation

30.1649.1.1 var sh1851_8c

Initial value:

```
=
[
    [ "SH1851", "sh1851_8c.html#a0bf9334d9decdbbcbb3a9bcfe3bf1ff8", null ],
    [ "sh1851", "sh1851_8c.html#a8c8eac78eedb5a0eac9ae1b79afb98e0", null ]
]
```

Definition at line 1 of file sh1851_8c.js.

30.1650 doc/html/sh1852_8c.js File Reference

Variables

- var sh1852_8c

30.1650.1 Variable Documentation

30.1650.1.1 var sh1852_8c

Initial value:

```
=
[
    [ "SH1852", "sh1852_8c.html#ac9383810836e865b354eb1f0b44b186a", null ],
    [ "sh1852", "sh1852_8c.html#a2c4a688b84b978cbeb7d429bba3ba128", null ]
]
```

Definition at line 1 of file sh1852_8c.js.

30.1651 doc/html/sh1853_8c.js File Reference

Variables

- var sh1853_8c

30.1651.1 Variable Documentation

30.1651.1.1 var sh1853_8c

Initial value:

```
=
[
    [ "SH1853", "sh1853_8c.html#ac8526ca756e8fde0f8a10d0fd16fefe1", null ],
    [ "sh1853", "sh1853_8c.html#af8236e75afcf2144054e46838adb0160", null ]
]
```

Definition at line 1 of file sh1853_8c.js.

30.1652 doc/html/sh1854_8c.js File Reference

Variables

- var sh1854_8c

30.1652.1 Variable Documentation

30.1652.1.1 var sh1854_8c

Initial value:

```
=
[
    [ "SH1854", "sh1854_8c.html#aa01b6886ebcfaf0dd554058fa8d97b2a", null ],
    [ "sh1854", "sh1854_8c.html#a631efd14d23a5cf5ba71a9ce25f88774", null ]
]
```

Definition at line 1 of file sh1854_8c.js.

30.1653 doc/html/sh1855_8c.js File Reference

Variables

- var sh1855_8c

30.1653.1 Variable Documentation

30.1653.1.1 var sh1855_8c

Initial value:

```
=
[
    [ "SH1855", "sh1855_8c.html#a80cd0fa6142cc1da5860271348591d3f", null ],
    [ "sh1855", "sh1855_8c.html#ac2d90ba6b91002c3664e947b70ea7eea", null ]
]
```

Definition at line 1 of file sh1855_8c.js.

30.1654 doc/html/sh1856_8c.js File Reference

Variables

- var sh1856_8c

30.1654.1 Variable Documentation

30.1654.1.1 var sh1856_8c

Initial value:

```
=
[
    [ "SH1856", "sh1856_8c.html#a6dbd5266deb9a6140646d51ef21cf193", null ],
    [ "sh1856", "sh1856_8c.html#a8cce63cd9ca4218da6c6b20cea437758", null ]
]
```

Definition at line 1 of file sh1856_8c.js.

30.1655 doc/html/sh1857_8c.js File Reference

Variables

- var sh1857_8c

30.1655.1 Variable Documentation

30.1655.1.1 var sh1857_8c

Initial value:

```
=
[
    [ "SH1857", "sh1857_8c.html#aa75942263b3eaf58a8b10dba16c0db03", null ],
    [ "sh1857", "sh1857_8c.html#a3fe3901bc3a92cb1e48f7d0ed94a9dd2", null ]
]
```

Definition at line 1 of file sh1857_8c.js.

30.1656 doc/html/sh1858_8c.js File Reference

Variables

- var sh1858_8c

30.1656.1 Variable Documentation

30.1656.1.1 var sh1858_8c

Initial value:

```
=
[
    [ "SH1858", "sh1858_8c.html#ac0e1fb7c55652142418fe285ab73c06e", null ],
    [ "sh1858", "sh1858_8c.html#a8c7a713b3333ceaf5da5e1f310dcef67", null ]
]
```

Definition at line 1 of file sh1858_8c.js.

30.1657 doc/html/sh1859_8c.js File Reference

Variables

- var sh1859_8c

30.1657.1 Variable Documentation

30.1657.1.1 var sh1859_8c

Initial value:

```
=
[
    [ "SH1859", "sh1859_8c.html#abce061fa2e9913a10704e881d7199cf3", null ],
    [ "sh1859", "sh1859_8c.html#a961fce72214749443c5178dc8875b013", null ]
]
```

Definition at line 1 of file sh1859_8c.js.

30.1658 doc/html/sh1860_8c.js File Reference

Variables

- var sh1860_8c

30.1658.1 Variable Documentation

30.1658.1.1 var sh1860_8c

Initial value:

```
=
[
    [ "SH1860", "sh1860_8c.html#aaa09af9fee31161cd844037f78eaefa6", null ],
    [ "sh1860", "sh1860_8c.html#a92ac57b7209272baddc40e0a6deb49e6", null ]
]
```

Definition at line 1 of file sh1860_8c.js.

30.1659 doc/html/sh1870_8c.js File Reference

Variables

- var sh1870_8c

30.1659.1 Variable Documentation

30.1659.1.1 var sh1870_8c

Initial value:

```
=
[
    [ "SH1870", "sh1870_8c.html#a5bd1095e55392ddc1ea0c8187e0ec831", null ],
    [ "sh1870", "sh1870_8c.html#a3433bc26e5f23f954f11c698f4da003c", null ]
]
```

Definition at line 1 of file sh1870_8c.js.

30.1660 doc/html/sh1871_8c.js File Reference

Variables

- var sh1871_8c

30.1660.1 Variable Documentation

30.1660.1.1 var sh1871_8c

Initial value:

```
=
[
    [ "SH1871", "sh1871_8c.html#a7385e94b25613c47ebca2c709360b208", null ],
    [ "sh1871", "sh1871_8c.html#a0fe08167ea693b69601f5f7aac8586d0", null ]
]
```

Definition at line 1 of file sh1871_8c.js.

30.1661 doc/html/sh1922_8c.js File Reference

Variables

- var sh1922_8c

30.1661.1 Variable Documentation

30.1661.1.1 var sh1922_8c

Initial value:

```
=
[
    [ "SH1922", "sh1922_8c.html#af74228ff227487ab117f29f718e43c05", null ],
    [ "sh1922", "sh1922_8c.html#a99193e2bc2d2f7cbbb97af0c6895fbf8", null ]
]
```

Definition at line 1 of file sh1922_8c.js.

30.1662 doc/html/sh1923_8c.js File Reference

Variables

- var sh1923_8c

30.1662.1 Variable Documentation

30.1662.1.1 var sh1923_8c

Initial value:

```
=
[
    [ "SH1923", "sh1923_8c.html#af12c33e7c62867ce6a830eed2daffd1b", null ],
    [ "sh1923", "sh1923_8c.html#a8b53e796129b2bcf8d7cf5a93886afa2", null ]
]
```

Definition at line 1 of file sh1923_8c.js.

30.1663 doc/html/sh1924_8c.js File Reference

Variables

- var sh1924_8c

30.1663.1 Variable Documentation

30.1663.1.1 var sh1924_8c

Initial value:

```
=
[
    [ "SH1924", "sh1924_8c.html#af94b3812baf8311584fe9c785e6c9b3e", null ],
    [ "sh1924", "sh1924_8c.html#acce5409e230e16f6cea80f2bb1cea286", null ]
]
```

Definition at line 1 of file sh1924_8c.js.

30.1664 doc/html/sh1925_8c.js File Reference

Variables

- var sh1925_8c

30.1664.1 Variable Documentation

30.1664.1.1 var sh1925_8c

Initial value:

```
=
[
    [ "SH1925", "sh1925_8c.html#a312ba7342834a317edc97d59a9a0fd69", null ],
    [ "sh1925", "sh1925_8c.html#a154cc85e5c541c4a18c0cf2367399f6a", null ]
]
```

Definition at line 1 of file sh1925_8c.js.

30.1665 doc/html/sh1926_8c.js File Reference

Variables

- var sh1926_8c

30.1665.1 Variable Documentation

30.1665.1.1 var sh1926_8c

Initial value:

```
=
[
    [ "SH1926", "sh1926_8c.html#a16a0d903aaf024ef1e0911d714782c52", null ],
    [ "sh1926", "sh1926_8c.html#a6dc81c77048256e9bb951cd2a71df8bb", null ]
]
```

Definition at line 1 of file sh1926_8c.js.

30.1666 doc/html/sh1927_8c.js File Reference

Variables

- var sh1927_8c

30.1666.1 Variable Documentation

30.1666.1.1 var sh1927_8c

Initial value:

```
=
[
    [ "SH1927", "sh1927_8c.html#ae87559c8f9b5dad2046eedd1808132ef", null ],
    [ "sh1927", "sh1927_8c.html#af3c3a1d60c7a62d775e5ce219e9a4788", null ]
]
```

Definition at line 1 of file sh1927_8c.js.

30.1667 doc/html/sh1928_8c.js File Reference

Variables

- var sh1928_8c

30.1667.1 Variable Documentation

30.1667.1.1 var sh1928_8c

Initial value:

```
=
[
    [ "SH1928", "sh1928_8c.html#a626eeb2d321e7388b527867f3f0a2920", null ],
    [ "sh1928", "sh1928_8c.html#ab4b70ecf3f02797353206a27012ddf78", null ]
]
```

Definition at line 1 of file sh1928_8c.js.

30.1668 doc/html/sh1929_8c.js File Reference

Variables

- var sh1929_8c

30.1668.1 Variable Documentation

30.1668.1.1 var sh1929_8c

Initial value:

```
=
[
    [ "SH1929", "sh1929_8c.html#af72b31ab3405cc474e3b99b60f96bf31", null ],
    [ "sh1929", "sh1929_8c.html#a6ea3f3d035e7d8c6068cbb2625476f4e", null ]
]
```

Definition at line 1 of file sh1929_8c.js.

30.1669 doc/html/sh1930_8c.js File Reference

Variables

- var sh1930_8c

30.1669.1 Variable Documentation

30.1669.1.1 var sh1930_8c

Initial value:

```
=
[
    [ "SH1930", "sh1930_8c.html#add3f30fdee1d4bb8ee6556070d9cea1b", null ],
    [ "sh1930", "sh1930_8c.html#a9be863d38cdb94a1ab1425e564416695", null ]
]
```

Definition at line 1 of file sh1930_8c.js.

30.1670 doc/html/sh1992_8c.js File Reference

Variables

- var sh1992_8c

30.1670.1 Variable Documentation

30.1670.1.1 var sh1992_8c

Initial value:

```
=
[
    [ "SH1992", "sh1992_8c.html#af7a78b760687df7844111762cdb9ed92", null ],
    [ "sh1992", "sh1992_8c.html#a0d0544d9e8d03bb70a08751df2961c0d", null ],
    [ "sh1992cu", "sh1992_8c.html#ab752ae0d476864e79e9df62dced89af4", null ],
    [ "sh1992su", "sh1992_8c.html#aae575a79958c0f2be983ec3bd1133dcc", null ]
]
```

Definition at line 1 of file sh1992_8c.js.

30.1671 doc/html/sh1993_8c.js File Reference

Variables

- var sh1993_8c

30.1671.1 Variable Documentation

30.1671.1.1 var sh1993_8c

Initial value:

```
=
[
    [ "SH1993", "sh1993_8c.html#a6dd20704053d2b2c9c9b0d0d5eb17efc", null ],
    [ "sh1993", "sh1993_8c.html#ad63d49b9a1e9a553de1b944bc470f9a5", null ]
]
```

Definition at line 1 of file sh1993_8c.js.

30.1672 doc/html/sh1994_8c.js File Reference

Variables

- var sh1994_8c

30.1672.1 Variable Documentation

30.1672.1.1 var sh1994_8c

Initial value:

```
=
[
    [ "SH1994", "sh1994_8c.html#ae9c8bbc735555df7a77da4b64b674dbb", null ],
    [ "sh1994", "sh1994_8c.html#a30cd0efe00663a3f1297dc075c75e6bd", null ]
]
```

Definition at line 1 of file sh1994_8c.js.

30.1673 doc/html/sh6clvert_8c.js File Reference

Variables

- var sh6clvert_8c

30.1673.1 Variable Documentation

30.1673.1.1 var sh6clvert_8c

Initial value:

```
=
[
    [ "SH6CLOSEVERT", "sh6clvert_8c.html#a5227e99e2de698f09e9acd2ed98ae6ff", null ],
    [ "sh6closevert", "sh6clvert_8c.html#ae0a1c74f12691152583d06755013d1c0", null ]
]
```

Definition at line 1 of file sh6clvert_8c.js.

30.1674 doc/html/sh6comedg_8c.js File Reference

Variables

- var sh6comedg_8c

30.1674.1 Variable Documentation

30.1674.1.1 var sh6comedg_8c

Initial value:

```
=
[
    [ "SH6COMEDG", "sh6comedg_8c.html#ad241a689937846a48631d61ed46d7fe0", null ],
    [ "sh6comedg", "sh6comedg_8c.html#a52c7e299d3f419ecad93806da7eea4e8", null ]
]
```

Definition at line 1 of file sh6comedg_8c.js.

30.1675 doc/html/sh6connect_8c.js File Reference

Variables

- var sh6connect_8c

30.1675.1 Variable Documentation

30.1675.1.1 var sh6connect_8c

Initial value:

```
=
[
    [ "SH6CONNECT", "sh6connect_8c.html#ace90b1a6fae52ce173ae85a20ddb3538", null ],
    [ "sh6connect", "sh6connect_8c.html#afef2f709a2884e4f4b3bf4ea8e38f14b", null ]
]
```

Definition at line 1 of file sh6connect_8c.js.

30.1676 doc/html/sh6count_8c.js File Reference

Variables

- var sh6count_8c

30.1676.1 Variable Documentation

30.1676.1.1 var sh6count_8c

Initial value:

```
=
[
    [ "SH6COUNT", "sh6count_8c.html#ab2a46a5d2645dd540fbb96a0b0411797", null ],
    [ "sh6count", "sh6count_8c.html#a98bf7925021a09295ae7eadf00b59c0c", null ]
]
```

Definition at line 1 of file sh6count_8c.js.

30.1677 doc/html/sh6cvvert_8c.js File Reference

Variables

- var sh6cvvert_8c

30.1677.1 Variable Documentation

30.1677.1.1 var sh6cvvert_8c

Initial value:

```
=
[
    [ "SH6CVVERT", "sh6cvvert_8c.html#a92816bd70078361ef5f19a407af0e409", null ],
    [ "sh6cvvert", "sh6cvvert_8c.html#ab54d30b3f595bb7924867fd11ac10f83", null ]
]
```

Definition at line 1 of file sh6cvvert_8c.js.

30.1678 doc/html/sh6degen_8c.js File Reference

Variables

- var sh6degen_8c

30.1678.1 Variable Documentation

30.1678.1.1 var sh6degen_8c

Initial value:

```
=
[
    [ "SH6DEGEN", "sh6degen_8c.html#af06233628f26ea80c2f3ca3c5ee31a34", null ],
    [ "sh6degen", "sh6degen_8c.html#ac0ab97e7a25be84d0f417e0038bbfadc", null ]
]
```

Definition at line 1 of file sh6degen_8c.js.

30.1679 doc/html/sh6disconn_8c.js File Reference

Variables

- var sh6disconn_8c

30.1679.1 Variable Documentation

30.1679.1.1 var sh6disconn_8c

Initial value:

```
=
[
    [ "SH6DISCONNECT", "sh6disconn_8c.html#a6822c427e0681b12b461ffdb1125c936", null ],
    [ "sh6disconnect", "sh6disconn_8c.html#a4280f5995d0545e323364876d341f107", null ]
]
```

Definition at line 1 of file sh6disconn_8c.js.

30.1680 doc/html/sh6edgpnt_8c.js File Reference

Variables

- var sh6edgpnt_8c

30.1680.1 Variable Documentation

30.1680.1.1 var sh6edgpnt_8c

Initial value:

```
=
[
    [ "SH6EDGPOINT", "sh6edgpnt_8c.html#ac0616b535e8c07fa6b52b8221e1dfcbd", null ],
    [ "sh6edgpoint", "sh6edgpnt_8c.html#a063f6a5ac7607baed46419da60462e20", null ]
]
```

Definition at line 1 of file sh6edgpnt_8c.js.

30.1681 doc/html/sh6edgred_8c.js File Reference

Variables

- var sh6edgred_8c

30.1681.1 Variable Documentation

30.1681.1.1 var sh6edgred_8c

Initial value:

```
=
[
    [ "SH6EDGRED", "sh6edgred_8c.html#a6d94485f308672b6b1e84ad4dd9c8d0f", null ],
    [ "sh6edgred", "sh6edgred_8c.html#a5784faf01a49282b79f84246473b4977", null ]
]
```

Definition at line 1 of file sh6edgred_8c.js.

30.1682 doc/html/sh6evalint_8c.js File Reference

Variables

- var sh6evalint_8c

30.1682.1 Variable Documentation

30.1682.1.1 var sh6evalint_8c

Initial value:

```
=
[
    [ "SH6EVALINT", "sh6evalint_8c.html#a22566f7a761d6b2b14061fc6ed897d80", null ],
    [ "sh6evalint", "sh6evalint_8c.html#a2e82ea60c713dc49fdec64f870b96ff9", null ]
]
```

Definition at line 1 of file sh6evalint_8c.js.

30.1683 doc/html/sh6floop_8c.js File Reference

Variables

- var sh6floop_8c

30.1683.1 Variable Documentation

30.1683.1.1 var sh6floop_8c

Initial value:

```
=
[
    [ "SH6FLOOP", "sh6floop_8c.html#a175aa1040ebef5216a87c37658eb05f0", null ],
    [ "sh6floop", "sh6floop_8c.html#a169dda0490387ca78847f0ca5617cb8e", null ]
]
```

Definition at line 1 of file sh6floop_8c.js.

30.1684 doc/html/sh6fndsplt_8c.js File Reference

Variables

- var sh6fndsplt_8c

30.1684.1 Variable Documentation

30.1684.1.1 var sh6fndsplt_8c

Initial value:

```
=
[
    [ "SH6FINDSPLIT", "sh6fndsplt_8c.html#a150d3c90bfb69e79b6346d239c30ef33", null ],
    [ "sh6findsplit", "sh6fndsplt_8c.html#ade8683fc91ba82736e1e595177aa58e5", null ]
]
```

Definition at line 1 of file sh6fndsplt_8c.js.

30.1685 doc/html/sh6getgeom_8c.js File Reference

Variables

- var sh6getgeom_8c

30.1685.1 Variable Documentation

30.1685.1.1 var sh6getgeom_8c

Initial value:

```
=
[
    [ "SH6GETGEOM", "sh6getgeom_8c.html#a37bee6dfbabecbf0c7c198177678be1d", null ],
    [ "sh6getgeom", "sh6getgeom_8c.html#af28bfbbd6a4afcd7d8c8f082c83517e3", null ]
]
```

Definition at line 1 of file sh6getgeom_8c.js.

30.1686 doc/html/sh6getlist_8c.js File Reference

Variables

- var sh6getlist_8c

30.1686.1 Variable Documentation

30.1686.1.1 var sh6getlist_8c

Initial value:

```
=
[
    [ "SH6GETLIST", "sh6getlist_8c.html#aa4c1fe9f2baf29a43e3e15ded921b8ce", null ],
    [ "sh6getlist", "sh6getlist_8c.html#a701601b3179395dbef1fba6a1174b4b9", null ]
]
```

Definition at line 1 of file sh6getlist_8c.js.

30.1687 doc/html/sh6getmain_8c.js File Reference

Variables

- var sh6getmain_8c

30.1687.1 Variable Documentation

30.1687.1.1 var sh6getmain_8c

Initial value:

```
=
[
    [ "SH6GETMAIN", "sh6getmain_8c.html#aab361fcb31f359af7765faad37b1bd16", null ],
    [ "sh6getmain", "sh6getmain_8c.html#a1088de9c49ea57dac9a91e60144e9653", null ]
]
```

Definition at line 1 of file sh6getmain_8c.js.

30.1688 doc/html/sh6getnbrs_8c.js File Reference

Variables

- var sh6getnbrs_8c

30.1688.1 Variable Documentation

30.1688.1.1 var sh6getnbrs_8c

Initial value:

```
=
[
    [ "SH6GETNHBRS", "sh6getnbrs_8c.html#abf7483ae7a4cee5a62cf35ce07bfcb0c", null ],
    [ "sh6getnhbrs", "sh6getnbrs_8c.html#a10b2ee815b92a90badd1046a4dd502c1", null ]
]
```

Definition at line 1 of file sh6getnbrs_8c.js.

30.1689 doc/html/sh6getnext_8c.js File Reference

Variables

- var sh6getnext_8c

30.1689.1 Variable Documentation

30.1689.1.1 var sh6getnext_8c

Initial value:

```
=
[
    [ "SH6GETNEXT", "sh6getnext_8c.html#a929dbdfcf2eaae318872b1e61de0fb47", null ],
    [ "sh6getnext", "sh6getnext_8c.html#a560b19880f6f11e8da518646a1cab30c", null ]
]
```

Definition at line 1 of file sh6getnext_8c.js.

30.1690 doc/html/sh6getothr_8c.js File Reference

Variables

- var sh6getothr_8c

30.1690.1 Variable Documentation

30.1690.1.1 var sh6getothr_8c

Initial value:

```
=
[
    [ "SH6GETOTHER", "sh6getothr_8c.html#a0342d42ed3aa44625153f965e7dde713", null ],
    [ "sh6getother", "sh6getothr_8c.html#a3a2d2afb4562ba2486792649b715b521", null ]
]
```

Definition at line 1 of file sh6getothr_8c.js.

30.1691 doc/html/sh6getprev_8c.js File Reference

Variables

- var sh6getprev_8c

30.1691.1 Variable Documentation

30.1691.1.1 var sh6getprev_8c

Initial value:

```
=
[
    [ "SH6GETPREV", "sh6getprev_8c.html#a53218e5a6b559a1d1ce235baa7b254c6", null ],
    [ "sh6getprev", "sh6getprev_8c.html#a4d238313c7573a17b9e841bc0adb2090", null ]
]
```

Definition at line 1 of file sh6getprev_8c.js.

30.1692 doc/html/sh6gettop_8c.js File Reference

Variables

- var sh6gettop_8c

30.1692.1 Variable Documentation

30.1692.1.1 var sh6gettop_8c

Initial value:

```
=
[
    [ "SH6GETTOP", "sh6gettop_8c.html#a7f39191e5b2203c31e5a6ffb7e364021", null ],
    [ "sh6gettop", "sh6gettop_8c.html#aa2508df0a2eff7c6d8ceaa6a52bd744d", null ]
]
```

Definition at line 1 of file sh6gettop_8c.js.

30.1693 doc/html/sh6idaledg_8c.js File Reference

Variables

- var sh6idaledg_8c

30.1693.1 Variable Documentation

30.1693.1.1 var sh6idaledg_8c

Initial value:

```
=
[
    [ "SH6ALLEDG", "sh6idaledg_8c.html#acf94af63060e9567e4d49db89db7b13b", null ],
    [ "sh6idalledg", "sh6idaledg_8c.html#a6610136782c8defe16dae71c5231409f", null ]
]
```

Definition at line 1 of file sh6idaledg_8c.js.

30.1694 doc/html/sh6idcon_8c.js File Reference

Variables

- var sh6idcon_8c

30.1694.1 Variable Documentation

30.1694.1.1 var sh6idcon_8c

Initial value:

```
=
[
    [ "SH6IDCON", "sh6idcon_8c.html#a5fbebfc7b402cb6142bc5ea95368b8bb", null ],
    [ "sh6idcon", "sh6idcon_8c.html#a4b027920c19388f0ac0799f844bfa0ef", null ]
]
```

Definition at line 1 of file sh6idcon_8c.js.

30.1695 doc/html/sh6idfcros_8c.js File Reference

Variables

- var sh6idfcros_8c

30.1695.1 Variable Documentation

30.1695.1.1 var sh6idfcros_8c

Initial value:

```
=
[
    [ "SH6IDFCROSS", "sh6idfcros_8c.html#a0f29889c1eb0bf509830f00dc12a3452", null ],
    [ "sh6idfcross", "sh6idfcros_8c.html#a5ec1be74fc2e952f177cbc8f863474d5", null ]
]
```

Definition at line 1 of file sh6idfcros_8c.js.

30.1696 doc/html/sh6idget_8c.js File Reference

Variables

- var sh6idget_8c

30.1696.1 Variable Documentation

30.1696.1.1 var sh6idget_8c

Initial value:

```
=
[
    [ "SH6IDGET", "sh6idget_8c.html#a1a448888fd638900a23f6fc89795b3a0", null ],
    [ "sh6idget", "sh6idget_8c.html#aa89a6ed7aafad9a960377d2d5c0407a0", null ]
]
```

Definition at line 1 of file sh6idget_8c.js.

30.1697 doc/html/sh6idkpt_8c.js File Reference

Variables

- var sh6idkpt_8c

30.1697.1 Variable Documentation

30.1697.1.1 var sh6idkpt_8c

Initial value:

```
=
[
    [ "S6IDKPT", "sh6idkpt_8c.html#a9cdb66d9ecc5c082ad0c17786c154aa6", null ],
    [ "sh6idkpt", "sh6idkpt_8c.html#a678f398e2200778c38fe506190e1bbfd", null ]
]
```

Definition at line 1 of file sh6idkpt_8c.js.

30.1698 doc/html/sh6idlis_8c.js File Reference

Variables

- var sh6idlis_8c

30.1698.1 Variable Documentation

30.1698.1.1 var sh6idlis_8c

Initial value:

```
=
[
    [ "SH6IDLIS", "sh6idlis_8c.html#a5bd4828e80bc86a29dc330f3160f9fea", null ],
    [ "sh6idlis", "sh6idlis_8c.html#a90e02bc8d1f5f19acdfa5d7389bec9d7", null ]
]
```

Definition at line 1 of file sh6idlis_8c.js.

30.1699 doc/html/sh6idnpt_8c.js File Reference

Variables

- var sh6idnpt_8c

30.1699.1 Variable Documentation

30.1699.1.1 var sh6idnpt_8c

Initial value:

```
=
[
    [ "SH6IDNPT", "sh6idnpt_8c.html#afffb8ea92f09285023ecd4fb4c3ed136", null ],
    [ "sh6idnpt", "sh6idnpt_8c.html#a251e74969631ebd5ce4744d5fb349b91", null ]
]
```

Definition at line 1 of file sh6idnpt_8c.js.

30.1700 doc/html/sh6idnwun_8c.js File Reference

Variables

- var sh6idnwun_8c

30.1700.1 Variable Documentation

30.1700.1.1 var sh6idnwun_8c

Initial value:

```
=
[
    [ "SH6IDNEWUNITE", "sh6idnwun_8c.html#ab94658f22c740aa76cef51baed32a1df", null ],
    [ "sh6idnewunite", "sh6idnwun_8c.html#aad62920d09ed3a7c9be024a685dff0a5", null ]
]
```

Definition at line 1 of file sh6idnwun_8c.js.

30.1701 doc/html/sh6idput_8c.js File Reference

Variables

- var sh6idput_8c

30.1701.1 Variable Documentation

30.1701.1.1 var sh6idput_8c

Initial value:

```
=
[
    [ "SH6IDPUT", "sh6idput_8c.html#ae4cb4da36de5c8e3250525773587fef3", null ],
    [ "sh6idput", "sh6idput_8c.html#a2eaa0322fe6925265b6c965e7792e40c", null ]
]
```

Definition at line 1 of file sh6idput_8c.js.

30.1702 doc/html/sh6idrcros_8c.js File Reference

Variables

- var sh6idrcros_8c

30.1702.1 Variable Documentation

30.1702.1.1 var sh6idrcros_8c

Initial value:

```
=
[
    [ "SH6IDRMCROSS", "sh6idrcros_8c.html#a505181fcb578f3c8dad95445c56293b9", null ],
    [ "sh6idrmcross", "sh6idrcros_8c.html#a1e59d65f0d73bbc7abc5baad47c0b3cd", null ]
]
```

Definition at line 1 of file sh6idrcros_8c.js.

30.1703 doc/html/sh6idsplit_8c.js File Reference

Variables

- var sh6idsplit_8c

30.1703.1 Variable Documentation

30.1703.1.1 var sh6idsplit_8c

Initial value:

```
=
[
    [ "S6IDSPLIT", "sh6idsplit_8c.html#a089b8657d965865812fd7f9f31840eb0", null ],
    [ "sh6idsplit", "sh6idsplit_8c.html#a876f109f74a62a01383807cf5d168481", null ]
]
```

Definition at line 1 of file sh6idsplit_8c.js.

30.1704 doc/html/sh6idunite_8c.js File Reference

Variables

- var sh6idunite_8c

30.1704.1 Variable Documentation

30.1704.1.1 var sh6idunite_8c

Initial value:

```
=
[
    [ "SH6IDUNITE", "sh6idunite_8c.html#aeb00fecb2ecd4af82bb8a391ab301556", null ],
    [ "sh6idunite", "sh6idunite_8c.html#a407c30e3d3d4603bd1496501bd423d0d", null ]
]
```

Definition at line 1 of file sh6idunite_8c.js.

30.1705 doc/html/sh6insert_8c.js File Reference

Variables

- var sh6insert_8c

30.1705.1 Variable Documentation

30.1705.1.1 var sh6insert_8c

Initial value:

```
=
[
    [ "SH6INSERT", "sh6insert_8c.html#a3d952f2286e68e4a84337019217bcb7e", null ],
    [ "sh6insert", "sh6insert_8c.html#a87a721d19918aa75a2ea25dda10f6bc3", null ]
]
```

Definition at line 1 of file sh6insert_8c.js.

30.1706 doc/html/sh6inspnt_8c.js File Reference

Variables

- var sh6inspnt_8c

30.1706.1 Variable Documentation

30.1706.1.1 var sh6inspnt_8c

Initial value:

```
=
[
    [ "SH6INSERTPT", "sh6inspnt_8c.html#a2d6b7e67bdab7a0a4095601dfe75f4bd", null ],
    [ "sh6insertpt", "sh6inspnt_8c.html#ab65110f3152221cecd83680be891d96d", null ]
]
```

Definition at line 1 of file sh6inspnt_8c.js.

30.1707 doc/html/sh6iscnect_8c.js File Reference

Variables

- var sh6iscnect_8c

30.1707.1 Variable Documentation

30.1707.1.1 var sh6iscnect_8c

Initial value:

```
=
[
    [ "SH6ISCONNECT", "sh6iscnect_8c.html#aa08554fd31fb6ee673f8c241c6a4f4e1", null ],
    [ "sh6isconnect", "sh6iscnect_8c.html#a893c64add08451455091285683a69a3f", null ]
]
```

Definition at line 1 of file sh6iscnect_8c.js.

30.1708 doc/html/sh6ishelp_8c.js File Reference

Variables

- var sh6ishelp_8c

30.1708.1 Variable Documentation

30.1708.1.1 var sh6ishelp_8c

Initial value:

```
=
[
    [ "SH6ISHELP", "sh6ishelp_8c.html#a7d84d068ec4d570e1f30886cc3731b7c", null ],
    [ "sh6ishelp", "sh6ishelp_8c.html#ae13c6d0c9a348ab2c9f2a79b56a7da80", null ]
]
```

Definition at line 1 of file sh6ishelp_8c.js.

30.1709 doc/html/sh6isinsid_8c.js File Reference

Variables

- var sh6isinsid_8c

30.1709.1 Variable Documentation

30.1709.1.1 var sh6isinsid_8c

Initial value:

```
=
[
    [ "SH6ISINSIDE", "sh6isinsid_8c.html#a5aca7b2e618fe3e238d16ed1f9833cbc", null ],
    [ "sh6isinside", "sh6isinsid_8c.html#a97a97c24c868e99ce24b72d33ee9182e", null ]
]
```

Definition at line 1 of file sh6isinsid_8c.js.

30.1710 doc/html/sh6ismain_8c.js File Reference

Variables

- var sh6ismain_8c

30.1710.1 Variable Documentation

30.1710.1.1 var sh6ismain_8c

Initial value:

```
=
[
    [ "SH6ISMAIN", "sh6ismain_8c.html#ab87337baae0ac9a4799691c6a7174640", null ],
    [ "sh6ismain", "sh6ismain_8c.html#a5c9d73ced459c88d59e78e6fe5298c3c", null ]
]
```

Definition at line 1 of file sh6ismain_8c.js.

30.1711 doc/html/sh6nmbhelp_8c.js File Reference

Variables

- var sh6nmbhelp_8c

30.1711.1 Variable Documentation

30.1711.1.1 var sh6nmbhelp_8c

Initial value:

```
=
[
    [ "SH6NMBHELP", "sh6nmbhelp_8c.html#ad4e3d0fa18290a69d3cecd82a715fffc", null ],
    [ "sh6nmbhelp", "sh6nmbhelp_8c.html#a42c189b49bbef14f74a0bf39a809652a", null ]
]
```

Definition at line 1 of file sh6nmbhelp_8c.js.

30.1712 doc/html/sh6nmbmain_8c.js File Reference

Variables

- var sh6nmbmain_8c

30.1712.1 Variable Documentation

30.1712.1.1 var sh6nmbmain_8c

Initial value:

```
=
[
    [ "SH6NMBMAIN", "sh6nmbmain_8c.html#a7126024b5ab5517d48337605da3d3e6a", null ],
    [ "sh6nmbmain", "sh6nmbmain_8c.html#ad1abddf30f2de712bbbd5aa54e6444d9", null ]
]
```

Definition at line 1 of file sh6nmbmain_8c.js.

30.1713 doc/html/sh6ptobj_8c.js File Reference

Variables

- var sh6ptobj_8c

30.1713.1 Variable Documentation

30.1713.1.1 var sh6ptobj_8c

Initial value:

```
=
[
    [ "SH6PTOBJ", "sh6ptobj_8c.html#ab62d8f2f795be727b089fd2260e5805d", null ],
    [ "sh6ptobj", "sh6ptobj_8c.html#a47eda2808eeb05906685d99931a48660", null ]
]
```

Definition at line 1 of file sh6ptobj_8c.js.

30.1714 doc/html/sh6ptouchp_8c.js File Reference

Variables

- var sh6ptouchp_8c

30.1714.1 Variable Documentation

30.1714.1.1 var sh6ptouchp_8c

Initial value:

```
=
[
    [ "SH6PUTTOUCH", "sh6ptouchp_8c.html#aa92f8bbe693f23b85ee24880538ee02a", null ],
    [ "sh6puttouch", "sh6ptouchp_8c.html#a6683809dd520ceba30f5090847b8a5cd", null ]
]
```

Definition at line 1 of file sh6ptouchp_8c.js.

30.1715 doc/html/sh6putsing_8c.js File Reference

Variables

- var sh6putsing_8c

30.1715.1 Variable Documentation

30.1715.1.1 var sh6putsing_8c

Initial value:

```
=
[
    [ "SH6PUTSING", "sh6putsing_8c.html#af86f9ba2a053b56a5dea9e15abf27681", null ],
    [ "sh6putsing", "sh6putsing_8c.html#a5760688066a9dcba72cd41923f9dc444", null ]
]
```

Definition at line 1 of file sh6putsing_8c.js.

30.1716 doc/html/sh6red_8c.js File Reference

Variables

- var sh6red_8c

30.1716.1 Variable Documentation

30.1716.1.1 var sh6red_8c

Initial value:

```
=
[
    [ "SH6RED", "sh6red_8c.html#a4b51da6c9ddf99d067c6c323ffbdbb5a", null ],
    [ "sh6red", "sh6red_8c.html#a070ccccb1eb32adb8d21f08f230bb4e0", null ]
]
```

Definition at line 1 of file sh6red_8c.js.

30.1717 doc/html/sh6remcon_8c.js File Reference

Variables

- var sh6remcon_8c

30.1717.1 Variable Documentation

30.1717.1.1 var sh6remcon_8c

Initial value:

```
=
[
    [ "SH6REMCON", "sh6remcon_8c.html#ac0815d6d1d054bbb1906c2dd663a2f2d", null ],
    [ "sh6remcon", "sh6remcon_8c.html#a33753b225608455f10e902fc90b206e2", null ]
]
```

Definition at line 1 of file sh6remcon_8c.js.

30.1718 doc/html/sh6rempnt_8c.js File Reference

Variables

- var sh6rempnt_8c

30.1718.1 Variable Documentation

30.1718.1.1 var sh6rempnt_8c

Initial value:

```
=
[
    [ "SH6REMOVEPT", "sh6rempnt_8c.html#ab91875a9a4cfe8ece303409ed266d714", null ],
    [ "sh6removept", "sh6rempnt_8c.html#ad6c0d64e4c17fc4671b3a4f894afcbdd", null ]
]
```

Definition at line 1 of file sh6rempnt_8c.js.

30.1719 doc/html/sh6sepcrv_8c.js File Reference

Variables

- var sh6sepcrv_8c

30.1719.1 Variable Documentation

30.1719.1.1 var sh6sepcrv_8c

Initial value:

```
=
[
    [ "SH6SEPCRV", "sh6sepcrv_8c.html#abc90a2ce940bf936f50554984aeb384a", null ],
    [ "sh6sepcrv", "sh6sepcrv_8c.html#a93d2c11fcd92267a1cdfa67e5a81ddb9", null ]
]
```

Definition at line 1 of file sh6sepcrv_8c.js.

30.1720 doc/html/sh6setcnsd_8c.js File Reference

Variables

- var sh6setcnsd_8c

30.1720.1 Variable Documentation

30.1720.1.1 var sh6setcnsd_8c

Initial value:

```
=
[
    [ "SH6SETCNSDIR", "sh6setcnsd_8c.html#a351b19abf17457b755b0cb8648dc2ffb", null ],
    [ "sh6setcnsdir", "sh6setcnsd_8c.html#a267a4676be5c9b7dbeaf2ebd89783b15", null ]
]
```

Definition at line 1 of file sh6setcnsd_8c.js.

30.1721 doc/html/sh6setdir_8c.js File Reference

Variables

- var sh6setdir_8c

30.1721.1 Variable Documentation

30.1721.1.1 var sh6setdir_8c

Initial value:

```
=
[
    [ "SH6SETDIR", "sh6setdir_8c.html#ac729135f6795117ad6b44ddeca47ddd1", null ],
    [ "sh6setdir", "sh6setdir_8c.html#a20e29afe34cc0d2e5533f8ca9e351023", null ]
]
```

Definition at line 1 of file sh6setdir_8c.js.

30.1722 doc/html/sh6settop_8c.js File Reference

Variables

- var sh6settop_8c

30.1722.1 Variable Documentation

30.1722.1.1 var sh6settop_8c

Initial value:

```
=
[
    [ "SH6SETTOP", "sh6settop_8c.html#aa394d04421e09b58bf88fa2f0c08686a", null ],
    [ "sh6settop", "sh6settop_8c.html#a59c3d57c15d5812d124ea6b2a046735b", null ]
]
```

Definition at line 1 of file sh6settop_8c.js.

30.1723 doc/html/sh6spltgeo_8c.js File Reference

Variables

- var sh6spltgeo_8c

30.1723.1 Variable Documentation

30.1723.1.1 var sh6spltgeo_8c

Initial value:

```
=
[
    [ "SH6SPLITGEOM", "sh6spltgeo_8c.html#acce1eba6d4c4b8854d4ecd0574ca76dc", null ],
    [ "sh6splitgeom", "sh6spltgeo_8c.html#ab099e556161318dca26f3291a6e50799", null ]
]
```

Definition at line 1 of file sh6spltgeo_8c.js.

30.1724 doc/html/sh6tohelp_8c.js File Reference

Variables

- var sh6tohelp_8c

30.1724.1 Variable Documentation

30.1724.1.1 var sh6tohelp_8c

Initial value:

```
=
[
    [ "SH6TOHELP", "sh6tohelp_8c.html#a607b71db79c735bc8ac56e30e5c6ac94", null ],
    [ "sh6tohelp", "sh6tohelp_8c.html#a848d1506b88f48c0d8749390bbccd017", null ]
]
```

Definition at line 1 of file sh6tohelp_8c.js.

30.1725 doc/html/sh6tomain_8c.js File Reference

Variables

- var sh6tomain_8c

30.1725.1 Variable Documentation

30.1725.1.1 var sh6tomain_8c

Initial value:

```
=
[
    [ "SH6TOMAIN", "sh6tomain_8c.html#abc7e258f890a0ed91c5d7c4296abecc7", null ],
    [ "sh6tomain", "sh6tomain_8c.html#ada68312b3b987f0c4eb10da02e52244d", null ]
]
```

Definition at line 1 of file sh6tomain_8c.js.

30.1726 doc/html/sh6topohlp_8c.js File Reference

Variables

- var sh6topohlp_8c

30.1726.1 Variable Documentation

30.1726.1.1 var sh6topohlp_8c

Initial value:

```
=
[
    [ "SH6GETTOPHLP", "sh6topohlp_8c.html#ac0b07e537df497e13122959615d41990", null ],
    [ "sh6gettophlp", "sh6topohlp_8c.html#a6627cb084123ddaa28012f1f36935882", null ]
]
```

Definition at line 1 of file sh6topohlp_8c.js.

30.1727 doc/html/sh6trmlist_8c.js File Reference

Variables

- var sh6trmlist_8c

30.1727.1 Variable Documentation

30.1727.1.1 var sh6trmlist_8c

Initial value:

```
=
[
    [ "SH6TRIMLIST", "sh6trmlist_8c.html#acc3c264459a941f3386916ceb56004e1", null ],
    [ "sh6trimlist", "sh6trmlist_8c.html#a5406954936b747638dffce401afbef2c", null ]
]
```

Definition at line 1 of file sh6trmlist_8c.js.

30.1728 doc/html/sh__1d__div_8c.js File Reference

Variables

- var sh__1d__div_8c

30.1728.1 Variable Documentation

30.1728.1.1 var sh__1d__div_8c

Initial value:

```
=
[
    [ "SH_1D_DIV", "sh__1d__div_8c.html#a556babe68df3aa043c3b79df48cda50e", null ],
    [ "sh_1d_div", "sh__1d__div_8c.html#a1f72e0258e406ddc9ae28aa342e7fbb8", null ]
]
```

Definition at line 1 of file sh__1d__div_8c.js.

30.1729 doc/html/sh__div__crv_8c.js File Reference

Variables

- var sh__div__crv_8c

30.1729.1 Variable Documentation

30.1729.1.1 var sh__div__crv_8c

Initial value:

```
=
[
    [ "SH_DIV_CRV", "sh__div__crv_8c.html#aa005bac3d55af3b8228ef651f8d5ed82", null ],
    [ "sh_div_crv", "sh__div__crv_8c.html#ab1f9c6fab7b315df15cfa6b77aba28cb", null ]
]
```

Definition at line 1 of file sh__div__crv_8c.js.

30.1730 doc/html/sh__set__at_8c.js File Reference

Variables

- var sh__set__at_8c

30.1730.1 Variable Documentation

30.1730.1.1 var sh__set__at_8c

Initial value:

```
=
[
    [ "SH_SET_AT", "sh__set__at_8c.html#a3255a53266073c94bb1b30926bf66da9", null ],
    [ "sh_set_at", "sh__set__at_8c.html#a66d841775e76cce7990f5bc50196a694", null ]
]
```

Definition at line 1 of file sh__set__at_8c.js.

30.1731 doc/html/shape_8c.js File Reference

Variables

- var shape_8c

30.1731.1 Variable Documentation

30.1731.1.1 var shape_8c

Initial value:

```
=
[
    [ "SHAPE", "shape_8c.html#ac87c8082751a389b26904e86cb59dc1c", null ],
    [ "shape", "shape_8c.html#a7c4d1336dd8bb444d0807203f8241d89", null ]
]
```

Definition at line 1 of file shape_8c.js.

30.1732 doc/html/shcheckput_8c.js File Reference

Variables

- var shcheckput_8c

30.1732.1 Variable Documentation

30.1732.1.1 var shcheckput_8c

Initial value:

```
=
[
    [ "SHCHECKPUT", "shcheckput_8c.html#a9e36e2212f708937f0ed5b77f2cf4730", null ],
    [ "shcheckput", "shcheckput_8c.html#a26524e868944c4a184a5bd544ae9faa2", null ]
]
```

Definition at line 1 of file shcheckput_8c.js.

30.1733 doc/html/shchecktyp_8c.js File Reference

Variables

- var shchecktyp_8c

30.1733.1 Variable Documentation

30.1733.1.1 var shchecktyp_8c

Initial value:

```
=
[
    [ "SHCHECKTYPE", "shchecktyp_8c.html#a90290aaaf635725f0b96e187b828558f", null ],
    [ "shchecktype", "shchecktyp_8c.html#a19d45c66afbaf74b4d0d5f4bb0a32105", null ]
]
```

Definition at line 1 of file shchecktyp_8c.js.

30.1734 doc/html/shcsfsing_8c.js File Reference

Variables

- var shcsfsing_8c

30.1734.1 Variable Documentation

30.1734.1.1 var shcsfsing_8c

Initial value:

```
=
[
    [ "SHCSFSING", "shcsfsing_8c.html#a58cafdbd0467b9f0d5a6466753504fcc", null ],
    [ "shcsfsing", "shcsfsing_8c.html#ade962d53c8a17ac6235e6c983bee5fe6", null ]
]
```

Definition at line 1 of file shcsfsing_8c.js.

30.1735 doc/html/shdivsurf_8c.js File Reference

Variables

- var shdivsurf_8c

30.1735.1 Variable Documentation

30.1735.1.1 var shdivsurf_8c

Initial value:

```
=
[
    [ "SH_DIV_SURF", "shdivsurf_8c.html#afafe7bbd7549f685c9a4c65c5584c8f4", null ],
    [ "sh_div_surf", "shdivsurf_8c.html#abd93a9592b45b9316e65da391a7b5f1c", null ]
]
```

Definition at line 1 of file shdivsurf_8c.js.

30.1736 doc/html/shevalc_8c.js File Reference

Variables

- var shevalc_8c

30.1736.1 Variable Documentation

30.1736.1.1 var shevalc_8c

Initial value:

```
=
[
    [ "SHEVALC", "shevalc_8c.html#a2614bb5f46ad539324752297dd163f55", null ],
    [ "shevalc", "shevalc_8c.html#a385976a259db5e930009ff66013579b8", null ]
]
```

Definition at line 1 of file shevalc_8c.js.

30.1737 doc/html/shmkhlppts_8c.js File Reference

Variables

- var shmkhlppts_8c

30.1737.1 Variable Documentation

30.1737.1.1 var shmkhlppts_8c

Initial value:

```
=
[
    [ "SHMKHLPPTS", "shmkhlppts_8c.html#abf8f635b6fdaff6166dd237c3421981c", null ],
    [ "shmkhlppts", "shmkhlppts_8c.html#a3ed280ab29326295f9f85b00dcbdd107", null ]
]
```

Definition at line 1 of file shmkhlppts_8c.js.

30.1738 doc/html/shsing_8c.js File Reference

Variables

- var shsing_8c

30.1738.1 Variable Documentation

30.1738.1.1 var shsing_8c

Initial value:

```
=
[
    [ "SHSING", "shsing_8c.html#aa91694f277641baba1e47820d9a2bda7", null ],
    [ "shsing", "shsing_8c.html#a9cdb51640398934a2c752f4796650119", null ]
]
```

Definition at line 1 of file shsing_8c.js.

30.1739 doc/html/sisl_8h.js File Reference

Variables

- var sisl_8h

30.1739.1 Variable Documentation

30.1739.1.1 var sisl_8h

Definition at line 1 of file sisl_8h.js.

30.1740 doc/html/sisl__aux_8cpp.js File Reference

Variables

- var sisl__aux_8cpp

30.1740.1 Variable Documentation

30.1740.1.1 var sisl__aux_8cpp

Initial value:

```
=
[
    [ "DBGqqq", "sisl__aux_8cpp.html#a22e3c68f7ee44d24da231675c4aceafa", null ],
    [ "compute_surface_normals", "sisl__aux_8cpp.html#a8308e4ab9871c36e1c464ec66a38330e", null ],
    [ "lower_degree_and_subdivide", "sisl__aux_8cpp.html#a41370e2009c0559374f5b2a8fac856c3", null ],
    [ "lower_degree_to_linear", "sisl__aux_8cpp.html#aa5f98ab5409ba1865a5085a4538a1b1c", null ]
]
```

Definition at line 1 of file sisl__aux_8cpp.js.

30.1741 doc/html/sisl__aux_8h.js File Reference

Variables

- var sisl__aux_8h

30.1741.1 Variable Documentation

30.1741.1.1 var sisl__aux_8h

Initial value:

```
=
[
    [ "SISL_AUX_H_INCLUDED", "sisl__aux_8h.html#aff90e9e70b6fd8aa2943b9bca77603eb", null ],
    [ "compute_surface_normals", "sisl__aux_8h.html#a8308e4ab9871c36e1c464ec66a38330e", null ],
    [ "lower_degree_and_subdivide", "sisl__aux_8h.html#a41370e2009c0559374f5b2a8fac856c3", null ],
    [ "lower_degree_to_linear", "sisl__aux_8h.html#aa5f98ab5409ba1865a5085a4538a1b1c", null ]
]
```

Definition at line 1 of file sisl__aux_8h.js.

30.1742 doc/html/sisl__file__io_8h.js File Reference

Variables

- var sisl__file__io_8h

30.1742.1 Variable Documentation

30.1742.1.1 var sisl__file__io_8h

Initial value:

```
=
[
    [ "STD_FILE", "sisl__file__io_8h.html#af318346325017ad6fc3de1d8b3f04b63", null ],
    [ "curve_to_file", "sisl__file__io_8h.html#a2009d5567228487282828775f9028501cf", null ],
    [ "file_to_obj", "sisl__file__io_8h.html#a33acd8174723671557c66157c7c497bc", null ],
    [ "get_next_surface", "sisl__file__io_8h.html#acd2574f50f6a00a582b57459d000548e", null ],
    [ "get_sisl_surfaces", "sisl__file__io_8h.html#a97db5bc2e2c26fcdecbb4e833e93962b", null ],
    [ "read_non_comment", "sisl__file__io_8h.html#a4ebf0dcd87434f41757f2b67961a45ef", null ],
    [ "surface_to_file", "sisl__file__io_8h.html#adb534c8afdd8a0abd4cae8f7ff6b5731", null ]
]
```

Definition at line 1 of file sisl__file__io_8h.js.

30.1743 doc/html/sisl__view__demo_8cpp.js File Reference

Variables

- var sisl__view__demo_8cpp

30.1743.1 Variable Documentation

30.1743.1.1 var sisl__view__demo_8cpp

Definition at line 1 of file sisl__view__demo_8cpp.js.

30.1744 doc/html/sisl_p_8h.js File Reference

Variables

- var sisl_p_8h

30.1744.1 Variable Documentation

30.1744.1.1 var sisl_p_8h

Definition at line 1 of file sisl_p_8h.js.

30.1745 doc/html/sl__ex_8cpp.js File Reference

Variables

- var sl__ex_8cpp

30.1745.1 Variable Documentation

30.1745.1.1 var sl__ex_8cpp

Initial value:

```
=
[
    [ "Cube", "class_cube.html", null ],
    [ "WANT_MATH", "sl__ex_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "WANT_STREAM", "sl__ex_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "main", "sl__ex_8cpp.html#ae66f6b31b5ad750f1fe042a706a4e3d4", null ]
]
```

Definition at line 1 of file sl__ex_8cpp.js.

30.1746 doc/html/sleep_8h.js File Reference

Variables

- var sleep_8h

30.1746.1 Variable Documentation

30.1746.1.1 var sleep_8h

Initial value:

```
=
[
    [ "msleep", "sleep_8h.html#a6d5214d1f7774c98bbfb5a2f18a4d95c", null ]
]
```

Definition at line 1 of file sleep_8h.js.

30.1747 doc/html/solution_8cpp.js File Reference

Variables

- var solution_8cpp

30.1747.1 Variable Documentation

30.1747.1.1 var solution_8cpp

Initial value:

```
=
[
    [ "WANT_MATH", "solution_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "WANT_STREAM", "solution_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "square", "solution_8cpp.html#ae0c42a7620957500708a95cbb31e4260", null ]
]
```

Definition at line 1 of file solution_8cpp.js.

30.1748 doc/html/sort_8cpp.js File Reference

Variables

- var sort_8cpp

30.1748.1 Variable Documentation

30.1748.1.1 var sort_8cpp

Initial value:

```
=
[
    [ "DoSimpleSort", "sort_8cpp.html#a8435a3581eb620a85d630b3d5ae61936", null ],
    [ "MaxDepth", "sort_8cpp.html#aba605615b0d8658dbbe798b26420fa7e", null ],
    [ "REPORT", "sort_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "sort_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "SortAscending", "sort_8cpp.html#ac9ddf9f13cd8b252a2712023d6a13f82", null ],
    [ "SortDescending", "sort_8cpp.html#a074fccd66ff446e8b7f3358a13fecb29", null ],
    [ "SortSV", "sort_8cpp.html#afa20f7a2b9175cfc10ff1befacff795c", null ],
    [ "SortSV", "sort_8cpp.html#aa8f0accc1aabaaf5a211314aeaf5559b", null ]
]
```

Definition at line 1 of file sort_8cpp.js.

30.1749 doc/html/spli__silh_8c.js File Reference

Variables

- var spli__silh_8c

30.1749.1 Variable Documentation

30.1749.1.1 var spli__silh_8c

Initial value:

```
=
[
    [ "SPLI_SILH", "spli__silh_8c.html#ad5c5406b54fc3870162a123c96b07cab", null ],
    [ "spli_silh", "spli__silh_8c.html#ae3b475e63e628683bdd68b1c7046a182", null ]
]
```

Definition at line 1 of file spli__silh_8c.js.

30.1750 doc/html/spline2mesh_8h.js File Reference

Variables

- var spline2mesh_8h

30.1750.1 Variable Documentation

30.1750.1.1 var spline2mesh_8h

Initial value:

```
=
[
    [ "make_trimmed_mesh", "spline2mesh_8h.html#a27667fd082f69d891d6ef61d01812909", null ]
]
```

Definition at line 1 of file spline2mesh_8h.js.

30.1751 doc/html/struct_go_1_1_adjacency_info.js File Reference

Variables

- var struct_go_1_1_adjacency_info

30.1751.1 Variable Documentation

30.1751.1.1 var struct_go_1_1_adjacency_info

Initial value:

```
=
[
    [ "AdjacencyInfo", "struct_go_1_1_adjacency_info.html#ad3c0a4063f137288f0a9ac36f544298d", null ],
    [ "adjacency_found_", "struct_go_1_1_adjacency_info.html#a3ac7dc366593e8dacac6ecfc3dab3e16", null ],
    [ "bd_idx_1_", "struct_go_1_1_adjacency_info.html#a135e418f5acb664e9418a53950280d55", null ],
    [ "bd_idx_2_", "struct_go_1_1_adjacency_info.html#a81130b05146075f1811048f327f60df9", null ],
    [ "corner_failed_", "struct_go_1_1_adjacency_info.html#a972fd35f9c95bfb83228b3c9c5a030ca", null ],
    [ "same_orient_", "struct_go_1_1_adjacency_info.html#acad312b3c03024d7d1c1326aac59873a", null ]
]
```

Definition at line 1 of file struct_go_1_1_adjacency_info.js.

30.1752 doc/html/struct_go_1_1_alg2_d_elem.js File Reference

Variables

- var struct_go_1_1_alg2_d_elem

30.1752.1 Variable Documentation

30.1752.1.1 var struct_go_1_1_alg2_d_elem

Initial value:

```
=
[
    [ "Alg2DElem", "struct_go_1_1_alg2_d_elem.html#a250274f1d6b660e316ea7afe05650c01", null ],
    [ "degrees_", "struct_go_1_1_alg2_d_elem.html#a522c5b04daa09ae4c08cb4cff3eafdcc", null ],
    [ "factor_", "struct_go_1_1_alg2_d_elem.html#af716c43434f3b63fe96ac23765c33a58", null ]
]
```

Definition at line 1 of file struct_go_1_1_alg2_d_elem.js.

30.1753 doc/html/struct_go_1_1_alg3_d_elem.js File Reference

Variables

- var struct_go_1_1_alg3_d_elem

30.1753.1 Variable Documentation

30.1753.1.1 var struct_go_1_1_alg3_d_elem

Initial value:

```
=
[
    [ "Alg3DElem", "struct_go_1_1_alg3_d_elem.html#a11a5c8e48159b5217cbc5ef0f3cddac8", null ],
    [ "degrees_", "struct_go_1_1_alg3_d_elem.html#a8a59cc9695d937aed4138522a05c96b6", null ],
    [ "factor_", "struct_go_1_1_alg3_d_elem.html#aa1beae70718c23de5e2b5bfd258b3998", null ]
]
```

Definition at line 1 of file struct_go_1_1_alg3_d_elem.js.

30.1754 doc/html/struct_go_1_1_basis_derivs.js File Reference

Variables

- var struct_go_1_1_basis_derivs

30.1754.1 Variable Documentation

30.1754.1.1 var struct_go_1_1_basis_derivs

Initial value:

```
=
[
    [ "prepareDerivs", "struct_go_1_1_basis_derivs.html#a0f2d4956f345c6766520c5aec29e427d", null ],
    [ "basisDerivs_u", "struct_go_1_1_basis_derivs.html#a5f4e2a29371152a6434851fbfc0a6746", null ],
    [ "basisDerivs_v", "struct_go_1_1_basis_derivs.html#a75a1a2eb190559faf63e1c670c2b5284", null ],
    [ "basisDerivs_w", "struct_go_1_1_basis_derivs.html#a1b29f5f3ff4ba78f72923493f040adbb", null ],
    [ "basisValues", "struct_go_1_1_basis_derivs.html#ad574c9bd6638fac3def9a7c08770ee2d", null ],
    [ "left_idx", "struct_go_1_1_basis_derivs.html#ac2eecec7e9fb61617f3b459d979088b7", null ],
    [ "param", "struct_go_1_1_basis_derivs.html#a2e5e57b7537c7d0477e5fdcd1629a59c", null ]
]
```

Definition at line 1 of file struct_go_1_1_basis_derivs.js.

30.1755 doc/html/struct_go_1_1_basis_derivs2.js File Reference

Variables

- var struct_go_1_1_basis_derivs2

30.1755.1 Variable Documentation

30.1755.1.1 var struct_go_1_1_basis_derivs2

Initial value:

```
=
[
    [ "prepareDerivs", "struct_go_1_1_basis_derivs2.html#a5cd8af2b43d26016c8e873b0b10286bb", null ],
    [ "basisDerivs_u", "struct_go_1_1_basis_derivs2.html#a3e86cd088c2275d67b028312d4194ccc", null ],
    [ "basisDerivs_uu", "struct_go_1_1_basis_derivs2.html#a4996c2b8943eb42e5a9fd7f8c1c68f2b", null ],
    [ "basisDerivs_uv", "struct_go_1_1_basis_derivs2.html#a05d1d272ca15c51f176630dff370b1c7", null ],
    [ "basisDerivs_uw", "struct_go_1_1_basis_derivs2.html#aa6b76d8fd5df9f04ec5393980543d3ec", null ],
    [ "basisDerivs_v", "struct_go_1_1_basis_derivs2.html#a15bc9a9f8c705547e215271f694b4f2b", null ],
    [ "basisDerivs_vv", "struct_go_1_1_basis_derivs2.html#a44960d0fc0cb8a5ea1801938577d85d7", null ],
    [ "basisDerivs_vw", "struct_go_1_1_basis_derivs2.html#a76278e7a79fac6a1d2a8c80f6f4cd9fb", null ],
    [ "basisDerivs_w", "struct_go_1_1_basis_derivs2.html#aa12e98b99c909c6e921bbba216f677e9", null ],
    [ "basisDerivs_ww", "struct_go_1_1_basis_derivs2.html#ac730fbecf4031715f1af594bf2eeeb5c", null ],
    [ "basisValues", "struct_go_1_1_basis_derivs2.html#a4bc4bdc3686322b8efe061781413d467", null ],
    [ "left_idx", "struct_go_1_1_basis_derivs2.html#aec82985f5d7d85022bf5b6e15396730a", null ],
    [ "param", "struct_go_1_1_basis_derivs2.html#a4dc5f908e2c48928ee48af3d45fdaadf", null ]
]
```

Definition at line 1 of file struct_go_1_1_basis_derivs2.js.

30.1756 doc/html/struct_go_1_1_basis_derivs_sf.js File Reference

Variables

- var struct_go_1_1_basis_derivs_sf

30.1756.1 Variable Documentation

30.1756.1.1 var struct_go_1_1_basis_derivs_sf

Initial value:

```
=
[
    [ "prepareDerivs", "struct_go_1_1_basis_derivs_sf.html#aa1dfdeda83e25fc3c15663dc42c516cd", null ],
    [ "basisDerivs_u", "struct_go_1_1_basis_derivs_sf.html#a7a26e86e9156363bdae38d7eb091b5a5", null ],
    [ "basisDerivs_v", "struct_go_1_1_basis_derivs_sf.html#add12858f4dea006a23fbb9193cd3bddb", null ],
    [ "basisValues", "struct_go_1_1_basis_derivs_sf.html#ab16e0b1de9155d2e66761345cb31e3a8", null ],
    [ "left_idx", "struct_go_1_1_basis_derivs_sf.html#a1adf51c6d8e7b08c87e953d84a09217f", null ],
    [ "param", "struct_go_1_1_basis_derivs_sf.html#a67167cf9e44d225ea7f31d55f9921c0d", null ]
]
```

Definition at line 1 of file struct_go_1_1_basis_derivs_sf.js.

30.1757 doc/html/struct_go_1_1_basis_derivs_sf2.js File Reference

Variables

- var struct_go_1_1_basis_derivs_sf2

30.1757.1 Variable Documentation

30.1757.1.1 var struct_go_1_1_basis_derivs_sf2

Initial value:

```
=
[
    [ "prepareDerivs", "struct_go_1_1_basis_derivs_sf2.html#a676603203e8a459dd9494bfdf183555b", null ],
    [ "basisDerivs_u", "struct_go_1_1_basis_derivs_sf2.html#a3d72d6a39c1f7034e6a6d7b061dfac14", null ],
    [ "basisDerivs_uu", "struct_go_1_1_basis_derivs_sf2.html#a13170a3e3019f68c407dfa0f8040dba8", null ],
    [ "basisDerivs_uv", "struct_go_1_1_basis_derivs_sf2.html#adc9789db3b1bc8eaa37c146755415591", null ],
    [ "basisDerivs_v", "struct_go_1_1_basis_derivs_sf2.html#a9e59c18dea79f0b30601a610d1e17cd4", null ],
    [ "basisDerivs_vv", "struct_go_1_1_basis_derivs_sf2.html#ab4001ded4fa3b3b4405cbbe257dd1ce3", null ],
    [ "basisValues", "struct_go_1_1_basis_derivs_sf2.html#a93947150bf557685ebafdb390db38917", null ],
    [ "left_idx", "struct_go_1_1_basis_derivs_sf2.html#a5ff58e0e70be8c4e2c38df1c41f33161", null ],
    [ "param", "struct_go_1_1_basis_derivs_sf2.html#a53dbe3c720404d69680df2b5feae9a93", null ]
]
```

Definition at line 1 of file struct_go_1_1_basis_derivs_sf2.js.

30.1758 doc/html/struct_go_1_1_basis_pts.js File Reference

Variables

- var struct_go_1_1_basis_pts

30.1758.1 Variable Documentation

30.1758.1.1 var struct_go_1_1_basis_pts

Initial value:

```
=
[
    [ "preparePts", "struct_go_1_1_basis_pts.html#ad22db843371b8f397257dbe583843b7e", null ],
    [ "basisValues", "struct_go_1_1_basis_pts.html#aba6acc133e5a05541107092f6a9bca7c", null ],
    [ "left_idx", "struct_go_1_1_basis_pts.html#a1c795dfc9bb560f5d484f091a1474bd3", null ],
    [ "param", "struct_go_1_1_basis_pts.html#ad97d1b920547ff7d174645fb4dfa2f5c", null ]
]
```

Definition at line 1 of file struct_go_1_1_basis_pts.js.

30.1759 doc/html/struct_go_1_1_basis_pts_sf.js File Reference

Variables

- var struct_go_1_1_basis_pts_sf

30.1759.1 Variable Documentation

30.1759.1.1 var struct_go_1_1_basis_pts_sf

Initial value:

```
=
[
    [ "preparePts", "struct_go_1_1_basis_pts_sf.html#a86dd096c1aefe0d735b37d93fa535b41", null ],
    [ "basisValues", "struct_go_1_1_basis_pts_sf.html#a31b96b97399bfa287f882cdb2164a059", null ],
    [ "left_idx", "struct_go_1_1_basis_pts_sf.html#a2c610e84482885c898916dc71eb2d8a7", null ],
    [ "param", "struct_go_1_1_basis_pts_sf.html#a84abb1d4aec60b7c33f66c390a5cd6f9", null ]
]
```

Definition at line 1 of file struct_go_1_1_basis_pts_sf.js.

30.1760 doc/html/struct_go_1_1_boundary_function_int.js File Reference

Variables

- var struct_go_1_1_boundary_function_int

30.1760.1 Variable Documentation

30.1760.1.1 var struct_go_1_1_boundary_function_int

Initial value:

```
=
[
    [ "BoundaryFunctionInt", "struct_go_1_1_boundary_function_int.html#adde591970ca49de228bf50daf99ae383",
      null ],
    [ "getDir", "struct_go_1_1_boundary_function_int.html#abbcc046f35a5b9fcdb639cf7f12d1f90", null ],
    [ "getObject", "struct_go_1_1_boundary_function_int.html#adba90dced2c9bbd2c547e00676fafac7", null ],
    [ "getPar", "struct_go_1_1_boundary_function_int.html#aca6592096415555d4b1568a9c86743bd", null ],
    [ "bd_obj_", "struct_go_1_1_boundary_function_int.html#a0b0876977cae00b3366392a785271dc9", null ],
    [ "par_", "struct_go_1_1_boundary_function_int.html#abdd6fb0794b689f8cedab585558fb705", null ],
    [ "pardir_", "struct_go_1_1_boundary_function_int.html#adcdac7d7de248a75f2430289d36c4e4d", null ]
]
```

Definition at line 1 of file struct_go_1_1_boundary_function_int.js.

30.1761 doc/html/struct_go_1_1_boundary_geom_int.js File Reference

Variables

- var struct_go_1_1_boundary_geom_int

30.1761.1 Variable Documentation

30.1761.1.1 var struct_go_1_1_boundary_geom_int

Initial value:

```
=
[
    [ "BoundaryGeomInt", "struct_go_1_1_boundary_geom_int.html#a882a22882af88ef60332f51546381b8a", null ],
    [ "~BoundaryGeomInt", "struct_go_1_1_boundary_geom_int.html#a8aecd94df6c1451ed33fa1af838634a7", null ],
    [ "getDir", "struct_go_1_1_boundary_geom_int.html#a99fe848182e9a3f5e0f7d7d2b4d91a73", null ],
    [ "getObject", "struct_go_1_1_boundary_geom_int.html#ab7bc4834231e9fe90d2665ca75793f10", null ],
    [ "getPar", "struct_go_1_1_boundary_geom_int.html#a1fa41fdd02c95da5cb423308f2be1cbf", null ],
    [ "bd_obj_", "struct_go_1_1_boundary_geom_int.html#a4e614dd0ecf36ec3ba697525a61acc2d", null ],
    [ "par_", "struct_go_1_1_boundary_geom_int.html#aad567caa842e72da59abef6979c8766b", null ],
    [ "pardir_", "struct_go_1_1_boundary_geom_int.html#a024ae519753767d06f28b20feb866c07", null ]
]
```

Definition at line 1 of file struct_go_1_1_boundary_geom_int.js.

30.1762 doc/html/struct_go_1_1_boundary_intersection_data.js File Reference

Variables

- var struct_go_1_1_boundary_intersection_data

30.1762.1 Variable Documentation

30.1762.1.1 var struct_go_1_1_boundary_intersection_data

Initial value:

```
=
[
    [ "dir", "struct_go_1_1_boundary_intersection_data.html#ad6374760b4612e464ee5a17614d28f98", null ],
    [ "par", "struct_go_1_1_boundary_intersection_data.html#a2f9c90e69885fa15d27e41a8995bb6f3", null ],
    [ "pts", "struct_go_1_1_boundary_intersection_data.html#ac7fcf20e08a0bde5c3c3d3d622bbd4c2", null ]
]
```

Definition at line 1 of file struct_go_1_1_boundary_intersection_data.js.

30.1763 doc/html/struct_go_1_1_cached_interval.js File Reference

Variables

- var struct_go_1_1_cached_interval

30.1763.1 Variable Documentation

30.1763.1.1 var struct_go_1_1_cached_interval

Initial value:

```
=
[
    [ "CachedInterval", "struct_go_1_1_cached_interval.html#a2a79622b639df3527ba3d5fe75b6564e", null ],
    [ "cached", "struct_go_1_1_cached_interval.html#a8170fc35bc28a1bc0ec21ca682fa3467", null ],
    [ "inside", "struct_go_1_1_cached_interval.html#add52690f177dc786745baab34218d43e", null ],
    [ "outside", "struct_go_1_1_cached_interval.html#aa3934c163e9e6f7234e8b62e28c01fe5", null ]
]
```

Definition at line 1 of file struct_go_1_1_cached_interval.js.

30.1764 doc/html/struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.js File Reference

Variables

- var struct_go_1_1_composite_model_file_handler_1_1sfcvinfo

30.1764.1 Variable Documentation

30.1764.1.1 var struct_go_1_1_composite_model_file_handler_1_1sfcvinfo

Initial value:

```
=
[
    [ "sfcvinfo", "
      struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.html#a177513f5a9a1909739ce7b596ae09151", null ],
    [ "sfcvinfo", "
      struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.html#a9e3c53fc0515becef648e9d76361d936", null ],
    [ "bd_", "struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.html#a896c96f83432fabe1857f3fa0c967471
      ", null ],
    [ "ccm_", "
      struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.html#a973e16399c81b5c4b7048218a994c0c1", null ],
    [ "constdir_", "
      struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.html#ac85589591c5e53b310729228778b9cb6", null ],
    [ "constpar_", "
      struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.html#a743d5484d4cbacb67b40895d038d6d5f", null ],
    [ "infoset_", "
      struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.html#a86fcad4cbb8e0d381a9fd62b15168932", null ],
    [ "orientation_", "
      struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.html#a37202c0c673bb47d999ee7391da3dd92", null ]
]
```

Definition at line 1 of file struct_go_1_1_composite_model_file_handler_1_1sfcvinfo.js.

30.1765 doc/html/struct_go_1_1_entity_list.js File Reference

Variables

- var struct_go_1_1_entity_list

30.1765.1 Variable Documentation

30.1765.1.1 var struct_go_1_1_entity_list

Initial value:

```
=
[
    [ "EntityList", "struct_go_1_1_entity_list.html#ad199ed8f5f536681e40c02ed7193f42d", null ],
    [ "validEntity", "struct_go_1_1_entity_list.html#a4579a25ef0627fd75736eec3082a5fc3", null ]
]
```

Definition at line 1 of file struct_go_1_1_entity_list.js.

30.1766 doc/html/struct_go_1_1_face_connectivity.js File Reference

Variables

- var struct_go_1_1_face_connectivity

30.1766.1 Variable Documentation

30.1766.1.1 var struct_go_1_1_face_connectivity

Initial value:

```
=
[
    [ "FaceConnectivity", "struct_go_1_1_face_connectivity.html#a296535b83af35ef3587335903306feb4", null ],
    [ "BestStatus", "struct_go_1_1_face_connectivity.html#a70242d99cd485ceb0947580499029539", null ],
    [ "setEdges", "struct_go_1_1_face_connectivity.html#adf71b98305e2832964bd274299548736", null ],
    [ "WorstStatus", "struct_go_1_1_face_connectivity.html#a71455fb59609e8d2356ad33f1bc637cb", null ],
    [ "e1_", "struct_go_1_1_face_connectivity.html#a42876bc3d54e64697555761d3667382e", null ],
    [ "e2_", "struct_go_1_1_face_connectivity.html#a56d1d7a434f3fd07682e85488b369fb8", null ],
    [ "parameters_", "struct_go_1_1_face_connectivity.html#a2ed15f49224afe9774dca01f42adbc3d", null ],
    [ "status_", "struct_go_1_1_face_connectivity.html#ab76cb8807d8e5fc05e146bb22494969c", null ]
]
```

Definition at line 1 of file struct_go_1_1_face_connectivity.js.

30.1767 doc/html/struct_go_1_1_factorial.js File Reference

Variables

- var struct_go_1_1_factorial

30.1767.1 Variable Documentation

30.1767.1.1 var struct_go_1_1_factorial

Initial value:

```
=
[
    [ "value", "
      struct_go_1_1_factorial.html#a579daed3b4275abe013c8f88077f888fa4acbf42abf2d3a50f62969f536eacb98", null ]
]
```

Definition at line 1 of file struct_go_1_1_factorial.js.

30.1768 doc/html/struct_go_1_1_factorial_3_011_01_4.js File Reference

Variables

- var struct_go_1_1_factorial_3_011_01_4

30.1768.1 Variable Documentation

30.1768.1.1 var struct_go_1_1_factorial_3_011_01_4

Initial value:

```
=
[
    [ "value", "
      struct_go_1_1_factorial_3_011_01_4.html#a654cb8f1088a190314946d0cb460482caf04561aa2fcbf1fb66fbc964a355d268", null ]
]
```

Definition at line 1 of file struct_go_1_1_factorial_3_011_01_4.js.

30.1769 doc/html/struct_go_1_1_g_pos.js File Reference

Variables

- var struct_go_1_1_g_pos

30.1769.1 Variable Documentation

30.1769.1.1 var struct_go_1_1_g_pos

Initial value:

```
=
[
    [ "GPos", "struct_go_1_1_g_pos.html#ae910793fecbd0454cdd204d0caa3a4d2", null ],
    [ "GPos", "struct_go_1_1_g_pos.html#aee17bf04a62e40f1c61fe4ec6f0da6cb", null ],
    [ "ix", "struct_go_1_1_g_pos.html#a0895731fb21626c1164e1f6fa046adef", null ],
    [ "mult", "struct_go_1_1_g_pos.html#a4f709223efab431e6971b4c8339195b2", null ]
]
```

Definition at line 1 of file struct_go_1_1_g_pos.js.

30.1770 doc/html/struct_go_1_1_i_g_e_sdirentry.js File Reference

Variables

- var struct_go_1_1_i_g_e_sdirentry

30.1770.1 Variable Documentation

30.1770.1.1 var struct_go_1_1_i_g_e_sdirentry

Initial value:

```
=
[
    [ "color", "struct_go_1_1_i_g_e_sdirentry.html#a4d990a00123c4704611b9ba8f27b989b", null ],
    [ "entity_label", "struct_go_1_1_i_g_e_sdirentry.html#a5480c7dc7f12734b1e313bef389b1712", null ],
    [ "entity_number", "struct_go_1_1_i_g_e_sdirentry.html#a9e49664cd4d7ed47a39c36b0b142667f", null ],
    [ "entity_type_number", "struct_go_1_1_i_g_e_sdirentry.html#a917759db22246f21ef576f1dae2227a8", null ],
    [ "form", "struct_go_1_1_i_g_e_sdirentry.html#a8606d475e0ffca150e9946c5308de47e", null ],
    [ "label_display", "struct_go_1_1_i_g_e_sdirentry.html#a2b8d7c0041720a2cc10d1eab59d69171", null ],
    [ "level", "struct_go_1_1_i_g_e_sdirentry.html#a837cf114d978fcc9afcebbfdb3669fd6", null ],
    [ "line_count", "struct_go_1_1_i_g_e_sdirentry.html#ab4ddf1370937d01fdd225c185bc7c258", null ],
    [ "line_font_pattern", "struct_go_1_1_i_g_e_sdirentry.html#a90c7e2e78d871d26f616c1d1f8cffc99", null ],
    [ "line_weight", "struct_go_1_1_i_g_e_sdirentry.html#acbc23ab052dfcffa1cb983ff880d06b9", null ],
    [ "param_data_start", "struct_go_1_1_i_g_e_sdirentry.html#a3e3ad50a649cfde1254cb2ded3d1976a", null ],
    [ "status", "struct_go_1_1_i_g_e_sdirentry.html#a0f36ffdbe266da4804cf0fa10745c7de", null ],
    [ "structure", "struct_go_1_1_i_g_e_sdirentry.html#a6093dbd62cd1555ef8eb137416f1b3e0", null ],
    [ "trans_matrix", "struct_go_1_1_i_g_e_sdirentry.html#ae98cd224456e7828d236ee28ce49b5df", null ],
    [ "view", "struct_go_1_1_i_g_e_sdirentry.html#a302fe7f59f59804f3b0b81c258dfe234", null ]
]
```

Definition at line 1 of file struct_go_1_1_i_g_e_sdirentry.js.

30.1771 doc/html/struct_go_1_1_i_g_e_sheader.js File Reference

Variables

- var struct_go_1_1_i_g_e_sheader

30.1771.1 Variable Documentation

30.1771.1.1 var struct_go_1_1_i_g_e_sheader

Definition at line 1 of file struct_go_1_1_i_g_e_sheader.js.

30.1772 doc/html/struct_go_1_1_int_pt_info.js File Reference

Variables

- var struct_go_1_1_int_pt_info

30.1772.1 Variable Documentation

30.1772.1.1 var struct_go_1_1_int_pt_info

Initial value:

```
=
[
    [ "IntPtInfo", "struct_go_1_1_int_pt_info.html#add87e1a4de4b7f7a58cbab079cc68a06", null ],
    [ "direction", "struct_go_1_1_int_pt_info.html#ae3a23ef20b202e17ce73a7c7b0ad632c", null ],
    [ "is_ok", "struct_go_1_1_int_pt_info.html#a495860fb45a3d2a1cf2d2f07d3800484", null ],
    [ "location", "struct_go_1_1_int_pt_info.html#a88f8a5994f8e3764ac5f4214cbdf6cb5", null ],
    [ "nneighbours", "struct_go_1_1_int_pt_info.html#a22aa9d2d7a95251c6039aa2b68c384a0", null ],
    [ "singularity_type", "struct_go_1_1_int_pt_info.html#a60186b83a5dadcca48c41b2b42175476", null ]
]
```

Definition at line 1 of file struct_go_1_1_int_pt_info.js.

30.1773 doc/html/struct_go_1_1_l_r_spline_surface_1_1_b_s_key.js File Reference

Variables

- var struct_go_1_1_l_r_spline_surface_1_1_b_s_key

30.1773.1 Variable Documentation

30.1773.1.1 var struct_go_1_1_l_r_spline_surface_1_1_b_s_key

Initial value:

```
=
[
    [ "operator<", "struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a32e81f8d2b5f0fd3352d8e22b9f233a1",
      null ],
    [ "u_max", "struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a5cb5e8c6fbbfe331603f97c20d1ccc69", null
      ],
    [ "u_min", "struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a59296b191fcad4e9c7c7034a2967ae3f", null
      ],
    [ "u_mult1", "struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a0dd8a6a75f9f5f7404616f5c970c9285",
      null ],
    [ "u_mult2", "struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#ac4082082e914b3bf54b9cc1115f4bfd2",
      null ],
    [ "v_max", "struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a6751c5eed5caa610e8dac5f3558b4702", null
      ],
    [ "v_min", "struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a917055d1f2ba2783786ba6345d73cbd8", null
      ],
    [ "v_mult1", "struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#ac8f082b1e3b79de0d2531198fd3648af",
      null ],
    [ "v_mult2", "struct_go_1_1_l_r_spline_surface_1_1_b_s_key.html#a04b64c2a027326729a138282d8015159",
      null ]
]
```

Definition at line 1 of file struct_go_1_1_l_r_spline_surface_1_1_b_s_key.js.

30.1774 doc/html/struct_go_1_1_l_r_spline_surface_1_1_elem_key.js File Reference

Variables

- var struct_go_1_1_l_r_spline_surface_1_1_elem_key

30.1774.1 Variable Documentation

30.1774.1.1 var struct_go_1_1_l_r_spline_surface_1_1_elem_key

Initial value:

```
=
[
    [ "operator<", "struct_go_1_1_l_r_spline_surface_1_1_elem_key.html#a4b8aa0d0e5013360361c758df0f5e0cf",
      null ],
    [ "u_min", "struct_go_1_1_l_r_spline_surface_1_1_elem_key.html#a585692254199d6a43db9f961acdf51c5", null
       ],
    [ "v_min", "struct_go_1_1_l_r_spline_surface_1_1_elem_key.html#a9f214ce7d7d8e22bd73c4f1bb3c93f42", null
       ]
]
```

Definition at line 1 of file struct_go_1_1_l_r_spline_surface_1_1_elem_key.js.

30.1775 doc/html/struct_go_1_1_l_r_spline_surface_1_1_refinement2_d.js File Reference

Variables

- var struct_go_1_1_l_r_spline_surface_1_1_refinement2_d

30.1775.1 Variable Documentation

30.1775.1.1 var struct_go_1_1_l_r_spline_surface_1_1_refinement2_d

Initial value:

```
=
[
    [ "setVal", "struct_go_1_1_l_r_spline_surface_1_1_refinement2_d.html#aa26cc499b466c314bd246bd4418e87ef"
      , null ],
    [ "d", "struct_go_1_1_l_r_spline_surface_1_1_refinement2_d.html#a8a68737e378b8daee92599fcb690ef3c",
      null ],
    [ "end", "struct_go_1_1_l_r_spline_surface_1_1_refinement2_d.html#a79c566a0c23670665f282314f2909e47",
      null ],
    [ "kval", "struct_go_1_1_l_r_spline_surface_1_1_refinement2_d.html#ad68d760801298c71f45dd219074943ea",
      null ],
    [ "multiplicity", "
      struct_go_1_1_l_r_spline_surface_1_1_refinement2_d.html#a462ad5c139fa0447bd322d7ff2268b73", null ],
    [ "start", "struct_go_1_1_l_r_spline_surface_1_1_refinement2_d.html#a325d8e12827d93a7cbe7bae48c39a6da",
       null ]
]
```

Definition at line 1 of file struct_go_1_1_l_r_spline_surface_1_1_refinement2_d.js.

30.1776 doc/html/struct_go_1_1_l_r_spline_surface_1_1double__pair__hash.js File Reference

Variables

- var struct_go_1_1_l_r_spline_surface_1_1double__pair__hash

30.1776.1 Variable Documentation

30.1776.1.1 var struct_go_1_1_l_r_spline_surface_1_1double__pair__hash

Initial value:

```
=
[
    [ "operator()", "
      struct_go_1_1_l_r_spline_surface_1_1double__pair__hash.html#a7e8b524336976f752599f2cb567bcd37", null ]
]
```

Definition at line 1 of file struct_go_1_1_l_r_spline_surface_1_1double__pair__hash.js.

30.1777 doc/html/struct_go_1_1_l_r_spline_utils_1_1support__compare.js File Reference

Variables

- var struct_go_1_1_l_r_spline_utils_1_1support__compare

30.1777.1 Variable Documentation

30.1777.1.1 var struct_go_1_1_l_r_spline_utils_1_1support__compare

Initial value:

```
=
[
    [ "operator()", "
      struct_go_1_1_l_r_spline_utils_1_1support__compare.html#a28edd5aeea0ffbf79bea57b17574c74a", null ]
]
```

Definition at line 1 of file struct_go_1_1_l_r_spline_utils_1_1support__compare.js.

30.1778 doc/html/struct_go_1_1_l_s_smooth_data.js File Reference

Variables

- var struct_go_1_1_l_s_smooth_data

30.1778.1 Variable Documentation

30.1778.1.1 var struct_go_1_1_l_s_smooth_data

Definition at line 1 of file struct_go_1_1_l_s_smooth_data.js.

30.1779 doc/html/struct_go_1_1_param_surface_1_1degenerate__info.js File Reference

Variables

- var struct_go_1_1_param_surface_1_1degenerate__info

30.1779.1 Variable Documentation

30.1779.1.1 var struct_go_1_1_param_surface_1_1degenerate__info

Initial value:

```
=
[
    [ "degenerate_info", "
      struct_go_1_1_param_surface_1_1degenerate__info.html#af7e36e8c2ef05ede0e1128b9e7095678", null ],
    [ "b_", "struct_go_1_1_param_surface_1_1degenerate__info.html#af0a777570c58379b45b0dd42f44abcf5", null
      ],
    [ "is_set_", "struct_go_1_1_param_surface_1_1degenerate__info.html#a11677d293ea8af0c68160fdba3c842d5",
      null ],
    [ "l_", "struct_go_1_1_param_surface_1_1degenerate__info.html#a9e9e4dd3a9bad4fc495e1ca428d1c4e9", null
      ],
    [ "r_", "struct_go_1_1_param_surface_1_1degenerate__info.html#af2004242eeb813ed444c5fdb9b265071", null
      ],
    [ "t_", "struct_go_1_1_param_surface_1_1degenerate__info.html#aa4a1b5a04e6f9581c46bf8c50ec6e408", null
      ],
    [ "tol_", "struct_go_1_1_param_surface_1_1degenerate__info.html#a55c0c7e01d4007c150c56dbafb798269",
      null ]
]
```

Definition at line 1 of file struct_go_1_1_param_surface_1_1degenerate__info.js.

30.1780 doc/html/struct_go_1_1_registration_input.js File Reference

Variables

- var struct_go_1_1_registration_input

30.1780.1 Variable Documentation

30.1780.1.1 var struct_go_1_1_registration_input

Initial value:

```
=
[
    [ "RegistrationInput", "struct_go_1_1_registration_input.html#affc39aa78123a30d05592b6980fbc482", null
      ],
    [ "setToleranceWeights", "struct_go_1_1_registration_input.html#aca7253fe61b9355e8f84b2eb49985c02",
      null ],
    [ "area_tolerance_sq_", "struct_go_1_1_registration_input.html#a9a3cc58d9786bf20ffbf59f98ac216e6", null
       ],
    [ "calculate_tolerance_weights_", "
      struct_go_1_1_registration_input.html#aabe8f93a69c69d7bf91694bf6ecd4014", null ],
    [ "max_newton_iterations_", "struct_go_1_1_registration_input.html#abf0cd5901fd84ee604bc3c8bf7158fc1",
      null ],
    [ "max_solve_iterations_", "struct_go_1_1_registration_input.html#afd763fcedbcbb0fc83fb44cfff6e4289",
      null ],
    [ "multi_core_", "struct_go_1_1_registration_input.html#a77cfc967fa9e21ea7a54dbd74b5babc4", null ],
    [ "newton_tolerance_", "struct_go_1_1_registration_input.html#ab16f5ac069894e7e8ca7373961e30238", null
      ],
    [ "solve_tolerance_", "struct_go_1_1_registration_input.html#a58504d45397361df5e1e68b7882140d2", null ]
      ,
    [ "tolerance_weight_rescale_", "struct_go_1_1_registration_input.html#a9d3f27ba63e821fcb235938a203b2f0e
      ", null ],
    [ "tolerance_weight_rotation_", "
      struct_go_1_1_registration_input.html#a371aa86034f5a693f8dfd9229539b643", null ],
    [ "tolerance_weight_translation_", "
      struct_go_1_1_registration_input.html#a0208ec7d77cf7d0dbe724f362552ec56", null ]
]
```

Definition at line 1 of file struct_go_1_1_registration_input.js.

30.1781 doc/html/struct_go_1_1_registration_result.js File Reference

Variables

- var struct_go_1_1_registration_result

30.1781.1 Variable Documentation

30.1781.1.1 var struct_go_1_1_registration_result

Initial value:

```
=
[
    [ "ok", "struct_go_1_1_registration_result.html#a957cba48cdf7bb610efc628421dd67ec", null ],
    [ "last_change_", "struct_go_1_1_registration_result.html#a7df6e84c504a75d83f47aa2de92d747d", null ],
    [ "last_newton_iteration_", "struct_go_1_1_registration_result.html#a0955123270a8c94b76919e794f6e8e67",
      null ],
    [ "rescaling_", "struct_go_1_1_registration_result.html#a507fbaaf0d1eab2a0512885808a182b3", null ],
    [ "result_type_", "struct_go_1_1_registration_result.html#a0c2bd34528ab3fdee72d2ea9fb2ac10d", null ],
    [ "rotation_matrix_", "struct_go_1_1_registration_result.html#a1a9d598ac5b634684c0195091c3e4b0c", null
    ],
    [ "solve_result_", "struct_go_1_1_registration_result.html#aca96630179c46e97c522fa12f6aa4ff5", null ],
    [ "translation_", "struct_go_1_1_registration_result.html#a7f3b4d4a4b1643d5c69ab233464af84e", null ]
]
```

Definition at line 1 of file struct_go_1_1_registration_result.js.

30.1782 doc/html/struct_go_1_1_rotation_info.js File Reference

Variables

- var struct_go_1_1_rotation_info

30.1782.1 Variable Documentation

30.1782.1.1 var struct_go_1_1_rotation_info

Initial value:

```
=
[
    [ "center_pt_", "struct_go_1_1_rotation_info.html#ae1728f3027b87e4ba67a13cfda4a5bb0", null ],
    [ "rot_angle_", "struct_go_1_1_rotation_info.html#a3db6ec36284fa5acbac073cf25ec8d62", null ],
    [ "rot_axis_", "struct_go_1_1_rotation_info.html#a2798f84d097d7cf10a29384d43f4be10", null ]
]
```

Definition at line 1 of file struct_go_1_1_rotation_info.js.

30.1783 doc/html/struct_go_1_1_sample_point_data.js File Reference

Variables

- var struct_go_1_1_sample_point_data

30.1783.1 Variable Documentation

30.1783.1.1 var struct_go_1_1_sample_point_data

Initial value:

```
=
[
    [ "SamplePointData", "struct_go_1_1_sample_point_data.html#a85126d355b2454994df7a2469d5a6175", null ],
    [ "SamplePointData", "struct_go_1_1_sample_point_data.html#ab68887e84ad4ecc105ba26ea657e8ae5", null ],
    [ "edge_", "struct_go_1_1_sample_point_data.html#abba15d6076f86102c17f7c4bb857ac13", null ],
    [ "edge_par_", "struct_go_1_1_sample_point_data.html#ae50653d346158f4c60b5d7d1a4438422", null ],
    [ "face_", "struct_go_1_1_sample_point_data.html#a465f4888fbb14ceecbcee972212ab7c6", null ],
    [ "face_par_", "struct_go_1_1_sample_point_data.html#a76366a7f8bc6787cd792f4802a3de4ae", null ],
    [ "mean_curvature_", "struct_go_1_1_sample_point_data.html#ae6f344ac2642a13b3cc703b439739f37", null ],
    [ "norm_", "struct_go_1_1_sample_point_data.html#ab59472473d4e3cdcec26b12b2de3c2fd", null ],
    [ "pos_", "struct_go_1_1_sample_point_data.html#ac7d9f75b41ce1554ff0b13852f5ef1d2", null ]
]
```

Definition at line 1 of file struct_go_1_1_sample_point_data.js.

30.1784 doc/html/struct_go_1_1_second_order_properties.js File Reference

Variables

- var struct_go_1_1_second_order_properties

30.1784.1 Variable Documentation

30.1784.1.1 var struct_go_1_1_second_order_properties

Initial value:

```
=
[
    [ "SecondOrderProperties", "
      struct_go_1_1_second_order_properties.html#acec4d7b81e300b5447c044f4689aa8ca", null ],
    [ "clear", "struct_go_1_1_second_order_properties.html#a7969d702b4b5d1cb8ae66e6f4654f57e", null ],
    [ "singularity_info_is_cached", "
      struct_go_1_1_second_order_properties.html#a14908f83790648e620a16d33ecafcf62", null ],
    [ "singularity_type", "struct_go_1_1_second_order_properties.html#a14b5ad356212956de4932d1f3bcb3957",
      null ],
    [ "tangent_2d_1", "struct_go_1_1_second_order_properties.html#a2a04d22fd412a880614e77120022ed82", null
      ],
    [ "tangent_2d_2", "struct_go_1_1_second_order_properties.html#ae150a2eb73072238b54e2c3f5e130dff", null
      ],
    [ "tangent_2d_is_cached", "struct_go_1_1_second_order_properties.html#a43338efc4bd449d02635099c6ae9e082
      ", null ],
    [ "tangent_3d", "struct_go_1_1_second_order_properties.html#a186f4ccbf51d36ce342d1ab3ca1a7eda", null ],
    [ "tangent_is_oriented", "struct_go_1_1_second_order_properties.html#a77419f5e3c6b905374de860cf8713de6"
      , null ]
]
```

Definition at line 1 of file struct_go_1_1_second_order_properties.js.

30.1785 doc/html/struct_go_1_1_sing_box.js File Reference

Variables

- var struct_go_1_1_sing_box

30.1785.1 Variable Documentation

30.1785.1.1 var struct_go_1_1_sing_box

Initial value:

```
=
[
    [ "SingBox", "struct_go_1_1_sing_box.html#aa633222dc53a7a26ea0c855c6f804ba9", null ],
    [ "box_limit_", "struct_go_1_1_sing_box.html#aac7ab7ae3c058c0230309d6e24c76d2a", null ],
    [ "sing_", "struct_go_1_1_sing_box.html#a1e5835e588eea5b841cc21965d97831e", null ]
]
```

Definition at line 1 of file struct_go_1_1_sing_box.js.

30.1786 doc/html/struct_go_1_1_sing_union.js File Reference

Variables

- var struct_go_1_1_sing_union

30.1786.1 Variable Documentation

30.1786.1.1 var struct_go_1_1_sing_union

Initial value:

```
=
[
    [ "SingUnion", "struct_go_1_1_sing_union.html#a0cc6c1cea085b254f191595693633466", null ],
    [ "isInside", "struct_go_1_1_sing_union.html#a59d8fee9a4c801e785eb6c7b779fc224", null ],
    [ "limit_", "struct_go_1_1_sing_union.html#a2dda72e7981d4b7aa75e3b07afeb3432", null ],
    [ "singbox_idx_", "struct_go_1_1_sing_union.html#a35dc77ec020eaef2962f15e78cf5721f", null ]
]
```

Definition at line 1 of file struct_go_1_1_sing_union.js.

30.1787 doc/html/struct_go_1_1_volume_adjacency_info.js File Reference

Variables

- var struct_go_1_1_volume_adjacency_info

30.1787.1 Variable Documentation

30.1787.1.1 var struct_go_1_1_volume_adjacency_info

Initial value:

```
=
[
    [ "VolumeAdjacencyInfo", "struct_go_1_1_volume_adjacency_info.html#af0cfdbdd8a7245df440439472f668b50",
      null ],
    [ "adjacency_found_", "struct_go_1_1_volume_adjacency_info.html#a1456ba763024182354bdc7b0293a8006",
      null ],
    [ "bd_idx_1_", "struct_go_1_1_volume_adjacency_info.html#a6d9d4da5f8f22f015a36c802615320f8", null ],
    [ "bd_idx_2_", "struct_go_1_1_volume_adjacency_info.html#a14b33072c37d65cde9c321b836171f48", null ],
    [ "corner_adjacency_", "struct_go_1_1_volume_adjacency_info.html#a52c4593e325975e3359fa00a34d92f3e",
      null ],
    [ "corner_failed_", "struct_go_1_1_volume_adjacency_info.html#a33b458ffd3d40e178ff5b2199590532f", null
      ],
    [ "edg_idx_1_", "struct_go_1_1_volume_adjacency_info.html#ab19327268c61359eb382df49d03f9095", null ],
    [ "edg_idx_2_", "struct_go_1_1_volume_adjacency_info.html#a41ce7795661cc2ff8be7e16bcd260678", null ],
    [ "same_dir_order_", "struct_go_1_1_volume_adjacency_info.html#a521c75be572f2eec3873445975f31268", null
     ],
    [ "same_orient_edge_", "struct_go_1_1_volume_adjacency_info.html#a555f87a35995e3a6867ee22872a98363",
      null ],
    [ "same_orient_u_", "struct_go_1_1_volume_adjacency_info.html#a1df26ac9019c9c2371c158ca1567a037", null
      ],
    [ "same_orient_v_", "struct_go_1_1_volume_adjacency_info.html#ae7fc007c2677c37c0a4f7cf7755c974a", null
      ]
]
```

Definition at line 1 of file struct_go_1_1_volume_adjacency_info.js.

30.1788 doc/html/struct_go_1_1cv_set_constraint.js File Reference

Variables

- var struct_go_1_1cv_set_constraint

30.1788.1 Variable Documentation

30.1788.1.1 var struct_go_1_1cv_set_constraint

Initial value:

```
=
[
    [ "cvSetConstraint", "struct_go_1_1cv_set_constraint.html#a941d33cdfeda3a108633b734725ebd83", null ],
    [ "cv1_der_", "struct_go_1_1cv_set_constraint.html#ac3cfb977e815ff0b74cda8d69f2598f3", null ],
    [ "cv1_id_", "struct_go_1_1cv_set_constraint.html#a14db96d1c4a8ee7c54b7715215854e06", null ],
    [ "cv1_par_", "struct_go_1_1cv_set_constraint.html#a46e18bfc5fc509398e237166bb5abc97", null ],
    [ "cv2_der_", "struct_go_1_1cv_set_constraint.html#aa8d9cb5e25786b1fa9ef39009b6b0311", null ],
    [ "cv2_id_", "struct_go_1_1cv_set_constraint.html#aa0816bc54f1d293792cee4d60c6d7b35", null ],
    [ "cv2_par_", "struct_go_1_1cv_set_constraint.html#ad571b0402688a16f6e83c69dae7c8940", null ],
    [ "opp_", "struct_go_1_1cv_set_constraint.html#a1596f6a4ffd640d10699ac01d5b179a4", null ]
]
```

Definition at line 1 of file struct_go_1_1cv_set_constraint.js.

30.1789 doc/html/struct_go_1_1go__iterator__traits.js File Reference

Variables

- var struct_go_1_1go__iterator__traits

30.1789.1 Variable Documentation

30.1789.1.1 var struct_go_1_1go__iterator__traits

Initial value:

```
=
[
    [ "difference_type", "struct_go_1_1go__iterator__traits.html#a60ff0cd0a7bea11271baf9e731e38668", null ]
      ,
    [ "pointer", "struct_go_1_1go__iterator__traits.html#abbc7c10f9ef14171c490acf122004524", null ],
    [ "reference", "struct_go_1_1go__iterator__traits.html#a5740f64a72fc01a7253afa774d04a402", null ],
    [ "value_type", "struct_go_1_1go__iterator__traits.html#aca25ce118093b91e456e2982fb419bb8", null ]
]
```

Definition at line 1 of file struct_go_1_1go__iterator__traits.js.

30.1790 doc/html/struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4.js File Reference

Variables

- var struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4

30.1790.1 Variable Documentation

30.1790.1.1 var struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4

Initial value:

```
=
[
    [ "difference_type", "
      struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4.html#a5e7177e826be4b2f9f5d096498718dd0", null ],
    [ "pointer", "struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4.html#a11eab6473cd0d43eb5df24534c0079b4
      ", null ],
    [ "reference", "
      struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4.html#a99b5a8308fd9f139997304d6342b6adb", null ],
    [ "value_type", "
      struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4.html#a0ee41a5f38a4f3fe31c01d158afda111", null ]
]
```

Definition at line 1 of file struct_go_1_1go__iterator__traits_3_01_t_01_5_01_4.js.

30.1791 doc/html/struct_go_1_1go__iterator__traits_3_01const_01_t_01_5_01_4.js File Reference

Variables

- var struct_go_1_1go__iterator__traits_3_01const_01_t_01_5_01_4

30.1791.1 Variable Documentation

30.1791.1.1 var struct_go_1_1go__iterator__traits_3_01const_01_t_01_5_01_4

Initial value:

```
=
[
    [ "difference_type", "
      struct_go_1_1go__iterator__traits_3_01const_01_t_01_5_01_4.html#ad52128b11f892bd42c90da2176966d3d", null ],
    [ "pointer", "
      struct_go_1_1go__iterator__traits_3_01const_01_t_01_5_01_4.html#a99812d2ef18fb8567a95f3c4a25c64f5", null ],
    [ "reference", "
      struct_go_1_1go__iterator__traits_3_01const_01_t_01_5_01_4.html#a4578230c2e878ae79d7b879193a662ba", null ],
    [ "value_type", "
      struct_go_1_1go__iterator__traits_3_01const_01_t_01_5_01_4.html#a84cddaaf55d0866599d519ad2c571901", null ]
]
```

Definition at line 1 of file struct_go_1_1go__iterator__traits_3_01const_01_t_01_5_01_4.js.

30.1792 doc/html/struct_go_1_1pre_evaluation_sf.js File Reference

Variables

- var struct_go_1_1pre_evaluation_sf

30.1792.1 Variable Documentation

30.1792.1.1 var struct_go_1_1pre_evaluation_sf

Initial value:

```
=
[
    [ "basisvals_u_", "struct_go_1_1pre_evaluation_sf.html#a91dd426c6c5337ed9ed5f56eb322d84e", null ],
    [ "basisvals_v_", "struct_go_1_1pre_evaluation_sf.html#aabcb7e6e143886ca99b43f4e224bb1e9", null ],
    [ "deriv_u_", "struct_go_1_1pre_evaluation_sf.html#ac123341fd9aa000ce921267dd70b42cf", null ],
    [ "deriv_v_", "struct_go_1_1pre_evaluation_sf.html#a7b0efdd0fe6f2368a385e8c73fdf7975", null ],
    [ "gauss_par1_", "struct_go_1_1pre_evaluation_sf.html#a0393353862a463947fde80079d490cce", null ],
    [ "gauss_par2_", "struct_go_1_1pre_evaluation_sf.html#ace1d1bd2b24ca88754fdeb7ea99bd4d9", null ],
    [ "left_u_", "struct_go_1_1pre_evaluation_sf.html#a59a9f4aafc91f9e82df45ac7ea6aae60", null ],
    [ "left_v_", "struct_go_1_1pre_evaluation_sf.html#a89358ac9fc24cade5a89b2a369fde41f", null ],
    [ "points_", "struct_go_1_1pre_evaluation_sf.html#a23a1a7948ea2467a97973836670e0a2f", null ]
]
```

Definition at line 1 of file struct_go_1_1pre_evaluation_sf.js.

30.1793 doc/html/struct_go_1_1pre_evaluation_vol.js File Reference

Variables

- var struct_go_1_1pre_evaluation_vol

30.1793.1 Variable Documentation

30.1793.1.1 var struct_go_1_1pre_evaluation_vol

Initial value:

```
=
[
    [ "basisvals_u_", "struct_go_1_1pre_evaluation_vol.html#a5e7c77da854e4afde03dc5ebe4c6d697", null ],
    [ "basisvals_v_", "struct_go_1_1pre_evaluation_vol.html#a3a7eb7d9e0d2572af2b4a8dc2573ac3b", null ],
    [ "basisvals_w_", "struct_go_1_1pre_evaluation_vol.html#a5e77e4b4dc72a43f05cb9343b61a2f7c", null ],
    [ "deriv_u_", "struct_go_1_1pre_evaluation_vol.html#aa89c476b1df345003c8b41ccc01f9649", null ],
    [ "deriv_v_", "struct_go_1_1pre_evaluation_vol.html#ac26d34eb8669c7a737d0523869c570b9", null ],
    [ "deriv_w_", "struct_go_1_1pre_evaluation_vol.html#a8d8118d56133deda0a60613a91d6a52b", null ],
    [ "gauss_par1_", "struct_go_1_1pre_evaluation_vol.html#a9b92c9130ab7bdf6f0a264cafb05a876", null ],
    [ "gauss_par2_", "struct_go_1_1pre_evaluation_vol.html#a8a9d745ba22ef7316928f5708f7c2218", null ],
    [ "gauss_par3_", "struct_go_1_1pre_evaluation_vol.html#a12bc6c681b912d957caef1efa6c1fed5", null ],
    [ "left_u_", "struct_go_1_1pre_evaluation_vol.html#a85883b21ed633ed6d067a28b9025f289", null ],
    [ "left_v_", "struct_go_1_1pre_evaluation_vol.html#a3df4e48b49594c6845f9d72536d0f387", null ],
    [ "left_w_", "struct_go_1_1pre_evaluation_vol.html#a69ef813656841df09ebb1b90c2e5df57", null ],
    [ "points_", "struct_go_1_1pre_evaluation_vol.html#a1b69a5ee428f6e0a0106cb92cdcaedab", null ]
]
```

Definition at line 1 of file struct_go_1_1pre_evaluation_vol.js.

30.1794 doc/html/struct_go_1_1raw__pointer__comp.js File Reference

Variables

- var struct_go_1_1raw__pointer__comp

30.1794.1 Variable Documentation

30.1794.1.1 var struct_go_1_1raw__pointer__comp

Initial value:

```
=
[
    [ "operator()", "struct_go_1_1raw__pointer__comp.html#a49d48faead3948813f516529ac678a47", null ]
]
```

Definition at line 1 of file struct_go_1_1raw__pointer__comp.js.

30.1795 doc/html/struct_go_1_1side_constraint.js File Reference

Variables

- var struct_go_1_1side_constraint

30.1795.1 Variable Documentation

30.1795.1.1 var struct_go_1_1side_constraint

Initial value:

```
=
[
    [ "constant_term_", "struct_go_1_1side_constraint.html#a1c4ce153decf0be47e64049a0f03b997", null ],
    [ "dim_", "struct_go_1_1side_constraint.html#a1952d607d06bc2bbc6b18732cc74babd", null ],
    [ "factor_", "struct_go_1_1side_constraint.html#a96f76c21dd13a3cbf2cc957b645894c7", null ]
]
```

Definition at line 1 of file struct_go_1_1side_constraint.js.

30.1796 doc/html/struct_go_1_1side_constraint_set.js File Reference

Variables

- var struct_go_1_1side_constraint_set

30.1796.1 Variable Documentation

30.1796.1.1 var struct_go_1_1side_constraint_set

Initial value:

```
=
[
    [ "sideConstraintSet", "struct_go_1_1side_constraint_set.html#ae8dfdf0b9ffe1f86ae409754713ebd22", null
      ],
    [ "sideConstraintSet", "struct_go_1_1side_constraint_set.html#a5b126e87b30c488581a328382f536bac", null
      ],
    [ "constant_term_", "struct_go_1_1side_constraint_set.html#a5a19524ec281c4cec61a09477417ce95", null ],
    [ "dim_", "struct_go_1_1side_constraint_set.html#aa5df7e5ef2bc0cf501591605a651e431", null ],
    [ "factor_", "struct_go_1_1side_constraint_set.html#af7f3d4a1dd8b604945f562e958684188", null ]
]
```

Definition at line 1 of file struct_go_1_1side_constraint_set.js.

30.1797 doc/html/struct_go_1_1tp_tolerances.js File Reference

Variables

- var struct_go_1_1tp_tolerances

30.1797.1 Variable Documentation

30.1797.1.1 var struct_go_1_1tp_tolerances

Initial value:

```
=
[
    [ "tpTolerances", "struct_go_1_1tp_tolerances.html#a9e03114371499d3134c72633caf9b82a", null ],
    [ "tpTolerances", "struct_go_1_1tp_tolerances.html#aa1b9ae0e412a9e7817c072a517b3b103", null ],
    [ "bend", "struct_go_1_1tp_tolerances.html#a961c956c4e5955fc2d627f5d48e06b35", null ],
    [ "gap", "struct_go_1_1tp_tolerances.html#a62617afddb73267fdc536da40b3932cc", null ],
    [ "kink", "struct_go_1_1tp_tolerances.html#a587c6924aaf46d129e70defebf9cdf73", null ],
    [ "neighbour", "struct_go_1_1tp_tolerances.html#a76bf81fb08ac0b307500369354355d9c", null ]
]
```

Definition at line 1 of file struct_go_1_1tp_tolerances.js.

30.1798 doc/html/struct_go_1_1tp_topological_info.js File Reference

Variables

- var struct_go_1_1tp_topological_info

30.1798.1 Variable Documentation

30.1798.1.1 var struct_go_1_1tp_topological_info

Initial value:

```
=
[
    [ "BestStatus", "struct_go_1_1tp_topological_info.html#aeccd70e94d436846ae5eb57c4d3805e2", null ],
    [ "WorstStatus", "struct_go_1_1tp_topological_info.html#a7ef71026619e890f6f54f1d349f780c9", null ],
    [ "parameters_", "struct_go_1_1tp_topological_info.html#a455ee7f65fe4e8c01afcc093f7cb9088", null ],
    [ "status_", "struct_go_1_1tp_topological_info.html#ac068190d400ab2256663bcbe8a54ff92", null ]
]
```

Definition at line 1 of file struct_go_1_1tp_topological_info.js.

30.1799 doc/html/struct_s_i_s_l_curve.js File Reference

Variables

- var struct_s_i_s_l_curve

30.1799.1 Variable Documentation

30.1799.1.1 var struct_s_i_s_l_curve

Initial value:

```
=
[
    [ "cuopen", "struct_s_i_s_l_curve.html#a6c031e11c3badca1643217b2ec055bc1", null ],
    [ "ecoef", "struct_s_i_s_l_curve.html#ad8783e20499cc2468b34e22d322354ad", null ],
    [ "et", "struct_s_i_s_l_curve.html#a6660a910d17845be1d4e770742bda5e2", null ],
    [ "icopy", "struct_s_i_s_l_curve.html#a20f717dfda7626d2381b6d852aadc3b0", null ],
    [ "idim", "struct_s_i_s_l_curve.html#a6227a5fa011a17a04876d75673a6188d", null ],
    [ "ik", "struct_s_i_s_l_curve.html#aa89b9c10e7939117d38d4bb8e0b659b5", null ],
    [ "ikind", "struct_s_i_s_l_curve.html#a7a1be0fc6cfa3e8df203cdf9f550beda", null ],
    [ "in", "struct_s_i_s_l_curve.html#abf20462b97b644fdfcbbad9607f8f63a", null ],
    [ "pbox", "struct_s_i_s_l_curve.html#a9e80a5a1c9a09ed706b3cb0bdcc3f5f5", null ],
    [ "pdir", "struct_s_i_s_l_curve.html#adf101061eed3968878f896139fed9e14", null ],
    [ "rcoef", "struct_s_i_s_l_curve.html#a61db2260a12ff723c165b0c2a42d2382", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_curve.js.

30.1800 doc/html/struct_s_i_s_l_edge.js File Reference

Variables

- var struct_s_i_s_l_edge

30.1800.1 Variable Documentation

30.1800.1.1 var struct_s_i_s_l_edge

Initial value:

```
=
[
    [ "iedge", "struct_s_i_s_l_edge.html#aae56bb9770ce1480fd04280c562556bf", null ],
    [ "ipoint", "struct_s_i_s_l_edge.html#af46a5cdff70574154600e1cf366fffc6", null ],
    [ "prpt", "struct_s_i_s_l_edge.html#abaa384b7e839e6b170334e4f406942c4", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_edge.js.

30.1801 doc/html/struct_s_i_s_l_intcurve.js File Reference

Variables

- var struct_s_i_s_l_intcurve

30.1801.1 Variable Documentation

30.1801.1.1 var struct_s_i_s_l_intcurve

Initial value:

```
=
[
    [ "epar1", "struct_s_i_s_l_intcurve.html#ad9c824225a104dcc0bfd21c778aac565", null ],
    [ "epar2", "struct_s_i_s_l_intcurve.html#aea825119f2d53a057a79777548dc66c6", null ],
    [ "ipar1", "struct_s_i_s_l_intcurve.html#aec61aedccef3c0c2c0912eef5056e59e", null ],
    [ "ipar2", "struct_s_i_s_l_intcurve.html#adfe4c670ba809912ae82093c0bd60225", null ],
    [ "ipoint", "struct_s_i_s_l_intcurve.html#a1da825a8df3499ee26bd5cd65d0439a8", null ],
    [ "itype", "struct_s_i_s_l_intcurve.html#afaee2668e42179480627d91d97631bf2", null ],
    [ "pgeom", "struct_s_i_s_l_intcurve.html#acee034e9a8a833d22d2a497558d45663", null ],
    [ "ppar1", "struct_s_i_s_l_intcurve.html#a6369dff5ebf4f62874ba17544a478885", null ],
    [ "ppar2", "struct_s_i_s_l_intcurve.html#a1daa3d431470166aa9af7c87caacca68", null ],
    [ "pretop", "struct_s_i_s_l_intcurve.html#a6102f396edc113322ce79c5fe8822d21", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_intcurve.js.

30.1802 doc/html/struct_s_i_s_l_intdat.js File Reference

Variables

- var struct_s_i_s_l_intdat

30.1802.1 Variable Documentation

30.1802.1.1 var struct_s_i_s_l_intdat

Initial value:

```
=
[
    [ "ilist", "struct_s_i_s_l_intdat.html#ab2cb4908e33d27f064f48e4e9a96ea9e", null ],
    [ "ilmax", "struct_s_i_s_l_intdat.html#a0dacecddb448c7f346d8937ad9369e26", null ],
    [ "ipmax", "struct_s_i_s_l_intdat.html#a88191ca61bd1eae0a977c6d50fc144fd", null ],
    [ "ipoint", "struct_s_i_s_l_intdat.html#ae67dc7c802f091b5e23eaa9da1b35f46", null ],
    [ "vlist", "struct_s_i_s_l_intdat.html#aad63f961bf24bb54af199e9018af1979", null ],
    [ "vpoint", "struct_s_i_s_l_intdat.html#aedd63d0f344d9481f9d86c3bbffb5e1e", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_intdat.js.

30.1803 doc/html/struct_s_i_s_l_intlist.js File Reference

Variables

- var struct_s_i_s_l_intlist

30.1803.1 Variable Documentation

30.1803.1.1 var struct_s_i_s_l_intlist

Initial value:

```
=
[
    [ "ind_first", "struct_s_i_s_l_intlist.html#a483154e00a22842259c47aed57eaea26", null ],
    [ "ind_last", "struct_s_i_s_l_intlist.html#acb27a34ec1638818320ac5793de6b28c", null ],
    [ "inumb", "struct_s_i_s_l_intlist.html#a232b0af3a54fd02c78ae6a7478dd151c", null ],
    [ "itype", "struct_s_i_s_l_intlist.html#ae29a8433d0703e6c774036328f9871a3", null ],
    [ "pfirst", "struct_s_i_s_l_intlist.html#a9ace40ac92695d31a2d0a6ebdba82318", null ],
    [ "plast", "struct_s_i_s_l_intlist.html#aafac3dd38fc98f21d924fb1c733de075", null ],
    [ "pretop", "struct_s_i_s_l_intlist.html#a12aaf5c24722d9858919016d04d36b01", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_intlist.js.

30.1804 doc/html/struct_s_i_s_l_intpt.js File Reference

Variables

- var struct_s_i_s_l_intpt

30.1804.1 Variable Documentation

30.1804.1.1 var struct_s_i_s_l_intpt

Initial value:

```
=
[
    [ "adist", "struct_s_i_s_l_intpt.html#a8693e35392ccbdfb93e6669a2bcdc4af", null ],
    [ "curve_dir", "struct_s_i_s_l_intpt.html#acade9f71b3d0b7eb0095296f7763ce3c", null ],
    [ "edge_1", "struct_s_i_s_l_intpt.html#a46dc1e8c213299854359e559636234b9", null ],
    [ "edge_2", "struct_s_i_s_l_intpt.html#a6a017813f6d6c57e694fdd3332a8a233", null ],
    [ "epar", "struct_s_i_s_l_intpt.html#a28d46346449e16d0205947d09df8dba9", null ],
    [ "evaluated", "struct_s_i_s_l_intpt.html#aeff820650f42a3fba2c5d01e23280985", null ],
    [ "geo_data_1", "struct_s_i_s_l_intpt.html#ad4083a64bc31371f487e7943157aa92b", null ],
    [ "geo_data_2", "struct_s_i_s_l_intpt.html#ae48801801ddc36807cf6885b69c9002d", null ],
    [ "geo_track_2d_1", "struct_s_i_s_l_intpt.html#acde072bd6f03b86ec5b894fc7f65144d", null ],
    [ "geo_track_2d_2", "struct_s_i_s_l_intpt.html#a08a00fed068ef573184fc50537408adc", null ],
    [ "geo_track_3d", "struct_s_i_s_l_intpt.html#a643bd8d87fb2dc110022a57994c42e74", null ],
    [ "iinter", "struct_s_i_s_l_intpt.html#aac443e9a9052df80f6e7e9f279f659e8", null ],
    [ "ipar", "struct_s_i_s_l_intpt.html#a52f2220278fcd7a4c02b1ab8762c6fb0", null ],
    [ "iside_1", "struct_s_i_s_l_intpt.html#a940f033ab6b38b4ecda0f8f606612090", null ],
    [ "iside_2", "struct_s_i_s_l_intpt.html#af639507dc79ebcda9af979665553e300", null ],
    [ "left_obj_1", "struct_s_i_s_l_intpt.html#a2c0713f85b7f0da8ad86ecf649dbf700", null ],
    [ "left_obj_2", "struct_s_i_s_l_intpt.html#a93bcf9e32b6579e98653418d40d8f079", null ],
    [ "marker", "struct_s_i_s_l_intpt.html#ad5c2518818bd8c1dfdf535ddc983a4ae", null ],
    [ "no_of_curves", "struct_s_i_s_l_intpt.html#aa66df488d76385c8080a785750274205", null ],
    [ "no_of_curves_alloc", "struct_s_i_s_l_intpt.html#a2f2bb287bcee40c0818c85ee80f442d0", null ],
    [ "pcurve", "struct_s_i_s_l_intpt.html#a1cb1189b587de134efaa749f4ffd4eea", null ],
    [ "pnext", "struct_s_i_s_l_intpt.html#aad3e6c2126ca13639265e9c0bbd6124e", null ],
    [ "right_obj_1", "struct_s_i_s_l_intpt.html#aa0709dea69d6e8d3cfdef881fdca74f9", null ],
    [ "right_obj_2", "struct_s_i_s_l_intpt.html#af5c85d9c7929f4c1f9320c1e307e3ff8", null ],
    [ "size_1", "struct_s_i_s_l_intpt.html#afe1e88d67af0b704c1260873ab60498e", null ],
    [ "size_2", "struct_s_i_s_l_intpt.html#a12b741d83ed7441e8e3d7317b86fd3a9", null ],
    [ "trim", "struct_s_i_s_l_intpt.html#ab6312ad6e3683f8c19abd76dd83632e6", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_intpt.js.

30.1805 doc/html/struct_s_i_s_l_intsurf.js File Reference

Variables

- var struct_s_i_s_l_intsurf

30.1805.1 Variable Documentation

30.1805.1.1 var struct_s_i_s_l_intsurf

Initial value:

```
=
[
    [ "const_par", "struct_s_i_s_l_intsurf.html#af4e7155eed736b7736ef8525bb1fd7b4", null ],
    [ "epar", "struct_s_i_s_l_intsurf.html#a91a596112825df965f624f036dd86bcf", null ],
    [ "ipar", "struct_s_i_s_l_intsurf.html#a7693f0a7f5897a7486e4981b8da7625c", null ],
    [ "ipoint", "struct_s_i_s_l_intsurf.html#a5f1b0420969e65fdd533234f6013e557", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_intsurf.js.

30.1806 doc/html/struct_s_i_s_l_object.js File Reference

Variables

- var struct_s_i_s_l_object

30.1806.1 Variable Documentation

30.1806.1.1 var struct_s_i_s_l_object

Initial value:

```
=
[
    [ "c1", "struct_s_i_s_l_object.html#a26da748cce4938c2115bd695d6810f0e", null ],
    [ "edg", "struct_s_i_s_l_object.html#a3b5ff84d39e82a228481c7806a424ee7", null ],
    [ "iobj", "struct_s_i_s_l_object.html#a7a8b2316f85a32bc3a5e6b3afc22015f", null ],
    [ "ol", "struct_s_i_s_l_object.html#aa40c25309fff2ffd852103f2af7acd1f", null ],
    [ "p1", "struct_s_i_s_l_object.html#ad43b93d19cac19ebe52bcd81e357e8b9", null ],
    [ "psimple", "struct_s_i_s_l_object.html#a8958916a7eb1f5c2bd6b1a79947e8e23", null ],
    [ "s1", "struct_s_i_s_l_object.html#a932bc80aef806de501a097405e6c5422", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_object.js.

30.1807 doc/html/struct_s_i_s_l_point.js File Reference

Variables

- var struct_s_i_s_l_point

30.1807.1 Variable Documentation

30.1807.1.1 var struct_s_i_s_l_point

Initial value:

```
=
[
    [ "ec", "struct_s_i_s_l_point.html#aaab08c937d85029f5d86c469a21bf45d", null ],
    [ "ecoef", "struct_s_i_s_l_point.html#aa674e75fad6c907c12ade842728d6eb4", null ],
    [ "icopy", "struct_s_i_s_l_point.html#abb277b543c1cfce82467725ead2544c2", null ],
    [ "idim", "struct_s_i_s_l_point.html#abef8b5e785c40e2db1b1d5ebdc708287", null ],
    [ "pbox", "struct_s_i_s_l_point.html#af4a8804cfc17dcac6e545a95226e4d6e", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_point.js.

30.1808 doc/html/struct_s_i_s_l_ptedge.js File Reference

Variables

- var struct_s_i_s_l_ptedge

30.1808.1 Variable Documentation

30.1808.1.1 var struct_s_i_s_l_ptedge

Initial value:

```
=
[
    [ "pnext", "struct_s_i_s_l_ptedge.html#a52cbd7e01e8626e196f1dce846185514", null ],
    [ "ppt", "struct_s_i_s_l_ptedge.html#af9a9f4641766f6729fdba34fbec63cca", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_ptedge.js.

30.1809 doc/html/struct_s_i_s_l_surf.js File Reference

Variables

- var struct_s_i_s_l_surf

30.1809.1 Variable Documentation

30.1809.1.1 var struct_s_i_s_l_surf

Initial value:

```
=
[
    [ "cuopen_1", "struct_s_i_s_l_surf.html#aa837a027392850c3d24bbbc819d6ae8b", null ],
    [ "cuopen_2", "struct_s_i_s_l_surf.html#ae881c7eaa509bf8650b08315e4b691dc", null ],
    [ "ecoef", "struct_s_i_s_l_surf.html#af123d50549798ffca464196d4bc6321e", null ],
    [ "et1", "struct_s_i_s_l_surf.html#aceffa0c397a6adb7aff68fa85830bb48", null ],
    [ "et2", "struct_s_i_s_l_surf.html#a1bb1b5ad1da78a4bb16b14e047404395", null ],
    [ "icopy", "struct_s_i_s_l_surf.html#aa626e2db7658d0247f79c931ac118e56", null ],
    [ "idim", "struct_s_i_s_l_surf.html#a019bcfe66a11fdfd362682b27769997b", null ],
    [ "ik1", "struct_s_i_s_l_surf.html#a40d082323ddfaecf33747d9d52db7465", null ],
    [ "ik2", "struct_s_i_s_l_surf.html#a76c8a3b086cb88f5b447f777bf00575d", null ],
    [ "ikind", "struct_s_i_s_l_surf.html#ad57401abd890ea793717dfad7d2e397b", null ],
    [ "in1", "struct_s_i_s_l_surf.html#a5a21e30e8a619feb2a6d7052a64857c9", null ],
    [ "in2", "struct_s_i_s_l_surf.html#ab35ab0913115ac994be9dd162ec45a0e", null ],
    [ "pbox", "struct_s_i_s_l_surf.html#ab2988bc8ac978910d425f474aea279f1", null ],
    [ "pdir", "struct_s_i_s_l_surf.html#a34f3fabfde05d92c10fac011c96b1bf8", null ],
    [ "rcoef", "struct_s_i_s_l_surf.html#a03e61d32e600e946e2ba0a15ee9181a6", null ],
    [ "use_count", "struct_s_i_s_l_surf.html#ac378f7abff1662f5b75820dc4de4c2ca", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_surf.js.

30.1810 doc/html/struct_s_i_s_l_track.js File Reference

Variables

- var struct_s_i_s_l_track

30.1810.1 Variable Documentation

30.1810.1.1 var struct_s_i_s_l_track

Initial value:

```
=
[
    [ "eimpli", "struct_s_i_s_l_track.html#a0ea37cfe8212572b39b2e2b39b14bd11", null ],
    [ "exact", "struct_s_i_s_l_track.html#af27f30a02b7252048f0d6dce8771b2ea", null ],
    [ "ideg", "struct_s_i_s_l_track.html#ae8ac7e2bcd66072d9b91a1b98721e45e", null ],
    [ "pcurve_2d_1", "struct_s_i_s_l_track.html#a44e41e7c1d8aa4dd95d2ef2f7f9085da", null ],
    [ "pcurve_2d_2", "struct_s_i_s_l_track.html#a04c8a8213a0b4e9607b881c8b6702919", null ],
    [ "pcurve_3d", "struct_s_i_s_l_track.html#a88180d2b237d4041a635394845adb2e4", null ],
    [ "pretop", "struct_s_i_s_l_track.html#acb3175d087b67041f33bcd4d7fcaa68a", null ],
    [ "psurf_1", "struct_s_i_s_l_track.html#acda4e9721862e8182c74a4c1874b0df7", null ],
    [ "psurf_2", "struct_s_i_s_l_track.html#acafb7a77a39354dd4fc8d9a9129bc5d4", null ],
    [ "sing_end", "struct_s_i_s_l_track.html#a28a8ff25f23b0d72dcf47b2b20e7e4e8", null ],
    [ "sing_start", "struct_s_i_s_l_track.html#a2656d1a08c1ec0e31cdaa8ac44454396", null ],
    [ "turned", "struct_s_i_s_l_track.html#ae1386a7490108e4a47e7156a8652b3df", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_track.js.

30.1811 doc/html/struct_s_i_s_l_trimpar.js File Reference

Variables

- var struct_s_i_s_l_trimpar

30.1811.1 Variable Documentation

30.1811.1.1 var struct_s_i_s_l_trimpar

Initial value:

```
=
[
    [ "parindex", "struct_s_i_s_l_trimpar.html#aff23388e1f39cd924a8848aef7445592", null ],
    [ "ptindex", "struct_s_i_s_l_trimpar.html#a4bcaeb998bbf486ac7ca78906e3f68fd", null ]
]
```

Definition at line 1 of file struct_s_i_s_l_trimpar.js.

30.1812 doc/html/struct_s_i_s_lbox.js File Reference

Variables

- var struct_s_i_s_lbox

30.1812.1 Variable Documentation

30.1812.1.1 var struct_s_i_s_lbox

Initial value:

```
=
[
    [ "e2max", "struct_s_i_s_lbox.html#a669492a1c5428ae5d107e54a63052903", null ],
    [ "e2min", "struct_s_i_s_lbox.html#ae83586cc85d8c03f69f07976bdd48e20", null ],
    [ "emax", "struct_s_i_s_lbox.html#ae747be1534c35d809a4f6570df2a2645", null ],
    [ "emin", "struct_s_i_s_lbox.html#a51efab2a865658401a8431c21b150e51", null ],
    [ "etol", "struct_s_i_s_lbox.html#a96ff59a1a0103bb30f2c5f0d7e326b0b", null ],
    [ "imax", "struct_s_i_s_lbox.html#a1367186d47af3984e0f08f432e64b09b", null ],
    [ "imin", "struct_s_i_s_lbox.html#a1c59e9aab0ab10792f48f641b7ee9e3c", null ]
]
```

Definition at line 1 of file struct_s_i_s_lbox.js.

30.1813 doc/html/struct_s_i_s_ldir.js File Reference

Variables

- var struct_s_i_s_ldir

30.1813.1 Variable Documentation

30.1813.1.1 var struct_s_i_s_ldir

Initial value:

```
=
[
    [ "aang", "struct_s_i_s_ldir.html#aa799f5940d835206e64ba17ac835a34e", null ],
    [ "ecoef", "struct_s_i_s_ldir.html#a9cae019213555ec9a755671f7c12ba98", null ],
    [ "esmooth", "struct_s_i_s_ldir.html#a97387e3b6a63720b32d8461c373045ec", null ],
    [ "igtpi", "struct_s_i_s_ldir.html#a890b7a9164c51f468b8e5e5092f01f2a", null ]
]
```

Definition at line 1 of file struct_s_i_s_ldir.js.

30.1814 doc/html/structgv_color.js File Reference

Variables

- var structgv_color

30.1814.1 Variable Documentation

30.1814.1.1 var structgv_color

Initial value:

```
=
[
    [ "gvColor", "structgv_color.html#ae6f09f93165d1b5ca8cf0bd452c97d6c", null ],
    [ "gvColor", "structgv_color.html#a3735cfc761ad806cf3b250881e1aa946", null ],
    [ "gvColor", "structgv_color.html#a0ac1453e77267e2226953a9bec725832", null ],
    [ "gvColor", "structgv_color.html#a456ade3b05ee26a0fc65d0614f7b7839", null ],
    [ "operator=", "structgv_color.html#a27a0054113071b8b40361a3c95d70326", null ],
    [ "rgba", "structgv_color.html#ac897899ae348ba30cfd7bf158ec967f8", null ]
]
```

Definition at line 1 of file structgv_color.js.

30.1815 doc/html/structhed_1_1_t_t_ltraits.js File Reference

Variables

- var structhed_1_1_t_t_ltraits

30.1815.1 Variable Documentation

30.1815.1.1 var structhed_1_1_t_t_ltraits

Initial value:

```
=
[
    [ "real_type", "structhed_1_1_t_t_ltraits.html#a106cb14e7c6eedbd6be052303fa0afc5", null ]
]
```

Definition at line 1 of file structhed_1_1_t_t_ltraits.js.

30.1816 doc/html/structhetriang_1_1_t_t_ltraits.js File Reference

Variables

- var structhetriang_1_1_t_t_ltraits

30.1816.1 Variable Documentation

30.1816.1.1 var structhetriang_1_1_t_t_ltraits

Initial value:

```
=
[
    [ "real_type", "structhetriang_1_1_t_t_ltraits.html#abf42554b5b7d9797367a39319c888f97", null ]
]
```

Definition at line 1 of file structhetriang_1_1_t_t_ltraits.js.

30.1817 doc/html/structrank__info.js File Reference

Variables

- var structrank__info

30.1817.1 Variable Documentation

30.1817.1.1 var structrank__info

Initial value:

```
=
[
    [ "antgr", "structrank__info.html#ae804395fa428f28f7697ce7a5eefef0c", null ],
    [ "antrem", "structrank__info.html#a44eefd512ab6c68a6ed053e6e8b7c3ab", null ],
    [ "groups", "structrank__info.html#a73fee02c95e70e58861325236285ad37", null ],
    [ "prio", "structrank__info.html#a6f5b3419ea5bddaa4ffe212f4d794110", null ]
]
```

Definition at line 1 of file structrank__info.js.

30.1818 doc/html/submat_8cpp.js File Reference

Variables

- var submat_8cpp

30.1818.1 Variable Documentation

30.1818.1.1 var submat_8cpp

Initial value:

```
=
[
    [ "REPORT", "submat_8cpp.html#a787099914a94ed31fa544b985b55752f", null ]
]
```

Definition at line 1 of file submat_8cpp.js.

30.1819 doc/html/svd_8cpp.js File Reference

Variables

- var svd_8cpp

30.1819.1 Variable Documentation

30.1819.1.1 var svd_8cpp

Initial value:

```
=
[
    [ "REPORT", "svd_8cpp.html#a787099914a94ed31fa544b985b55752f", null ],
    [ "WANT_MATH", "svd_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "SVD", "svd_8cpp.html#a5baabc28604c2542162289fb30558361", null ],
    [ "SVD", "svd_8cpp.html#a27a3125ab1b71b9eb6cc3960ec00c432", null ]
]
```

Definition at line 1 of file svd_8cpp.js.

30.1820 doc/html/test__exc_8cpp.js File Reference

Variables

- var test__exc_8cpp

30.1820.1 Variable Documentation

30.1820.1.1 var test__exc_8cpp

Initial value:

```
=
[
    [ "WANT_STREAM", "test__exc_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "main", "test__exc_8cpp.html#ae66f6b31b5ad750f1fe042a706a4e3d4", null ]
]
```

Definition at line 1 of file test__exc_8cpp.js.

30.1821 doc/html/test_suite_8h.js File Reference

Variables

- var test_suite_8h

30.1821.1 Variable Documentation

30.1821.1.1 var test_suite_8h

Definition at line 1 of file test_suite_8h.js.

30.1822 doc/html/timeutils_8h.js File Reference

Variables

- var timeutils_8h

30.1822.1 Variable Documentation

30.1822.1.1 var timeutils_8h

Initial value:

```
=
[
    [ "getCurrentTime", "timeutils_8h.html#ac0e253cc2c29edaee2bb57317c739afa", null ],
    [ "systemSleep", "timeutils_8h.html#ac6e7d9797bd3b2a08a074906884a330e", null ]
]
```

Definition at line 1 of file timeutils_8h.js.

30.1823 doc/html/tmt1_8cpp.js File Reference

Variables

- var tmt1_8cpp

30.1823.1 Variable Documentation

30.1823.1.1 var tmt1_8cpp

Initial value:

```
=
[
    [ "WANT_STREAM", "tmt1_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "trymat1", "tmt1_8cpp.html#adf8cd83287d3b4c581af88fd3d9a493f", null ]
]
```

Definition at line 1 of file tmt1_8cpp.js.

30.1824 doc/html/tmt2_8cpp.js File Reference

Variables

- var tmt2_8cpp

30.1824.1 Variable Documentation

30.1824.1.1 var tmt2_8cpp

Initial value:

```
=
[
    [ "trymat2", "tmt2_8cpp.html#a9b12f26defc10f30396b41bdbf94d0e1", null ]
]
```

Definition at line 1 of file tmt2_8cpp.js.

30.1825 doc/html/tmt3_8cpp.js File Reference

Variables

- var tmt3_8cpp

30.1825.1 Variable Documentation

30.1825.1.1 var tmt3_8cpp

Initial value:

```
=
[
    [ "trymat3", "tmt3_8cpp.html#a61d94bf0a4996b713fb0aa2147037bb3", null ]
]
```

Definition at line 1 of file tmt3_8cpp.js.

30.1826 doc/html/tmt4_8cpp.js File Reference

Variables

- var tmt4_8cpp

30.1826.1 Variable Documentation

30.1826.1.1 var tmt4_8cpp

Initial value:

```
=
[
    [ "trymat4", "tmt4_8cpp.html#a3a464a95b2670f8d61a182891b355cfa", null ]
]
```

Definition at line 1 of file tmt4_8cpp.js.

30.1827 doc/html/tmt5_8cpp.js File Reference

Variables

- var tmt5_8cpp

30.1827.1 Variable Documentation

30.1827.1.1 var tmt5_8cpp

Initial value:

```
=
[
    [ "Returner0", "tmt5_8cpp.html#a728c253b13aa555c3afc312db4b9b98d", null ],
    [ "Returner1", "tmt5_8cpp.html#adb2395bf88f189f4e628c7374b89fa21", null ],
    [ "Returner2", "tmt5_8cpp.html#a8674ddfd6f28ee3eb04393f37fe1ced1", null ],
    [ "Returner3", "tmt5_8cpp.html#a42214b07dd6dc58736d2d339efccc977", null ],
    [ "Returner4", "tmt5_8cpp.html#a1894eea68488f515763e2edb1446d560", null ],
    [ "Returner5", "tmt5_8cpp.html#aa734f4973c9b6c6d77d79692e7400216", null ],
    [ "Returner6", "tmt5_8cpp.html#a70ddb0157f6cd2d8c57db7dd296fdef6", null ],
    [ "Returner7", "tmt5_8cpp.html#ac6f157c59309471a39cc087c34f3c2b6", null ],
    [ "trymat5", "tmt5_8cpp.html#a8e00dadf2342ac51cd1b008907a6c7eb", null ]
]
```

Definition at line 1 of file tmt5_8cpp.js.

30.1828 doc/html/tmt6_8cpp.js File Reference

Variables

- var tmt6_8cpp

30.1828.1 Variable Documentation

30.1828.1.1 var tmt6_8cpp

Initial value:

```
=
[
    [ "WANT_MATH", "tmt6_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "trymat6", "tmt6_8cpp.html#a46dabf6b2a26e7b353bc6480ae9d2806", null ]
]
```

Definition at line 1 of file tmt6_8cpp.js.

30.1829 doc/html/tmt7_8cpp.js File Reference

Variables

- var tmt7_8cpp

30.1829.1 Variable Documentation

30.1829.1.1 var tmt7_8cpp

Initial value:

```
=
[
    [ "trymat7", "tmt7_8cpp.html#a921f1befd9a59c98bc34d2faa1fc1bb5", null ]
]
```

Definition at line 1 of file tmt7_8cpp.js.

30.1830 doc/html/tmt8_8cpp.js File Reference

Variables

- var tmt8_8cpp

30.1830.1 Variable Documentation

30.1830.1.1 var tmt8_8cpp

Initial value:

```
=
[
    [ "TestReturn", "tmt8_8cpp.html#abb55317727e34fc56a15f10807764969", null ],
    [ "Transposer", "tmt8_8cpp.html#a0aafc7166aa2d8f5c8c1623f60c6f9cd", null ],
    [ "trymat8", "tmt8_8cpp.html#a4a53bff873b626a6896efaf51e6ffaf5", null ]
]
```

Definition at line 1 of file tmt8_8cpp.js.

30.1831 doc/html/tmt9_8cpp.js File Reference

Variables

- var tmt9_8cpp

30.1831.1 Variable Documentation

30.1831.1.1 var tmt9_8cpp

Initial value:

```
=
[
    [ "trymat9", "tmt9_8cpp.html#a0a16e0bed3edd004ec64a20c5baffdaf", null ]
]
```

Definition at line 1 of file tmt9_8cpp.js.

30.1832 doc/html/tmt_8cpp.js File Reference

Variables

- var tmt_8cpp

30.1832.1 Variable Documentation

30.1832.1.1 var tmt_8cpp

Initial value:

```
=
[
    [ "PrintCounter", "class_print_counter.html", "class_print_counter" ],
    [ "WANT_STREAM", "tmt_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "Clean", "tmt_8cpp.html#a135986a1dbc5462716a7b1534f64465b", null ],
    [ "Clean", "tmt_8cpp.html#acad9423ada3cd6a3b00d6bb66946d2fc", null ],
    [ "main", "tmt_8cpp.html#ae66f6b31b5ad750f1fe042a706a4e3d4", null ],
    [ "PCN", "tmt_8cpp.html#ad8c568418026515ef02d20569113e572", null ],
    [ "PCZ", "tmt_8cpp.html#a226ffa61ef1b7e208afdf08826bbd3f1", null ],
    [ "PentiumCheck", "tmt_8cpp.html#a445726f1bc5080fe3cc6e348c1b4f448", null ],
    [ "Print", "tmt_8cpp.html#a3eb604f5656885c261da566404dd868b", null ],
    [ "Print", "tmt_8cpp.html#a7bac0dc5d051b772aa72b58127ef92c0", null ],
    [ "Print", "tmt_8cpp.html#a881d96da4a037f72701c4bd0e39dbc72", null ],
    [ "Print", "tmt_8cpp.html#a4c79bdbb0b38ca2e6ca10d7667b54f75", null ],
    [ "Print", "tmt_8cpp.html#aa768a8e9313d7e15627a7d29fd4b28bd", null ],
    [ "TestTypeAdd", "tmt_8cpp.html#af220b6319631325a16185681a839293e", null ],
    [ "TestTypeConcat", "tmt_8cpp.html#a7aba478bb251659fde686f24bc42b638", null ],
    [ "TestTypeKP", "tmt_8cpp.html#a983461223a6bc2fbbd34734521804782", null ],
    [ "TestTypeMult", "tmt_8cpp.html#a41bf9d5b9037a3740ac96899d524950a", null ],
    [ "TestTypeOrder", "tmt_8cpp.html#a95508cae1746ce1acc83acbbe5db868a", null ],
    [ "TestTypeSP", "tmt_8cpp.html#aa3ec56ce85d47861fff5992303183986", null ]
]
```

Definition at line 1 of file tmt_8cpp.js.

30.1833 doc/html/tmt_8h.js File Reference

Variables

- var tmt_8h

30.1833.1 Variable Documentation

30.1833.1.1 var tmt_8h

Definition at line 1 of file tmt_8h.js.

30.1834 doc/html/tmta_8cpp.js File Reference

Variables

- var tmta_8cpp

30.1834.1 Variable Documentation

30.1834.1.1 var tmta_8cpp

Initial value:

```
=
[
    [ "trymata", "tmta_8cpp.html#a11d5d10e6616b327fb308c8d5a258caa", null ]
]
```

Definition at line 1 of file tmta_8cpp.js.

30.1835 doc/html/tmtb_8cpp.js File Reference

Variables

- var tmtb_8cpp

30.1835.1 Variable Documentation

30.1835.1.1 var tmtb_8cpp

Initial value:

```
=
[
    [ "TestClass", "class_test_class.html", "class_test_class" ],
    [ "trymatb", "tmtb_8cpp.html#a01ad919bd48316e6e589d57066d09a83", null ]
]
```

Definition at line 1 of file tmtb_8cpp.js.

30.1836 doc/html/tmtc_8cpp.js File Reference

Variables

- var tmtc_8cpp

30.1836.1 Variable Documentation

30.1836.1.1 var tmtc_8cpp

Initial value:

```
=
[
    [ "trymatc", "tmtc_8cpp.html#ad842b5ce09c4e47733029b1365b4d0fe", null ]
]
```

Definition at line 1 of file tmtc_8cpp.js.

30.1837 doc/html/tmtd_8cpp.js File Reference

Variables

- var tmtd_8cpp

30.1837.1 Variable Documentation

30.1837.1.1 var tmtd_8cpp

Initial value:

```
=
[
    [ "Inverter", "tmtd_8cpp.html#ab9af5da7bc1cef2aae2b9dc1920f3e7c", null ],
    [ "trymatd", "tmtd_8cpp.html#a17794c42f43b5d17dce86ee4966c0670", null ]
]
```

Definition at line 1 of file tmtd_8cpp.js.

30.1838 doc/html/tmte_8cpp.js File Reference

Variables

- var tmte_8cpp

30.1838.1 Variable Documentation

30.1838.1.1 var tmte_8cpp

Initial value:

```
=
[
    [ "WANT_MATH", "tmte_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "CheckIsSorted", "tmte_8cpp.html#a8ee61016bcc6a456f1b8adfad9cc0235", null ],
    [ "trymate", "tmte_8cpp.html#a9551e964abb474a2727342b57ae81f54", null ]
]
```

Definition at line 1 of file tmte_8cpp.js.

30.1839 doc/html/tmtf_8cpp.js File Reference

Variables

- var tmtf_8cpp

30.1839.1 Variable Documentation

30.1839.1.1 var tmtf_8cpp

Initial value:

```
=
[
    [ "WANT_MATH", "tmtf_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "trymatf", "tmtf_8cpp.html#a1caf44b5d784f8f179eced8d999509c5", null ]
]
```

Definition at line 1 of file tmtf_8cpp.js.

30.1840 doc/html/tmtg_8cpp.js File Reference

Variables

- var tmtg_8cpp

30.1840.1 Variable Documentation

30.1840.1.1 var tmtg_8cpp

Initial value:

```
=
[
    [ "WANT_MATH", "tmtg_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "trymatg", "tmtg_8cpp.html#aa7a5cd73a99176b30f1db1902c42da87", null ]
]
```

Definition at line 1 of file tmtg_8cpp.js.

30.1841 doc/html/tmth_8cpp.js File Reference

Variables

- var tmth_8cpp

30.1841.1 Variable Documentation

30.1841.1.1 var tmth_8cpp

Initial value:

```
=
[
    [ "BandFunctions", "tmth_8cpp.html#ac1f6e4e77610e4d49a2d8ed653c1fc66", null ],
    [ "LowerBandFunctions", "tmth_8cpp.html#a4b890058b46519a5ce24e41a758abd0c", null ],
    [ "SymmetricBandFunctions", "tmth_8cpp.html#aa920dbb90a50a0f408fbc753dcf283d4", null ],
    [ "trymath", "tmth_8cpp.html#ad0ee11e103cd5efc92d8c7c5a66663e9", null ],
    [ "UpperBandFunctions", "tmth_8cpp.html#ac9dcaddbf88c61b8431275fbd9240764", null ]
]
```

Definition at line 1 of file tmth_8cpp.js.

30.1842 doc/html/tmti_8cpp.js File Reference

Variables

- var tmti_8cpp

30.1842.1 Variable Documentation

30.1842.1.1 var tmti_8cpp

Initial value:

```
=
[
    [ "ReSizeMatrix", "tmti_8cpp.html#a9e44a4958cc08f32780b5349d5c63608", null ],
    [ "trymati", "tmti_8cpp.html#a060685b2ce0f15fcf2c674ede9d89fda", null ],
    [ "WillNotConverge", "tmti_8cpp.html#a0f921978f9992fd411af3b20cca52c04", null ]
]
```

Definition at line 1 of file tmti_8cpp.js.

30.1843 doc/html/tmtj_8cpp.js File Reference

Variables

- var tmtj_8cpp

30.1843.1 Variable Documentation

30.1843.1.1 var tmtj_8cpp

Initial value:

```
=
[
    [ "trymatj", "tmtj_8cpp.html#a1ea028cc8894408521cb89ab94198275", null ]
]
```

Definition at line 1 of file tmtj_8cpp.js.

30.1844 doc/html/tmtk_8cpp.js File Reference

Variables

- var tmtk_8cpp

30.1844.1 Variable Documentation

30.1844.1.1 var tmtk_8cpp

Initial value:

```
=
[
    [ "WANT_STREAM", "tmtk_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "trymatk", "tmtk_8cpp.html#a2106b6c4deb1061e6812db8b3950aefa", null ]
]
```

Definition at line 1 of file tmtk_8cpp.js.

30.1845 doc/html/tmtl_8cpp.js File Reference

Variables

- var tmtl_8cpp

30.1845.1 Variable Documentation

30.1845.1.1 var tmtl_8cpp

Initial value:

```
=
[
    [ "WANT_MATH", "tmtl_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "WANT_STREAM", "tmtl_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "TestMax", "tmtl_8cpp.html#a84d95be44bbe612e692698848948b3bc", null ],
    [ "trymatl", "tmtl_8cpp.html#a529c68f2004396c7f4c17b742dba3dbb", null ]
]
```

Definition at line 1 of file tmtl_8cpp.js.

30.1846 doc/html/tmtm_8cpp.js File Reference

Variables

- var tmtm_8cpp

30.1846.1 Variable Documentation

30.1846.1.1 var tmtm_8cpp

Initial value:

```
=
[
    [ "WANT_MATH", "tmtm_8cpp.html#a8335b327d416f961a5dbaa0e058cc515", null ],
    [ "WANT_STREAM", "tmtm_8cpp.html#a6ed6c2d6e68d8f0e7900326b4e30850c", null ],
    [ "trymatm", "tmtm_8cpp.html#af1aad2210a853ae6eb7ad8a3772f5313", null ]
]
```

Definition at line 1 of file tmtm_8cpp.js.

30.1847 doc/html/tp_joint_type_8h.js File Reference

Variables

- var tp_joint_type_8h

30.1847.1 Variable Documentation

30.1847.1.1 var tp_joint_type_8h

Initial value:

```
=
[
    [ "tpJointType", "tp_joint_type_8h.html#a1ff99d2b83bb317e5db42679477c31c2", [
      [ "JOINT_G1", "
      tp_joint_type_8h.html#a1ff99d2b83bb317e5db42679477c31c2ada229f3349f036f74128f22b91778c5b", null ],
      [ "JOINT_KINK", "
      tp_joint_type_8h.html#a1ff99d2b83bb317e5db42679477c31c2ab918bde030f6bc020b44ec2422b39e25", null ],
      [ "JOINT_G0", "
      tp_joint_type_8h.html#a1ff99d2b83bb317e5db42679477c31c2a7f5a6b29283bce2a3de4770df35da7d9", null ],
      [ "JOINT_GAP", "
      tp_joint_type_8h.html#a1ff99d2b83bb317e5db42679477c31c2a7a64be06e4c446d0ae5d82ef5dce4949", null ],
      [ "JOINT_DISC", "
      tp_joint_type_8h.html#a1ff99d2b83bb317e5db42679477c31c2a70a0cebf99fd902cf435fac73306b6e3", null ],
      [ "JOINT_NONE", "
      tp_joint_type_8h.html#a1ff99d2b83bb317e5db42679477c31c2a45992da186ea931a1bf00b446280b433", null ]
    ] ]
]
```

Definition at line 1 of file tp_joint_type_8h.js.

30.1848 doc/html/tp_utils_8h.js File Reference

Variables

- var tp_utils_8h

30.1848.1 Variable Documentation

30.1848.1.1 var tp_utils_8h

Initial value:

```
=
[
    [ "adjacentEdges", "tp_utils_8h.html#abfcb55015ae56b2f06c8b3df521bfe10", null ],
    [ "checkContinuity", "tp_utils_8h.html#a58146fa0d1b27a17933f61b9189280de", null ]
]
```

Definition at line 1 of file tp_utils_8h.js.

30.1849 doc/html/transfutils_8cpp.js File Reference

Variables

- var transfutils_8cpp

30.1849.1 Variable Documentation

30.1849.1.1 var transfutils_8cpp

Initial value:

```
=
[
    [ "rotate", "transfutils_8cpp.html#a4bf712e2384f81588420c38cdb216cc3", null ],
    [ "scale", "transfutils_8cpp.html#ac27f31adada4333fd9e5b1d683cc2dc3", null ],
    [ "translate", "transfutils_8cpp.html#a56405fd2b22f51d08b371fb188374a40", null ],
    [ "xrot", "transfutils_8cpp.html#a5175ae8b353bb511616aec812502269d", null ],
    [ "xrot_eps", "transfutils_8cpp.html#a7b5f2e7bb8d2b8248ec297c6adb57401", null ],
    [ "xscale", "transfutils_8cpp.html#ac9ea1df8d926e2a6ed51a93a56ea0eea", null ],
    [ "xtrans", "transfutils_8cpp.html#a42422815616c3bc39a325d5dac156628", null ],
    [ "yrot", "transfutils_8cpp.html#aa796e5a13fbe734d62adecbe1c549960", null ],
    [ "yrot_eps", "transfutils_8cpp.html#a9437eac6121846f2a2db653a8b6bba3a", null ],
    [ "yscale", "transfutils_8cpp.html#a058a8b80939f5cadc3ee95eeb4ae9d1d", null ],
    [ "ytrans", "transfutils_8cpp.html#a83f92fc3677e5d1f3c9b863ff919cd94", null ],
    [ "zrot", "transfutils_8cpp.html#a55c591292392271334a0b01046a92a98", null ],
    [ "zrot_eps", "transfutils_8cpp.html#ab05217d9b07d153246937544f2e52d94", null ],
    [ "zscale", "transfutils_8cpp.html#a3ab9a848f6176d9bb377edf88e828b07", null ],
    [ "ztrans", "transfutils_8cpp.html#ac2f5216f194125aac9bf823b3be05648", null ]
]
```

Definition at line 1 of file transfutils_8cpp.js.

30.1850 doc/html/transfutils_8h.js File Reference

Variables

- var transfutils_8h

30.1850.1 Variable Documentation

30.1850.1.1 var transfutils_8h

Initial value:

```
=
[
    [ "TRANSFUTILS_H_INCLUDED", "transfutils_8h.html#ac536c5c0243e9fa908f4bc1a905dd6af", null ],
    [ "rotate", "transfutils_8h.html#a4bf712e2384f81588420c38cdb216cc3", null ],
    [ "scale", "transfutils_8h.html#ac27f31adada4333fd9e5b1d683cc2dc3", null ],
    [ "translate", "transfutils_8h.html#a56405fd2b22f51d08b371fb188374a40", null ],
    [ "xrot", "transfutils_8h.html#a5175ae8b353bb511616aec812502269d", null ],
    [ "xrot_eps", "transfutils_8h.html#a7b5f2e7bb8d2b8248ec297c6adb57401", null ],
    [ "xscale", "transfutils_8h.html#ac9ea1df8d926e2a6ed51a93a56ea0eea", null ],
    [ "xtrans", "transfutils_8h.html#a42422815616c3bc39a325d5dac156628", null ],
    [ "yrot", "transfutils_8h.html#aa796e5a13fbe734d62adecbe1c549960", null ],
    [ "yrot_eps", "transfutils_8h.html#a9437eac6121846f2a2db653a8b6bba3a", null ],
    [ "yscale", "transfutils_8h.html#a058a8b80939f5cadc3ee95eeb4ae9d1d", null ],
    [ "ytrans", "transfutils_8h.html#a83f92fc3677e5d1f3c9b863ff919cd94", null ],
    [ "zrot", "transfutils_8h.html#a55c591292392271334a0b01046a92a98", null ],
    [ "zrot_eps", "transfutils_8h.html#ab05217d9b07d153246937544f2e52d94", null ],
    [ "zscale", "transfutils_8h.html#a3ab9a848f6176d9bb377edf88e828b07", null ],
    [ "ztrans", "transfutils_8h.html#ac2f5216f194125aac9bf823b3be05648", null ]
]
```

Definition at line 1 of file transfutils_8h.js.

30.1851 doc/html/tstcyclknt_8c.js File Reference

Variables

- var tstcyclknt_8c

30.1851.1 Variable Documentation

30.1851.1.1 var tstcyclknt_8c

Initial value:

```
=
[
    [ "TEST_CYCLIC_KNOTS", "tstcyclknt_8c.html#a77b5bb7a941d583a9aee41d2be40d163", null ],
    [ "test_cyclic_knots", "tstcyclknt_8c.html#a7c828f6b4278bd340a0fa2be5069b51f", null ]
]
```

Definition at line 1 of file tstcyclknt_8c.js.

30.1852 doc/html/ttl_8h.js File Reference

Variables

- var ttl_8h

30.1852.1 Variable Documentation

30.1852.1.1 var ttl_8h

Definition at line 1 of file ttl_8h.js.

30.1853 doc/html/ttl__constr_8h.js File Reference

Variables

- var ttl__constr_8h

30.1853.1 Variable Documentation

30.1853.1.1 var ttl__constr_8h

Initial value:

```
=
[
    [ "crossesConstraint", "ttl__constr_8h.html#ac06117985e114e1d5012f9b1d3645b4e", null ],
    [ "findCrossingEdges", "ttl__constr_8h.html#a628efc55cb8a02046cb368360c8945cc", null ],
    [ "getAtSmallestAngle", "ttl__constr_8h.html#a8abc808bf7d32aa443e8584acea5cf12", null ],
    [ "insertConstraint", "ttl__constr_8h.html#a6edfbe6b045b5a1b1d0b2ab541b71c7e", null ],
    [ "isTheConstraint", "ttl__constr_8h.html#a7a284e8f4dbc2ad284fe3c2230846fde", null ],
    [ "transformToConstraint", "ttl__constr_8h.html#ae09853b3319d1206958eb1f44a4cb7d0", null ]
]
```

Definition at line 1 of file ttl__constr_8h.js.

30.1854 doc/html/ttl__util_8h.js File Reference

Variables

- var ttl__util_8h

30.1854.1 Variable Documentation

30.1854.1.1 var ttl__util_8h

Initial value:

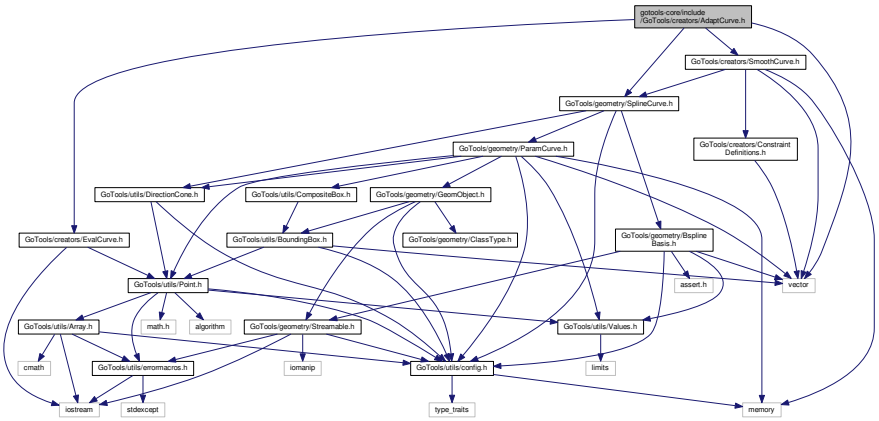
```
=
[
    [ "createRandomData", "ttl__util_8h.html#a1b19556dbec504e33c7afab9bead26d7", null ],
    [ "crossProduct2d", "ttl__util_8h.html#a1ad213497a328b60ba326994d7d7501b", null ],
    [ "orient2dfast", "ttl__util_8h.html#a7f11adbe6f58eb0e3cac2b05ec1f01da", null ],
    [ "scalarProduct2d", "ttl__util_8h.html#ae91fc49a144917bec417b6b9acfdf4c5", null ]
]
```

Definition at line 1 of file ttl__util_8h.js.

30.1855 gotools-core/include/GoTools/creators/AdaptCurve.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include <vector>
#include "GoTools/creators/SmoothCurve.h"
#include "GoTools/creators/EvalCurve.h"
```

Include dependency graph for AdaptCurve.h:



Classes

- class Go::AdaptCurve

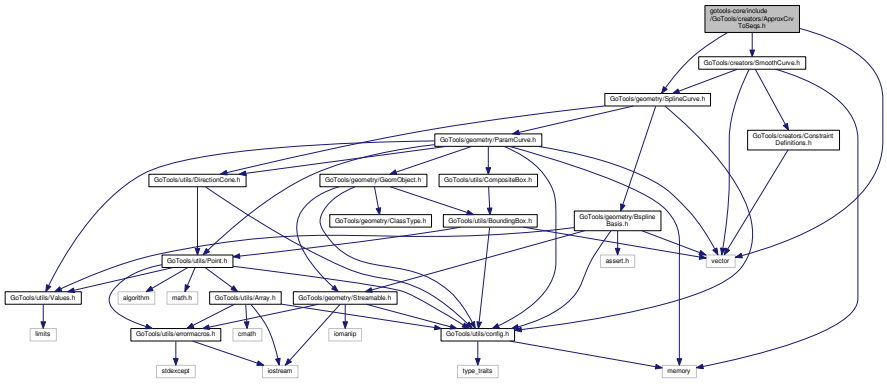
Namespaces

- Go

30.1856 gotools-core/include/GoTools/creators/ApproxCrvToSeqs.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include <vector>
#include "GoTools/creators/SmoothCurve.h"
```

Include dependency graph for ApproxCrvToSeqs.h:



Classes

- class Go::ApproxCrvToSeqs

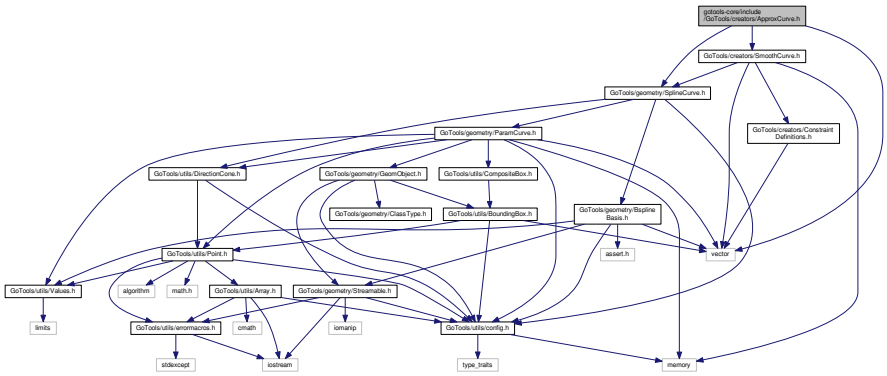
Namespaces

- Go

30.1857 gotools-core/include/GoTools/creators/ApproxCurve.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include <vector>
#include "GoTools/creators/SmoothCurve.h"
```

Include dependency graph for ApproxCurve.h:



Classes

- class Go::ApproxCurve

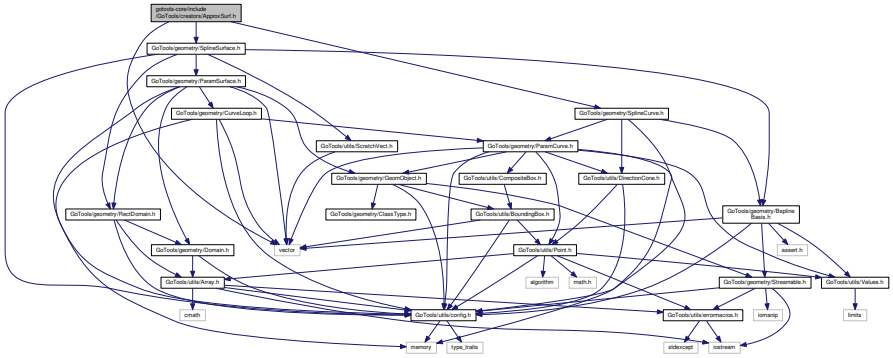
Namespaces

- Go

30.1858 gotools-core/include/GoTools/creators/ApproxSurf.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
#include <vector>
```

Include dependency graph for ApproxSurf.h:



Classes

- class Go::ApproxSurf

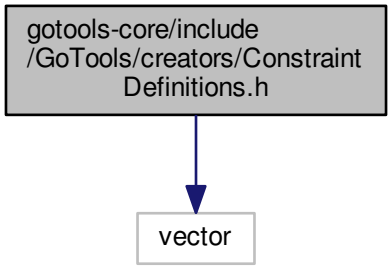
Namespaces

- Go

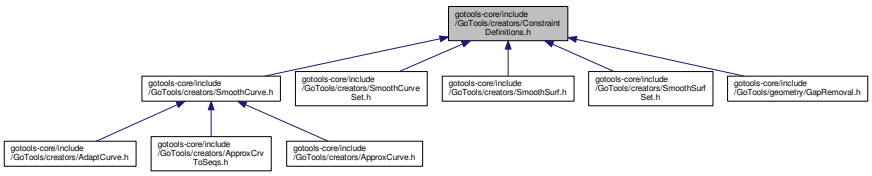
30.1859 gotools-core/include/GoTools/creators/ConstraintDefinitions.h File Reference

```
#include <vector>
```

Include dependency graph for ConstraintDefinitions.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::sideConstraint
- struct Go::sideConstraintSet

Namespaces

- Go

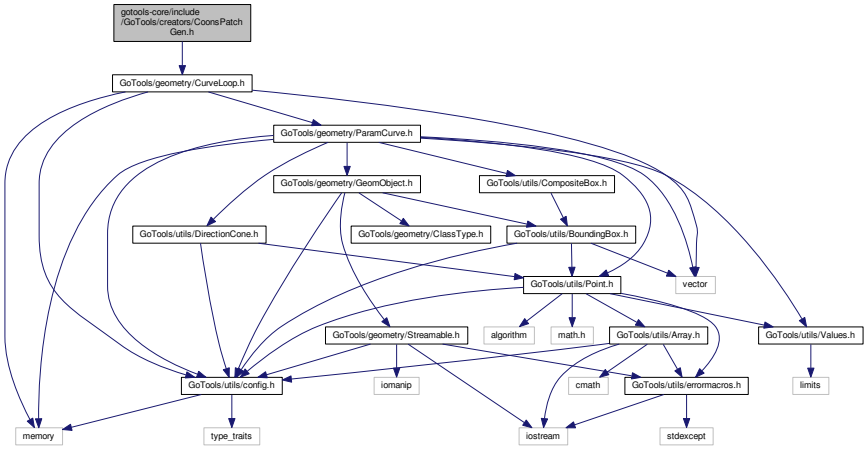
Typedefs

- typedef struct Go::sideConstraint Go::sideConstraint
- typedef struct Go::sideConstraintSet Go::sideConstraintSet

30.1860 gotools-core/include/GoTools/creators/CoonsPatchGen.h File Reference

```
#include "GoTools/geometry/CurveLoop.h"
```

Include dependency graph for CoonsPatchGen.h:



Classes

- class Go::CoonsPatchGen::UnKnownError

  Exception class.

Namespaces

- Go
- Go::CoonsPatchGen

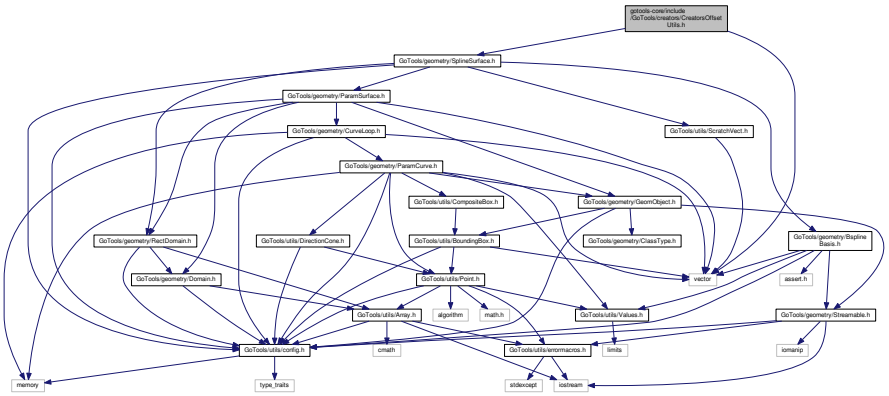
Functions

- SplineSurface * Go::CoonsPatchGen::createCoonsPatch (const CurveLoop &boundary)
- SplineSurface * Go::CoonsPatchGen::createCoonsPatch (std::vector< shared_ptr< ParamCurve > > &bd_curves, std::vector< shared_ptr< ParamCurve > > &cross_curves, double epsge, double kink_tol)
- SplineSurface * Go::CoonsPatchGen::createCoonsPatch (std::vector< shared_ptr< SplineCurve > > &bd_curves, std::vector< shared_ptr< SplineCurve > > &cross_curves)
- SplineSurface * Go::CoonsPatchGen::createGordonSurface (std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > &params, int &nmb_u_crvs, bool use_param_values)
- SplineSurface * Go::CoonsPatchGen::createGordonSurface (std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > &params, int &nmb_u_crvs, std::vector< shared_ptr< SplineCurve > > &cross_curves, std::vector< int > &cross_index, bool use_param_values=true)
- SplineSurface * Go::CoonsPatchGen::doCreateSurface (std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > &params, int &nmb_u_crvs, std::vector< shared_ptr< SplineCurve > > &cross_curves, std::vector< int > &cross_index)
- SplineSurface * Go::CoonsPatchGen::loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, int nmb_crvs)
- SplineSurface * Go::CoonsPatchGen::loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs)
- SplineSurface * Go::CoonsPatchGen::loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs, std::vector< shared_ptr< SplineCurve > >::iterator first_cross_curve, std::vector< int > &cross_index)
- SplineSurface * Go::CoonsPatchGen::tpSurface (const std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > params, int nmb_u_crvs, const std::vector< shared_ptr< SplineCurve > > &cross_curves, std::vector< int > &cross_index)
- void Go::CoonsPatchGen::splitMeshCurves (std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > &params, int &nmb_u_crvs, std::vector< int > &cross_index, double epsgeo)
- void Go::CoonsPatchGen::sortMeshCurves (std::vector< shared_ptr< SplineCurve > > &mesh_curves, std::vector< double > &params, int nmb_u_crvs, std::vector< int > &cross_index)
- void Go::CoonsPatchGen::getCrossTangs (const std::vector< shared_ptr< SplineCurve > > &curves, std::vector< shared_ptr< SplineCurve > > &mod_cross_curves, double tol1, double tol2)
- void Go::CoonsPatchGen::addMissingCrossCurves (const std::vector< shared_ptr< SplineCurve > > &bnd_curves, std::vector< shared_ptr< SplineCurve > > &cross_crvs)
- void Go::CoonsPatchGen::getTangBlends (std::vector< shared_ptr< SplineCurve > > &curves, int iedge, std::vector< shared_ptr< SplineCurve > > &blend_functions)
- void Go::CoonsPatchGen::blendcoef (double evecu[], double evecv[], double etang[], int idim, int isign, double *coef1, double *coef2)
- void Go::CoonsPatchGen::hermit (double econd[], int icond, bool hasder1, double astart, double aend, int idim)
- void Go::CoonsPatchGen::fixCrossEndPts (const std::vector< shared_ptr< SplineCurve > > &bd_curves, const std::vector< shared_ptr< SplineCurve > > &cross_curves)
- void Go::CoonsPatchGen::makeLoftParams (std::vector< shared_ptr< SplineCurve > >::const_iterator first_curve, int nmb_crvs, double param_length, std::vector< double > &params)
- void Go::CoonsPatchGen::reparamBoundaryCurve (std::vector< shared_ptr< SplineCurve > > &curves, double aconst)

30.1861 gotools-core/include/GoTools/creators/CreatorsOffsetUtils.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include <vector>
```

Include dependency graph for CreatorsOffsetUtils.h:



Namespaces

- Go
- Go::OffsetUtils

  Related to the generation of cross tangent curves.

Macros

- #define _OFFSETUTILS_H

Functions

- void Go::OffsetUtils::blend_s1421 (const SplineSurface ∗ps, double aoffset, int ider, const Point &epar, int &ilfs, int &ilft, std::vector< Point > &eoffpnt, std::vector< Point > &epnt, int ∗jstat)

30.1861.1 Macro Definition Documentation

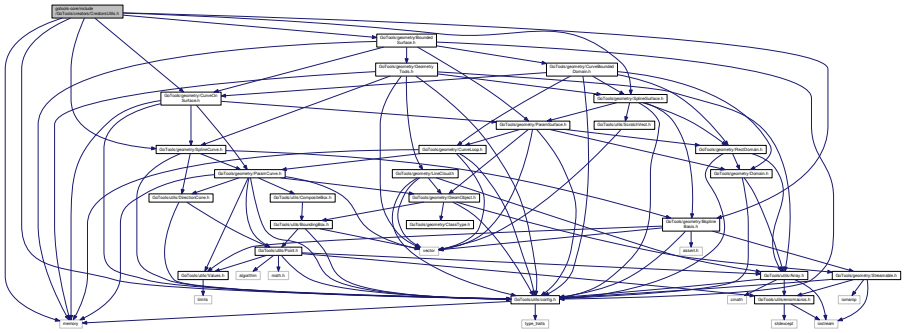
30.1861.1.1 #define _OFFSETUTILS_H

Definition at line 85 of file CreatorsOffsetUtils.h.

30.1862 gotools-core/include/GoTools/creators/CreatorsUtils.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/geometry/BoundedSurface.h"
#include <memory>
#include "GoTools/utils/config.h"
```

Include dependency graph for CreatorsUtils.h:



Namespaces

- Go
- Go::CreatorsUtils

  Related to the generation of cross tangent curves.

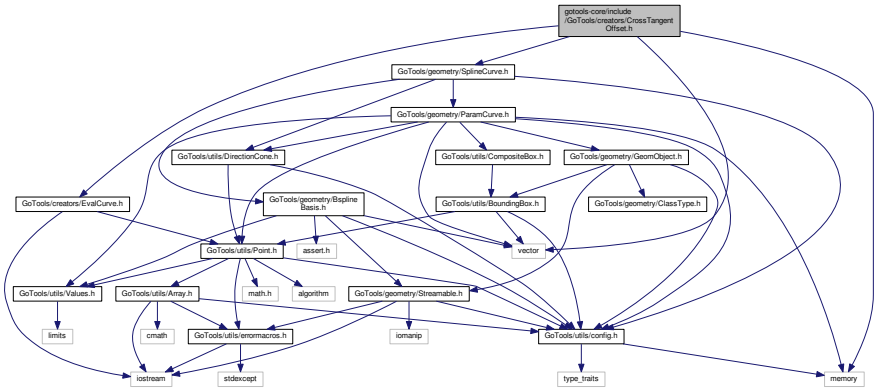
Functions

- SplineCurve GO_API * Go::CreatorsUtils::getParametricCurve (const std::vector< shared_ptr< const CurveOnSurface > > &cv)
- shared_ptr< Go::SplineCurve > GO_API Go::CreatorsUtils::createCrossTangent (const Go::CurveOn↩Surface &cv)
- shared_ptr< Go::SplineCurve > GO_API Go::CreatorsUtils::createCrossTangent (const Go::CurveOn↩Surface &cv, shared_ptr< Go::SplineCurve > basis_space_cv, const Go::SplineCurve *cross_cv_ref, bool appr_offset_cv=true)
- std::vector< Go::Point > GO_API Go::CreatorsUtils::projectPoint (const Go::ParamSurface *sf, bool closed_dir_u, bool closed_dir_v, const Go::Point &space_pt, double epsgeo=1e-04)
- shared_ptr< Go::Point > Go::CreatorsUtils::projectCurvePoint (const ParamSurface *sf, bool closed_dir_u, bool closed_dir_v, const Go::ParamCurve *space_cv, double cv_par, double epsgeo=1e-04)
- shared_ptr< Go::Point > Go::CreatorsUtils::projectCurvePoint (const SplineSurface &sf, bool closed_dir_u, bool closed_dir_v, const Go::ParamCurve *space_cv, double cv_par, double epsgeo=1e-04)
- void GO_API Go::CreatorsUtils::fixSeemCurves (shared_ptr< BoundedSurface > bd_sf, std::vector< shared_ptr< CurveOnSurface > > &loop_cvs, bool closed_dir_u, bool closed_dir_v, double tol)
- void GO_API Go::CreatorsUtils::fixTrimCurves (shared_ptr< Go::BoundedSurface > bd_sf, double epsgeo↩_frac=1.0, double tol=1.0e-3, double tol2=1.0e-2, double ang_tol=1.0e-2)

30.1863 gotools-core/include/GoTools/creators/CrossTangentOffset.h File Reference

```
#include "GoTools/creators/EvalCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include <vector>
#include <memory>
```

Include dependency graph for CrossTangentOffset.h:



Classes

- class Go::CrossTangentOffset

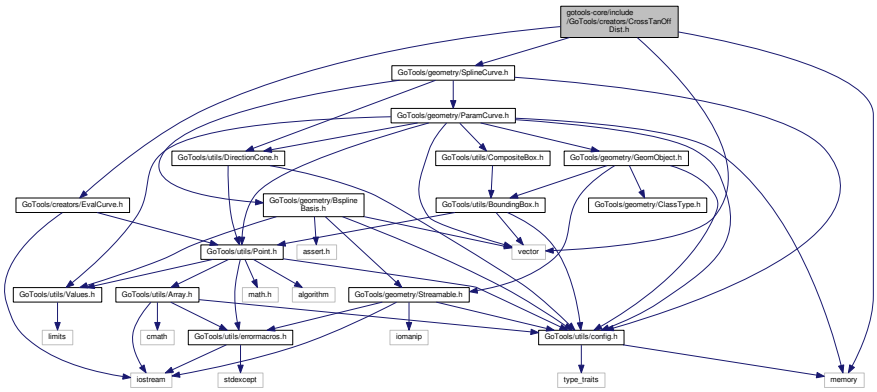
Namespaces

- Go

30.1864 gotools-core/include/GoTools/creators/CrossTanOffDist.h File Reference

```
#include "GoTools/creators/EvalCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include <vector>
#include <memory>
```

Include dependency graph for CrossTanOffDist.h:



Classes

- class Go::CrossTanOffDist

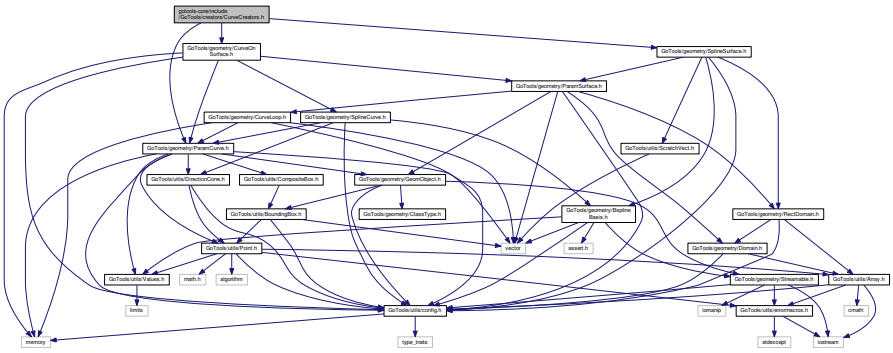
Namespaces

- Go

30.1865 gotools-core/include/GoTools/creators/CurveCreators.h File Reference

```
#include "GoTools/geometry/ParamCurve.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/geometry/SplineSurface.h"
```

Include dependency graph for CurveCreators.h:



Namespaces

- Go
- Go::CurveCreators

Functions

- SplineCurve GO_API * Go::CurveCreators::multCurveWithFunction (const SplineCurve &alpha, const SplineCurve &f)
- SplineCurve GO_API * Go::CurveCreators::blend (const SplineCurve &alpha_1, const SplineCurve &f_1, const SplineCurve &alpha_2, const SplineCurve &f_2)
- SplineCurve GO_API * Go::CurveCreators::approxCurves (shared_ptr< ParamCurve > *first_crv, shared_ptr< ParamCurve > *last_crv, const std::vector< Point > &start_pt, const std::vector< Point > &end_pt, double approxtol, double &maxdist, int max_iter=5, int degree=3)
- void Go::CurveCreators::projectCurve (shared_ptr< ParamCurve > &space_cv, shared_ptr< ParamSurface > &surf, double epsge, shared_ptr< SplineCurve > &proj_cv, shared_ptr< SplineCurve > &par_cv)
- std::vector< shared_ptr< SplineCurve > > Go::CurveCreators::curveApprox (shared_ptr< ParamCurve > cvs[], int nmb_cvs, const BsplineBasis &init_basis, double tol)
- std::vector< shared_ptr< SplineCurve > > Go::CurveCreators::curveApprox (shared_ptr< ParamCurve > cvs[], int nmb_cvs, double tol, double degree=3)

- SplineCurve GO_API * Go::CurveCreators::projectSpaceCurve (shared_ptr< ParamCurve > &space_cv, shared_ptr< ParamSurface > &surf, shared_ptr< Point > &start_par_pt, shared_ptr< Point > &end_par_pt, double epsge, const RectDomain *domain_of_interest=NULL)
- SplineCurve GO_API * Go::CurveCreators::liftParameterCurve (shared_ptr< ParamCurve > &parameter↩ _cv, shared_ptr< ParamSurface > &surf, double epsge)

  Lift the parameter_cv onto surf.
- SplineCurve GO_API * Go::CurveCreators::createCircle (Point center, Point axis, Point normal, double radius)

  Create a circle.
- shared_ptr< Go::SplineCurve > GO_API Go::CurveCreators::insertParamDomain (const Go::SplineCurve &cv_1d, double knot_tol=1e-08)

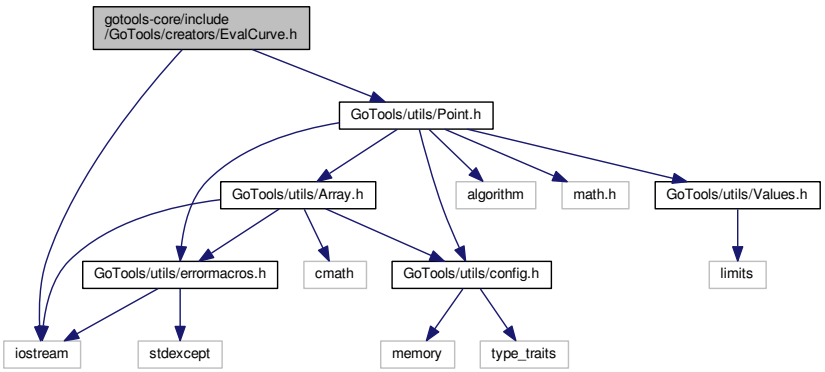
  Given input of 1-dimensional curve, return the 2-dimensional visualization (x, f(x)).
- SplineCurve GO_API * Go::CurveCreators::offsetCurve (const SplineCurve &cv, Point offset_val)

  Return the spline curve given by cv(t) + offset_val.

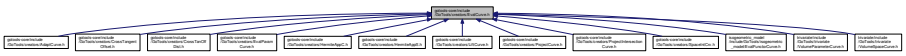
30.1866 gotools-core/include/GoTools/creators/EvalCurve.h File Reference

```
#include "GoTools/utils/Point.h"
#include <iostream>
```

Include dependency graph for EvalCurve.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::EvalCurve

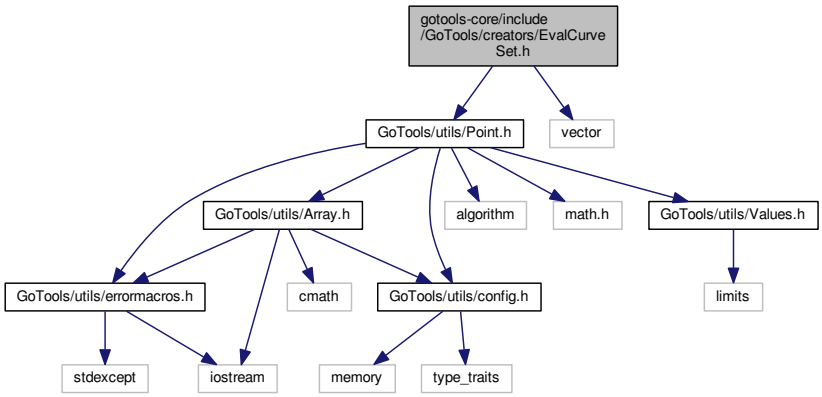
Namespaces

- Go

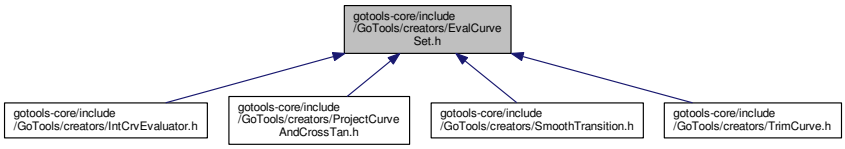
30.1867 gotools-core/include/GoTools/creators/EvalCurveSet.h File Reference

```
#include "GoTools/utils/Point.h"
#include <vector>
```

Include dependency graph for EvalCurveSet.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::EvalCurveSet

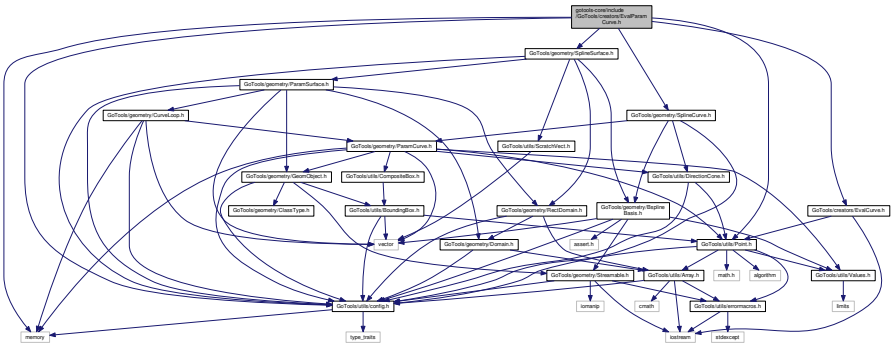
Namespaces

- Go

30.1868 gotools-core/include/GoTools/creators/EvalParamCurve.h File Reference

```
#include "GoTools/utils/Point.h"
#include "GoTools/creators/EvalCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/utils/config.h"
#include <memory>
```

Include dependency graph for EvalParamCurve.h:



Classes

- class Go::EvalParamCurve

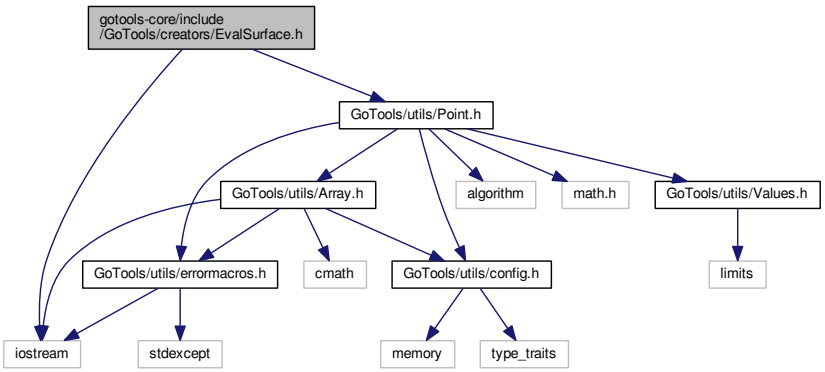
Namespaces

- Go

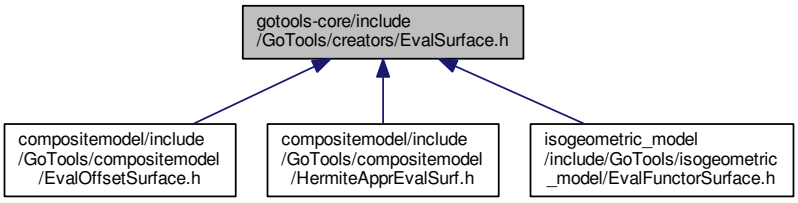
30.1869 gotools-core/include/GoTools/creators/EvalSurface.h File Reference

```
#include "GoTools/utils/Point.h"
#include <iostream>
```

Include dependency graph for EvalSurface.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::EvalSurface

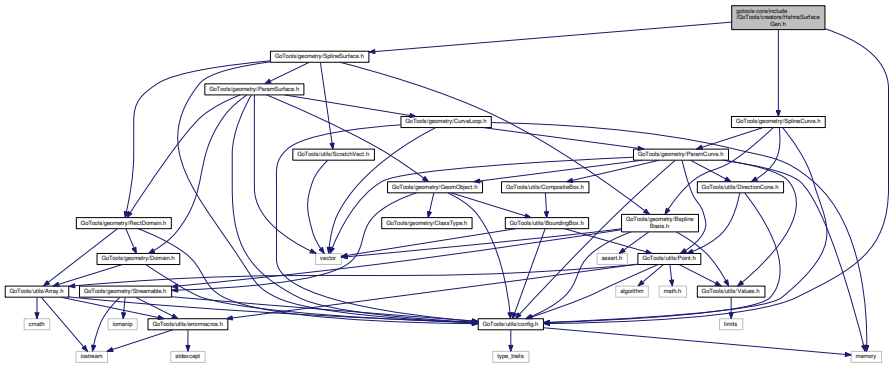
Namespaces

- Go

30.1870 gotools-core/include/GoTools/creators/HahnsSurfaceGen.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for HahnsSurfaceGen.h:



Namespaces

- Go
- Go::HahnsSurfaceGen

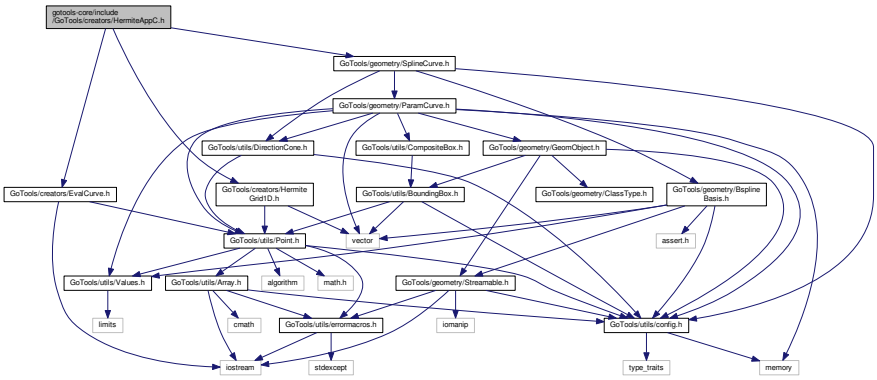
Functions

- std::vector< shared_ptr< Go::ParamSurface > > Go::HahnsSurfaceGen::constructPolygonialSurface (std::vector< shared_ptr< Go::ParamCurve > > &bnd_curves, std::vector< shared_ptr< Go::ParamCurve > > &cross_curves, double neighbour_tol, double kink_tol, double knot_diff_tol)
- std::vector< shared_ptr< Go::ParamSurface > > Go::HahnsSurfaceGen::constructHahnsSurface (std::vector< shared_ptr< Go::SplineCurve > > &bnd_curves, std::vector< shared_ptr< Go::SplineCurve > > &mod_cross_curves, double neighbour_tol, double kink_tol, double knot_diff_tol)

30.1871 gotools-core/include/GoTools/creators/HermiteAppC.h File Reference

```
#include "GoTools/creators/EvalCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/creators/HermiteGrid1D.h"
```

Include dependency graph for HermiteAppC.h:



Classes

- class Go::HermiteAppC

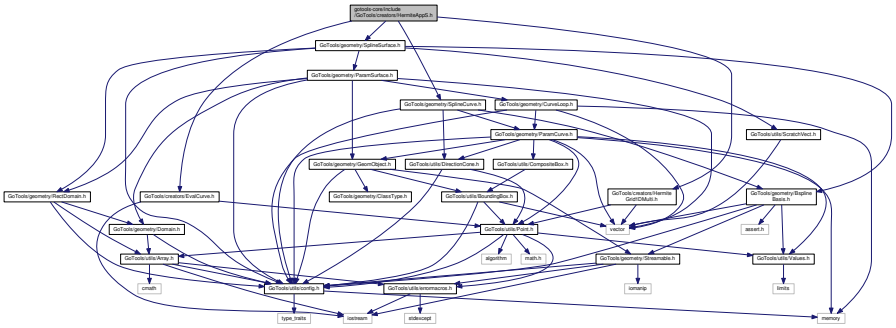
Namespaces

- Go

30.1872 gotools-core/include/GoTools/creators/HermiteAppS.h File Reference

```
#include "GoTools/creators/EvalCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/creators/HermiteGrid1DMulti.h"
```

Include dependency graph for HermiteAppS.h:



Classes

- class Go::HermiteAppS

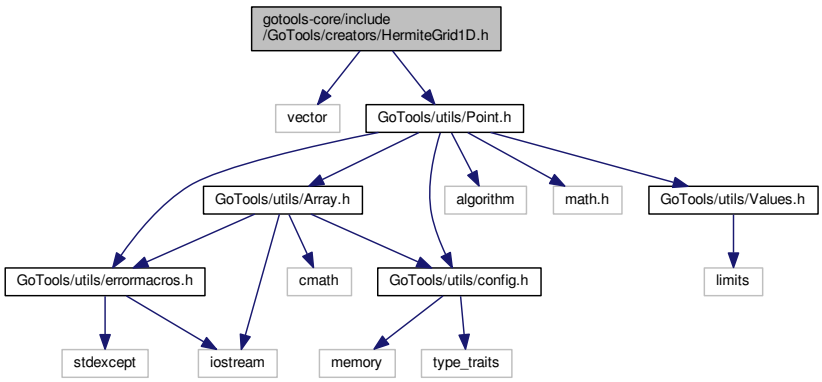
Namespaces

- Go

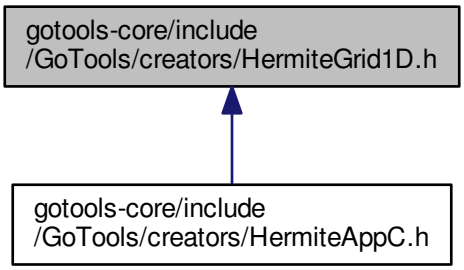
30.1873 gotools-core/include/GoTools/creators/HermiteGrid1D.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
```

Include dependency graph for HermiteGrid1D.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::HermiteGrid1D

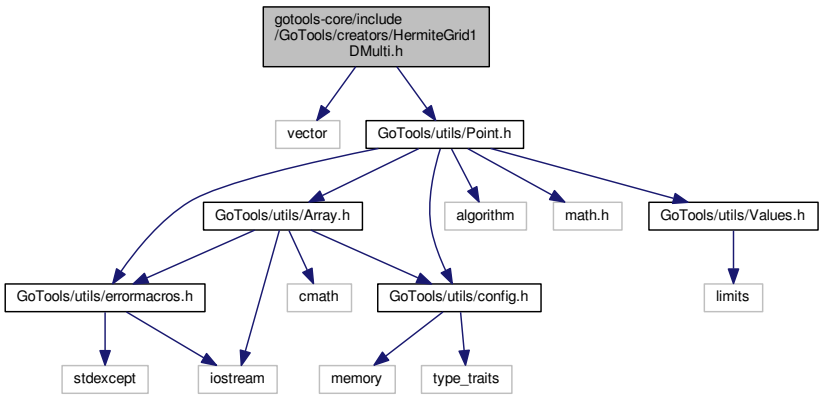
Namespaces

- Go

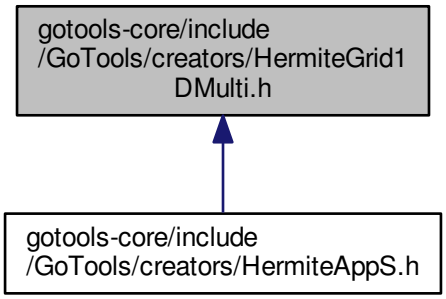
30.1874 gotools-core/include/GoTools/creators/HermiteGrid1DMulti.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
```

Include dependency graph for HermiteGrid1DMulti.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::HermiteGrid1DMulti

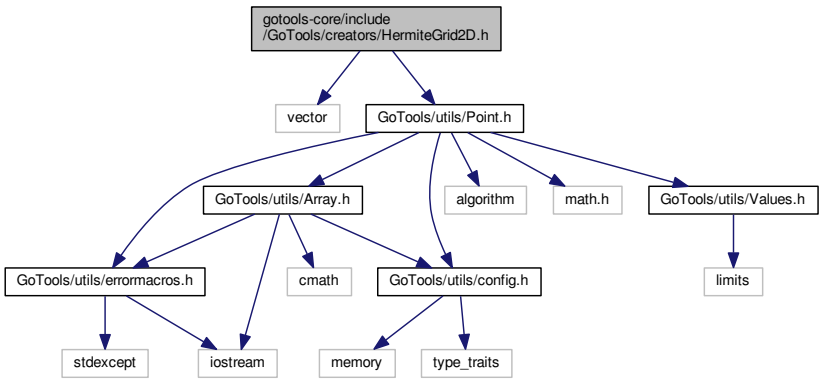
Namespaces

- Go

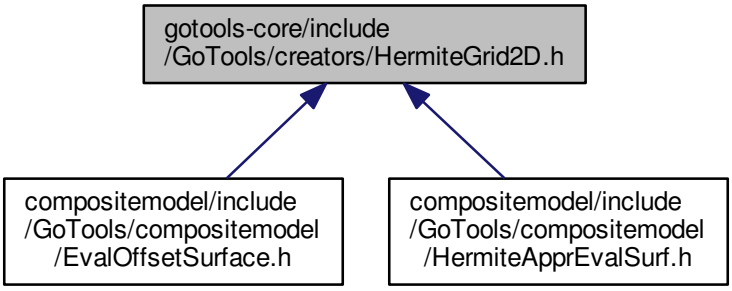
30.1875 gotools-core/include/GoTools/creators/HermiteGrid2D.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
```

Include dependency graph for HermiteGrid2D.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::HermiteGrid2D

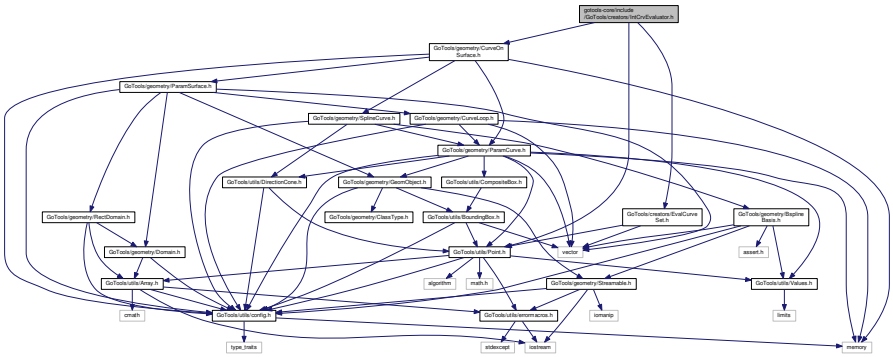
Namespaces

- Go

30.1876 gotools-core/include/GoTools/creators/IntCrvEvaluator.h File Reference

```
#include "GoTools/creators/EvalCurveSet.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for IntCrvEvaluator.h:



Classes

- class Go::IntCrvEvaluator

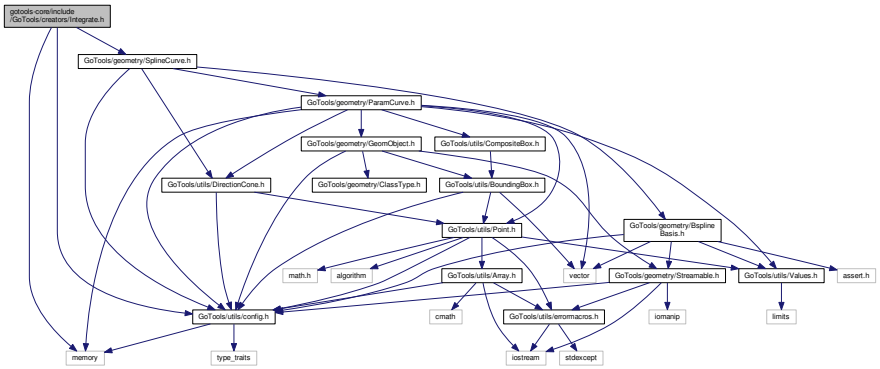
Namespaces

- Go

30.1877 gotools-core/include/GoTools/creators/Integrate.h File Reference

```
#include <memory>
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for Integrate.h:



Namespaces

- Go

Functions

- void Go::GaussQuadValues (const BsplineBasis &basis, std::vector< double > &parameters, std::vector< double > &par_weights)

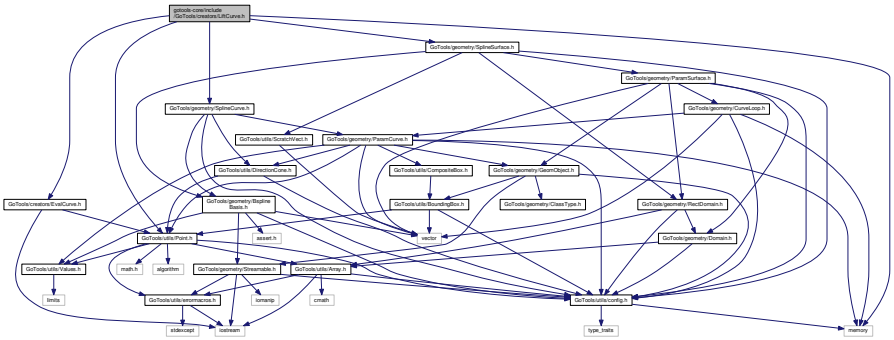
  Functions used to compute integrals of inner products of B-splines.

- void Go::GaussQuadInner (const BsplineBasis &basis, int ider, double lim1, double lim2, double ***integral)
- void Go::GaussQuadInnerFlat (const BsplineBasis &basis, int derivs, int start_der, int gap, double lim1, double lim2, std::vector< double > &integral)
- void Go::GaussQuadInner2 (const BsplineBasis &basis, int ider, double lim1, double lim2, double **integral)
- void Go::GaussQuadInnerRational (const BsplineBasis &basis, int ider, double lim1, double lim2, shared_ptr< SplineCurve > bspline_curve, double ***integral)

30.1878 gotools-core/include/GoTools/creators/LiftCurve.h File Reference

```
#include "GoTools/utils/Point.h"
#include "GoTools/creators/EvalCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include <memory>
```

Include dependency graph for LiftCurve.h:



Classes

- class Go::LiftCurve

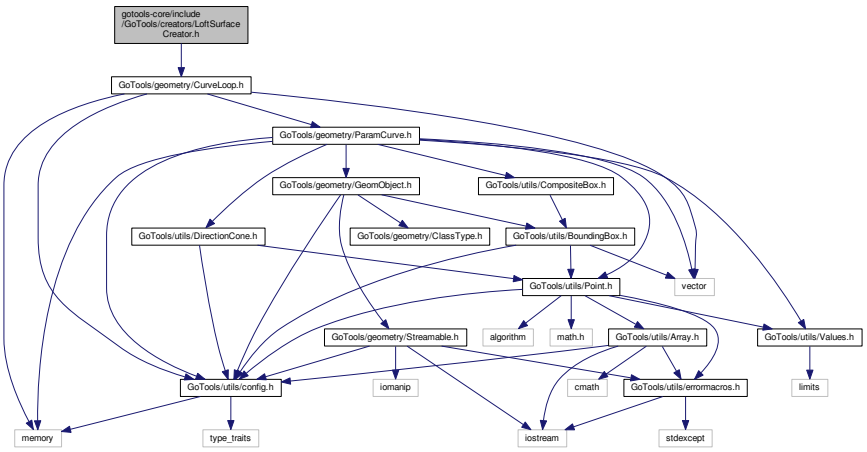
Namespaces

- Go

30.1879 gotools-core/include/GoTools/creators/LoftSurfaceCreator.h File Reference

```
#include "GoTools/geometry/CurveLoop.h"
```

Include dependency graph for LoftSurfaceCreator.h:



Namespaces

- Go
- Go::LoftSurfaceCreator

  This namespace contains functions used to create lofted surfaces.

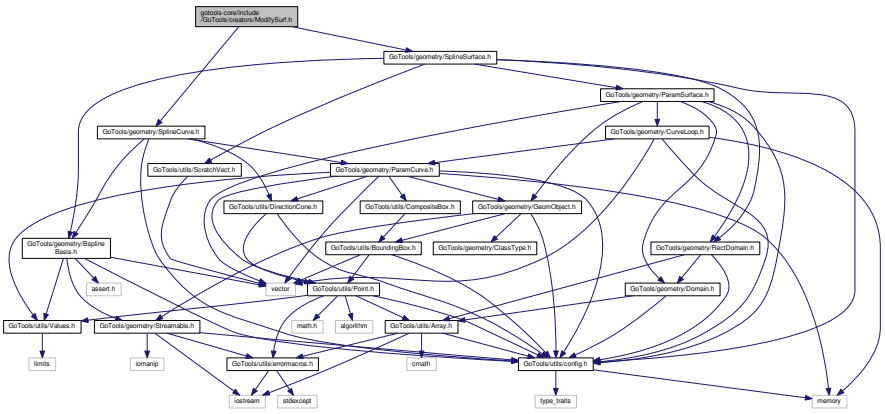
Functions

- SplineSurface * Go::LoftSurfaceCreator::loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, int nmb_crvs)
- SplineSurface * Go::LoftSurfaceCreator::loftSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs)
- SplineSurface * Go::LoftSurfaceCreator::loftSurface (std::vector< shared_ptr< SplineCurve > > &loft_↩ curves, int nmb_crvs)
- std::vector< shared_ptr< SplineCurve > > Go::LoftSurfaceCreator::unifiedCurvesCopy (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, int nmb_crvs)
- void Go::LoftSurfaceCreator::makeLoftParams (std::vector< shared_ptr< SplineCurve > >::const_iterator first_curve, int nmb_crvs, double param_length, std::vector< double > &params)
- SplineSurface * Go::LoftSurfaceCreator::loftSurfaceFromUnifiedCurves (std::vector< shared_ptr< Spline↩ Curve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs)
- SplineSurface * Go::LoftSurfaceCreator::loftNonrationalSurface (std::vector< shared_ptr< SplineCurve > >::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs)
- SplineSurface * Go::LoftSurfaceCreator::loftRationalSurface (std::vector< shared_ptr< SplineCurve > >↩ ::iterator first_curve, std::vector< double >::iterator first_param, int nmb_crvs)

30.1880 gotools-core/include/GoTools/creators/ModifySurf.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
```

Include dependency graph for ModifySurf.h:



Namespaces

- Go
- Go::ModifySurf

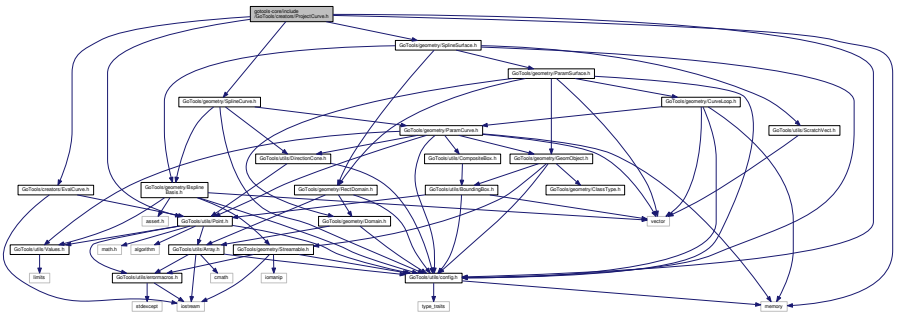
Functions

- void Go::ModifySurf::replaceBoundary (shared_ptr< SplineSurface > surf, shared_ptr< SplineCurve > curve, int bd_idx, double tol)
- bool Go::ModifySurf::enforceCoefCoLinearity (shared_ptr< SplineSurface > sf1, int bd1, shared_ptr< SplineSurface > sf2, int bd2, double tol, std::vector< std::vector< int > > &enumeration)
- bool Go::ModifySurf::enforceVxCoefCoLinearity (std::vector< shared_ptr< SplineSurface > > &sfs, std::vector< int > &vx_enum, std::vector< std::pair< std::vector< int >, std::pair< int, int > > > &coef_cond, double tol)

30.1881 gotools-core/include/GoTools/creators/ProjectCurve.h File Reference

```
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/creators/EvalCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for ProjectCurve.h:



Classes

- class Go::ProjectCurve

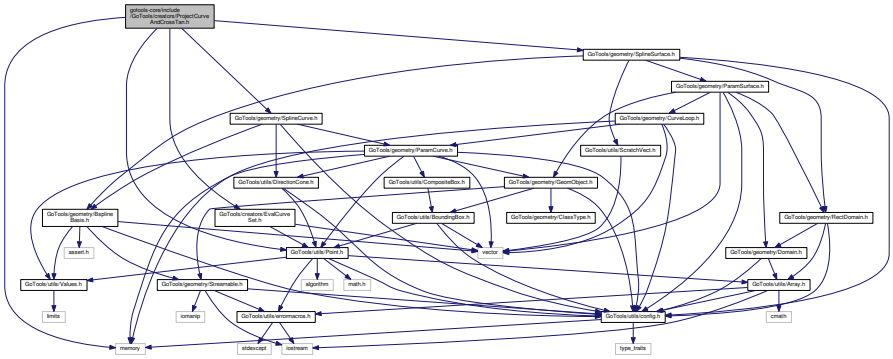
Namespaces

- Go

30.1882 gotools-core/include/GoTools/creators/ProjectCurveAndCrossTan.h File Reference

```
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/creators/EvalCurveSet.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
```

Include dependency graph for ProjectCurveAndCrossTan.h:



Classes

- class Go::ProjectCurveAndCrossTan

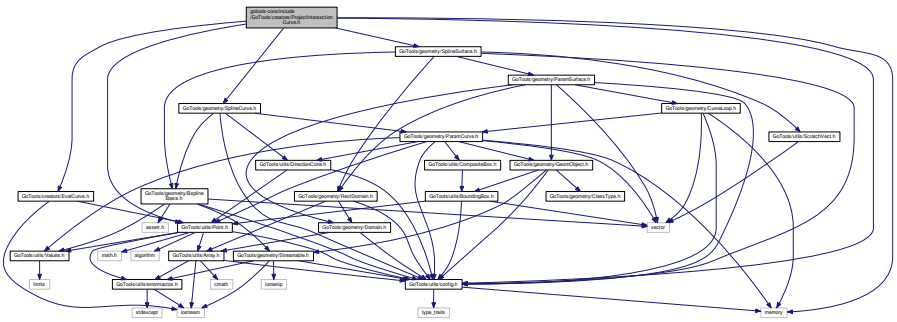
Namespaces

- Go

30.1883 gotools-core/include/GoTools/creators/ProjectIntersectionCurve.h File Reference

```
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/creators/EvalCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for ProjectIntersectionCurve.h:



Classes

- class Go::ProjectIntersectionCurve

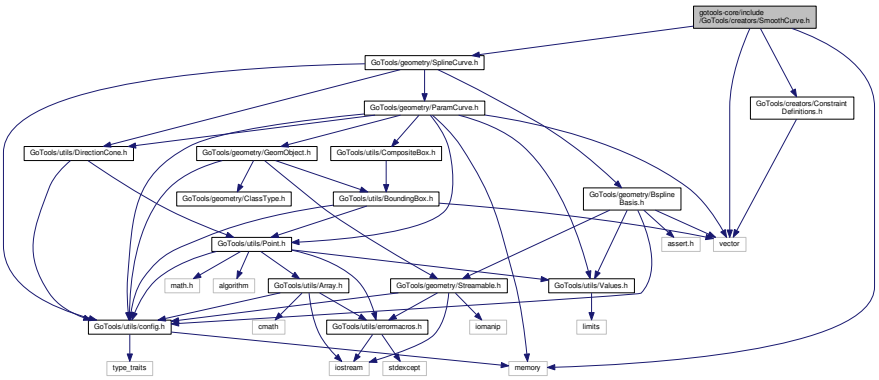
Namespaces

- Go

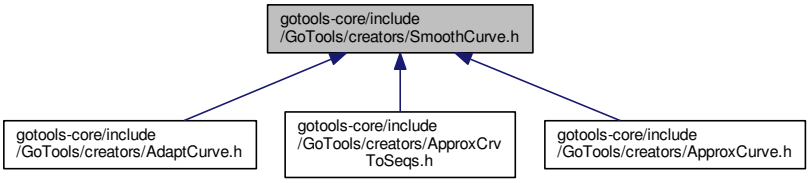
30.1884 gotools-core/include/GoTools/creators/SmoothCurve.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/creators/ConstraintDefinitions.h"
#include <memory>
#include <vector>
```

Include dependency graph for SmoothCurve.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::SmoothCurve

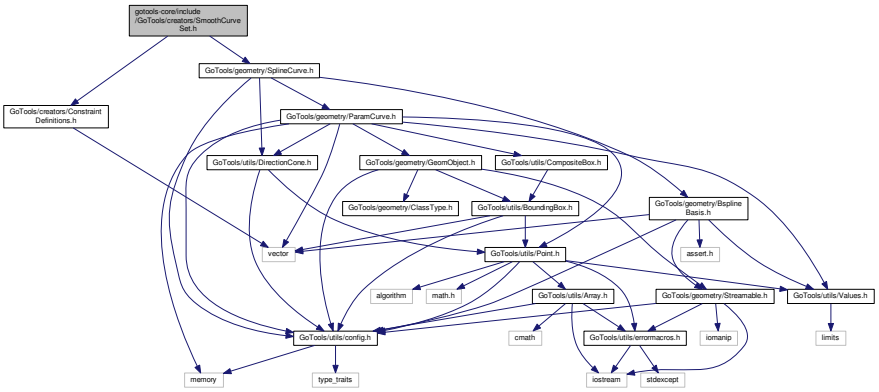
Namespaces

- Go

30.1885 gotools-core/include/GoTools/creators/SmoothCurveSet.h File Reference

```
#include "GoTools/creators/ConstraintDefinitions.h"
#include "GoTools/geometry/SplineCurve.h"
```

Include dependency graph for SmoothCurveSet.h:



Classes

- struct Go::cvSetConstraint
- class Go::SmoothCurveSet

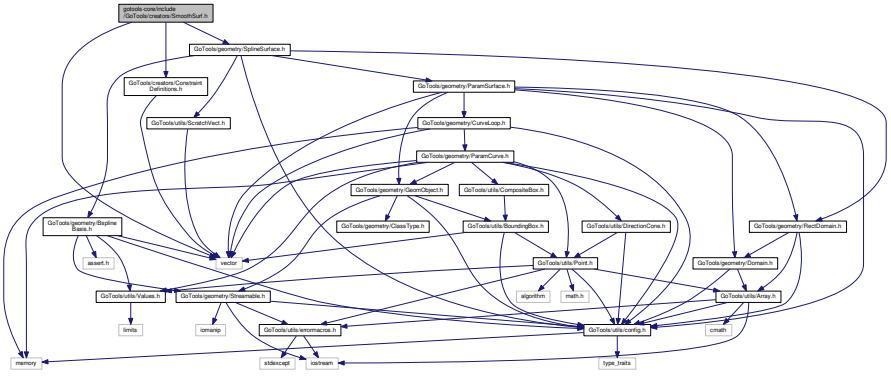
Namespaces

- Go

30.1886 gotools-core/include/GoTools/creators/SmoothSurf.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/creators/ConstraintDefinitions.h"
#include <vector>
```

Include dependency graph for SmoothSurf.h:



Classes

- class Go::SmoothSurf

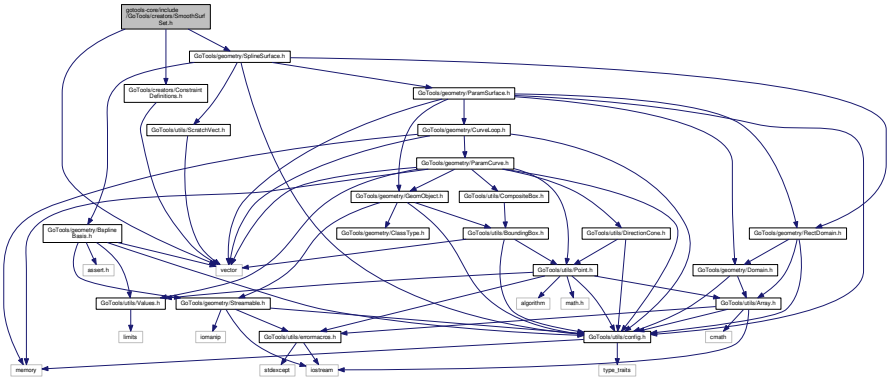
Namespaces

- Go

30.1887 gotools-core/include/GoTools/creators/SmoothSurfSet.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/creators/ConstraintDefinitions.h"
#include <vector>
```

Include dependency graph for SmoothSurfSet.h:



Classes

- class Go::SmoothSurfSet

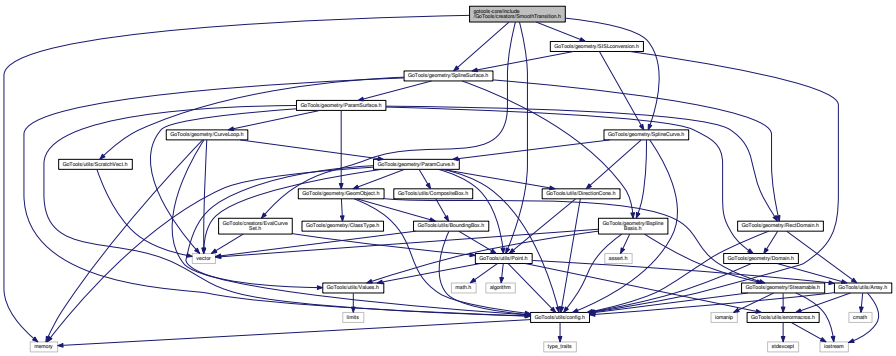
Namespaces

- Go

30.1888 gotools-core/include/GoTools/creators/SmoothTransition.h File Reference

```
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/creators/EvalCurveSet.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SISLconversion.h"
```

Include dependency graph for SmoothTransition.h:



Classes

- class Go::SmoothTransition

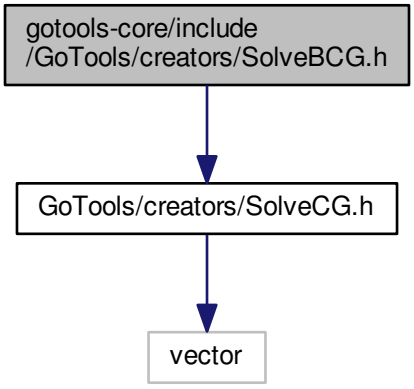
Namespaces

- Go

30.1889 gotools-core/include/GoTools/creators/SolveBCG.h File Reference

```
#include "GoTools/creators/SolveCG.h"
```

Include dependency graph for SolveBCG.h:



Classes

- class Go::SolveBCG

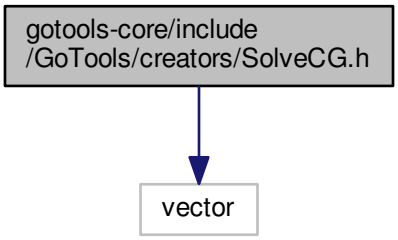
Namespaces

- Go

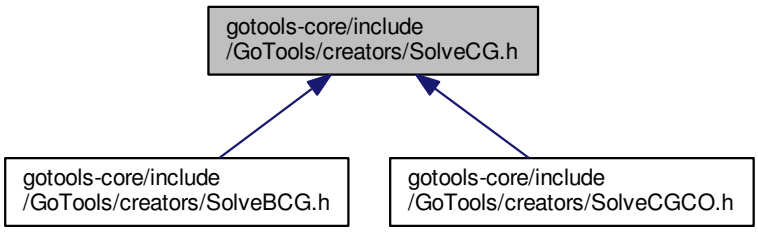
30.1890 gotools-core/include/GoTools/creators/SolveCG.h File Reference

```
#include <vector>
```

Include dependency graph for SolveCG.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::SolveCG

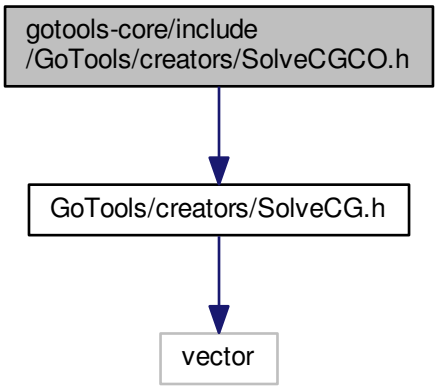
Namespaces

- Go

30.1891 gotools-core/include/GoTools/creators/SolveCGCO.h File Reference

```
#include "GoTools/creators/SolveCG.h"
```

Include dependency graph for SolveCGCO.h:



Classes

- class Go::SolveCGCO

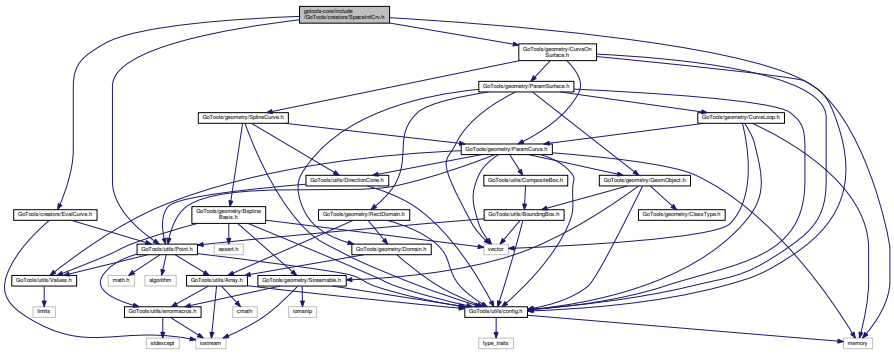
Namespaces

- Go

30.1892 gotools-core/include/GoTools/creators/SpaceIntCrv.h File Reference

```
#include "GoTools/creators/EvalCurve.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/utils/Point.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for SpaceIntCrv.h:



Classes

- class Go::SpaceIntCrv

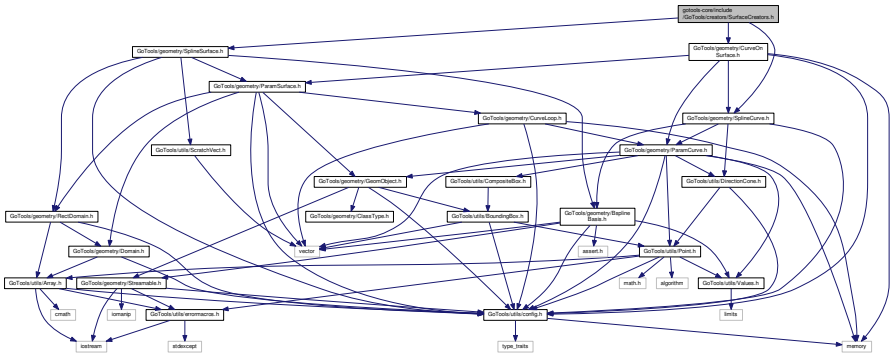
Namespaces

- Go

30.1893 gotools-core/include/GoTools/creators/SurfaceCreators.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/CurveOnSurface.h"
```

Include dependency graph for SurfaceCreators.h:



Namespaces

- Go
- Go::SurfaceCreators

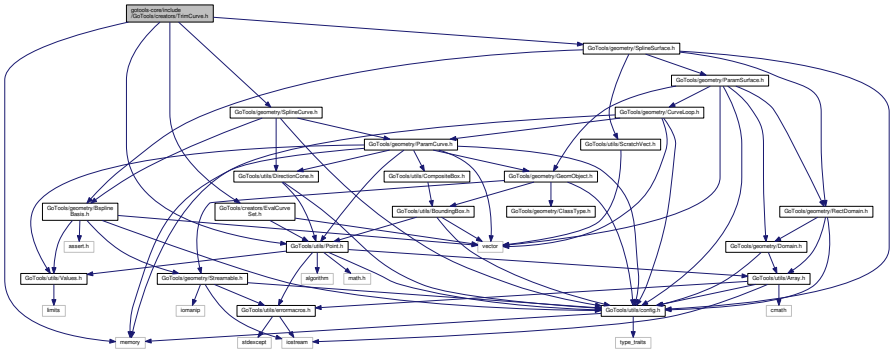
Functions

- shared_ptr< SplineSurface > Go::SurfaceCreators::createSmoothTransition (const std::vector< shared_ptr< const ParamSurface > > &surfs, const std::vector< shared_ptr< const CurveOnSurface > > &int_cvs, double dist_0, double dist_1, double epsge, std::vector< shared_ptr< SplineCurve > > &trim_crvs)
- shared_ptr< SplineSurface > Go::SurfaceCreators::mult1DSurfaces (const SplineSurface &sf1, const SplineSurface &sf2)
- shared_ptr< SplineSurface > Go::SurfaceCreators::mult1DBezierPatches (const SplineSurface &patch1, const SplineSurface &patch2)
- shared_ptr< Go::SplineSurface > Go::SurfaceCreators::mergeRationalParts (const Go::SplineSurface &nom_sf, const Go::SplineSurface &den_sf, bool weights_in_first=false)
- shared_ptr< Go::SplineSurface > Go::SurfaceCreators::insertParamDomain (const Go::SplineSurface &sf_1d)
- std::vector< shared_ptr< Go::SplineSurface > > Go::SurfaceCreators::separateRationalParts (const Go::SplineSurface &sf)

30.1894 gotools-core/include/GoTools/creators/TrimCurve.h File Reference

```
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/creators/EvalCurveSet.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
```

Include dependency graph for TrimCurve.h:



Classes

- class Go::TrimCurve

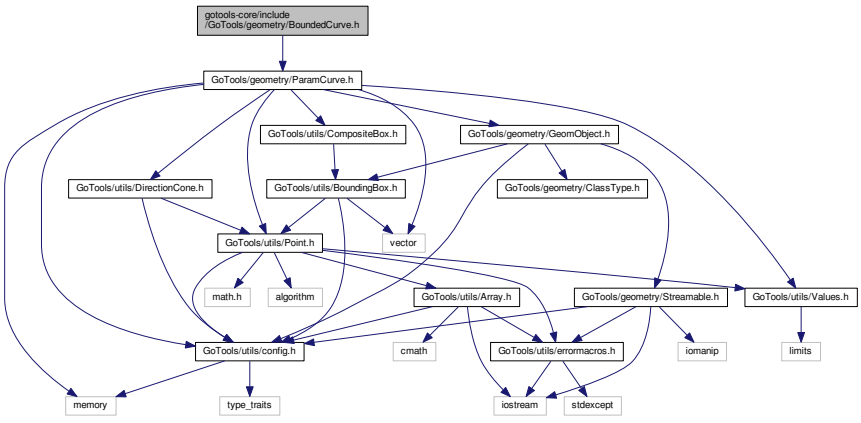
Namespaces

- Go

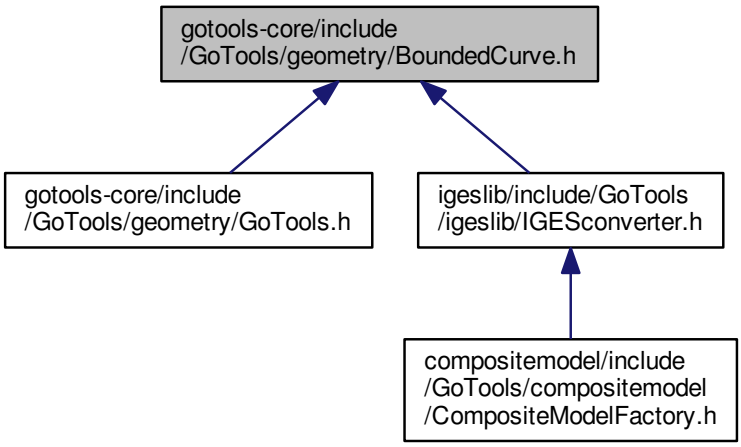
30.1895 gotools-core/include/GoTools/geometry/BoundedCurve.h File Reference

```
#include "GoTools/geometry/ParamCurve.h"
```

Include dependency graph for BoundedCurve.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BoundedCurve

  A bounded curve. Both parameter values and end points may be given to define the boundaries. Assuming that both points prefer parameter, or both points prefer points. Typically used to bound infinite curves, for instance lines.

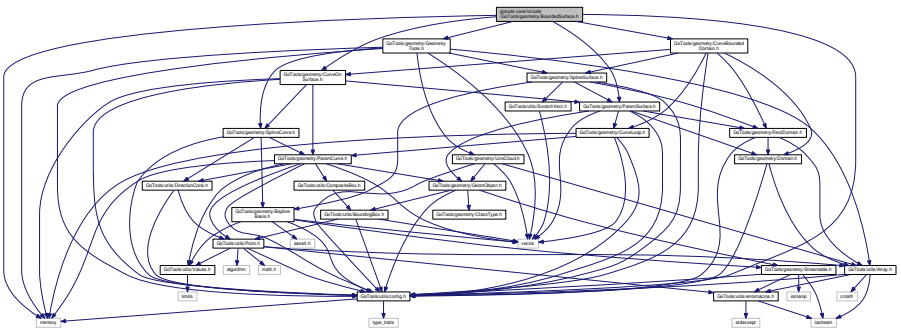
Namespaces

- Go

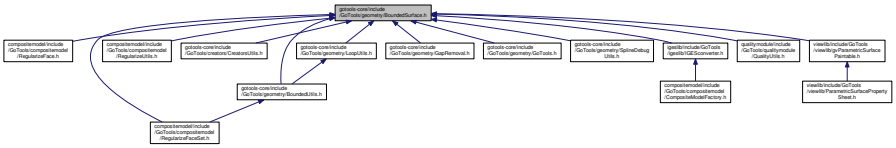
30.1896 gotools-core/include/GoTools/geometry/BoundedSurface.h File Reference

```
#include <memory>
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/geometry/CurveBoundedDomain.h"
#include "GoTools/geometry/GeometryTools.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for BoundedSurface.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BoundedSurface

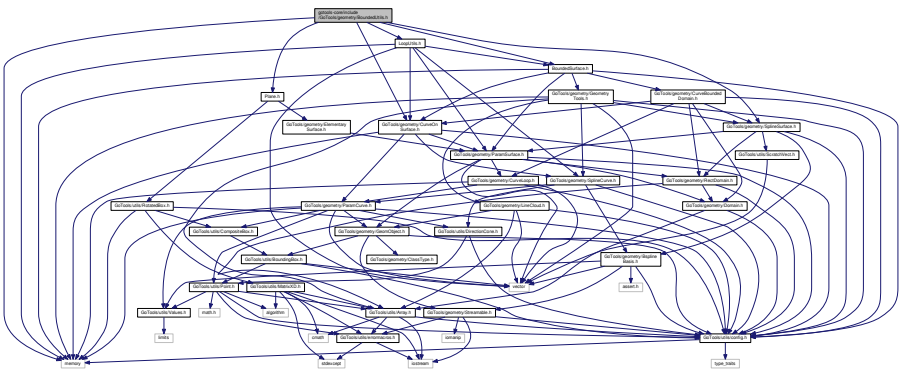
Namespaces

- Go

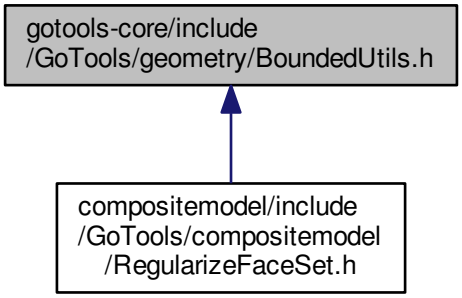
30.1897 gotools-core/include/GoTools/geometry/BoundedUtils.h File Reference

```
#include "BoundedSurface.h"
#include "SplineSurface.h"
#include "CurveOnSurface.h"
#include "LoopUtils.h"
#include "Plane.h"
#include <memory>
```

Include dependency graph for BoundedUtils.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- Go
- Go::BoundedUtils

Functions

- std::vector< shared_ptr< CurveOnSurface > > Go::BoundedUtils::intersectWithSurface (CurveOnSurface &curve, BoundedSurface &bounded_surf, double epsge)
- void Go::BoundedUtils::intersectWithSurfaces (std::vector< shared_ptr< CurveOnSurface > > &curves1, shared_ptr< BoundedSurface > &bd_sf1, std::vector< shared_ptr< CurveOnSurface > > &curves2, shared_ptr< BoundedSurface > &bd_sf2, double epsge)
- std::vector< shared_ptr< CurveOnSurface > > Go::BoundedUtils::getPlaneIntersections (const shared_ptr< ParamSurface > &surf, Point point, Point normal, double epsge, shared_ptr< BoundedSurface > &bounded_sf)
- std::vector< shared_ptr< CurveOnSurface > > Go::BoundedUtils::getCylinderIntersections (const shared_ptr< ParamSurface > &surf, Point point, Point axis, double radius, double epsge, shared_ptr< BoundedSurface > &bounded_sf)
- void Go::BoundedUtils::getSurfaceIntersections (const shared_ptr< ParamSurface > &surf1, const shared_ptr< ParamSurface > &surf2, double epsge, std::vector< shared_ptr< CurveOnSurface > > &int_cv1, shared_ptr< BoundedSurface > &bounded_sf1, std::vector< shared_ptr< CurveOnSurface > > &int_cv2, shared_ptr< BoundedSurface > &bounded_sf2)
- std::vector< shared_ptr< BoundedSurface > > Go::BoundedUtils::splitWithPlane (const shared_ptr< ParamSurface > &surf, Point point, Point normal, double epsge)
- std::vector< shared_ptr< BoundedSurface > > Go::BoundedUtils::splitBetweenParams (const shared_ptr< ParamSurface > &surf, Point parval1, Point parval2, double epsge)

  Split a parametric surface betweem specified parameter values.
- std::vector< shared_ptr< BoundedSurface > > Go::BoundedUtils::splitBetweenParPairs (const shared_ptr< ParamSurface > &surf, std::vector< std::pair< Point, Point > > parvals, double epsge)
- std::vector< shared_ptr< CurveOnSurface > > Go::BoundedUtils::getTrimCrvsParam (const shared_ptr< ParamSurface > &surf, Point parval1, Point parval2, double epsge, shared_ptr< BoundedSurface > &bounded_sf)

  Get the split curves between specified parameter values.

- std::vector< shared_ptr< CurveOnSurface > > Go::BoundedUtils::getTrimCrvsPcrv (const shared_ptr< ParamSurface > &surf, shared_ptr< ParamCurve > &pcurve, double epsge, shared_ptr< BoundedSurface > &bounded_sf)
- std::vector< shared_ptr< BoundedSurface > > Go::BoundedUtils::trimWithPlane (const shared_ptr< ParamSurface > &surf, Point point, Point normal, double epsge)
- std::vector< shared_ptr< BoundedSurface > > Go::BoundedUtils::trimSurfWithSurf (const shared_ptr< ParamSurface > &sf1, const shared_ptr< ParamSurface > &sf2, double epsge)
- std::vector< std::vector< shared_ptr< BoundedSurface > > > Go::BoundedUtils::trimSurfsWithSurfs (const std::vector< shared_ptr< ParamSurface > > &sfs1, const std::vector< shared_ptr< ParamSurface > > &sfs2, double epsge)
- BoundedSurface * Go::BoundedUtils::convertToBoundedSurface (const SplineSurface &surf, double space_epsilon)
- std::vector< std::vector< shared_ptr< CurveOnSurface > > > Go::BoundedUtils::getBoundaryLoops (const BoundedSurface &sf, std::vector< shared_ptr< CurveOnSurface > > &part_bnd_cvs, double eps, int last_split=-1)
- int Go::BoundedUtils::checkCurveCoincidence (shared_ptr< CurveOnSurface > cv1, shared_ptr< CurveOnSurface > cv2, double tol, bool same_orient)

  Help function for getBoundaryLoops.
- std::vector< shared_ptr< BoundedSurface > > Go::BoundedUtils::createTrimmedSurfs (std::vector< std::vector< shared_ptr< CurveOnSurface > > > &loops, shared_ptr< ParamSurface > under_sf, double epsgeo)
- std::vector< shared_ptr< BoundedSurface > > Go::BoundedUtils::splitWithTrimSegments (shared_ptr< BoundedSurface > surf, std::vector< shared_ptr< CurveOnSurface > > &bnd_cvs, double eps)
- std::vector< shared_ptr< BoundedSurface > > Go::BoundedUtils::subtractSfPart (shared_ptr< BoundedSurface > surf, std::vector< shared_ptr< CurveOnSurface > > &bnd_cvs, double eps)
- std::vector< shared_ptr< CurveOnSurface > > Go::BoundedUtils::intersectWithPlane (shared_ptr< ParamSurface > &surf, Point pnt, Point normal, double geom_tol)
- std::vector< shared_ptr< CurveOnSurface > > Go::BoundedUtils::intersectWithCylinder (shared_ptr< ParamSurface > &surf, Point pnt, Point vec, double radius, double geom_tol)
- void Go::BoundedUtils::getIntersectionCurve (shared_ptr< ParamSurface > &sf1, shared_ptr< ParamSurface > &sf2, std::vector< shared_ptr< CurveOnSurface > > &int_segments1, std::vector< shared_ptr< CurveOnSurface > > &int_segments2, double epsge)
- void Go::BoundedUtils::translateBoundedSurf (Point trans_vec, BoundedSurface &bd_sf, double deg_eps)
- void Go::BoundedUtils::rotateBoundedSurf (Point rot_axis, double alpha, BoundedSurface &bf_sf, double deg_eps)
- void Go::BoundedUtils::trimSurfaceKinks (const BoundedSurface &sf, double max_normal_angle, std::vector< double > &g1_disc_u, std::vector< double > &g1_disc_v, bool compute_g1_disc=true)
- int Go::BoundedUtils::checkAndFixLoopOrientation (shared_ptr< BoundedSurface > surf)
- shared_ptr< Go::SplineSurface > Go::BoundedUtils::makeTrimmedPlane (shared_ptr< Go::Plane > &plane, std::vector< shared_ptr< Go::ParamCurve > > &space_crvs)
- void Go::BoundedUtils::translatePlaneToCurves (shared_ptr< Go::Plane > &plane, std::vector< shared_ptr< Go::ParamCurve > > &space_crvs)
- void Go::BoundedUtils::fixInvalidBoundedSurface (shared_ptr< Go::BoundedSurface > &bd_sf, double max_tol_mult=1.0)

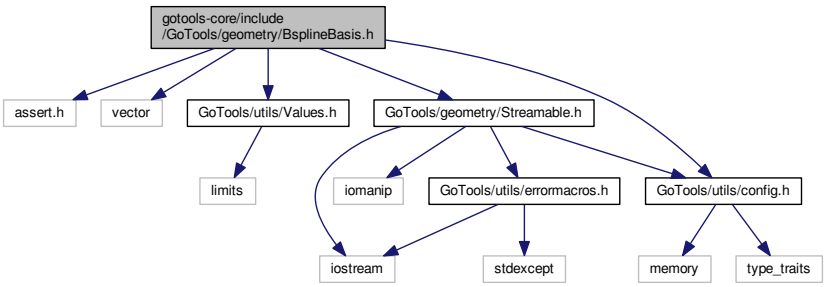
  Fix the boundary loops of a surface in case of inconsistencies.
- bool Go::BoundedUtils::loopIsDegenerate (std::vector< shared_ptr< CurveOnSurface > > &loop, double epsgeo)
- bool Go::BoundedUtils::createMissingParCvs (Go::BoundedSurface &bd_sf)
- bool Go::BoundedUtils::createMissingParCvs (std::vector< Go::CurveLoop > &bd_loops)

30.1898 gotools-core/include/GoTools/geometry/BsplineBasis.h File Reference

```
#include <assert.h>
```

```
#include <vector>
#include "GoTools/utils/Values.h"
#include "GoTools/geometry/Streamable.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for BsplineBasis.h:



This graph shows which files directly or indirectly include this file:

Classes

- class Go::BsplineBasis

Namespaces

- Go

Macros

- #define CHECK(object) (object)->check()

30.1898.1 Macro Definition Documentation

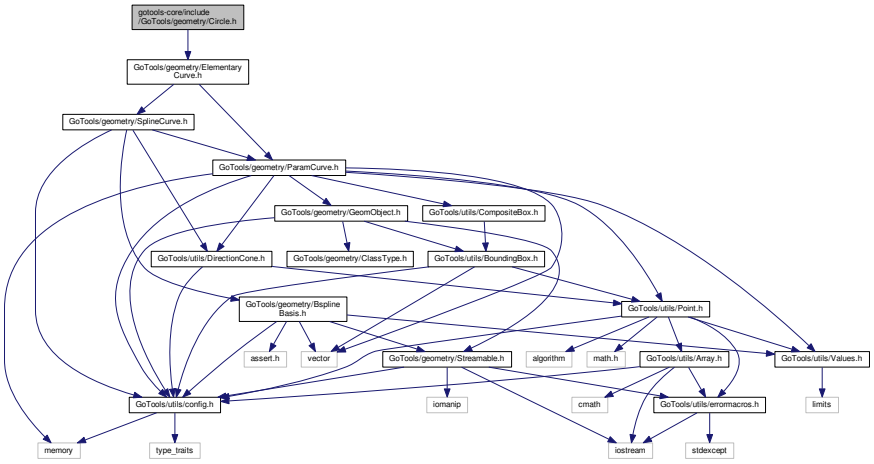
30.1898.1.1 #define CHECK(*object*) (object)->check()

Definition at line 52 of file BsplineBasis.h.

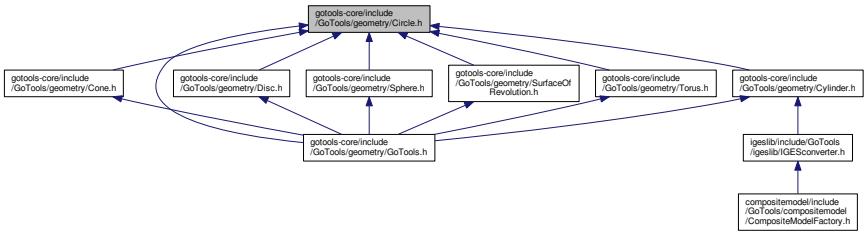
30.1899 gotools-core/include/GoTools/geometry/Circle.h File Reference

```
#include "GoTools/geometry/ElementaryCurve.h"
```

Include dependency graph for Circle.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Circle

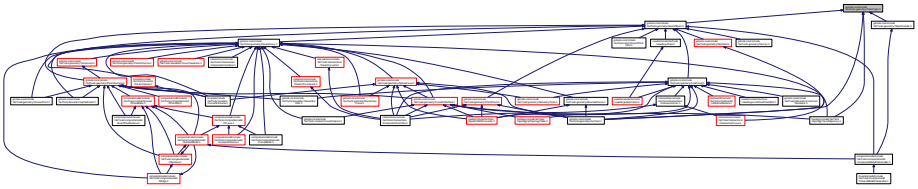
  Class that represents a circle. It is a subclass of ElementaryCurve and thus has a parametrization.

Namespaces

- Go

30.1900 gotools-core/include/GoTools/geometry/ClassType.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- Go

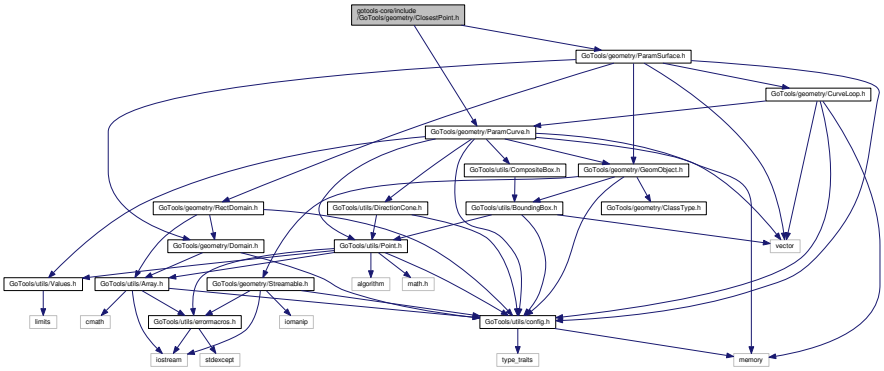
Enumerations

- enum Go::ClassType {
  Go::Class_Unknown = 0, Go::Class_SplineCurve = 100, Go::Class_CurveOnSurface = 110, Go::Class_↩
  CurveOnVolume = 111,
  Go::Class_Line = 120, Go::Class_Circle = 130, Go::Class_Ellipse = 140, Go::Class_BoundedCurve = 150,
  Go::Class_Hyperbola = 160, Go::Class_Parabola = 170, Go::Class_SplineSurface = 200, Go::Class_↩
  BoundedSurface = 210,
  Go::Class_SurfaceOnVolume = 211, Go::Class_GoBaryPolSurface = 220, Go::Class_GoHBSplineParam↩
  Surface = 230, Go::Class_CompositeSurface = 240,
  Go::Class_Plane = 250, Go::Class_Cylinder = 260, Go::Class_SurfaceOfLinearExtrusion = 261, Go::Class↩
  _Sphere = 270,
  Go::Class_Cone = 280, Go::Class_Torus = 290, Go::Class_SurfaceOfRevolution = 291, Go::Class_Disc =
  292,
  Go::Class_LRSplineSurface = 293, Go::Class_TSplineSurface = 294, Go::Class_Go3dsObject = 300, Go::↩
  Class_GoHeTriang = 310,
  Go::Class_GoSdTriang = 320, Go::Class_GoQuadMesh = 330, Go::Class_GoHybridMesh = 340, Go::↩
  Class_ParamTriang = 350,
  Go::Class_GoVrmlGeometry = 360, Go::Class_PointCloud = 400, Go::Class_LineCloud = 410, Go::Class↩
  _GoTriangleSets = 500,
  Go::Class_RectGrid = 510, Go::Class_SplineVolume = 700, Go::Class_BoundedVolume = 710, Go::Class↩
  _Parallelepiped = 720,
  Go::Class_SphereVolume = 721, Go::Class_CylinderVolume = 722, Go::Class_ConeVolume = 723, Go::↩
  Class_TorusVolume = 724,
  Go::Class_LRSplineVolume = 793 }

30.1901 gotools-core/include/GoTools/geometry/ClosestPoint.h File Reference

```
#include "GoTools/geometry/ParamCurve.h"
#include "GoTools/geometry/ParamSurface.h"
```

Include dependency graph for ClosestPoint.h:



Namespaces

- Go
- Go::ClosestPoint

  Namespace for computing closest points.

Enumerations

- enum Go::AlgorithmChoice { Go::GEOMETRICAL, Go::FUNCTIONAL }

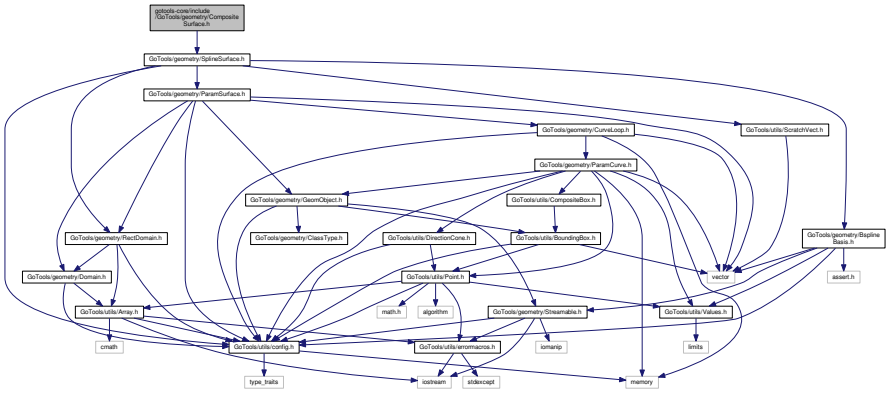
Functions

- void Go::ClosestPoint::closestPtCurves2D (ParamCurve ∗cv1, ParamCurve ∗cv2, double aepsge, double tmin1, double tmax1, double tmin2, double tmax2, double seed1, double seed2, int method, bool quick, double &par1, double &par2, double &dist, Point &ptc1, Point &ptc2, int &istat)
- void Go::ClosestPoint::closestPtCurves (const ParamCurve ∗cv1, const ParamCurve ∗cv2, double &par1, double &par2, double &dist, Point &ptc1, Point &ptc2)
- void Go::ClosestPoint::closestPtCurves (const ParamCurve ∗cv1, const ParamCurve ∗cv2, double tmin1, double tmax1, double tmin2, double tmax2, double seed1, double seed2, double &par1, double &par2, double &dist, Point &ptc1, Point &ptc2)
- void Go::ClosestPoint::closestPtCurveSurf (ParamCurve ∗pcurve, ParamSurface ∗psurf, double aepsge, double astart1, double aend1, RectDomain ∗domain, double anext1, double enext2[ ], double &cpos1, double gpos2[ ], double &dist, Point &pt_cv, Point &pt_su, bool second_order=false)
- void Go::ClosestPoint::closestPtCurveSurf (ParamCurve ∗pcurve, ParamSurface ∗psurf, double aepsge, double astart1, double estart2[ ], double aend1, double eend2[ ], double anext1, double enext2[ ], double &cpos1, double gpos2[ ], double &dist, Point &pt_cv, Point &pt_su, int &istat, bool second_order=false)
- void Go::ClosestPoint::closestPtSurfSurfPlane (const std::vector< Point > &epoint, const std::vector< Point > &epnt1, const std::vector< Point > &epnt2, const Point &epar1, const Point &epar2, const ParamSurface ∗psurf1, const ParamSurface ∗psurf2, double aepsge, std::vector< Point > &gpnt1, std::vector< Point > &gpnt2, Point &gpar1, Point &gpar2, int &jstat, AlgorithmChoice algo=FUNCTIONAL)
- void Go::ClosestPoint::closestPtSurfSurfPlaneGeometrical (const std::vector< Point > &epoint, const std↩ ::vector< Point > &epnt1, const std::vector< Point > &epnt2, const Point &epar1, const Point &epar2, const ParamSurface ∗psurf1, const ParamSurface ∗psurf2, double aepsge, std::vector< Point > &gpnt1, std↩ ::vector< Point > &gpnt2, Point &gpar1, Point &gpar2, int &jstat)
- void Go::ClosestPoint::closestPtSurfSurfPlaneFunctional (const std::vector< Point > &epoint, const std↩ ::vector< Point > &epnt1, const std::vector< Point > &epnt2, const Point &epar1, const Point &epar2, const ParamSurface ∗psurf1, const ParamSurface ∗psurf2, double aepsge, std::vector< Point > &gpnt1, std↩ ::vector< Point > &gpnt2, Point &gpar1, Point &gpar2, int &jstat)

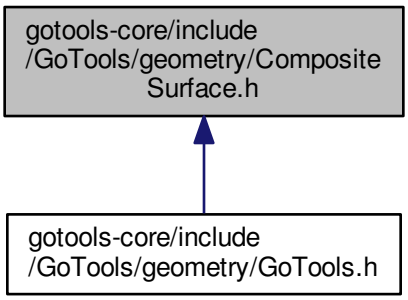
30.1902 gotools-core/include/GoTools/geometry/CompositeSurface.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
```

Include dependency graph for CompositeSurface.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::CompositeSurface

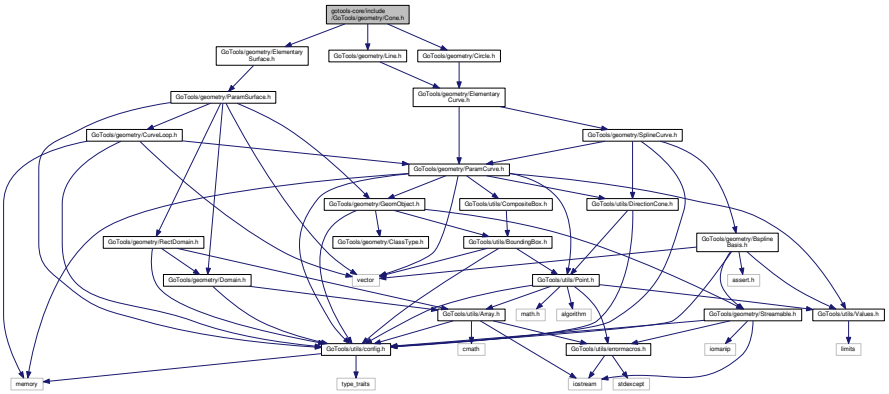
Namespaces

- Go

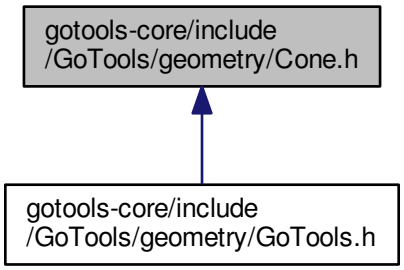
30.1903 gotools-core/include/GoTools/geometry/Cone.h File Reference

```
#include "GoTools/geometry/ElementarySurface.h"
#include "GoTools/geometry/Line.h"
#include "GoTools/geometry/Circle.h"
```

Include dependency graph for Cone.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Cone

  Class that represents a cone. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

Namespaces

- Go

30.1904 gotools-core/include/GoTools/geometry/copyright.h File Reference

Macros

- #define _COPYRIGHT_H

30.1904.1 Macro Definition Documentation

30.1904.1.1 #define _COPYRIGHT_H

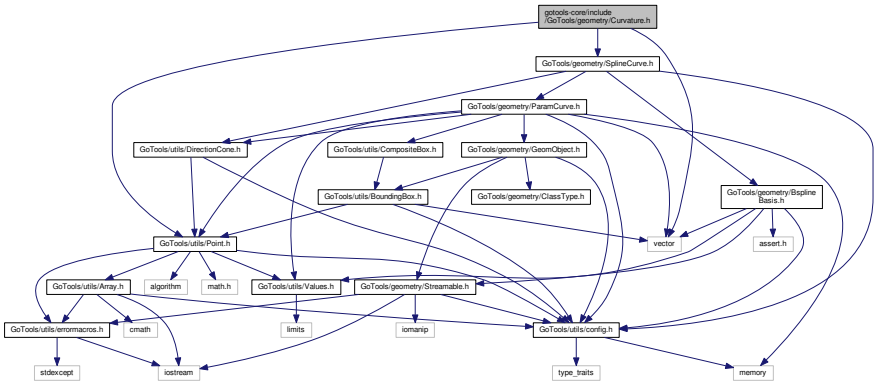
Definition at line 45 of file copyright.h.

30.1905 parametrization/include/GoTools/parametrization/copyright.h File Reference

30.1906 gotools-core/include/GoTools/geometry/Curvature.h File Reference

```
#include "GoTools/utils/Point.h"
#include "GoTools/geometry/SplineCurve.h"
#include <vector>
```

Include dependency graph for Curvature.h:



Namespaces

- Go
- Go::Curvature

  Curvature analysis related to curves.

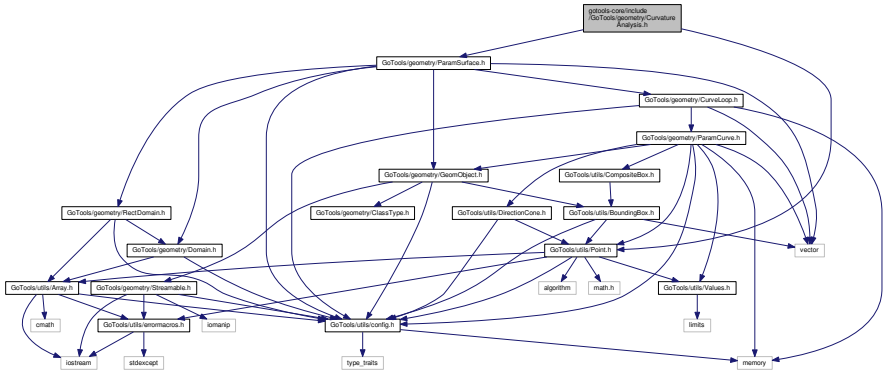
Functions

- void Go::Curvature::curvatureRadiusPoints (const SplineCurve &curve, double curveRad, std::vector< double > &pos)
- void Go::Curvature::minimalCurvatureRadius (const SplineCurve &curve, double &mincurv, double &pos)

30.1907 gotools-core/include/GoTools/geometry/CurvatureAnalysis.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for CurvatureAnalysis.h:



Namespaces

- Go
- Go::CurvatureAnalysis

Functions

- void Go::CurvatureAnalysis::computeFirstFundamentalForm (const ParamSurface &sf, double u, double v, int derivs, std::vector< double > &form)
- void Go::CurvatureAnalysis::computeSecondFundamentalForm (const ParamSurface &sf, double u, double v, double form1[3], double form2[3])
- void Go::CurvatureAnalysis::curvatures (const ParamSurface &sf, double u, double v, double &K, double &H)
- void Go::CurvatureAnalysis::principalCurvatures (const ParamSurface &sf, double u, double v, double &k1, Point &d1, double &k2, Point &d2)
- void Go::CurvatureAnalysis::minimalCurvatureRadius (const ParamSurface &sf, double tolerance, double &mincurv, double &pos_u, double &pos_v, double degenerate_eps, double curv_tol=1.0e-3)
- void Go::CurvatureAnalysis::evaluateMinCurvatureRadius (const ParamSurface &sf, double start_u, double end_u, double start_v, double end_v, double tolerance, std::vector< double > &param_u, std::vector< double > &param_v, std::vector< std::vector< double > > &curvs, double &mincurv, double &minpos_u, double &minpos_v, bool initialize)

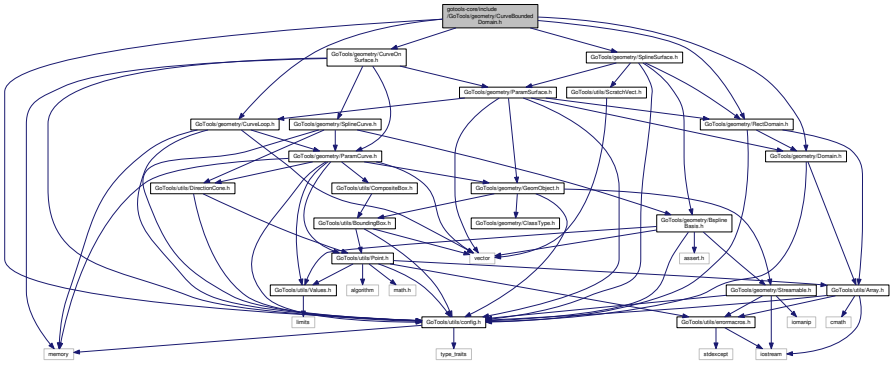
30.1907.1 Detailed Description

Curvature analysis related to surfaces. Functions computing fundamental forms and curvature.

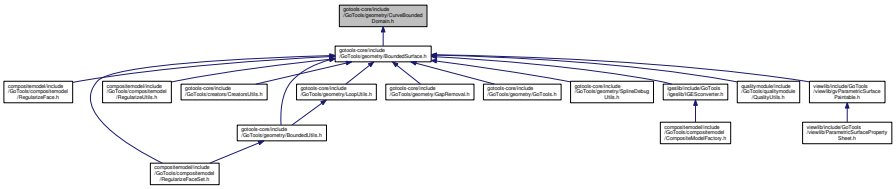
30.1908 gotools-core/include/GoTools/geometry/CurveBoundedDomain.h File Reference

```
#include "GoTools/geometry/Domain.h"
#include "GoTools/geometry/RectDomain.h"
#include "GoTools/geometry/CurveLoop.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for CurveBoundedDomain.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::CurveBoundedDomain

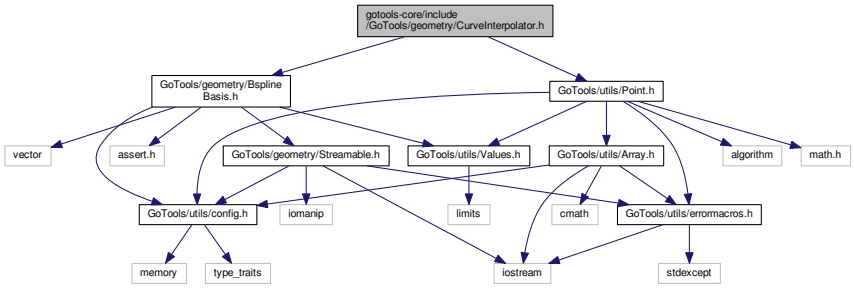
Namespaces

- Go

30.1909 gotools-core/include/GoTools/geometry/CurveInterpolator.h File Reference

```
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for CurveInterpolator.h:



Namespaces

- Go
- Go::CurveInterpolator

  Curve interpolation functionality not adapted to the Interpolator class.

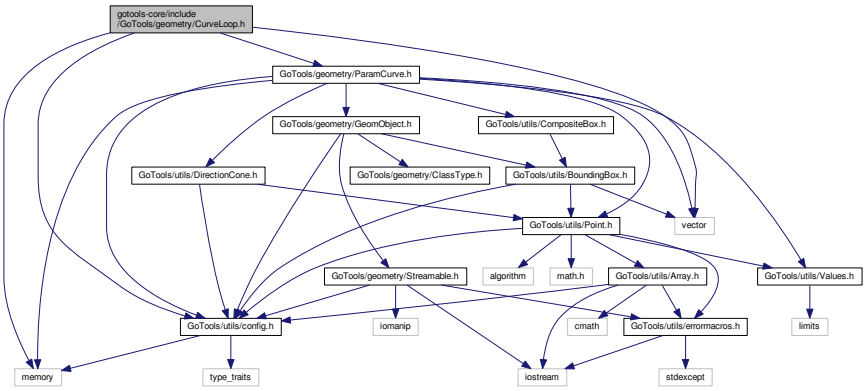
Functions

- SplineCurve * Go::CurveInterpolator::regularInterpolation (const BsplineBasis &basis, std::vector< double > &par, std::vector< double > &points, int dimension, bool rational, std::vector< double > &weights)

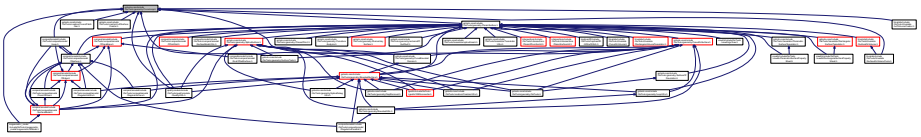
30.1910 gotools-core/include/GoTools/geometry/CurveLoop.h File Reference

```
#include <memory>
#include <vector>
#include "GoTools/utils/config.h"
#include "GoTools/geometry/ParamCurve.h"
```

Include dependency graph for CurveLoop.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::CurveLoop

Namespaces

- Go

Functions

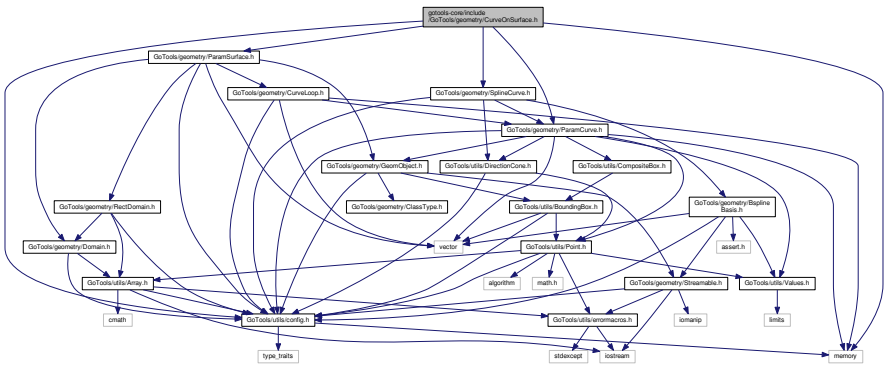
- template<class PtrToCurveType >
  double Go::computeLoopGap (const std::vector< PtrToCurveType > &curves)

  Computes the largest gap in the loop specified by the vector of curves.

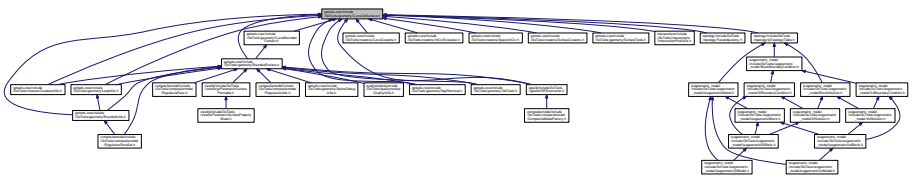
30.1911 gotools-core/include/GoTools/geometry/CurveOnSurface.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
#include <memory>
#include "GoTools/geometry/ParamCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for CurveOnSurface.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::CurveOnSurface

  A curve living on a parametric surface. It either has got information about the curve in geometry space and in the parameter domain of the surface or the ability to compute the other representation given one. The curve may have information on whether it is a constant parameter or boundary curve on the surface.

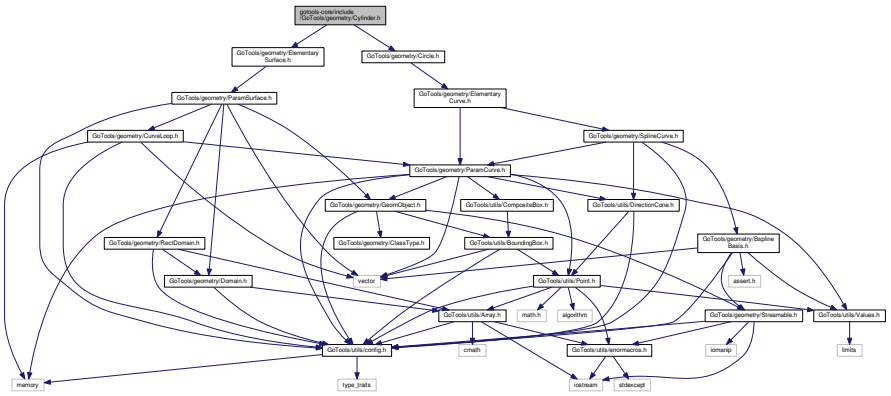
Namespaces

- Go

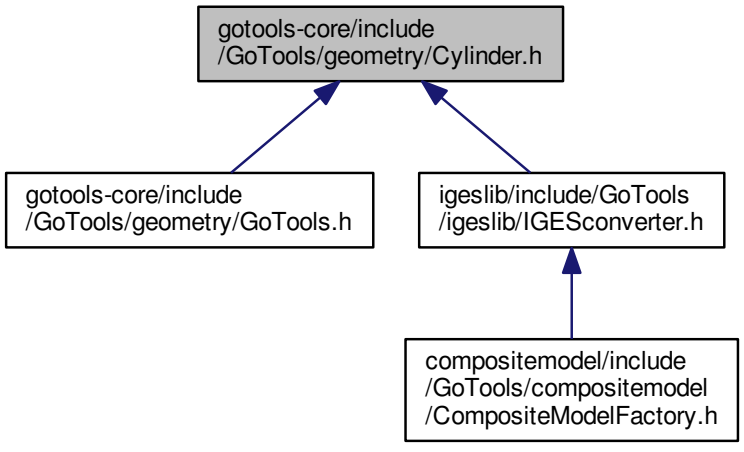
30.1912 gotools-core/include/GoTools/geometry/Cylinder.h File Reference

```
#include "GoTools/geometry/ElementarySurface.h"
#include "GoTools/geometry/Circle.h"
```

Include dependency graph for Cylinder.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Cylinder

  Class that represents a cylinder. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

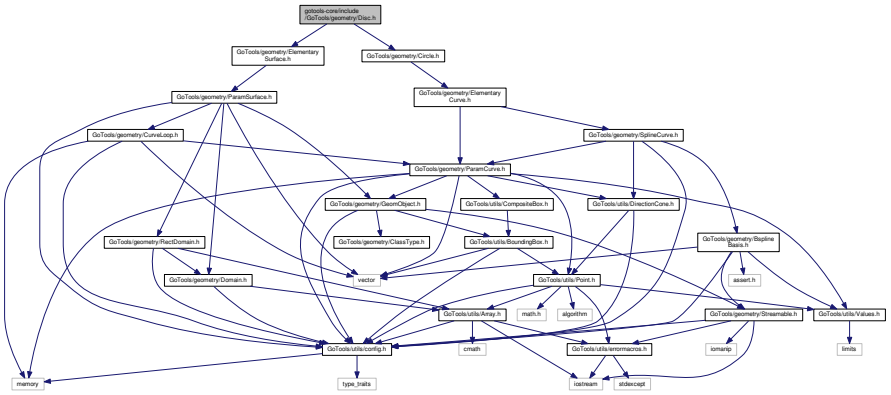
Namespaces

- Go

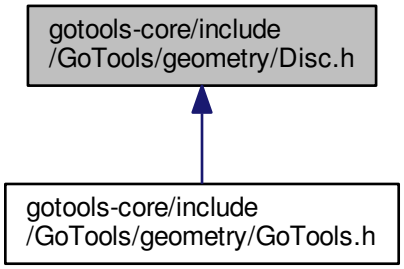
30.1913 gotools-core/include/GoTools/geometry/Disc.h File Reference

```
#include "GoTools/geometry/ElementarySurface.h"
#include "GoTools/geometry/Circle.h"
```

Include dependency graph for Disc.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Disc

  Class that represents a circular disc. It is a subclass of ElementarySurface, and has a natural parametrization by polar coordinates in terms of a radius r and angle v: ***p****(r, v) =* ***C*** *+ r((cos v)* ***x*** *+ (sin v)* ***y****), where* ***C*** *is the centre position vector and* ***x*** *and* ***y*** *are the (local) axes. The parametrization is bounded by:* $0 \leq r \leq R$ *and* $0 \leq v \leq 2\pi$*, where R is the disc radius. The dimension is 2 or 3.*

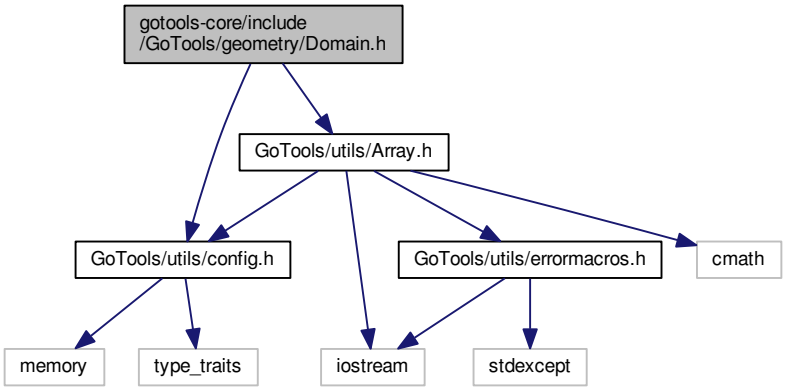
Namespaces

- Go

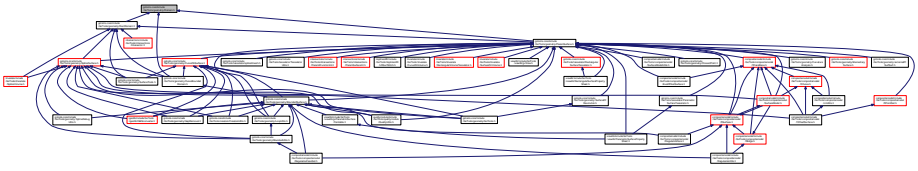
30.1914 gotools-core/include/GoTools/geometry/Domain.h File Reference

```
#include "GoTools/utils/config.h"
#include "GoTools/utils/Array.h"
```

Include dependency graph for Domain.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Domain

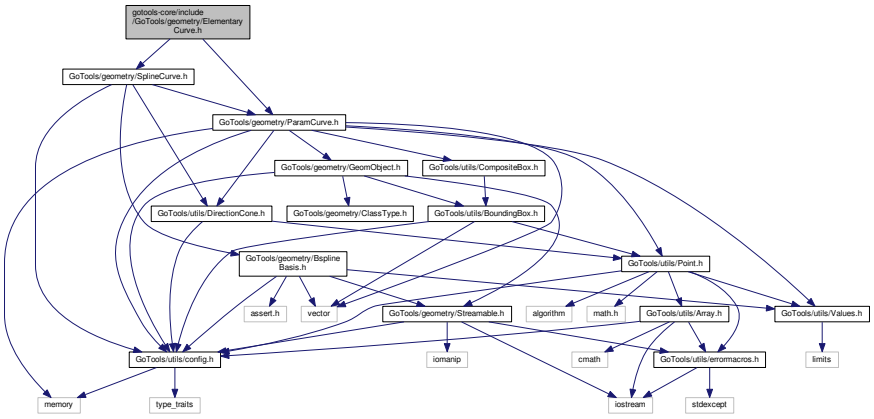
Namespaces

- Go

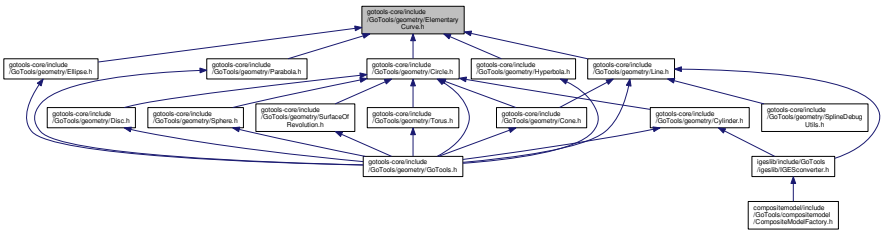
30.1915 gotools-core/include/GoTools/geometry/ElementaryCurve.h File Reference

```
#include "GoTools/geometry/ParamCurve.h"
#include "GoTools/geometry/SplineCurve.h"
```

Include dependency graph for ElementaryCurve.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ElementaryCurve

  ElementaryCurve is a base class for elementary curves like lines and circles. Such curves have natural parametrizations and ElementaryCurve is therefore a subclass of ParamCurve.

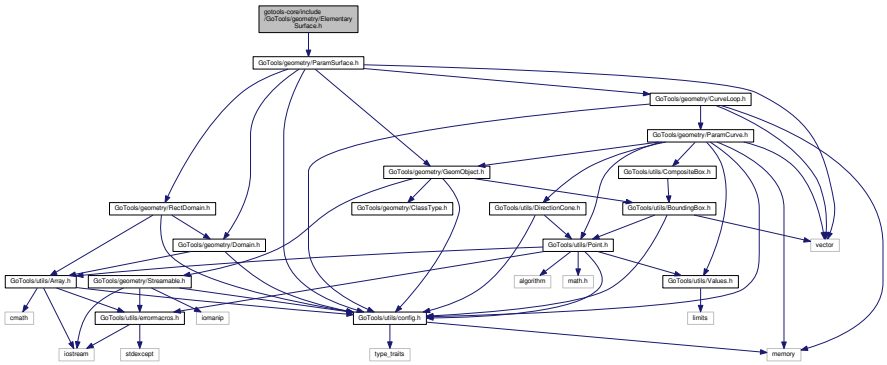
Namespaces

- Go

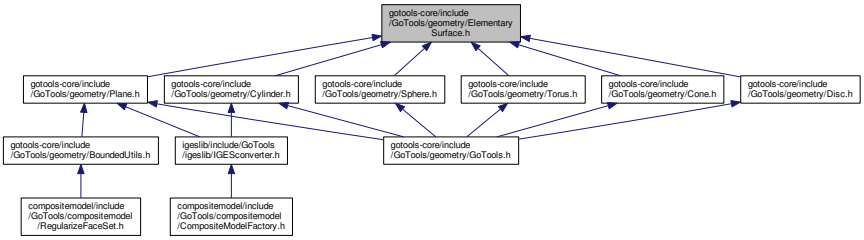
30.1916 gotools-core/include/GoTools/geometry/ElementarySurface.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
```

Include dependency graph for ElementarySurface.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ElementarySurface

  ElementarySurface is a base class for elementary surfaces like planes and cylinders. Such surfaces have natural parametrizations and ElementartSurface is therefore a subclass of ParamSurface. These surfaces are non-self-intersecting.

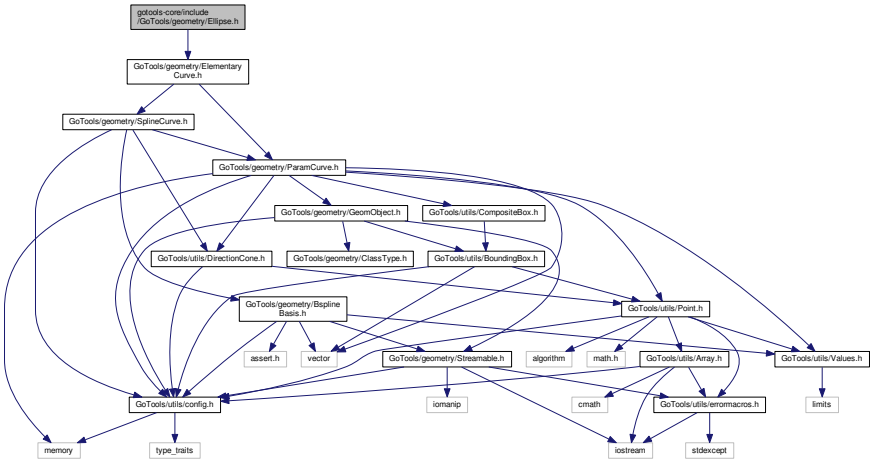
Namespaces

- Go

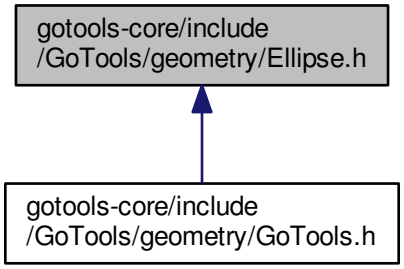
30.1917 gotools-core/include/GoTools/geometry/Ellipse.h File Reference

```
#include "GoTools/geometry/ElementaryCurve.h"
```

Include dependency graph for Ellipse.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Ellipse

  Class that represents an ellipse. It is a subclass of ElementaryCurve and thus has a parametrization.

Namespaces

- Go

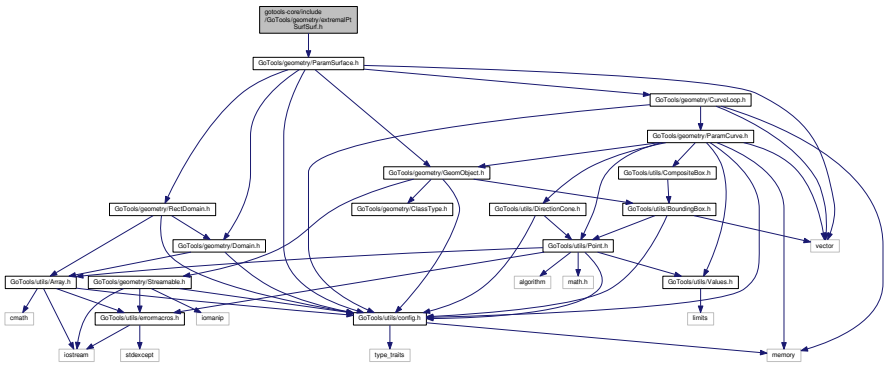
30.1918 gotools-core/include/GoTools/geometry/examples_core_doxymain.h File Reference

30.1919 gotools-core/include/GoTools/geometry/examples_doxymain.h File Reference

30.1920 gotools-core/include/GoTools/geometry/extremalPtSurfSurf.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
```

Include dependency graph for extremalPtSurfSurf.h:



Namespaces

- Go

Functions

- int Go::extremalPtSurfSurf (ParamSurface *psurf1, ParamSurface *psurf2, int constraints[2], double constraints_par[2], double limit[ ], double enext[ ], double gpos[ ], double angle_tol)

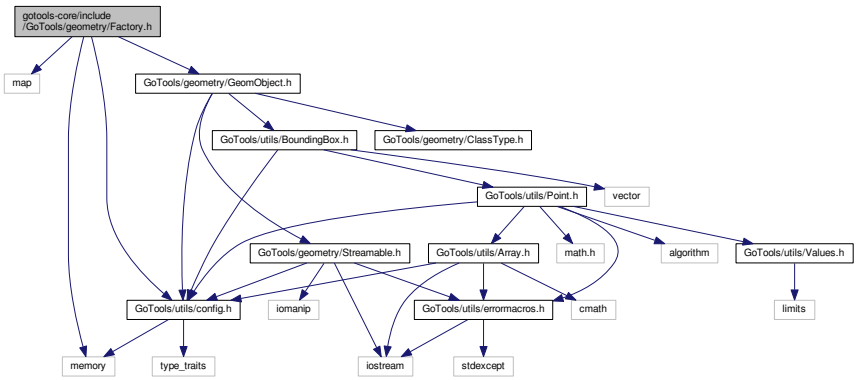
30.1920.1 Detailed Description

Declaration file for an intersection function operating on objects of class ParamSurface belonging to geometry. Ported from the sisl function shsing_ext.

30.1921 gotools-core/include/GoTools/geometry/Factory.h File Reference

```
#include <map>
#include <memory>
#include "GoTools/geometry/GeomObject.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for Factory.h:



Classes

- class Go::Creator
- class Go::ConcreteCreator< T >
- class Go::Factory
- class Go::Registrator< T >

Namespaces

- Go

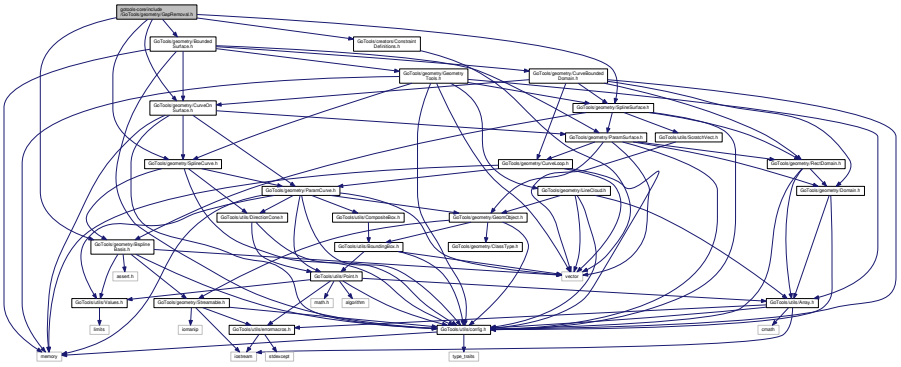
Functions

- template<class T >
  void Go::Register ()

30.1922 gotools-core/include/GoTools/geometry/GapRemoval.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/geometry/BoundedSurface.h"
#include "GoTools/creators/ConstraintDefinitions.h"
```

Include dependency graph for GapRemoval.h:



Namespaces

- Go
- Go::GapRemoval

  Functionality for removal of gaps between two adjacent surfaces of various types.

Functions

- void Go::GapRemoval::removeGapSpline (shared_ptr< SplineSurface > &srf1, shared_ptr< CurveOn↩ Surface > &bd_cv1, double start1, double end1, shared_ptr< SplineSurface > &srf2, shared_ptr< Curve↩ OnSurface > &bd_cv2, double start2, double end2, Point vertex1, Point vertex2, double epsge, bool *same↩ _orientation=NULL)
- double Go::GapRemoval::removeGapTrim (shared_ptr< CurveOnSurface > &bd_cv1, double start1, double end1, shared_ptr< CurveOnSurface > &bd_cv2, double start2, double end2, Point vertex1, Point vertex2, double epsge)
- bool Go::GapRemoval::removeGapSplineTrim (shared_ptr< SplineSurface > &srf1, std::vector< shared_↩ ptr< CurveOnSurface > > &bd_cv1, std::vector< double > start1, std::vector< double > end1, std::vector< shared_ptr< CurveOnSurface > > &bd_cv2, std::vector< double > start2, std::vector< double > end2, Point vertex1, Point vertex2, double epsge)
- void Go::GapRemoval::modifySplineSf (shared_ptr< ParamSurface > &srf1, std::vector< shared_ptr< CurveOnSurface > > &bd_cv1, std::vector< double > start1, std::vector< double > end1, shared_ptr< ParamSurface > &srf2, std::vector< shared_ptr< CurveOnSurface > > &bd_cv2, std::vector< double > start2, std::vector< double > end2, double epsge)
- void Go::GapRemoval::modifySplines (shared_ptr< ParamSurface > &srf1, std::vector< shared_ptr< CurveOnSurface > > &bd_cv1, std::vector< double > &start1, std::vector< double > &end1, shared_ptr< ParamSurface > &srf2, std::vector< shared_ptr< CurveOnSurface > > &bd_cv2, std::vector< double > &start2, std::vector< double > &end2, std::vector< Point > &vertex, double epsge)
- void Go::GapRemoval::removeGapSpline2 (std::vector< shared_ptr< CurveOnSurface > > &bd_cv1, std↩ ::vector< double > &start1, std::vector< double > &end1, std::vector< shared_ptr< CurveOnSurface > > &bd_cv2, std::vector< double > &start2, std::vector< double > &end2, std::vector< Point > &vertex, double epsge)
- std::vector< shared_ptr< sideConstraintSet > > Go::GapRemoval::getCoefConstraints (shared_ptr< SplineCurve > &crv1, int idx1, shared_ptr< SplineCurve > &crv2, int idx2, double tol)
- shared_ptr< SplineCurve > Go::GapRemoval::replaceCurvePiece (shared_ptr< SplineCurve > crv, shared_ptr< SplineCurve > sub_crv, double par1, int cont1, double par2, int cont2)
- shared_ptr< SplineSurface > Go::GapRemoval::getSplineAndBd (shared_ptr< ParamSurface > psurf, std↩ ::vector< shared_ptr< CurveOnSurface > > &bd_crvs)

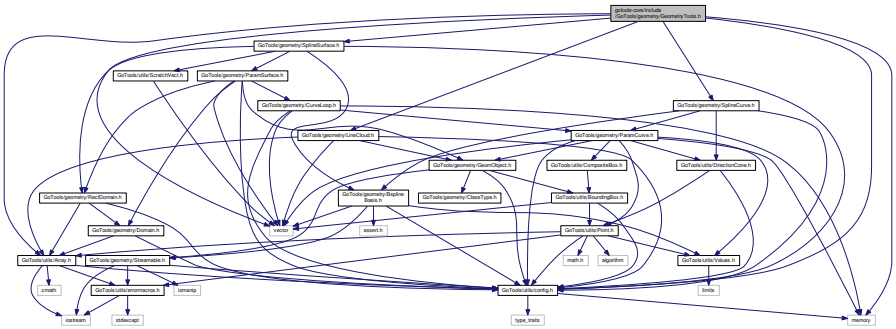
- void Go::GapRemoval::getBoundarySamples (std::vector< shared_ptr< CurveOnSurface > > &all_bd, std::vector< shared_ptr< CurveOnSurface > > &bd_cvs, std::vector< double > &pts, std::vector< double > &pars, std::vector< int > &bd_idx, double epsge)
- bool Go::GapRemoval::modifyAtVertex (shared_ptr< SplineSurface > srf, Point face_param, Point vertex, double epsge)
- void Go::GapRemoval::checkBoundaryDist (shared_ptr< CurveOnSurface > bd1, shared_ptr< CurveOnSurface > bd2, double start1, double end1, double start2, double end2, int nmb_sample, double &mdist1, double &mdist2)

30.1923 gotools-core/include/GoTools/geometry/geometry_doxymain.h File Reference

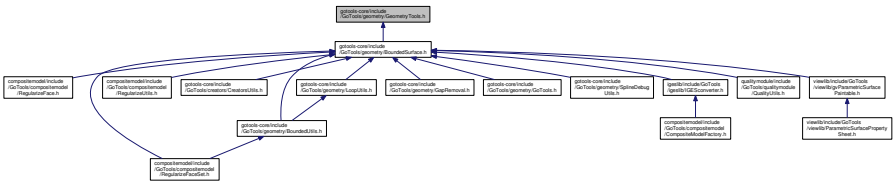
30.1924 gotools-core/include/GoTools/geometry/GeometryTools.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/LineCloud.h"
#include "GoTools/utils/Array.h"
#include <memory>
#include <vector>
#include "GoTools/utils/config.h"
```

Include dependency graph for GeometryTools.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- Go
- Go::GeometryTools

Functions

- int GO_API Go::GeometryTools::analyzePeriodicity (const SplineCurve &cv, double knot_tol=1e-12)
- int GO_API Go::GeometryTools::analyzePeriodicity (const SplineSurface &sf, int direction, double knot_↩ tol=1e-12)
- int GO_API Go::GeometryTools::analyzePeriodicity (const BsplineBasis &basis, double knot_tol=1e-12)
- int GO_API Go::GeometryTools::analyzePeriodicityDerivs (const ParamCurve &cv, int max_derivs, double tol=1e-14)
- int GO_API Go::GeometryTools::analyzePeriodicityDerivs (const SplineSurface &sf, int direction, int max_↩ derivs, double tol=1e-14)
- shared_ptr< SplineCurve > GO_API Go::GeometryTools::curveSum (const SplineCurve &crv1, double fac1, const SplineCurve &crv2, double fac2, double num_tol=1e-05)
- shared_ptr< SplineSurface > GO_API Go::GeometryTools::surfaceSum (const SplineSurface &sf1, double fac1, const SplineSurface &sf2, double fac2, double num_tol=1e-05)
- void GO_API Go::GeometryTools::estimateSurfaceSize (const ParamSurface &srf, double &length_u, double &length_v, double *area=NULL)
- void GO_API Go::GeometryTools::estimateIsoCurveLength (const SplineSurface &srf, bool dir_u, double par, double &length)
- bool GO_API Go::GeometryTools::degenerateToCurve (const SplineSurface &srf, bool dir_u, double tol)
- void GO_API Go::GeometryTools::makeBdDegenerate (SplineSurface &srf, int bd_idx)

  Make a specified surface boundary exactly degenerate.
- void GO_API Go::GeometryTools::makeUnionKnots (std::vector< BsplineBasis > &bbasis, double tol, std↩ ::vector< double > &union_knots)

  Compute the union of a set of knot vectors.
- void GO_API Go::GeometryTools::makeUnionKnots (std::vector< std::vector< double > > &knots, double tol, std::vector< double > &union_knots)
- bool GO_API Go::GeometryTools::checkConstantCoef (SplineCurve &cv, int idx, double val, double max_dist, double tol)
- void GO_API Go::GeometryTools::setSfBdCoefToConst (SplineSurface &srf, int bd_idx, int idx_d, double val, double deg_tol)
- void GO_API Go::GeometryTools::findDominant (const SplineSurface &surface, Vector3D &dominant_u, Vector3D &dominant_v)
- void GO_API Go::GeometryTools::getGnJoints (const ParamCurve &curve, const std::vector< double > &cont, std::vector< double > &gn_joints)
- void GO_API Go::GeometryTools::getGnJoints (const CurveLoop &loop, const std::vector< double > &cont, std::vector< std::vector< double > > &gn_joints)
- bool GO_API Go::GeometryTools::isCoincident (const ParamCurve &cv1, const ParamCurve &cv2, double epsge)
- bool GO_API Go::GeometryTools::negativeProj (const SplineSurface &surface, const Array< Vector3D, 2 > &refvector, const double eps=0.0)
- shared_ptr< ParamCurve > GO_API Go::GeometryTools::projectCurve (shared_ptr< ParamCurve > incurve, const Point &normal, bool planar)
- shared_ptr< SplineCurve > GO_API Go::GeometryTools::projectCurve (const SplineCurve &incurve, const Point &normal, bool planar)
- shared_ptr< SplineCurve > GO_API Go::GeometryTools::representSurfaceAsCurve (const SplineSurface &surface, int cv_dir)
- shared_ptr< SplineSurface > GO_API Go::GeometryTools::representCurveAsSurface (const SplineCurve &curve, int cv_dir, const BsplineBasis &other_bas, bool rational)
- std::vector< double > GO_API Go::GeometryTools::getRotationMatrix (const Point &unit_axis_dir, double alpha)
- void GO_API Go::GeometryTools::rotateSplineSurf (Point rot_axis, double alpha, SplineSurface &sf)
- void GO_API Go::GeometryTools::rotateSplineCurve (Point rot_axis, double alpha, SplineCurve &cv)
- void GO_API Go::GeometryTools::rotateLineCloud (Point rot_axis, double alpha, LineCloud &lc)
- void GO_API Go::GeometryTools::rotatePoint (Point rot_axis, double alpha, double *space_pt)
- void GO_API Go::GeometryTools::rotatePoint (Point rot_axis, double alpha, Point &space_pt)

- void GO_API Go::GeometryTools::splitCurveIntoSegments (const SplineCurve &cv, std::vector< SplineCurve > &seg)

  Split a spline curve into Bezier segments.
- std::vector< shared_ptr< SplineSurface > > GO_API Go::GeometryTools::splitInKinks (const SplineSurface &sf, const std::vector< double > &u_kinks, const std::vector< double > &v_kinks)

  Extract sub patches from the surface given by input parameters.
- void GO_API Go::GeometryTools::splitSurfaceIntoPatches (const SplineSurface &sf, std::vector< SplineSurface > &pat)

  Splits a spline surface into Bezier patches.
- void GO_API Go::GeometryTools::surfaceKinks (const SplineSurface &sf, double max_normal_angle, std::vector< double > &g1_disc_u, std::vector< double > &g1_disc_v, bool compute_g1_disc=true)
- void GO_API Go::GeometryTools::curveKinks (const SplineCurve &cv, double tol, double ang_tol, std::vector< double > &c1_disconts, std::vector< double > &g1_disconts)

  Find parameter values where a curve is G1- or C1-discontinuous.
- void GO_API Go::GeometryTools::translateSplineSurf (const Point &trans_vec, SplineSurface &sf)

  Translate the given SplineSurface by trans_vec.
- void GO_API Go::GeometryTools::translateSplineCurve (const Point &trans_vec, SplineCurve &cv)

  Translate the given SplineCurve by trans_vec.
- void GO_API Go::GeometryTools::translateLineCloud (const Point &trans_vec, LineCloud &lc)

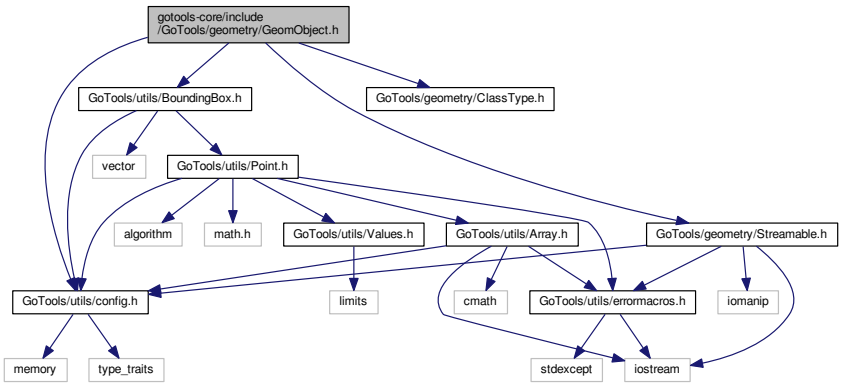
  Translate the given LineCloud by trans_vec.
- void GO_API Go::GeometryTools::averageBoundaryCoefs (shared_ptr< SplineSurface > &srf1, int bd1, bool keep_first, shared_ptr< SplineSurface > &srf2, int bd2, bool keep_second, bool found_corner1, Point corner1, bool found_corner2, Point corner2, bool opposite)
- void GO_API Go::GeometryTools::unifyCurveSplineSpace (std::vector< shared_ptr< SplineCurve > > &curves, double tol)
- void GO_API Go::GeometryTools::unifySurfaceSplineSpace (std::vector< shared_ptr< SplineSurface > > &surfaces, double tol, int dir=0)
- void GO_API Go::GeometryTools::unifySurfaceSplineSpaceOneDir (std::vector< shared_ptr< SplineSurface > > &surfaces, double tol, bool unify_u_dir)
- shared_ptr< SplineSurface > GO_API Go::GeometryTools::joinPatches (const std::vector< shared_ptr< SplineSurface > > &patches, const SplineSurface &spline_space)
- void GO_API Go::GeometryTools::insertKnotsEvenly (BsplineBasis &basis, int num_knots)
- void GO_API Go::GeometryTools::insertKnotsEvenly (BsplineBasis &basis, double tmin, double tmax, int num_knots, double knot_diff_tol=1e-05)
- double GO_API Go::GeometryTools::getKnotAtLargestInterval (const BsplineBasis &basis)
- std::pair< double, double > GO_API Go::GeometryTools::getLargestParameterInterval (const BsplineBasis &basis)
- void Go::GeometryTools::setParameterDomain (std::vector< shared_ptr< BoundedSurface > > &sfs, double u1, double u2, double v1, double v2)

  Reparameterize a set of bounded surfaces to the same domain.

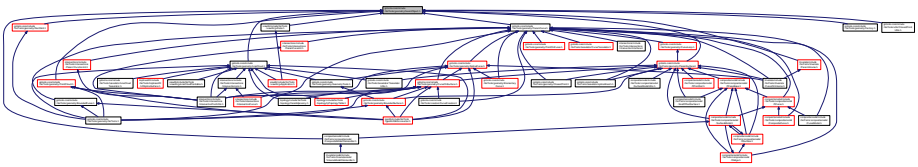
30.1925 gotools-core/include/GoTools/geometry/GeomObject.h File Reference

```
#include "GoTools/utils/BoundingBox.h"
#include "GoTools/geometry/Streamable.h"
#include "GoTools/geometry/ClassType.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for GeomObject.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::GeomObject

Namespaces

- Go

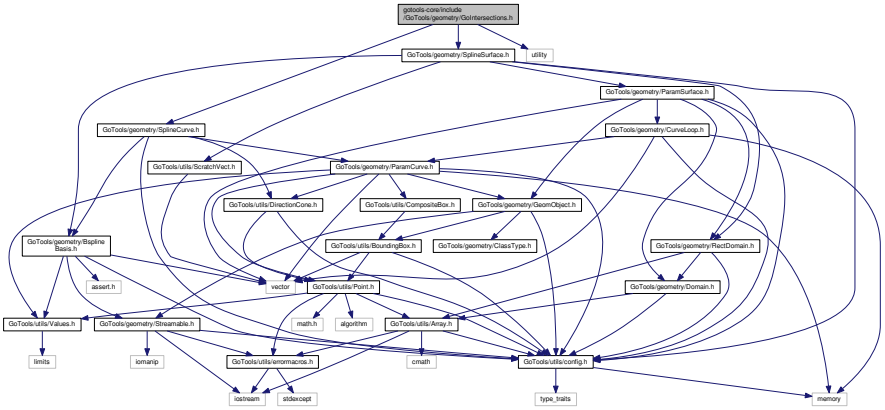
Variables

- const int Go::MAJOR_VERSION = 1
- const int Go::MINOR_VERSION = 0

30.1926 gotools-core/include/GoTools/geometry/GoIntersections.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include <utility>
```

Include dependency graph for GoIntersections.h:



Namespaces

- Go

Enumerations

- enum {
  Go::pretop_UNDEF, Go::pretop_IN, Go::pretop_OUT, Go::pretop_ON,
  Go::pretop_AT }

Functions

- void Go::intersectCurvePoint (const ParamCurve *crv, Point pnt, double epsge, std::vector< double > &intersections, std::vector< std::pair< double, double > > &int_crvs)
- void Go::intersect2Dcurves (const ParamCurve *cv1, const ParamCurve *cv2, double epsge, std::vector< std::pair< double, double > > &intersections, std::vector< int > &pretopology, std::vector< std::pair< std::pair< double, double >, std::pair< double, double > > > &int_crvs)
- void Go::intersectcurves (SplineCurve *cv1, SplineCurve *cv2, double epsge, std::vector< std::pair< double, double > > &intersections)
- void Go::intersectCurveSurf (const SplineCurve *cv, const SplineSurface *sf, double epsge, std::vector< std::pair< double, Point > > &int_pts, std::vector< int > &pretopology, std::vector< std::pair< std::pair< double, Point >, std::pair< double, Point > > > &int_crvs)

  Intersect a spline curve and a spline surface.
- void Go::closestPtCurves (SplineCurve *cv1, SplineCurve *cv2, double epsge, double &par1, double &par2, double &dist)

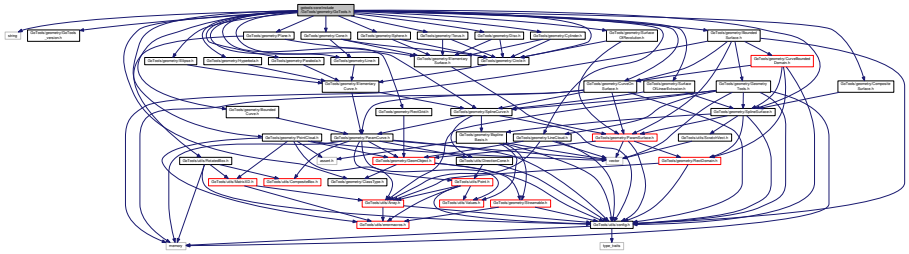
30.1926.1 Detailed Description

Declaration file for a set of free intersection functions operating on object belonging to GoTools but using the functionality of SISL.

30.1927 gotools-core/include/GoTools/geometry/GoTools.h File Reference

```
#include <string>
#include "GoTools/geometry/GoTools_version.h"
#include "GoTools/geometry/ClassType.h"
#include <GoTools/geometry/SplineCurve.h>
#include <GoTools/geometry/CurveOnSurface.h>
#include <GoTools/geometry/Line.h>
#include <GoTools/geometry/Circle.h>
#include <GoTools/geometry/Ellipse.h>
#include <GoTools/geometry/BoundedCurve.h>
#include <GoTools/geometry/Hyperbola.h>
#include <GoTools/geometry/Parabola.h>
#include <GoTools/geometry/SplineSurface.h>
#include <GoTools/geometry/BoundedSurface.h>
#include <GoTools/geometry/CompositeSurface.h>
#include <GoTools/geometry/Plane.h>
#include <GoTools/geometry/Cylinder.h>
#include <GoTools/geometry/Sphere.h>
#include <GoTools/geometry/Cone.h>
#include <GoTools/geometry/Torus.h>
#include <GoTools/geometry/SurfaceOfRevolution.h>
#include <GoTools/geometry/SurfaceOfLinearExtrusion.h>
#include <GoTools/geometry/Disc.h>
#include <GoTools/geometry/PointCloud.h>
#include <GoTools/geometry/LineCloud.h>
#include <GoTools/geometry/RectGrid.h>
```

Include dependency graph for GoTools.h:



Classes

- class Go::GoTools

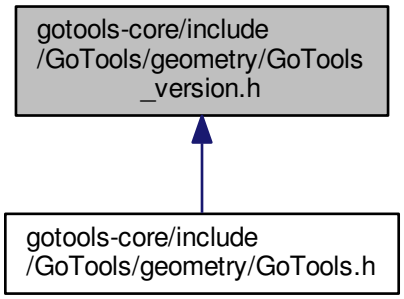
  Class containing some service functions for the GoTools "system".

Namespaces

- Go

30.1928 gotools-core/include/GoTools/geometry/GoTools_version.h File Reference

This graph shows which files directly or indirectly include this file:



Macros

- #define GO_VERSION_MAJOR 4
- #define GO_VERSION_MINOR 3
- #define GO_VERSION_PATCH 0

30.1928.1 Macro Definition Documentation

30.1928.1.1 #define GO_VERSION_MAJOR 4

Definition at line 44 of file GoTools_version.h.

30.1928.1.2 #define GO_VERSION_MINOR 3

Definition at line 45 of file GoTools_version.h.

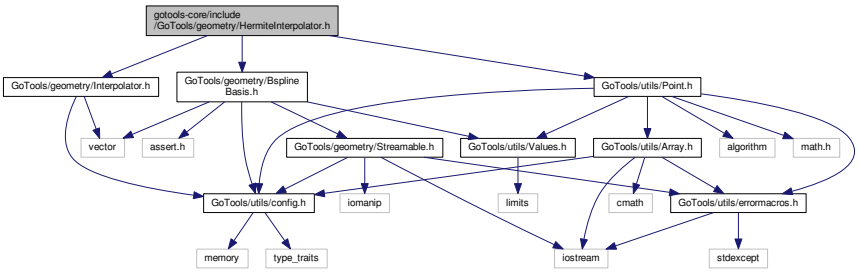
30.1928.1.3 #define GO_VERSION_PATCH 0

Definition at line 46 of file GoTools_version.h.

30.1929 gotools-core/include/GoTools/geometry/HermiteInterpolator.h File Reference

```
#include "GoTools/geometry/Interpolator.h"
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for HermiteInterpolator.h:



Classes

- class Go::HermiteInterpolator

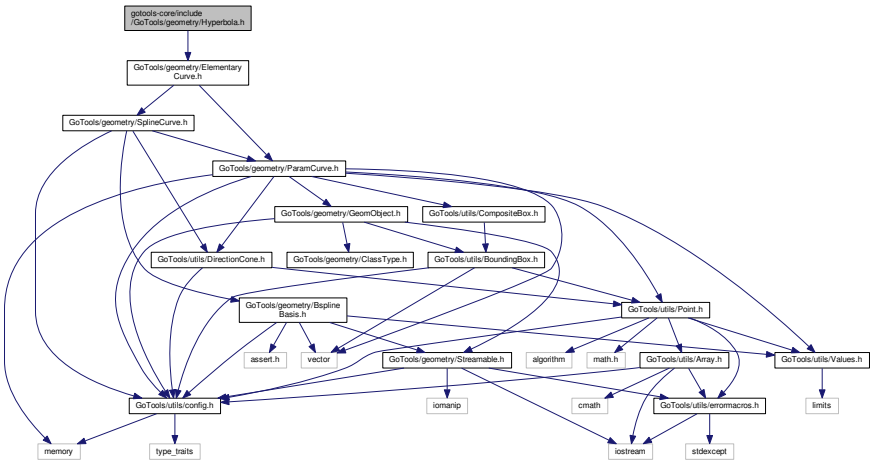
Namespaces

- Go

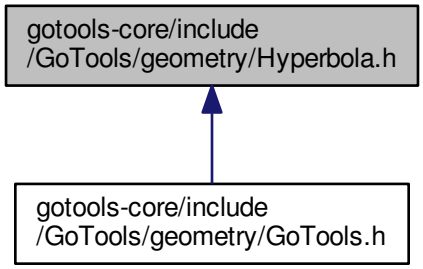
30.1930 gotools-core/include/GoTools/geometry/Hyperbola.h File Reference

```
#include "GoTools/geometry/ElementaryCurve.h"
```

Include dependency graph for Hyperbola.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Hyperbola

  Class that represents a hyperbola. It is a subclass of ElementaryCurve and thus has a parametrization.

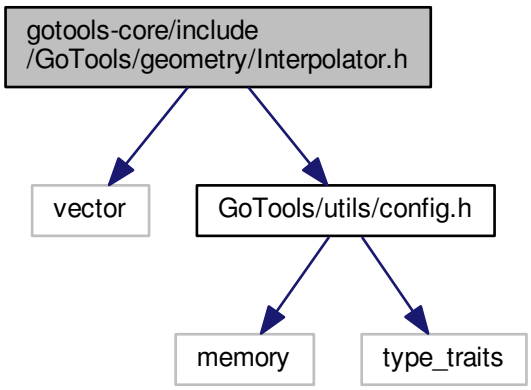
Namespaces

- Go

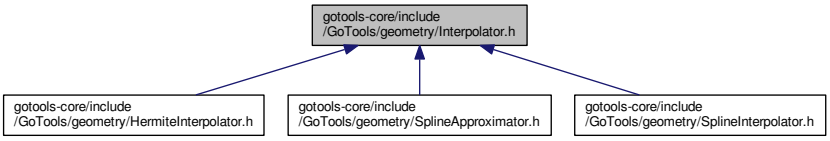
30.1931 gotools-core/include/GoTools/geometry/Interpolator.h File Reference

```
#include <vector>
#include "GoTools/utils/config.h"
```

Include dependency graph for Interpolator.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Interpolator

  Base class for spline interpolators or approximators.

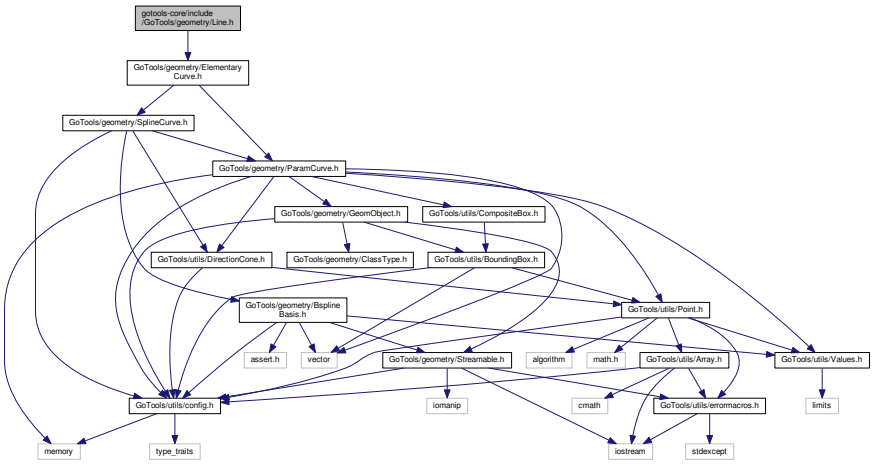
Namespaces

- Go

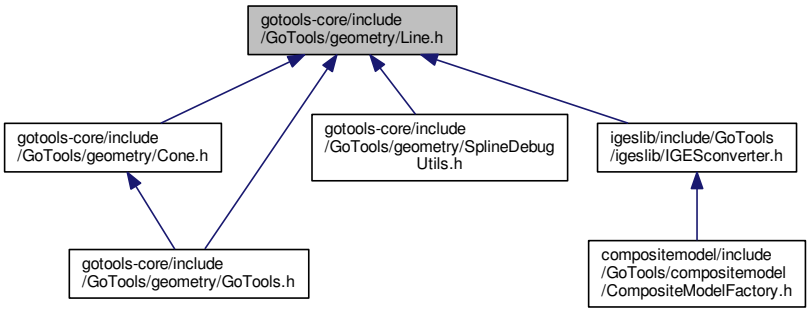
30.1932 gotools-core/include/GoTools/geometry/Line.h File Reference

```
#include "GoTools/geometry/ElementaryCurve.h"
```

Include dependency graph for Line.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Line

  Class that represents a line. It is a subclass of ElementaryCurve and thus has a parametrization.

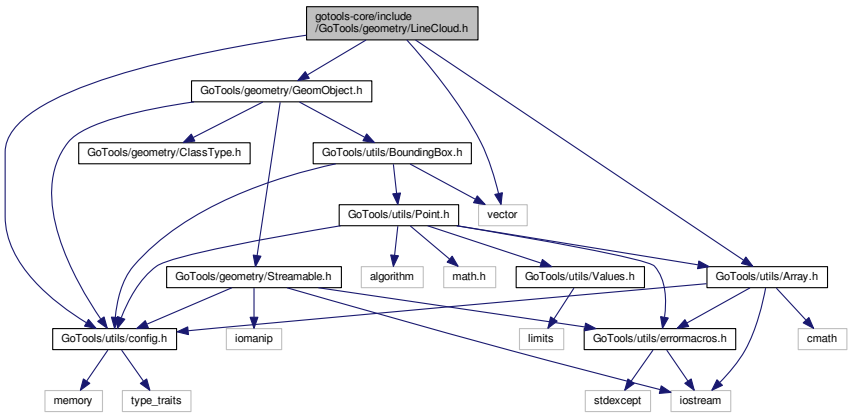
Namespaces

- Go

30.1933 gotools-core/include/GoTools/geometry/LineCloud.h File Reference

```
#include "GoTools/geometry/GeomObject.h"
#include "GoTools/utils/Array.h"
#include <vector>
#include "GoTools/utils/config.h"
```

Include dependency graph for LineCloud.h:



This graph shows which files directly or indirectly include this file:

Classes

- class Go::LineCloud

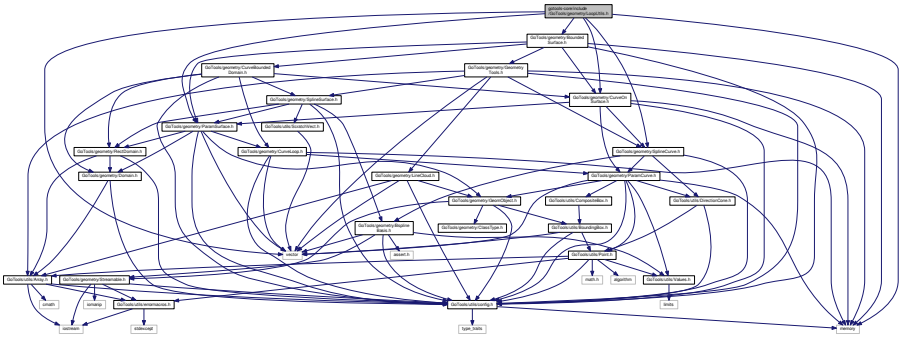
Namespaces

- Go

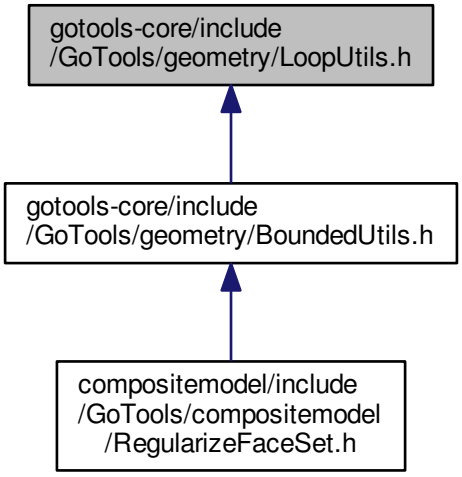
30.1934 gotools-core/include/GoTools/geometry/LoopUtils.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/geometry/BoundedSurface.h"
#include <vector>
#include <memory>
```

Include dependency graph for LoopUtils.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- Go
- Go::LoopUtils

Functions

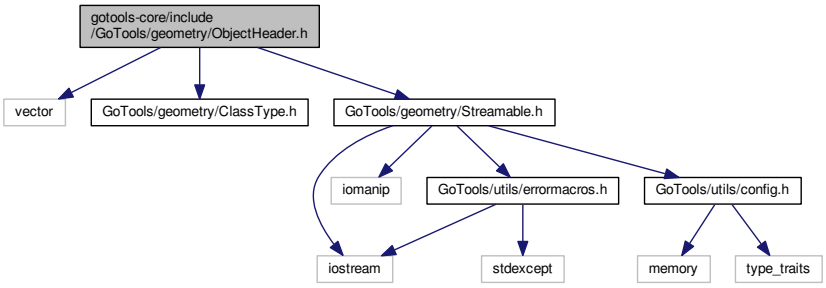
- void Go::LoopUtils::representAsSurfaceCurves (std::vector< shared_ptr< ParamCurve > > &curves, shared_ptr< BoundedSurface > surf, std::vector< shared_ptr< CurveOnSurface > > &cvs_on_sf)
- bool Go::LoopUtils::loopIsCCW (const std::vector< shared_ptr< Go::SplineCurve > > &simple_par_loop, double space_epsilon, double int_tol)
- bool Go::LoopUtils::paramIsCCW (const std::vector< shared_ptr< Go::CurveOnSurface > > &loop, double space_epsilon, double int_tol)
- bool Go::LoopUtils::loopIsCCW (const CurveLoop &loop, double int_tol)
- bool Go::LoopUtils::firstLoopInsideSecond (const std::vector< shared_ptr< Go::CurveOnSurface > > &first_loop, const std::vector< shared_ptr< Go::CurveOnSurface > > &second_loop, double loop_tol, double int_tol)

  Loops expected to be disjoint, except possibly share part of boundary.
- bool Go::LoopUtils::makeLoopCCW (std::vector< shared_ptr< ParamCurve > > &loop_cvs, double tol)

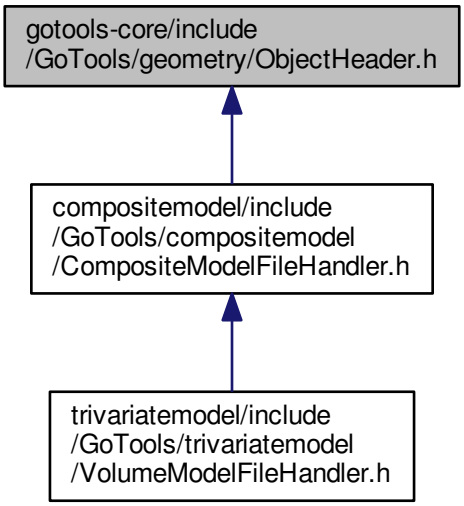
30.1935 gotools-core/include/GoTools/geometry/ObjectHeader.h File Reference

```
#include <vector>
#include "GoTools/geometry/ClassType.h"
#include "GoTools/geometry/Streamable.h"
```

Include dependency graph for ObjectHeader.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ObjectHeader

Namespaces

- Go

30.1936 gotools-core/include/GoTools/geometry/orientCurves.h File Reference

Namespaces

- Go
- Go::orientCurves

  Sorts and orients a set of curves.

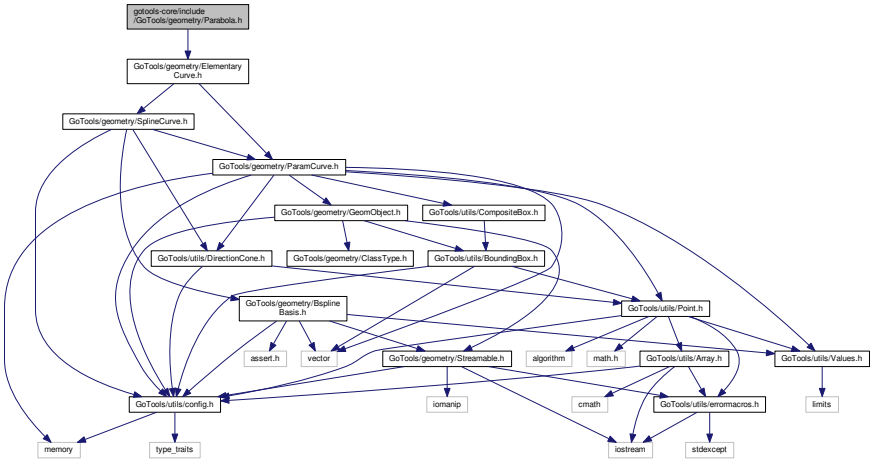
Functions

- template<class PtrToCurveType >
  void Go::orientCurves::orientCurves (const std::vector< PtrToCurveType > &curves, std::vector< int > &permutation, std::vector< bool > &reversed, double neighbour_tol, bool assume_manifold=true)

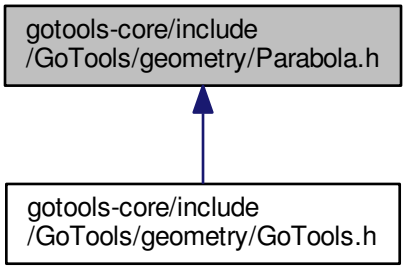
30.1937 gotools-core/include/GoTools/geometry/Parabola.h File Reference

```
#include "GoTools/geometry/ElementaryCurve.h"
```

Include dependency graph for Parabola.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Parabola

  Class that represents a parabola. It is a subclass of ElementaryCurve and thus has a parametrization.

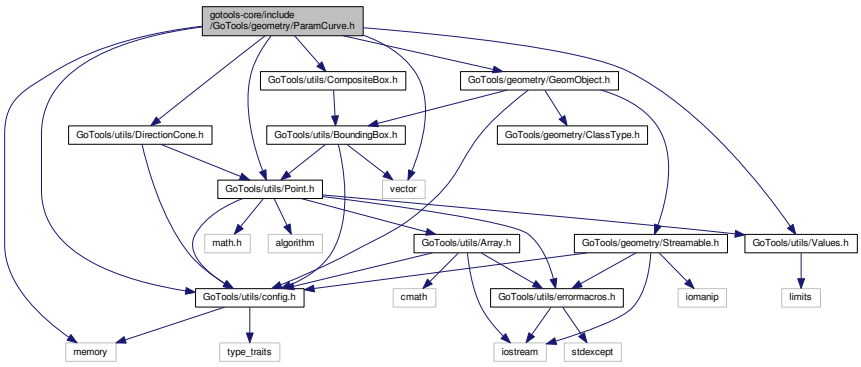
Namespaces

- Go

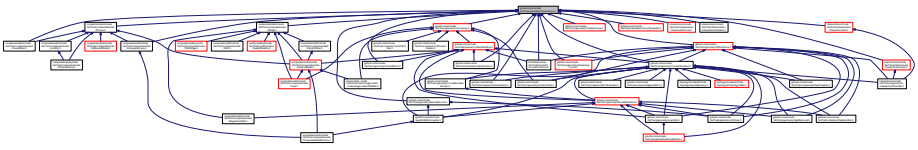
30.1938 gotools-core/include/GoTools/geometry/ParamCurve.h File Reference

```
#include "GoTools/utils/config.h"
#include "GoTools/utils/Point.h"
#include "GoTools/geometry/GeomObject.h"
#include "GoTools/utils/CompositeBox.h"
#include "GoTools/utils/DirectionCone.h"
#include "GoTools/utils/Values.h"
#include <vector>
#include <memory>
```

Include dependency graph for ParamCurve.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ParamCurve

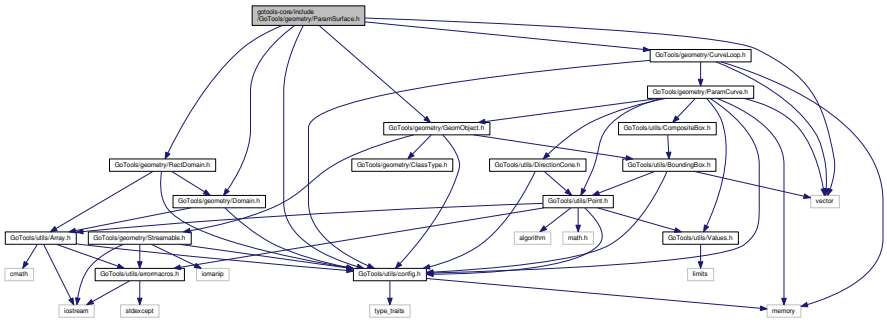
Namespaces

- Go

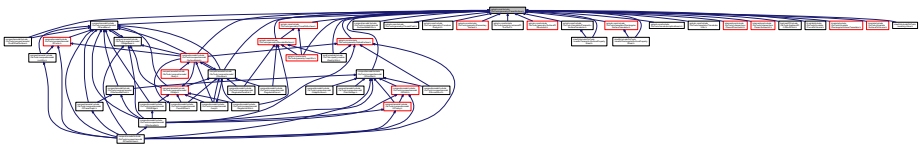
30.1939 gotools-core/include/GoTools/geometry/ParamSurface.h File Reference

```
#include "GoTools/geometry/Domain.h"
#include "GoTools/geometry/GeomObject.h"
#include "GoTools/geometry/RectDomain.h"
#include "GoTools/geometry/CurveLoop.h"
#include <vector>
#include "GoTools/utils/config.h"
```

Include dependency graph for ParamSurface.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ParamSurface
- struct Go::ParamSurface::degenerate_info

  Degeneracy information regarding one boundary surface of the current surface.

Namespaces

- Go

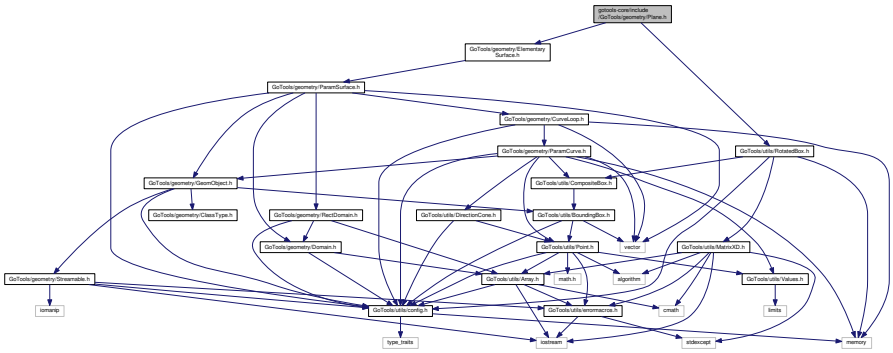
Enumerations

- enum Go::IteratorType { Go::Iterator_parametric = 0, Go::Iterator_geometric = 1 }

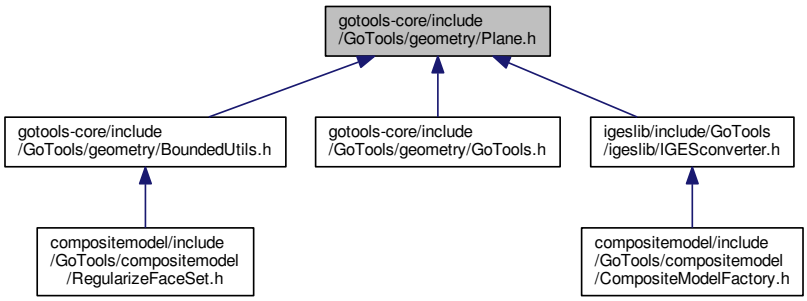
30.1940 gotools-core/include/GoTools/geometry/Plane.h File Reference

```
#include "GoTools/geometry/ElementarySurface.h"
#include "GoTools/utils/RotatedBox.h"
```

Include dependency graph for Plane.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Plane

  Class that represents a plane. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

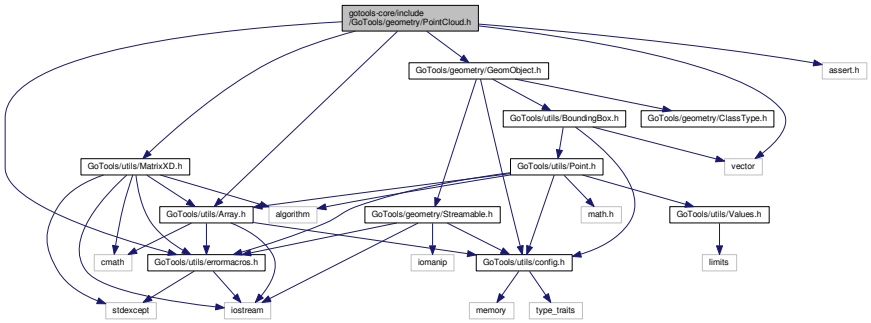
Namespaces

- Go

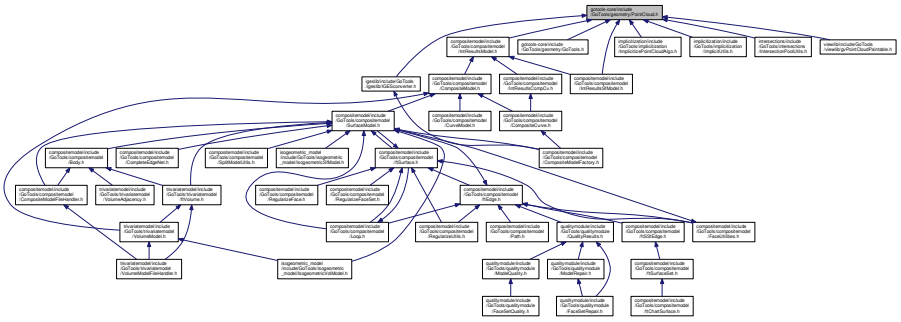
30.1941 gotools-core/include/GoTools/geometry/PointCloud.h File Reference

```
#include "GoTools/utils/errormacros.h"
#include "GoTools/geometry/GeomObject.h"
#include "GoTools/utils/Array.h"
#include "GoTools/utils/MatrixXD.h"
#include <vector>
#include <assert.h>
```

Include dependency graph for PointCloud.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::PointCloud< Dim >

Namespaces

- Go

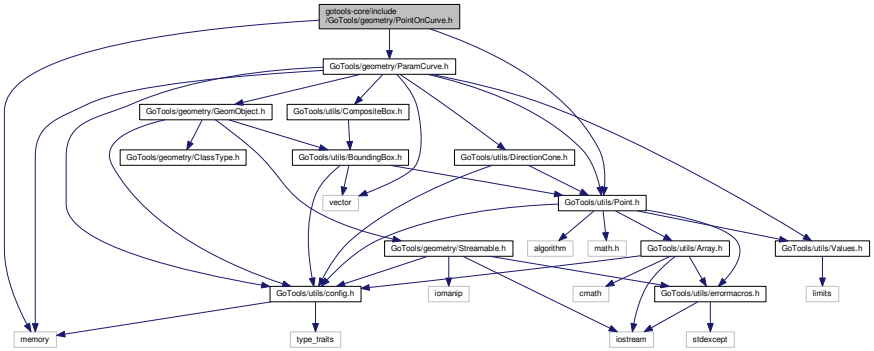
Typedefs

- typedef PointCloud< 3 > Go::PointCloud3D
- typedef PointCloud< 4 > Go::PointCloud4D

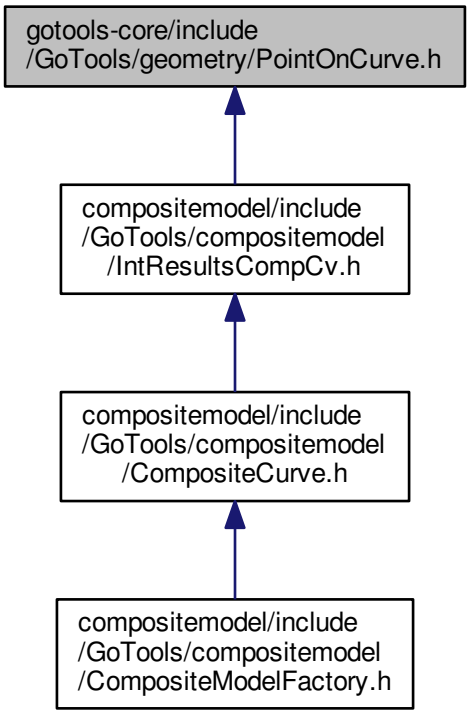
30.1942 gotools-core/include/GoTools/geometry/PointOnCurve.h File Reference

```
#include "GoTools/utils/Point.h"
#include <memory>
#include "GoTools/geometry/ParamCurve.h"
```

Include dependency graph for PointOnCurve.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::PointOnCurve

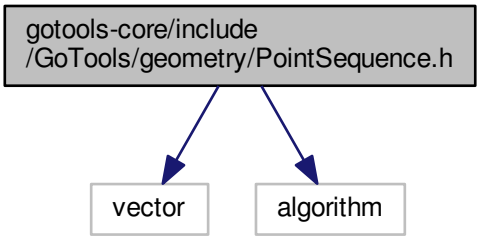
Namespaces

- Go

30.1943 gotools-core/include/GoTools/geometry/PointSequence.h File Reference

```
#include <vector>
#include <algorithm>
```

Include dependency graph for PointSequence.h:



Classes

- class Go::PointSequence

Namespaces

- Go

Enumerations

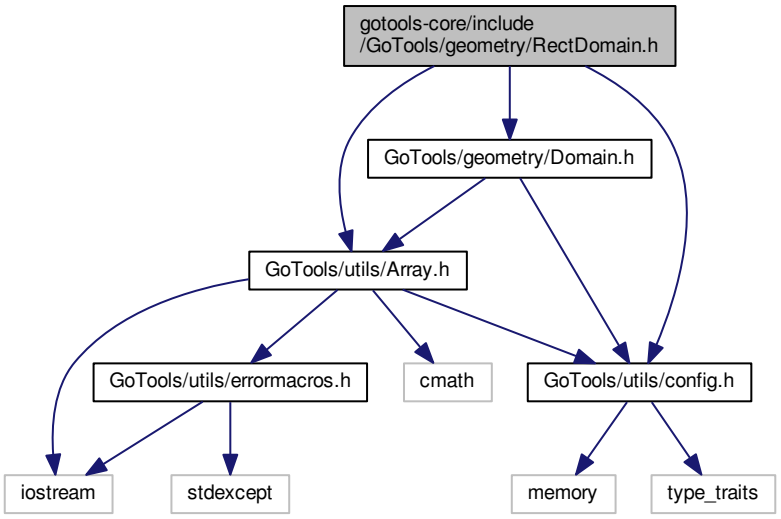
- enum Go::PointSequenceType { Go::PSTPoint, Go::PSTPointTangent, Go::PSTScattered }

  Type of point.

30.1944 gotools-core/include/GoTools/geometry/RectDomain.h File Reference

```
#include "GoTools/utils/Array.h"
#include "GoTools/geometry/Domain.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for RectDomain.h:



This graph shows which files directly or indirectly include this file:

Classes

- class Go::RectDomain

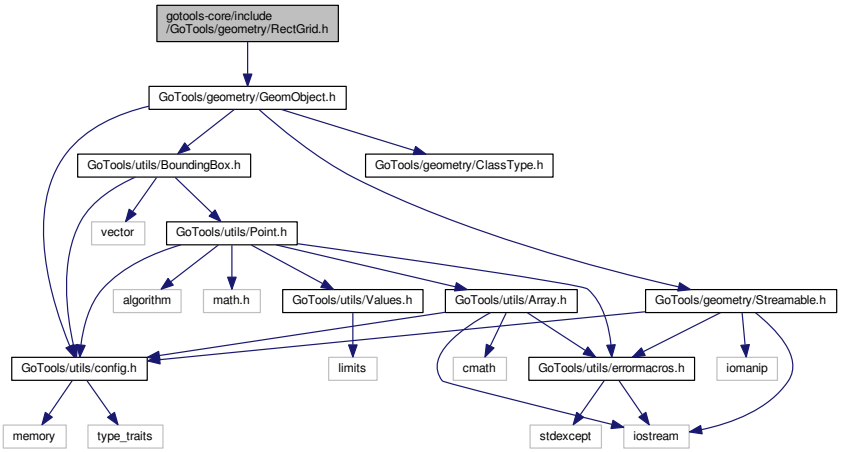
Namespaces

- Go

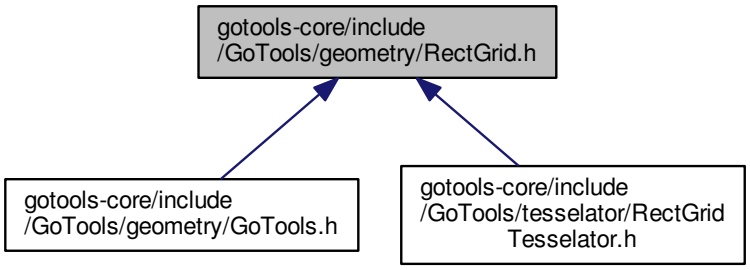
30.1945 gotools-core/include/GoTools/geometry/RectGrid.h File Reference

```
#include "GoTools/geometry/GeomObject.h"
```

Include dependency graph for RectGrid.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::RectGrid

Namespaces

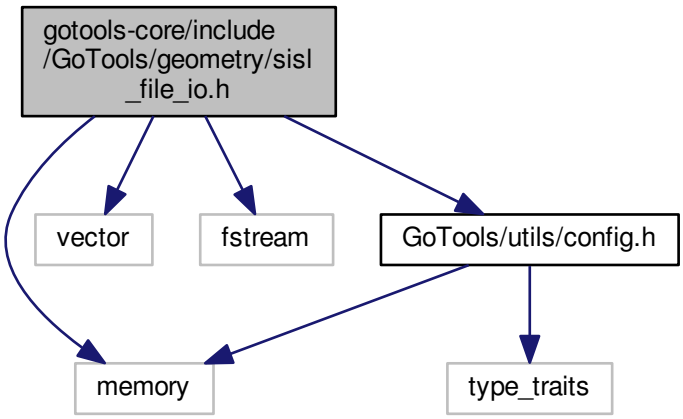
- Go

30.1946 gotools-core/include/GoTools/geometry/SISL_code.h File Reference

30.1947 gotools-core/include/GoTools/geometry/sisl_file_io.h File Reference

```
#include <memory>
#include <vector>
#include <fstream>
#include "GoTools/utils/config.h"
```

Include dependency graph for sisl_file_io.h:



Macros

- #define STD_FILE FILE

Functions

- void read_non_comment (STD_FILE *fp, char *string)
- void file_to_obj (STD_FILE *fp, SISLObject **wo, int *jstat)
- void curve_to_file (STD_FILE *f, struct SISLCurve *c1)
- void surface_to_file (STD_FILE *f, struct SISLSurf *surf)
- int get_next_surface (STD_FILE *fp, SISLSurf **qc)
- int get_sisl_surfaces (STD_FILE *fp, std::vector< shared_ptr< SISLSurf > > &sisl_sfs)

30.1947.1 Macro Definition Documentation

30.1947.1.1 #define STD_FILE FILE

Definition at line 55 of file sisl_file_io.h.

30.1947.2 Function Documentation

30.1947.2.1 void curve_to_file (STD_FILE * *f,* struct SISLCurve * *c1*)

30.1947.2.2 void file_to_obj (STD_FILE * *fp,* SISLObject ** *wo,* int * *jstat*)

30.1947.2.3 int get_next_surface (STD_FILE * *fp,* SISLSurf ** *qc*)

30.1947.2.4 int get_sisl_surfaces (STD_FILE * *fp,* std::vector< shared_ptr< SISLSurf > > & *sisl_sfs*)

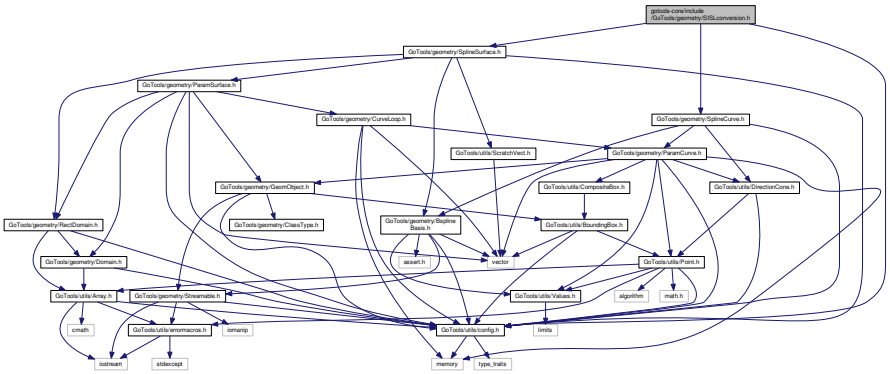
30.1947.2.5 void read_non_comment (STD_FILE * *fp,* char * *string*)

30.1947.2.6 void surface_to_file (STD_FILE * *f,* struct SISLSurf * *surf*)

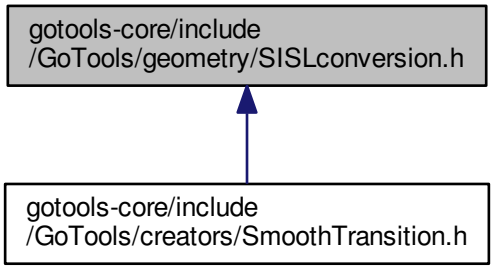
30.1948 gotools-core/include/GoTools/geometry/SISLconversion.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for SISLconversion.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- Go

Functions

- SISLCurve GO_API * Go::Curve2SISL (const SplineCurve &cv, bool copy=true)
- SISLCurve GO_API * Go::Curve2SISL_rat (const SplineCurve &cv)
- SplineCurve GO_API * Go::SISLCurve2Go (const SISLCurve *const cv)
- SISLSurf GO_API * Go::GoSurf2SISL (const SplineSurface &sf, bool copy=true)
- SplineSurface GO_API * Go::SISLSurf2Go (SISLSurf *sf)

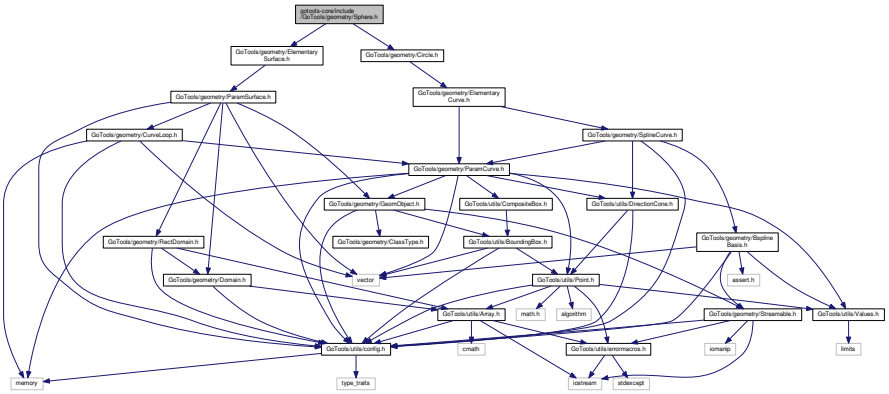
30.1948.1 Detailed Description

Declaration file for a set of free conversion functions between SISL and Spline curves and surfaces.

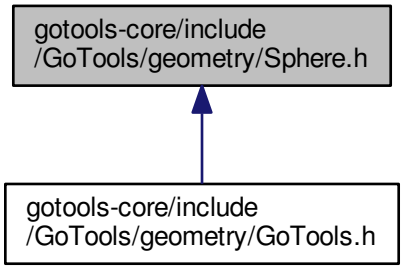
30.1949 gotools-core/include/GoTools/geometry/Sphere.h File Reference

```
#include "GoTools/geometry/ElementarySurface.h"
#include "GoTools/geometry/Circle.h"
```

Include dependency graph for Sphere.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Sphere

  Class that represents a sphere. It is a subclass of ElementarySurface, and thus has a parametrization and is non-selfintersecting.

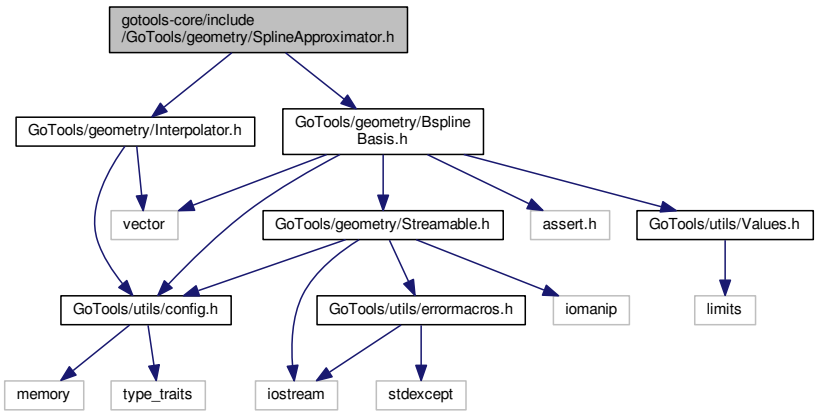
Namespaces

- Go

30.1950 gotools-core/include/GoTools/geometry/SplineApproximator.h File Reference

```
#include "GoTools/geometry/Interpolator.h"
#include "GoTools/geometry/BsplineBasis.h"
```

Include dependency graph for SplineApproximator.h:



Classes

- class Go::SplineApproximator

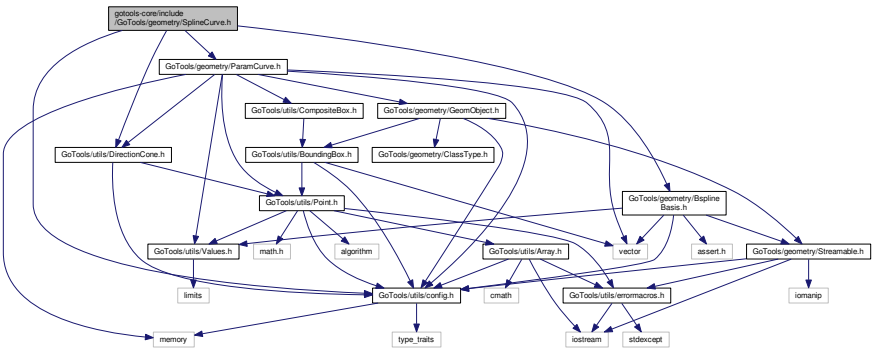
Namespaces

- Go

30.1951 gotools-core/include/GoTools/geometry/SplineCurve.h File Reference

```
#include "GoTools/utils/DirectionCone.h"
#include "GoTools/geometry/ParamCurve.h"
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for SplineCurve.h:



Classes

- class Go::SplineCurve

  SplineCurve provides methodes for storing, reading and manipulating rational and non-rational B-spline curves.

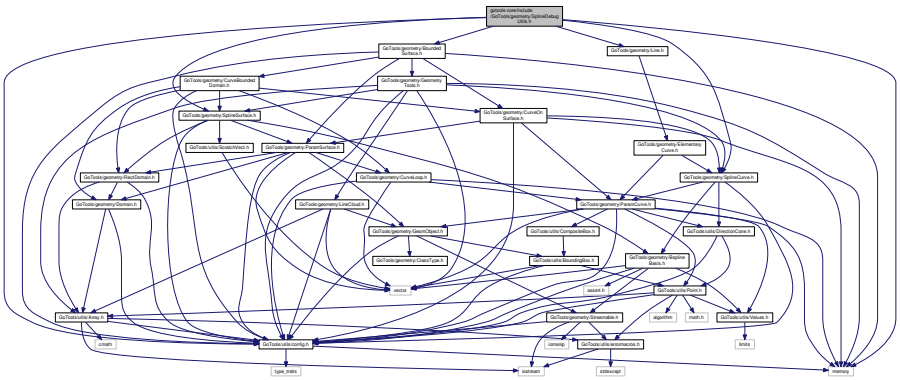
Namespaces

- Go

30.1952 gotools-core/include/GoTools/geometry/SplineDebugUtils.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/Line.h"
#include <memory>
#include "GoTools/utils/config.h"
#include "GoTools/geometry/BoundedSurface.h"
```

Include dependency graph for SplineDebugUtils.h:



Namespaces

- Go
- Go::SplineDebugUtils

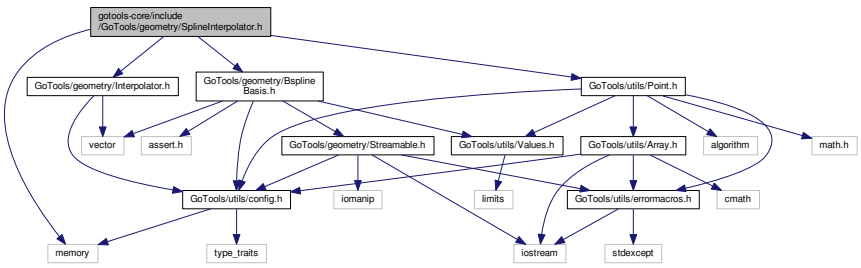
Functions

- void GO_API Go::SplineDebugUtils::writeSpaceParamCurve (const SplineCurve &pcurve, std::ostream &os, double z=0.0)
- void GO_API Go::SplineDebugUtils::writeSpaceParamCurve (const Line &pline, std::ostream &os, double z=0.0)
- void GO_API Go::SplineDebugUtils::writeTrimmedInfo (BoundedSurface &bd_sf, std::ostream &os, double z=0.0)
- void GO_API Go::SplineDebugUtils::writeOuterBoundaryLoop (ParamSurface &sf, std::ostream &os)
- void GO_API Go::SplineDebugUtils::objToFile (GeomObject ∗geom_obj, char ∗to_file)
- void GO_API Go::SplineDebugUtils::objsToFile (std::vector< shared_ptr< GeomObject > > &geom_objs, char ∗to_file)
- void GO_API Go::SplineDebugUtils::writeSISLFormat (const SplineCurve &spline_cv, std::ostream &os)
- void GO_API Go::SplineDebugUtils::writeCvsOnSf (const std::vector< shared_ptr< Go::ParamCurve > > &loop_cvs, double epsgeo, std::ofstream &fileout)
- void GO_API Go::SplineDebugUtils::writeCvsOnSf (const std::vector< shared_ptr< Go::CurveOnSurface > > &loop_cvs, double epsgeo, std::ofstream &fileout)

30.1953 gotools-core/include/GoTools/geometry/SplineInterpolator.h File Reference

```
#include "GoTools/geometry/Interpolator.h"
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/utils/Point.h"
#include <memory>
```

Include dependency graph for SplineInterpolator.h:



Classes

- class Go::SplineInterpolator

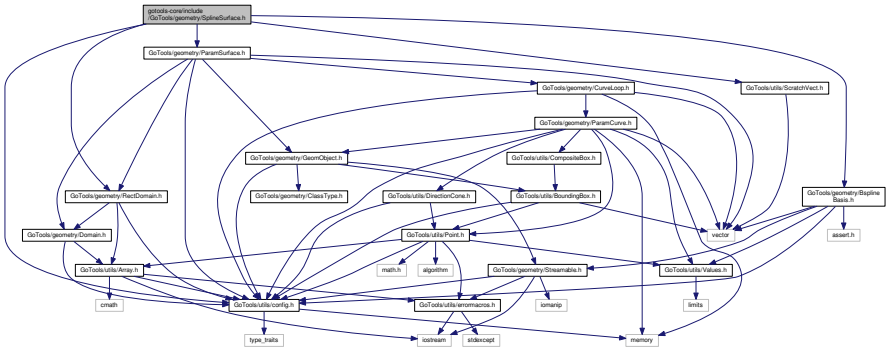
Namespaces

- Go

30.1954 gotools-core/include/GoTools/geometry/SplineSurface.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/geometry/RectDomain.h"
#include "GoTools/utils/ScratchVect.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for SplineSurface.h:



Classes

- struct Go::BasisPtsSf
- struct Go::BasisDerivsSf
- struct Go::BasisDerivsSf2
- class Go::SplineSurface

  SplineSurface provides methodes for storing, reading and manipulating rational and non-rational B-spline surfaces.

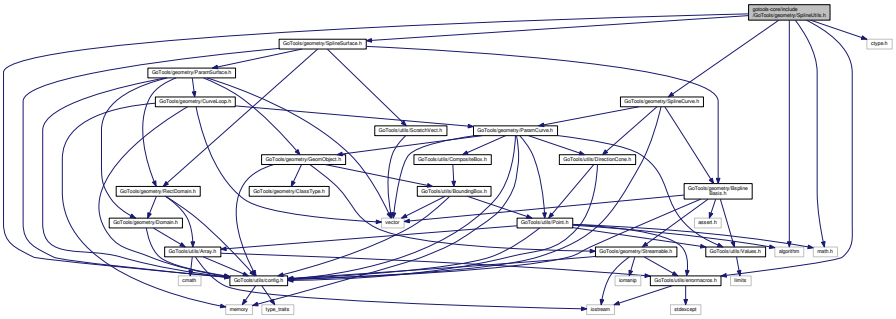
Namespaces

- Go

30.1955 gotools-core/include/GoTools/geometry/SplineUtils.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/utils/errormacros.h"
#include <math.h>
#include <algorithm>
#include <ctype.h>
#include "GoTools/utils/config.h"
```

Include dependency graph for SplineUtils.h:



Namespaces

- Go
- Go::SplineUtils

Functions

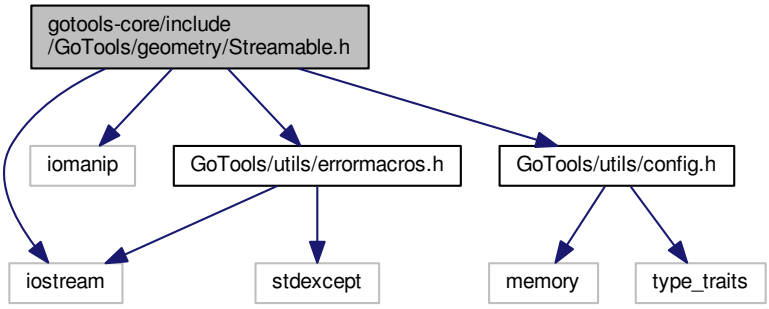
- void GO_API Go::SplineUtils::transpose_array (int dim, int m, int n, double *array_start)
- int GO_API Go::SplineUtils::closest_in_array (const double *pt, const double *array, int n, int dim)
- Vector3D GO_API Go::SplineUtils::closest_on_triangle (const Vector3D &pt, const Vector3D tri[3], double &clo_dist2)
- double GO_API Go::SplineUtils::closest_on_line_segment (const Vector3D &pt, const Vector3D &beg, const Vector3D &end)
- void GO_API Go::SplineUtils::closest_on_rectgrid (const double *pt, const double *array, int m, int n, double &clo_u, double &clo_v)
- void GO_API Go::SplineUtils::closest_on_rectgrid (const double *pt, const double *array, int u_min, int u_↩ max, int v_min, int v_max, int nmb_coefs_u, double &clo_u, double &clo_v)
- void GO_API Go::SplineUtils::make_coef_array_from_rational_coefs (const double *rationals, double *coefs, int num_coefs, int dim)
- void GO_API Go::SplineUtils::curve_ratder (double const eder[ ], int idim, int ider, double gder[ ])
- void GO_API Go::SplineUtils::surface_ratder (double const eder[ ], int idim, int ider, double gder[ ])
- void GO_API Go::SplineUtils::osloalg (int ij, int imy, int ik, int in, int *jpl, int *jfi, int *jla, const double *et, const double *etau, double *galfa)
- void GO_API Go::SplineUtils::refmatrix (const double *et, int im, int ik, const double *etau, int in, double *ea, int *nfirst, int *nlast)
- void GO_API Go::SplineUtils::splineToBezierTransfMat (const double *knots, std::vector< double > &transf_mat)
- void GO_API Go::SplineUtils::extractBezierCoefs (const double *coefs, const int num_coefs_u, const int num_coefs_v, const int ind_u_min, const int ind_v_min, const std::vector< double > &transf_mat_u, const std::vector< double > &transf_mat_v, std::vector< double > &bezier_coefs)
- void GO_API Go::SplineUtils::refinedBezierCoefsCubic (Go::SplineSurface &spline_sf, int ind_u_min, int ind_v_min, std::vector< double > &bez_coefs)

  Method expecting bi-cubic input.
- shared_ptr< SplineSurface > GO_API Go::SplineUtils::refineToBezier (const Go::SplineSurface &spline_sf)
- shared_ptr< SplineSurface > GO_API Go::SplineUtils::insertKnots (const Go::SplineSurface &spline_sf, const std::vector< double > new_knots_u, const std::vector< double > new_knots_v)

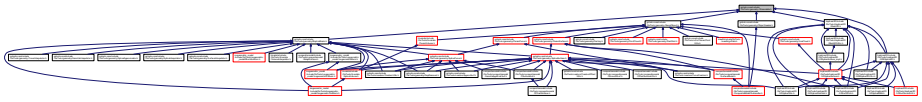
30.1956 gotools-core/include/GoTools/geometry/Streamable.h File Reference

```
#include <iostream>
#include <iomanip>
#include "GoTools/utils/errormacros.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for Streamable.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Streamable
- class Go::Streamable::EofException

Namespaces

- Go

Functions

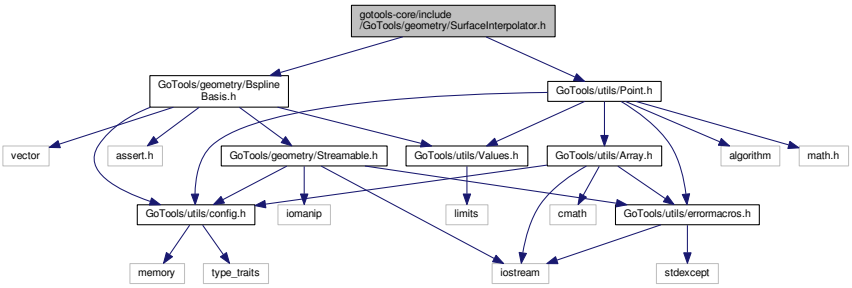
- std::istream & Go::operator>> (std::istream &is, Go::Streamable &obj)
- std::ostream & Go::operator<< (std::ostream &os, const Go::Streamable &obj)

30.1957 gotools-core/include/GoTools/geometry/streamable_doxymain.h File Reference

30.1958 gotools-core/include/GoTools/geometry/SurfaceInterpolator.h File Reference

```
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for SurfaceInterpolator.h:



Namespaces

- Go
- Go::SurfaceInterpolator

  Functionality for creating interpolating surfaces.

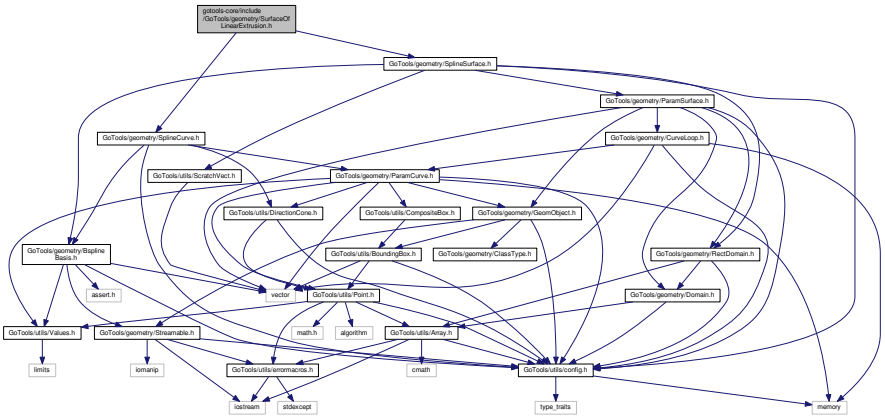
Functions

- SplineSurface * Go::SurfaceInterpolator::regularInterpolation (const BsplineBasis &basis_u, const Bspline↩ Basis &basis_v, std::vector< double > &par_u, std::vector< double > &par_v, std::vector< double > &points, int dimension, bool rational, std::vector< double > &weights)

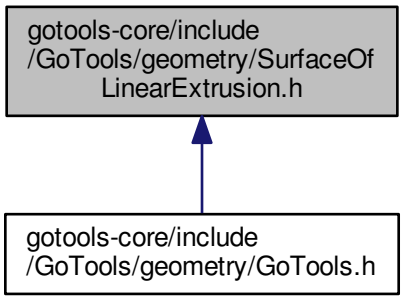
30.1959 gotools-core/include/GoTools/geometry/SurfaceOfLinearExtrusion.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
```

Include dependency graph for SurfaceOfLinearExtrusion.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::SurfaceOfLinearExtrusion

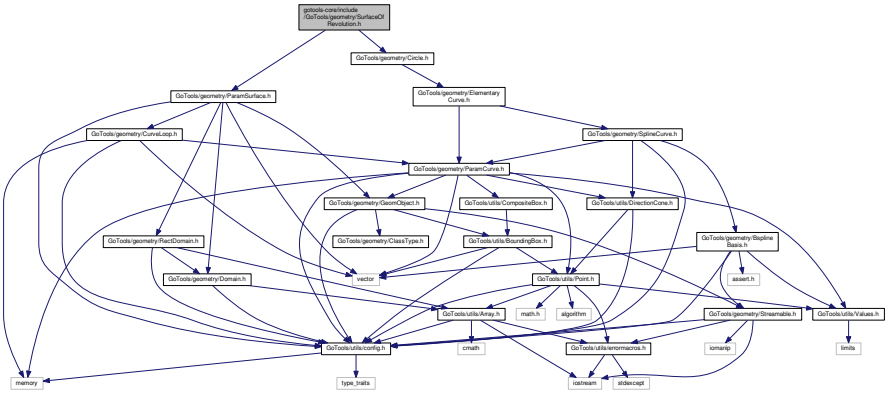
Namespaces

- Go

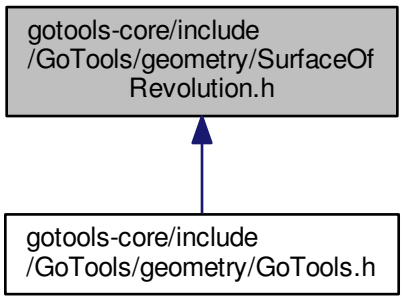
30.1960 gotools-core/include/GoTools/geometry/SurfaceOfRevolution.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/geometry/Circle.h"
```

Include dependency graph for SurfaceOfRevolution.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::SurfaceOfRevolution

  Class that represents a surface of revolution. A SurfaceOfRevolution is swept out by a SplineCurve that is rotated around an axis with a complete revolution, and is thereby a parametric surface.

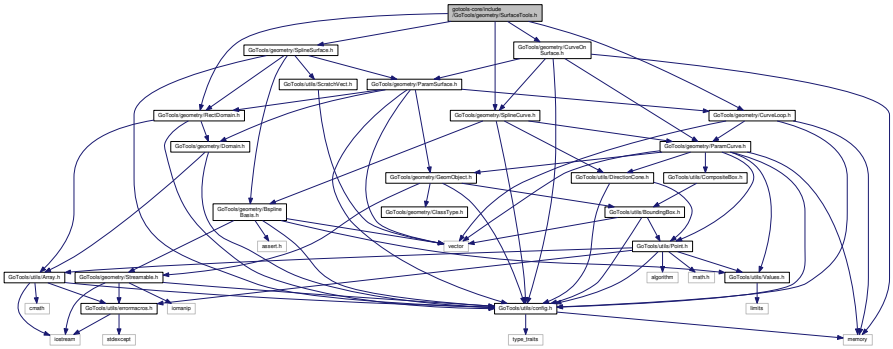
Namespaces

- Go

30.1961 gotools-core/include/GoTools/geometry/SurfaceTools.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/geometry/CurveLoop.h"
#include "GoTools/geometry/RectDomain.h"
```

Include dependency graph for SurfaceTools.h:



Namespaces

- Go
- Go::SurfaceTools

  Free functions operating on parametric surfaces.

Functions

- CurveLoop Go::SurfaceTools::outerBoundarySfLoop (shared_ptr< ParamSurface > surf, double degenerate_epsilon)

  Fetch the outer boundary loop of a parametric surface.
- std::vector< CurveLoop > Go::SurfaceTools::allBoundarySfLoops (shared_ptr< ParamSurface > surf, double degenerate_epsilon)

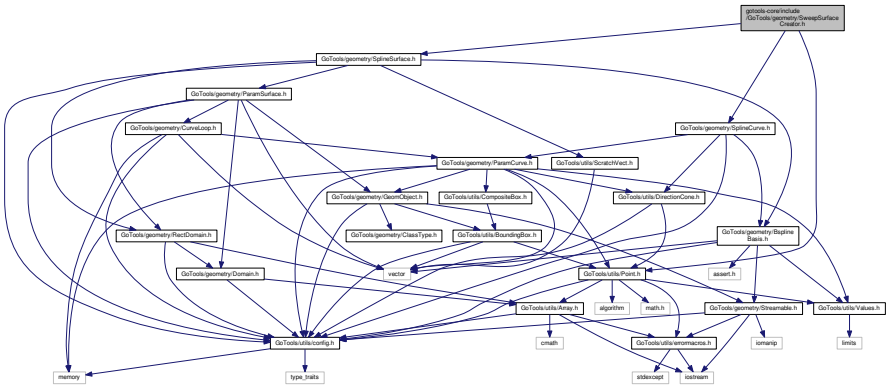
  Fetch all boundary loops of a parametric surface.
- std::vector< CurveLoop > Go::SurfaceTools::absolutelyAllBoundarySfLoops (shared_ptr< ParamSurface > surf, double degenerate_epsilon)
- void Go::SurfaceTools::iterateCornerPos (Point &vertex, std::vector< std::pair< shared_ptr< ParamSurface >, Point > > sfs, double tol)
- bool Go::SurfaceTools::cornerToCornerSfs (shared_ptr< ParamSurface > sf1, shared_ptr< CurveOnSurface > sf_cv1, shared_ptr< ParamSurface > sf2, shared_ptr< CurveOnSurface > sf_cv2, double tol)
- bool Go::SurfaceTools::getSfAdjacencyInfo (shared_ptr< ParamSurface > sf1, shared_ptr< CurveOnSurface > sf_cv1, shared_ptr< ParamSurface > sf2, shared_ptr< CurveOnSurface > sf_cv2, double tol, int &bd1, int &bd2, bool &same_orient)
- bool Go::SurfaceTools::getCorrCoefEnum (shared_ptr< SplineSurface > sf1, shared_ptr< SplineSurface > sf2, int bd1, int bd2, bool same_orient, std::vector< std::pair< int, int > > &enumeration)
- bool Go::SurfaceTools::getCoefEnumeration (shared_ptr< SplineSurface > sf, int bd, std::vector< int > &enumeration)
- bool Go::SurfaceTools::getCoefEnumeration (shared_ptr< SplineSurface > sf, int bd, std::vector< int > &enumeration_bd, std::vector< int > &enumeration_bd2)

- bool Go::SurfaceTools::getCornerCoefEnum (shared_ptr< SplineSurface > sf, int bd1, int bd2, int &enumeration)
- int Go::SurfaceTools::checkCoefCoLinearity (shared_ptr< SplineSurface > sf1, shared_ptr< SplineSurface > sf2, int bd1, int bd2, bool same_orient, double tol, double ang_tol, std::vector< std::vector< int > > &enumeration)
- void Go::SurfaceTools::surface_seedfind (const Point &pt, const ParamSurface &sf, const RectDomain *rd, double &u, double &v)
- void Go::SurfaceTools::parameterizeByBaseSurf (const ParamSurface &sf, const std::vector< double > &points, std::vector< double > &parvals)
- double Go::SurfaceTools::estimateTangentLength (SplineSurface *surf, int pardir, bool at_start)
- void GO_API Go::SurfaceTools::checkSurfaceClosed (const Go::ParamSurface &sf, bool &closed_dir_u, bool &closed_dir_v, double closed_tol=1e-06)
- void GO_API Go::SurfaceTools::surfaceClosed (const Go::SplineSurface &sf, bool &closed_dir_u, bool &closed_dir_v, double closed_tol=1e-06)
- Point Go::SurfaceTools::getParEpsilon (const ParamSurface &sf, double epsgeo)

30.1962 gotools-core/include/GoTools/geometry/SweepSurfaceCreator.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for SweepSurfaceCreator.h:



Classes

- class Go::SweepSurfaceCreator

  Functionality to create a spline surface by linear or rotational sweep.

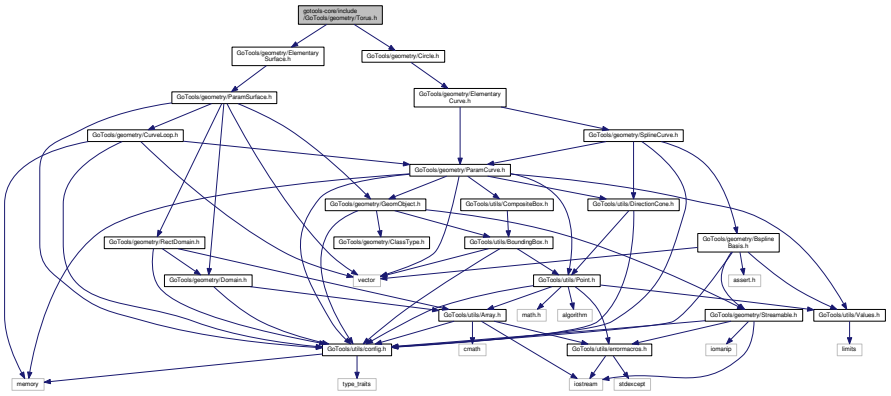
Namespaces

- Go

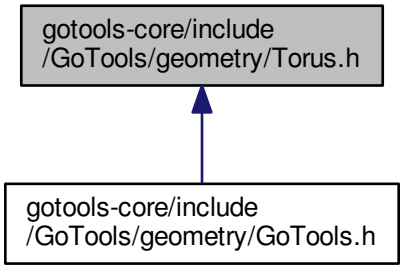
30.1963 gotools-core/include/GoTools/geometry/Torus.h File Reference

```
#include "GoTools/geometry/ElementarySurface.h"
#include "GoTools/geometry/Circle.h"
```

Include dependency graph for Torus.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Torus

  Class that represents a torus. It is a subclass of ElementarySurface, and thus has a parametrization. A torus may be degenerate. Then the minor radius is greater than the major radius, and it is in principle selfintersecting.

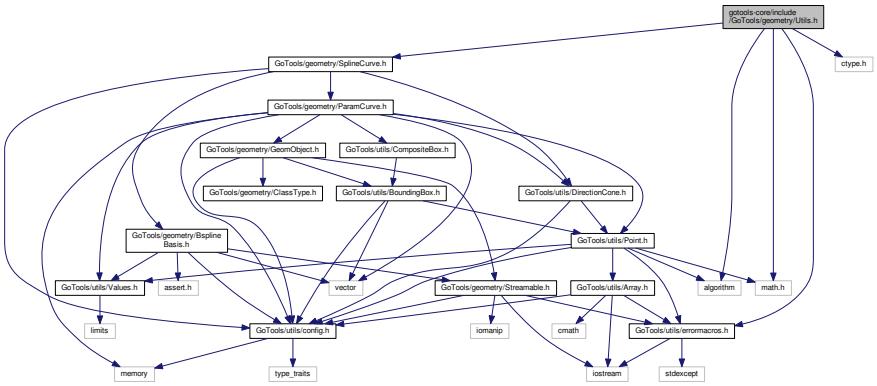
Namespaces

- Go

30.1964 gotools-core/include/GoTools/geometry/Utils.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/utils/errormacros.h"
#include <math.h>
#include <algorithm>
#include <ctype.h>
```

Include dependency graph for Utils.h:



Classes

- struct Go::go_iterator_traits< Iterator >
- struct Go::go_iterator_traits< T * >
- struct Go::go_iterator_traits< const T * >

Namespaces

- Go
- Go::Utils

  Namespace for some utility functions.

Functions

- template<typename ForwardIterator >
  go_iterator_traits< ForwardIterator >::value_type Go::Utils::sum (ForwardIterator first, ForwardIterator last)

  sum finds the sum of the elements
- template<typename ForwardIterator >
  go_iterator_traits< ForwardIterator >::value_type Go::Utils::sum_squared (ForwardIterator first, Forward↩ Iterator last)

  sum_squared finds the squared sum of the elements
- template<typename ForwardIterator >
  go_iterator_traits< ForwardIterator >::value_type Go::Utils::distance_squared (ForwardIterator first1, ForwardIterator last1, ForwardIterator first2)

  distance_squared
- template<typename ForwardIterator >
  void Go::Utils::normalize (ForwardIterator first, ForwardIterator last)

normalize makes the length of a vector 1.0

- template<typename ForwardIterator >
  go_iterator_traits< ForwardIterator >::value_type Go::Utils::inner (ForwardIterator first, ForwardIterator last, ForwardIterator second)

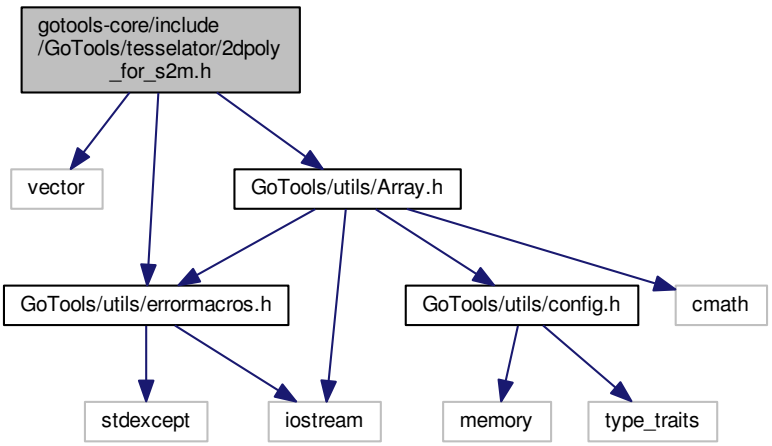
  inner product
- template<typename InputStream >
  InputStream & Go::Utils::eatwhite (InputStream &is)

  eat white space

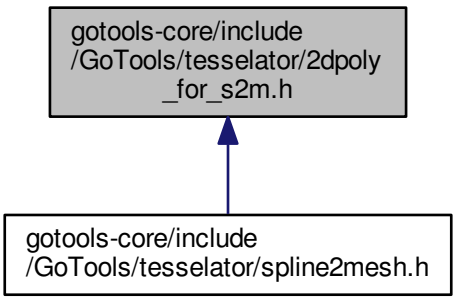
30.1965 gotools-core/include/GoTools/tesselator/2dpoly_for_s2m.h File Reference

```
#include <vector>
#include "GoTools/utils/Array.h"
#include "GoTools/utils/errormacros.h"
```

Include dependency graph for 2dpoly_for_s2m.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- Go

Typedefs

- typedef std::pair< short, std::vector< short > * > short_list
- typedef std::pair< short, std::vector< short_list > * > short_list_short_list

Functions

- bool Go::point_inside_contour (const double x0, const double y0, const double *const vertices, const std::vector< int > &contour)
- bool Go::segment_contour_intersection_for_s2m (const double x0, const double y0, const double x1, const double y1, const double *const vertices, const std::vector< int > &contour, double &x, double &y, double &s, const bool snap_ends=false)
- std::vector< short_list_short_list > Go::sort_2dpoly_segments (const double *const vertices, const std::vector< int > &contour, const bool transposed=false)
- int Go::is_inside (const std::vector< Go::Vector3D > &trim_curve_p, const std::vector< int > &contour, const double u, const double v)
- bool Go::is_on_corner (const std::vector< Go::Vector3D > &trim_curve_p, const std::vector< int > &contour, const double u, const double v)
- int Go::is_on_contour (const std::vector< Go::Vector3D > &trim_curve_p, const std::vector< int > &contour, const double u, const double v)
- bool Go::degenerate_triangle (const Vector2D &c1, const Vector2D &c2, const Vector2D &c3)

30.1965.1 Typedef Documentation

30.1965.1.1 typedef std::pair<short, std::vector<short> *> short_list

Definition at line 104 of file 2dpoly_for_s2m.h.

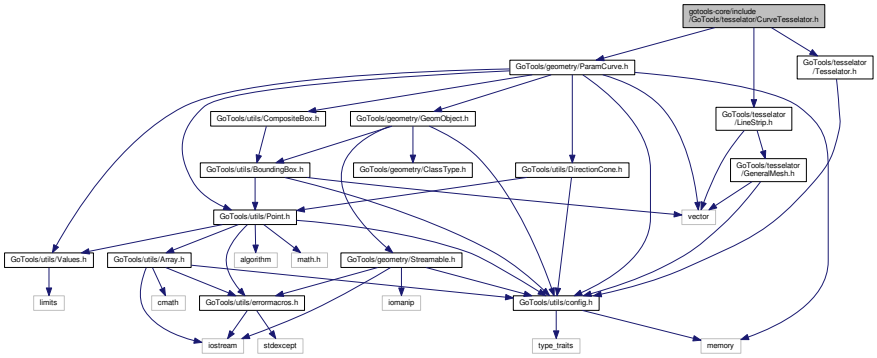
30.1965.1.2 typedef std::pair<short, std::vector<short_list> *> short_list_short_list

Definition at line 105 of file 2dpoly_for_s2m.h.

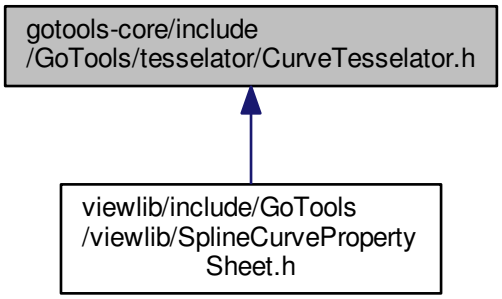
30.1966 gotools-core/include/GoTools/tesselator/CurveTesselator.h File Reference

```
#include "GoTools/tesselator/Tesselator.h"
#include "GoTools/tesselator/LineStrip.h"
#include "GoTools/geometry/ParamCurve.h"
```

Include dependency graph for CurveTesselator.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::CurveTesselator

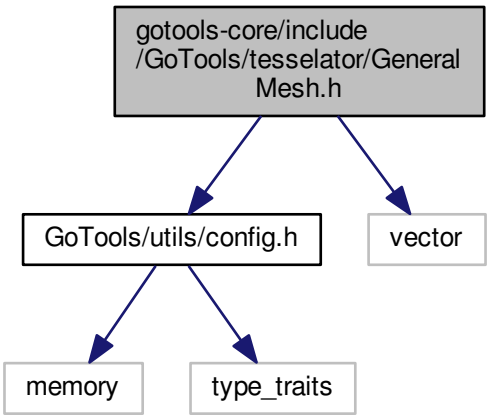
Namespaces

- Go

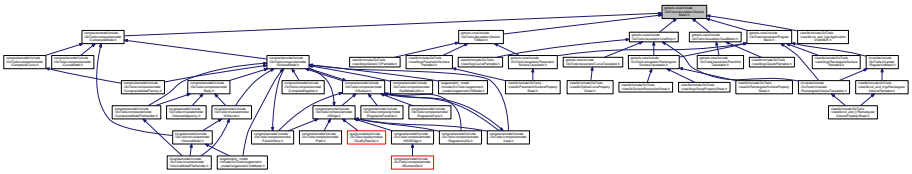
30.1967 gotools-core/include/GoTools/tesselator/GeneralMesh.h File Reference

```
#include "GoTools/utils/config.h"
#include <vector>
```

Include dependency graph for GeneralMesh.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::GeneralMesh

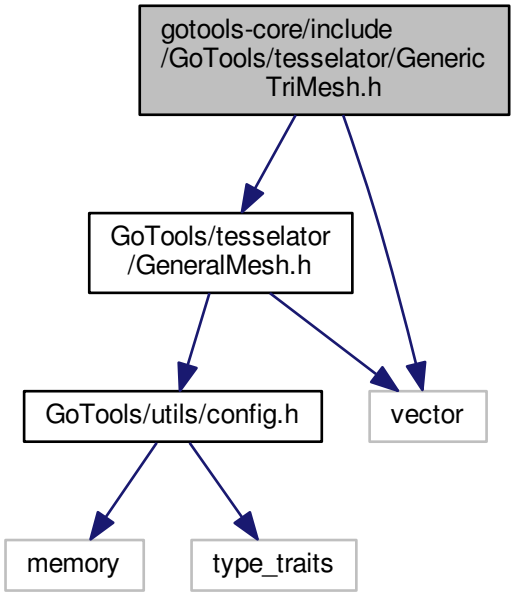
Namespaces

- Go

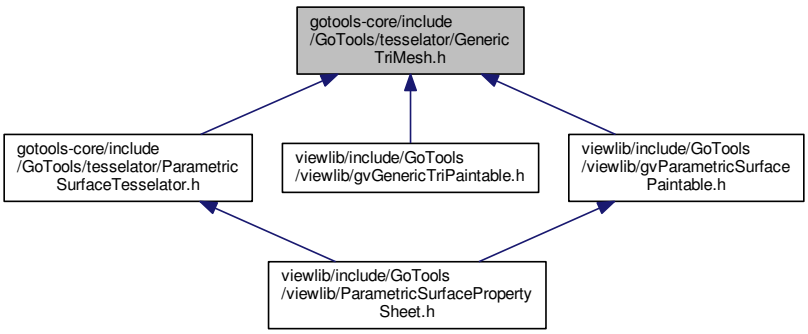
30.1968 gotools-core/include/GoTools/tesselator/GenericTriMesh.h File Reference

```
#include "GoTools/tesselator/GeneralMesh.h"
#include <vector>
```

Include dependency graph for GenericTriMesh.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::GenericTriMesh

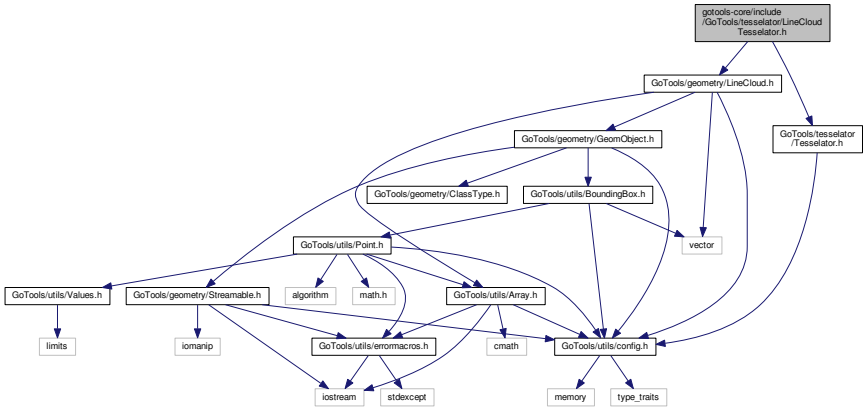
Namespaces

- Go

30.1969 gotools-core/include/GoTools/tesselator/LineCloudTesselator.h File Reference

```
#include "GoTools/tesselator/Tesselator.h"
#include "GoTools/geometry/LineCloud.h"
```

Include dependency graph for LineCloudTesselator.h:



Classes

- class Go::LineCloudTesselator

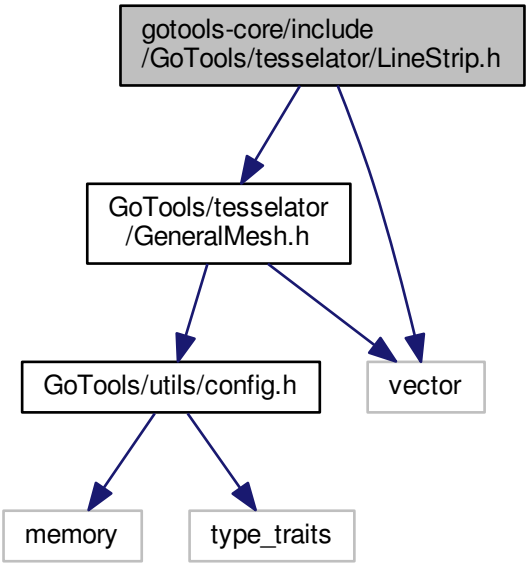
Namespaces

- Go

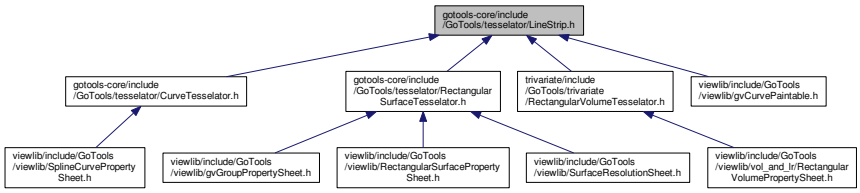
30.1970 gotools-core/include/GoTools/tesselator/LineStrip.h File Reference

```
#include "GoTools/tesselator/GeneralMesh.h"
#include <vector>
```

Include dependency graph for LineStrip.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::LineStrip

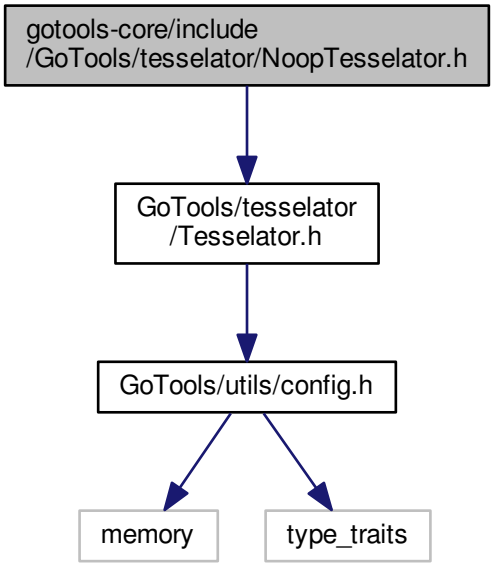
Namespaces

- Go

30.1971 gotools-core/include/GoTools/tesselator/NoopTesselator.h File Reference

```
#include "GoTools/tesselator/Tesselator.h"
```

Include dependency graph for NoopTesselator.h:



Classes

- class Go::NoopTesselator

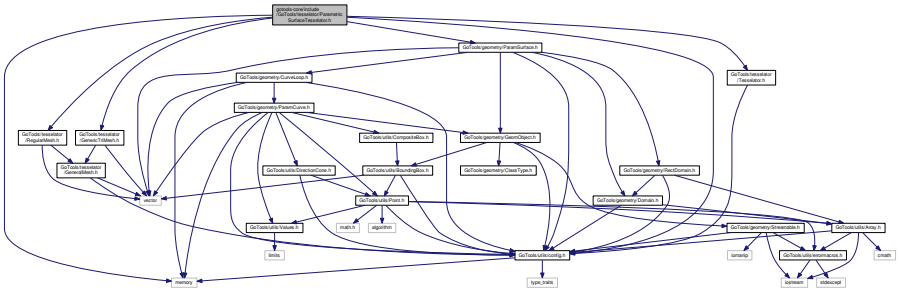
Namespaces

- Go

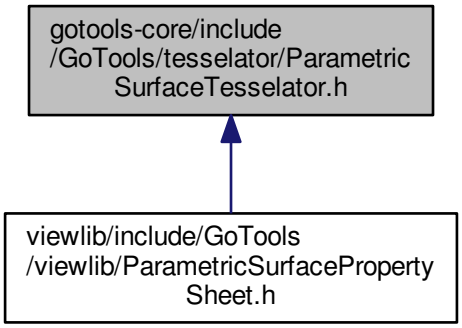
30.1972 gotools-core/include/GoTools/tesselator/ParametricSurfaceTesselator.h File Reference

```
#include "GoTools/tesselator/Tesselator.h"
#include "GoTools/tesselator/RegularMesh.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/tesselator/GenericTriMesh.h"
#include <memory>
#include "GoTools/utils/config.h"
```

Include dependency graph for ParametricSurfaceTesselator.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ParametricSurfaceTesselator

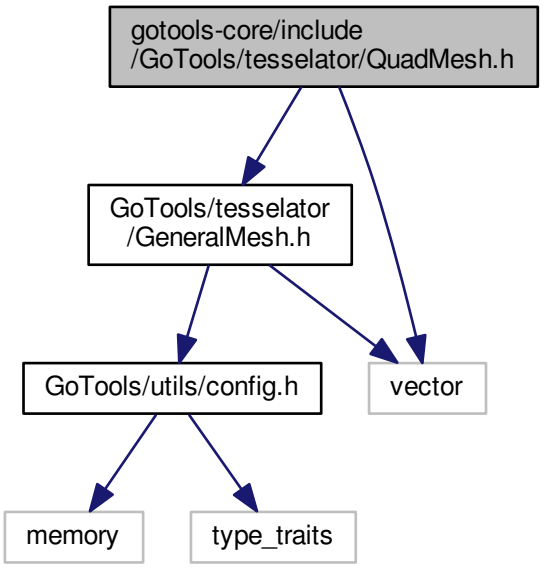
Namespaces

- Go

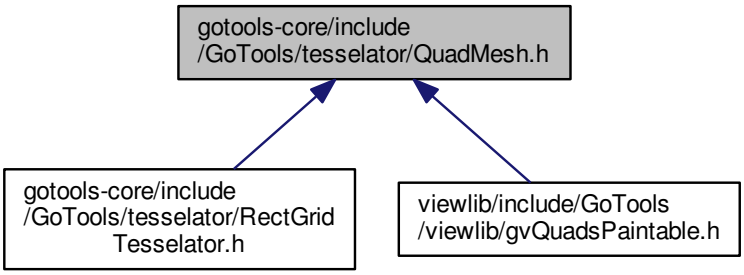
30.1973 gotools-core/include/GoTools/tesselator/QuadMesh.h File Reference

```
#include "GoTools/tesselator/GeneralMesh.h"
#include <vector>
```

Include dependency graph for QuadMesh.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::QuadMesh

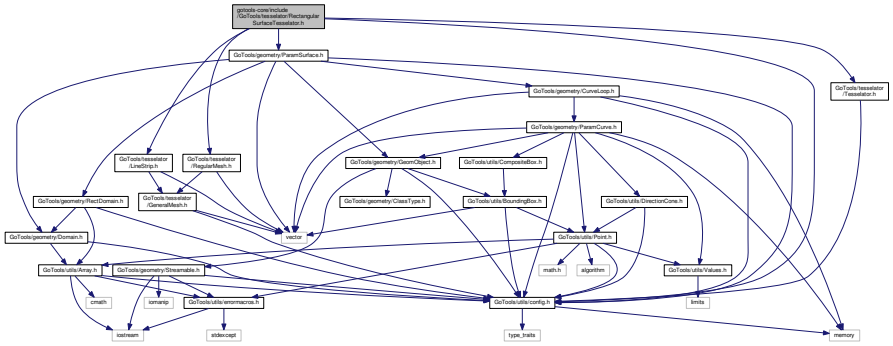
Namespaces

- Go

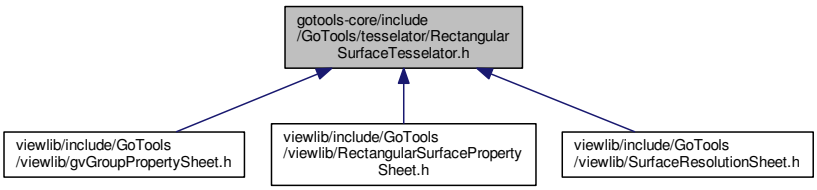
30.1974 gotools-core/include/GoTools/tesselator/RectangularSurfaceTesselator.h File Reference

```
#include "GoTools/tesselator/Tesselator.h"
#include "GoTools/tesselator/RegularMesh.h"
#include "GoTools/tesselator/LineStrip.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for RectangularSurfaceTesselator.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::RectangularSurfaceTesselator

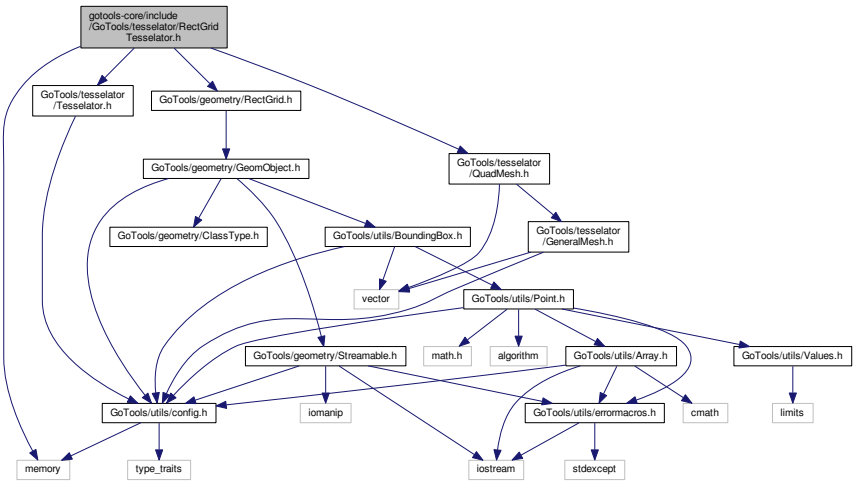
Namespaces

- Go

30.1975 gotools-core/include/GoTools/tesselator/RectGridTesselator.h File Reference

```
#include "GoTools/tesselator/Tesselator.h"
#include "GoTools/geometry/RectGrid.h"
#include "GoTools/tesselator/QuadMesh.h"
#include <memory>
```

Include dependency graph for RectGridTesselator.h:



Classes

- class Go::RectGridTesselator

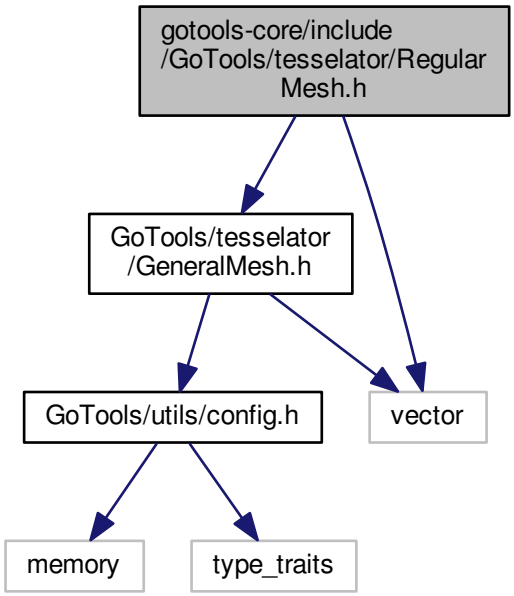
Namespaces

- Go

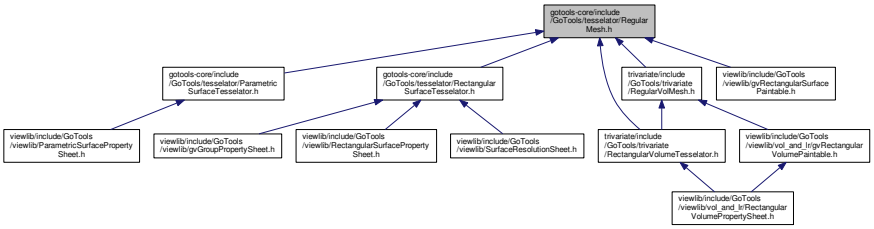
30.1976 gotools-core/include/GoTools/tesselator/RegularMesh.h File Reference

```
#include "GoTools/tesselator/GeneralMesh.h"
#include <vector>
```

Include dependency graph for RegularMesh.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Triangle
- class Go::RegularMesh

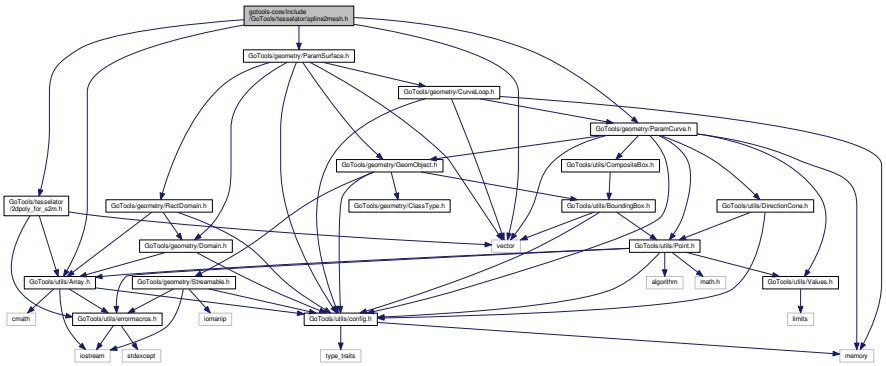
Namespaces

- Go

30.1977 gotools-core/include/GoTools/tesselator/spline2mesh.h File Reference

```
#include "GoTools/utils/Array.h"
#include <vector>
#include "GoTools/tesselator/2dpoly_for_s2m.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/geometry/ParamCurve.h"
```

Include dependency graph for spline2mesh.h:



Namespaces

- Go

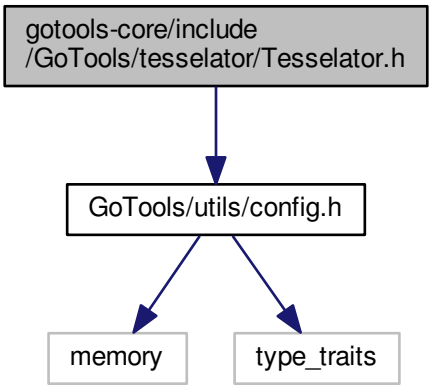
Functions

- void Go::make_trimmed_mesh (shared_ptr< ParamSurface > srf, std::vector< shared_ptr< ParamCurve > > &crv_set, std::vector< Vector3D > &vert, std::vector< Vector2D > &vert_p, std::vector< int > &bd, std::vector< Vector3D > &norm, std::vector< int > &mesh, std::vector< Vector3D > &trim_curve, std::vector< Vector3D > &trim_curve_p, const int dn, const int dm, double bd_res_ratio)

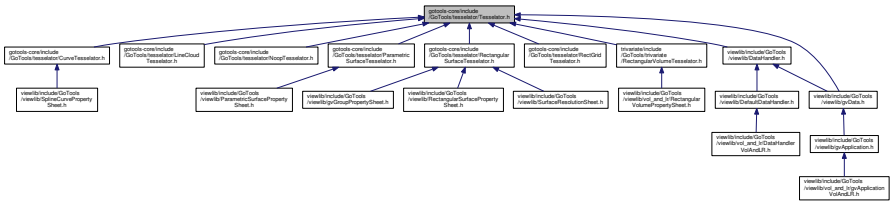
30.1978 gotools-core/include/GoTools/tesselator/Tesselator.h File Reference

```
#include "GoTools/utils/config.h"
```

Include dependency graph for Tesselator.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Tesselator

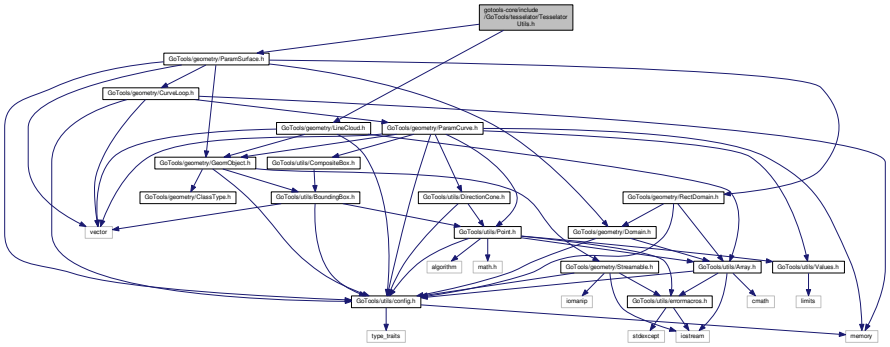
Namespaces

- Go

30.1979 gotools-core/include/GoTools/tesselator/TesselatorUtils.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/geometry/LineCloud.h"
```

Include dependency graph for TesselatorUtils.h:



Namespaces

- Go
- Go::TesselatorUtils

  Related to the relative resolution of tesselation.

Functions

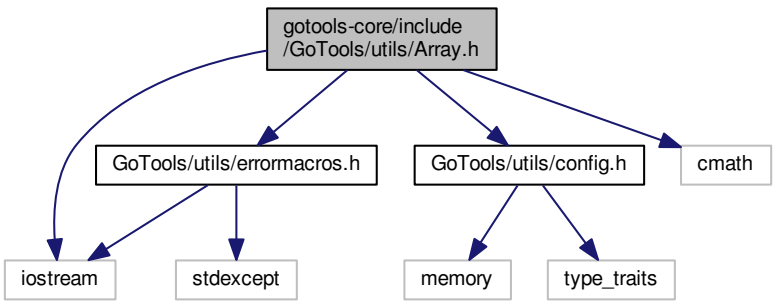
- void Go::TesselatorUtils::getResolution (const ParamSurface ∗surf, int &u_nmb, int &v_nmb, int uv_nmb=400)
- shared_ptr< LineCloud > Go::TesselatorUtils::getCtrPol (GeomObject ∗obj)

  Fetch the control polygon of some geometric entity.

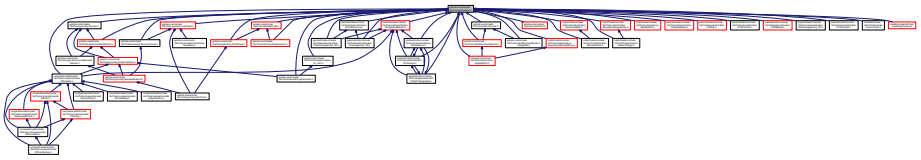
30.1980 gotools-core/include/GoTools/utils/Array.h File Reference

```
#include "GoTools/utils/errormacros.h"
#include "GoTools/utils/config.h"
#include <iostream>
#include <cmath>
```

Include dependency graph for Array.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Array< T, Dim >

Namespaces

- Go

Typedefs

- typedef Array< double, 2 > Go::Vector2D

  Typedef for ease of use in frequently used case.
- typedef Array< double, 3 > Go::Vector3D

  Typedef for ease of use in frequently used case.
- typedef Array< double, 4 > Go::Vector4D

  Typedef for ease of use in frequently used case.

Functions

- template<typename T , int Dim>
  Go::Array< T, Dim > Go::operator* (T d, const Go::Array< T, Dim > &v)

  The product of a vector and a scalar.
- template<typename T , int Dim>
  std::istream & Go::operator>> (std::istream &is, Go::Array< T, Dim > &v)

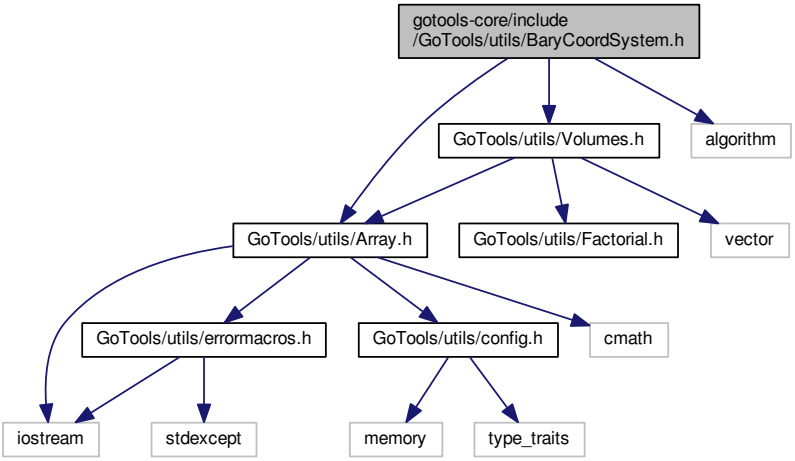
  Stream extraction for Array.
- template<typename T , int Dim>
  std::ostream & Go::operator<< (std::ostream &os, const Go::Array< T, Dim > &v)

  Stream insertion for Array.

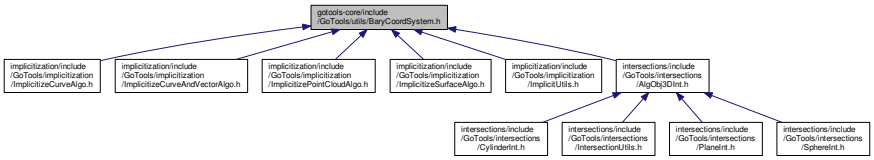
30.1981 gotools-core/include/GoTools/utils/BaryCoordSystem.h File Reference

```
#include "GoTools/utils/Array.h"
#include "GoTools/utils/Volumes.h"
#include <algorithm>
```

Include dependency graph for BaryCoordSystem.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BaryCoordSystem< Dim >

Namespaces

- Go
- std

Typedefs

- typedef BaryCoordSystem< 2 > Go::BaryCoordSystem2D
- typedef BaryCoordSystem< 3 > Go::BaryCoordSystem3D

Functions

- template<class T , int Dim>
  Array< T, Dim > Go::operator* (const Array< double, Dim > &a, const T b)
- template<int Dim>
  std::istream & std::operator>> (std::istream &is, Go::BaryCoordSystem< Dim > &bc)

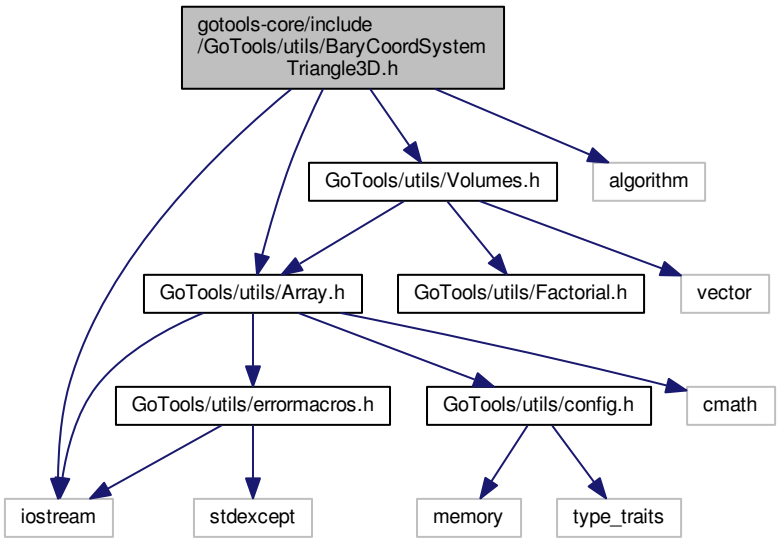
  Read BaryCoordSystem from input stream.
- template<int Dim>
  std::ostream & std::operator<< (std::ostream &os, const Go::BaryCoordSystem< Dim > &bc)

  Write BaryCoordSystem to output stream.

30.1982 gotools-core/include/GoTools/utils/BaryCoordSystemTriangle3D.h File Reference

```
#include "GoTools/utils/Array.h"
#include "GoTools/utils/Volumes.h"
#include <iostream>
#include <algorithm>
```

Include dependency graph for BaryCoordSystemTriangle3D.h:



Classes

- class Go::BaryCoordSystemTriangle3D

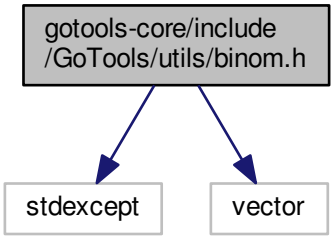
Namespaces

- Go

30.1983 gotools-core/include/GoTools/utils/binom.h File Reference

```
#include <stdexcept>
#include <vector>
```

Include dependency graph for binom.h:



Namespaces

- Go

Functions

- double Go::binom (int n, int i)

  Computes the binomial coefficient: n! / (i! (n-i)!)
- double Go::factorial (int n)

  computes n! (n factorial)
- double Go::trinomial (int n, int i, int j)

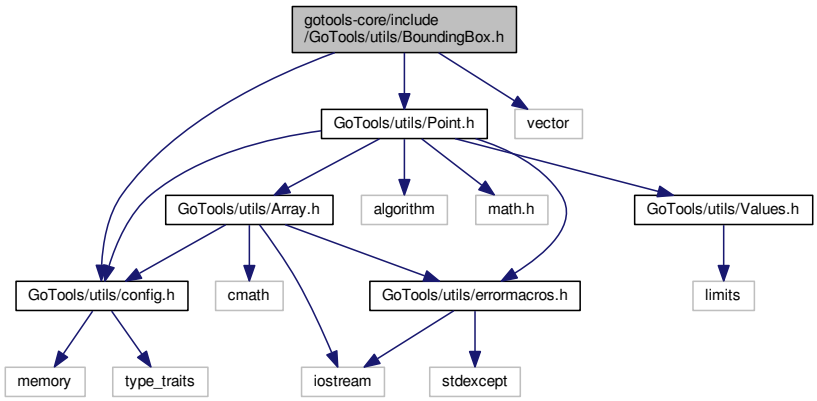
  computes the trinomial coefficient: n! / (i! j! (n-i-j)!)
- double Go::quadrinomial (int n, int i, int j, int k)

  computes the quadrinomial coefficient: n! / (i! j! k! (n-i-j-k)!)

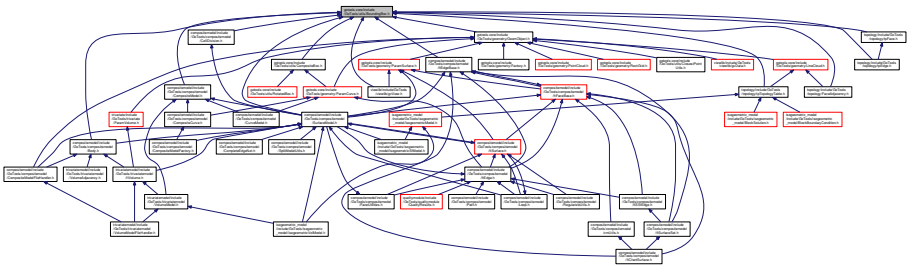
30.1984 gotools-core/include/GoTools/utils/BoundingBox.h File Reference

```
#include "GoTools/utils/Point.h"
#include <vector>
#include "GoTools/utils/config.h"
```

Include dependency graph for BoundingBox.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BoundingBox

Namespaces

- Go
- std

Functions

- std::istream & std::operator>> (std::istream &is, Go::BoundingBox &bbox)

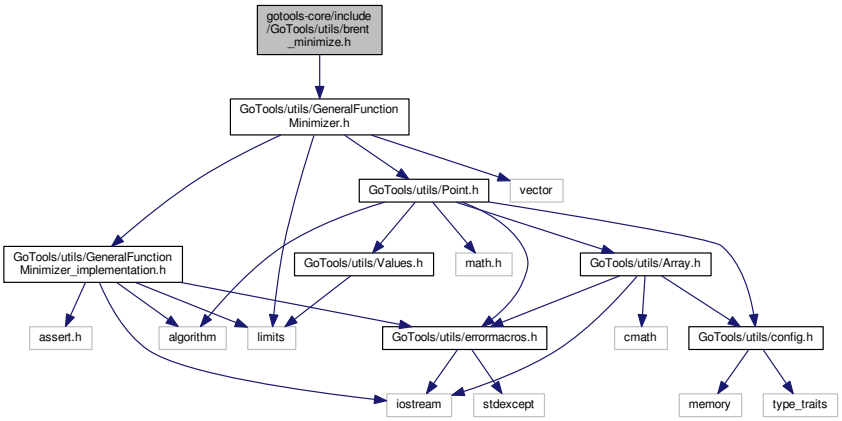
  Read BoundingBox from input stream.
- std::ostream & std::operator<< (std::ostream &os, const Go::BoundingBox &bbox)

  Write BoundingBox to output stream.

30.1985 gotools-core/include/GoTools/utils/brent_minimize.h File Reference

```
#include "GoTools/utils/GeneralFunctionMinimizer.h"
```

Include dependency graph for brent_minimize.h:



Classes

- class Go::Fun2Fun< Functor >

Namespaces

- Go

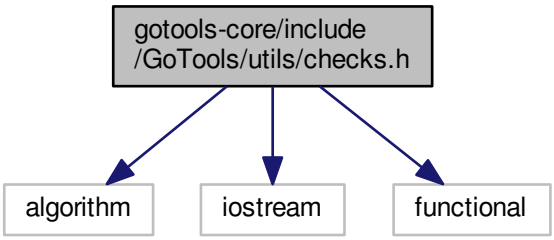
Functions

- template<class Functor >
  double Go::brent_minimize (const Functor &f, double a, double b, double c, double &parmin, const double rel_tolerance=std::sqrt(std::numeric_limits< double >::epsilon()))

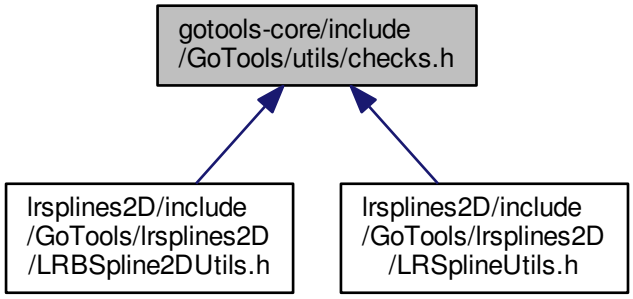
30.1986 gotools-core/include/GoTools/utils/checks.h File Reference

```
#include <algorithm>
#include <iostream>
#include <functional>
```

Include dependency graph for checks.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- Go

Functions

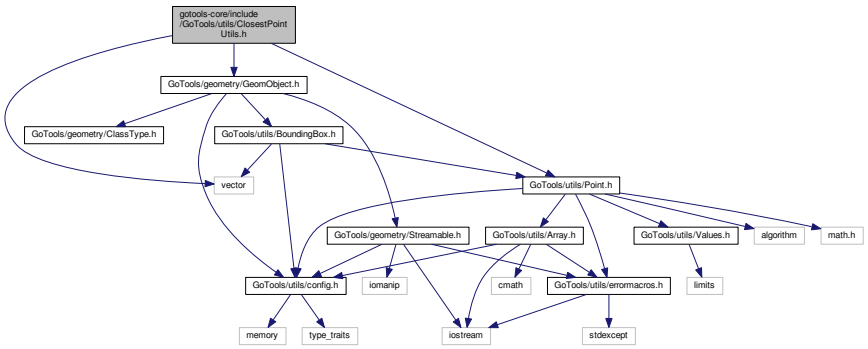
- template<typename Iterator >
  bool Go::strictly_increasing (Iterator begin, Iterator end)
- template<typename Array >
  bool Go::strictly_increasing (const Array &A)
- template<typename Iterator >
  bool Go::weakly_increasing (Iterator begin, Iterator end)
- template<typename Array >
  bool Go::weakly_increasing (const Array &A)
- template<typename Iterator >
  bool Go::strictly_decreasing (Iterator begin, Iterator end)

- template<typename Array >
  bool Go::strictly_decreasing (const Array &A)
- template<typename Iterator >
  bool Go::weakly_decreasing (Iterator begin, Iterator end)
- template<typename Array >
  bool Go::weakly_decreasing (const Array &A)
- template<typename ValueType >
  bool Go::nondecreasing (ValueType a, ValueType b, ValueType c)
- template<typename ValueType >
  bool Go::nonincreasing (ValueType a, ValueType b, ValueType c)
- template<typename ValueType >
  bool Go::strictly_decreasing (ValueType a, ValueType b, ValueType c)
- template<typename ValueType >
  bool Go::strictly_increasing (ValueType a, ValueType b, ValueType c)
- template<typename ValueType >
  bool Go::interval_overlap (ValueType front1, ValueType back1, ValueType front2, ValueType back2)
- template<typename Iterator >
  int Go::compare_seq (Iterator begin_1, Iterator end_1, Iterator begin_2, Iterator end_2)

30.1987 gotools-core/include/GoTools/utils/ClosestPointUtils.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
#include "GoTools/geometry/GeomObject.h"
```

Include dependency graph for ClosestPointUtils.h:



Classes

- class Go::boxStructuring::SurfaceData
- class Go::boxStructuring::SubSurfaceBoundingBox
- class Go::boxStructuring::BoundingBoxStructure

Namespaces

- Go
- Go::boxStructuring

Functions

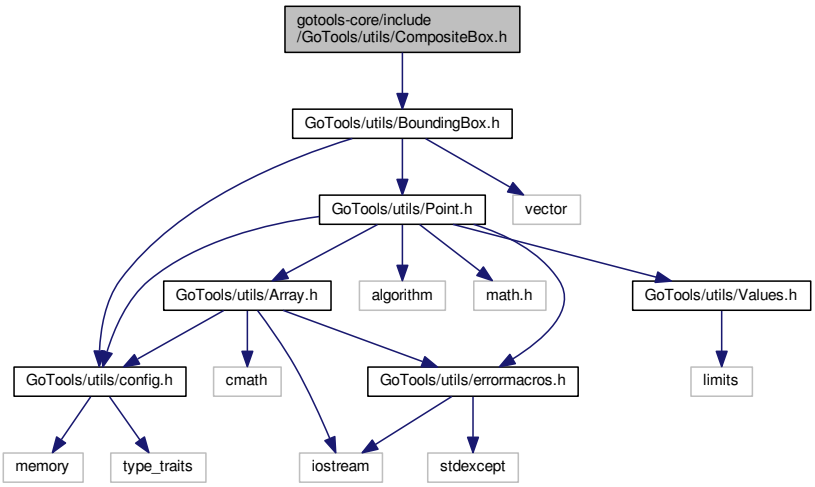
- shared_ptr< boxStructuring::BoundingBoxStructure > Go::preProcessClosestVectors (const std::vector< shared_ptr< GeomObject > > &surfaces, double par_len_el)
- void Go::closestPointSingleCalculation (int pt_idx, int start_idx, int skip, const std::vector< float > &inPoints, const std::vector< std::vector< double > > &rotationMatrix, const Point &translation, const shared_ptr< boxStructuring::BoundingBoxStructure > &boxStructure, std::vector< float > &result, std::vector< std::vector< int > > &lastBoxCall, int return_type, int search_extend)
- std::vector< float > Go::closestPointCalculations (const std::vector< float > &pts, const shared_ptr< boxStructuring::BoundingBoxStructure > &structure, const std::vector< std::vector< double > > &rotationMatrix, const Point &translation, int return_type, int start_idx, int skip, int max_idx, int search_extend=3, bool m_core=true)
- std::vector< float > Go::closestVectorsOld (const std::vector< float > &inPoints, const shared_ptr< boxStructuring::BoundingBoxStructure > &boxStructure, const std::vector< std::vector< double > > &rotationMatrix, const Point &translation, int return_type, int start_idx, int skip, int max_idx, int search_extend=3)

  Calculates the closest points of a point cloud to a surface model, by not using the inside polygons in closestVectors()
- std::vector< float > Go::closestPointCalculations (const std::vector< float > &pts, const shared_ptr< boxStructuring::BoundingBoxStructure > &structure, const std::vector< std::vector< double > > &rotationMatrix, const Point &translation, int return_type)
- std::vector< float > Go::closestDistances (const std::vector< float > &pts, const shared_ptr< boxStructuring::BoundingBoxStructure > &structure, const std::vector< std::vector< double > > &rotationMatrix, const Point &translation)
- std::vector< float > Go::closestSignedDistances (const std::vector< float > &pts, const shared_ptr< boxStructuring::BoundingBoxStructure > &structure, const std::vector< std::vector< double > > &rotationMatrix, const Point &translation)
- std::vector< float > Go::closestPoints (const std::vector< float > &pts, const shared_ptr< boxStructuring::BoundingBoxStructure > &structure, const std::vector< std::vector< double > > &rotationMatrix, const Point &translation)

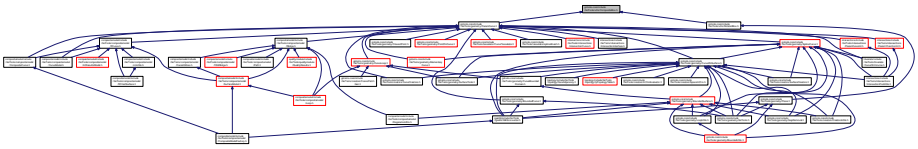
30.1988 gotools-core/include/GoTools/utils/CompositeBox.h File Reference

```
#include "GoTools/utils/BoundingBox.h"
```

Include dependency graph for CompositeBox.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::CompositeBox

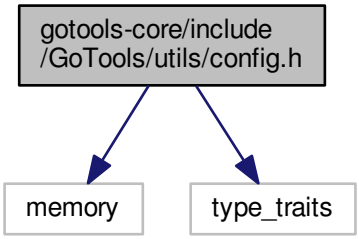
Namespaces

- Go

30.1989 gotools-core/include/GoTools/utils/config.h File Reference

```
#include <memory>
#include <type_traits>
```

Include dependency graph for config.h:



Macros

- #define GO_API

30.1989.1 Macro Definition Documentation

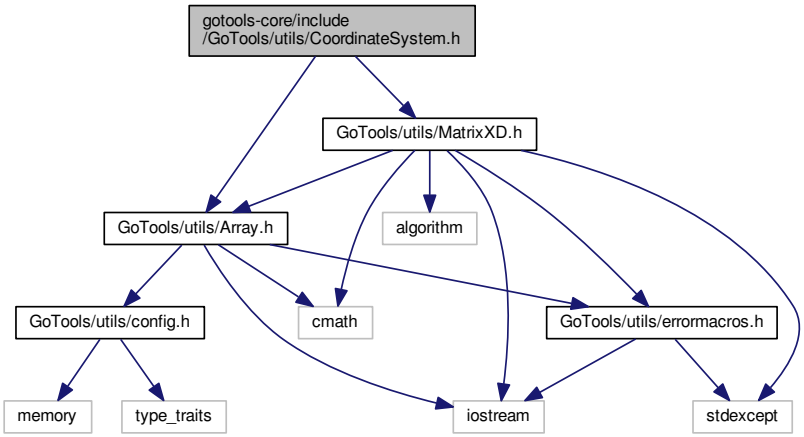
30.1989.1.1 #define GO_API

Definition at line 52 of file config.h.

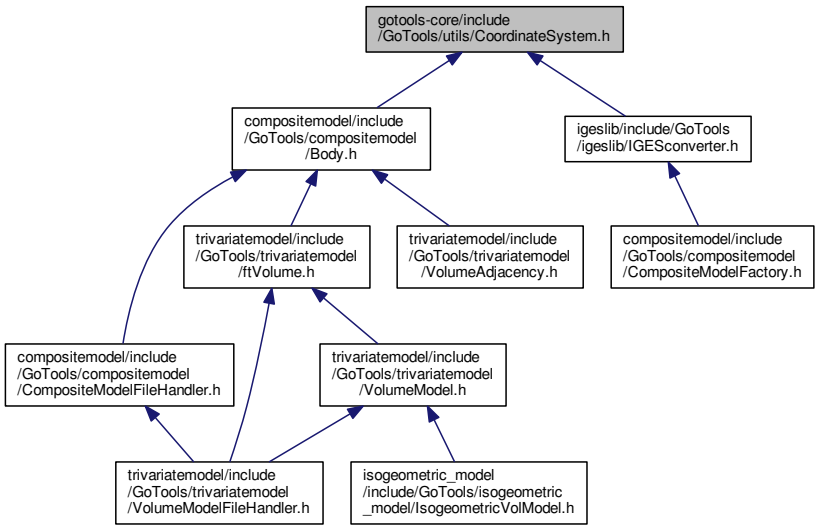
30.1990 gotools-core/include/GoTools/utils/CoordinateSystem.h File Reference

```
#include "GoTools/utils/Array.h"
#include "GoTools/utils/MatrixXD.h"
```

Include dependency graph for CoordinateSystem.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::CoordinateSystem< Dim >

  Defines a Cartesian coordinate system.

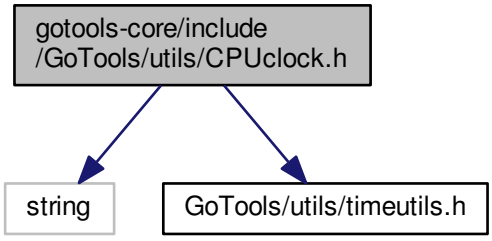
Namespaces

- Go

30.1991 gotools-core/include/GoTools/utils/CPUclock.h File Reference

```
#include <string>
#include "GoTools/utils/timeutils.h"
```

Include dependency graph for CPUclock.h:



Classes

- class Go::CPUclock

  A class for measuring CPU time in programs.

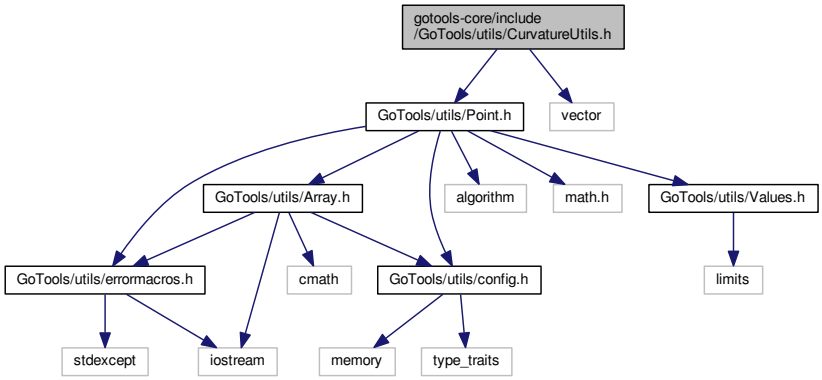
Namespaces

- Go

30.1992 gotools-core/include/GoTools/utils/CurvatureUtils.h File Reference

```
#include "GoTools/utils/Point.h"
#include <vector>
```

Include dependency graph for CurvatureUtils.h:



Namespaces

- Go

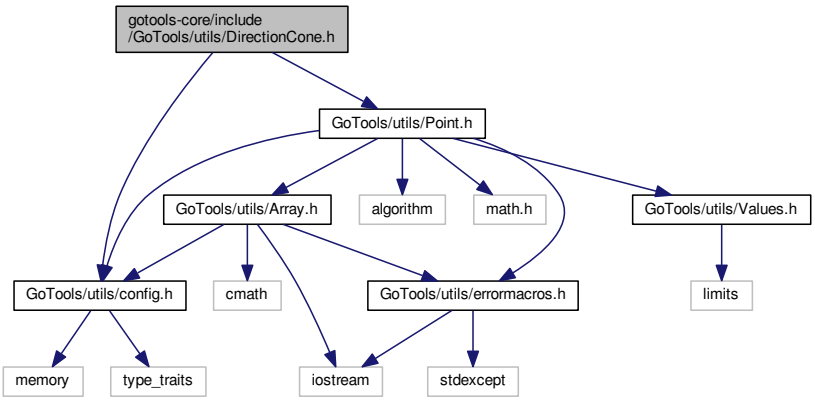
Functions

- double Go::curvatureRadius (const std::vector< Point > &der, std::vector< Point > &unitder)
- double Go::stepLenFromRadius (double radius, double aepsge)
- double Go::tanLenFromRadius (double radius, double angle)
- void Go::getHermiteData (const std::vector< Point > &der1, const std::vector< Point > &der2, double &parint, double &len1, double &len2)

30.1993 gotools-core/include/GoTools/utils/DirectionCone.h File Reference

```
#include "GoTools/utils/Point.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for DirectionCone.h:



This graph shows which files directly or indirectly include this file:

Classes

- class Go::DirectionCone

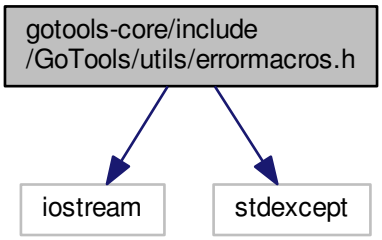
Namespaces

- Go

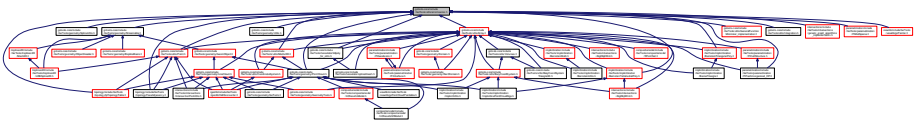
30.1994 gotools-core/include/GoTools/utils/errormacros.h File Reference

```
#include <iostream>
#include <stdexcept>
```

Include dependency graph for errormacros.h:



This graph shows which files directly or indirectly include this file:



Macros

- #define REPORT std::cerr << "\nIn file " << __FILE__ << ", line " << __LINE__ << std::endl
- #define MESSAGE(x) std::cerr << "\nIn file " << __FILE__ << ", line " << __LINE__ << ": " << x << std::endl
- #define MESSAGE_IF(cond, m) do {if(cond) MESSAGE(m);} while(0)
- #define THROW(x) MESSAGE(x), throw std::exception()
- #define GO_NO_CHECKS
- #define ALWAYS_ERROR_IF(condition, message) do {if(condition){ THROW(message);}} while(0)
- #define ASSERT(cond) if (!(cond)) THROW("Assertion \'" #cond "\' failed.")
- #define ASSERT2(cond, x) do { if (!(cond)) THROW(x);} while(0)
- #define DEBUG_ERROR_IF(cond, x) do { if (cond) THROW(x); } while(0)

30.1994.1 Macro Definition Documentation

30.1994.1.1 #define ALWAYS_ERROR_IF(*condition, message*) do {if(condition){ THROW(message);}} while(0)

Definition at line 83 of file errormacros.h.

30.1994.1.2 #define ASSERT(*cond*) if (!(cond)) THROW("Assertion \'" #cond "\' failed.")

Usage: ASSERT(condition) Usage: ASSERT2(condition, "Error message string.") Usage: DEBUG_ERROR_↩ IF(condition, "Error message string.");

Definition at line 100 of file errormacros.h.

30.1994.1.3 #define ASSERT2(*cond, x*) do { if (!(cond)) THROW(x);} while(0)

Definition at line 103 of file errormacros.h.

30.1994.1.4 #define DEBUG_ERROR_IF(*cond, x*) do { if (cond) THROW(x); } while(0)

Definition at line 107 of file errormacros.h.

30.1994.1.5 #define GO_NO_CHECKS

Definition at line 79 of file errormacros.h.

30.1994.1.6 #define MESSAGE(*x*) std::cerr << "\nIn file " << __FILE__ << ", line " << __LINE__ << ": " << x << std::endl

Definition at line 68 of file errormacros.h.

30.1994.1.7 #define MESSAGE_IF(*cond, m*) do {if(cond) MESSAGE(m);} while(0)

Definition at line 71 of file errormacros.h.

30.1994.1.8 #define REPORT std::cerr << "\nIn file " << __FILE__ << ", line " << __LINE__ << std::endl

Usage: REPORT; Usage: MESSAGE("Message string."); Usage: THROW("Error message string.");

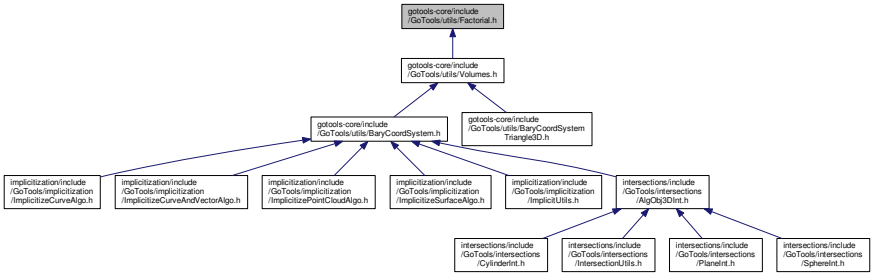
Definition at line 65 of file errormacros.h.

30.1994.1.9 #define THROW(*x*) MESSAGE(x), throw std::exception()

Definition at line 74 of file errormacros.h.

30.1995 gotools-core/include/GoTools/utils/Factorial.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- struct Go::Factorial< N >

  Compile-time factorial calculations.
- struct Go::Factorial< 1 >
- struct Go::InverseFactorial< T, N >

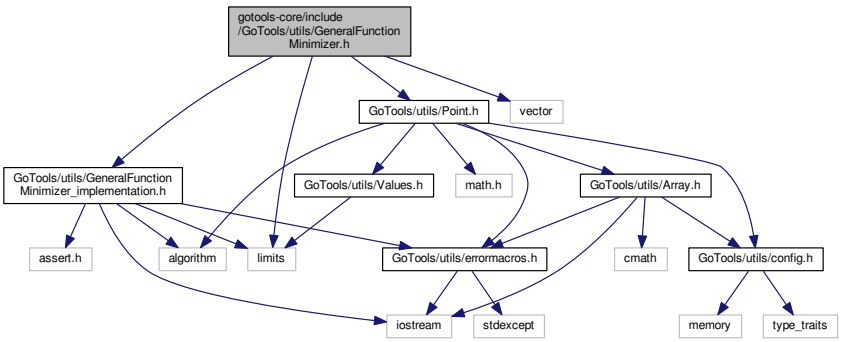
Namespaces

- Go

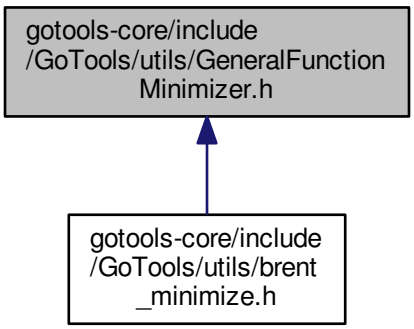
30.1996 gotools-core/include/GoTools/utils/GeneralFunctionMinimizer.h File Reference

```
#include "GoTools/utils/Point.h"
#include <vector>
#include <limits>
#include "GoTools/utils/GeneralFunctionMinimizer_implementation.h"
```

Include dependency graph for GeneralFunctionMinimizer.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::FunctionMinimizer< Functor >
- class Go::FunctionMinimizer< Functor >

Namespaces

- Go

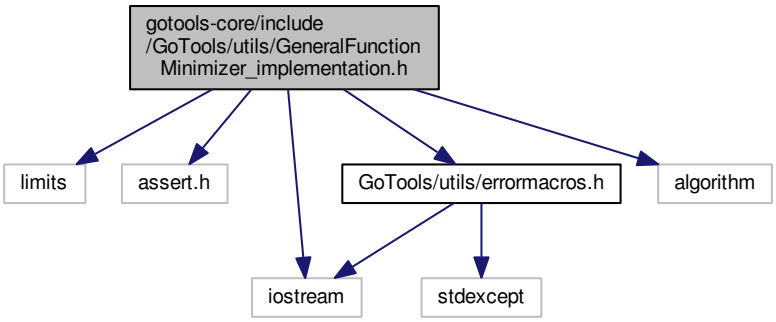
Functions

- template<class Functor >
  void Go::minimise_conjugated_gradient (FunctionMinimizer< Functor > &dfmin)

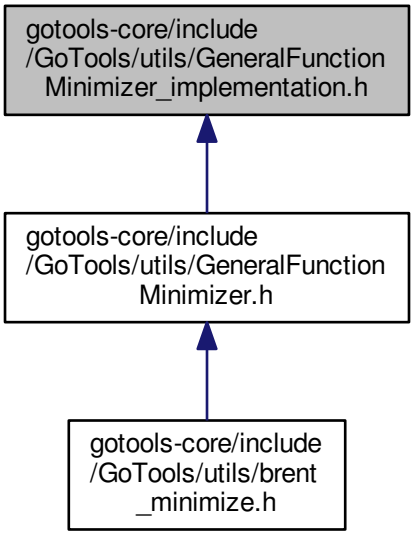
30.1997 gotools-core/include/GoTools/utils/GeneralFunctionMinimizer_implementation.h File Reference

```
#include <limits>
#include <assert.h>
#include "GoTools/utils/errormacros.h"
#include <algorithm>
#include <iostream>
```

Include dependency graph for GeneralFunctionMinimizer_implementation.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- Go

Functions

- template<class Functor >
  void Go::minimise_conjugated_gradient (FunctionMinimizer< Functor > &dfmin)

30.1998 gotools-core/include/GoTools/utils/gotools-doxymain.h File Reference

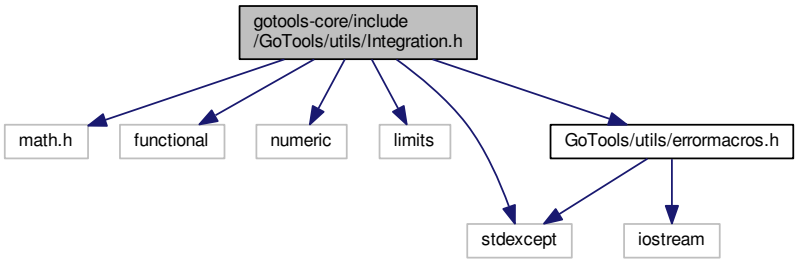
Namespaces

- Go

30.1999 gotools-core/include/GoTools/utils/Integration.h File Reference

```
#include <math.h>
#include <functional>
#include <numeric>
#include <limits>
#include <stdexcept>
#include "GoTools/utils/errormacros.h"
```

Include dependency graph for Integration.h:



Namespaces

- Go

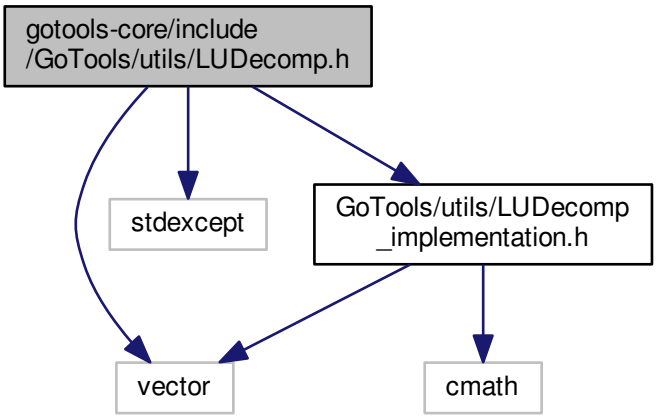
Functions

- template<typename Functor >
  void Go::trapezoidal (Functor &f, double a, double b, double &s, int n)
- template<typename Functor >
  double Go::simpsons_rule (Functor &f, double a, double b, const double eps=1.0e-6, const int max_iter=20)
- template<typename Functor >
  double Go::gaussian_quadrature (Functor &f, double a, double b)
- template<typename Functor2D >
  double Go::simpsons_rule2D (Functor2D &f, double ax, double bx, double ay, double by, const double eps=1.0e-6, const int max_iter=20)
- template<typename Functor2D >
  double Go::gaussian_quadrature2D (Functor2D &f, double ax, double bx, double ay, double by)

30.2000 gotools-core/include/GoTools/utils/LUDecomp.h File Reference

```
#include <vector>
#include <stdexcept>
#include "GoTools/utils/LUDecomp_implementation.h"
```

Include dependency graph for LUDecomp.h:



Namespaces

- Go

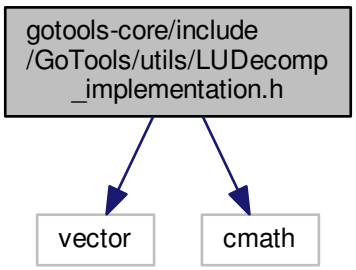
Functions

- template<typename SquareMatrix >
  void Go::LUDecomp (SquareMatrix &mat, int num_rows, int *perm, bool &parity)
- template<typename SquareMatrix , typename T >
  void Go::LUsolveSystem (SquareMatrix &A, int num_unknowns, T *vec)
- template<typename SquareMatrix , typename T >
  void Go::forwardSubstitution (const SquareMatrix &L, T *x, int num_unknowns)
- template<typename SquareMatrix , typename T >
  void Go::backwardSubstitution (const SquareMatrix &U, T *x, int num_unknowns)
- template<typename SquareMatrix >
  void Go::forwardSubstitution (const SquareMatrix &L, std::vector< double > *x, int num_unknowns)
- template<typename SquareMatrix >
  void Go::backwardSubstitution (const SquareMatrix &U, std::vector< double > *x, int num_unknowns)

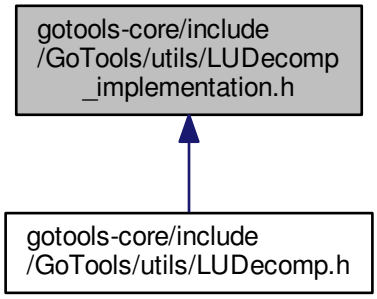
30.2001 gotools-core/include/GoTools/utils/LUDecomp_implementation.h File Reference

```
#include <vector>
#include <cmath>
```

Include dependency graph for LUDecomp_implementation.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- Go

Functions

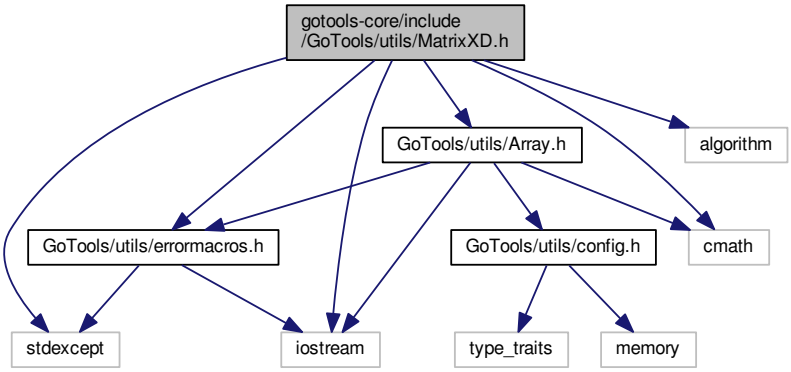
- template<typename SquareMatrix >
  void Go::LUDecomp (SquareMatrix &mat, int num_rows, int *perm, bool &parity)
- template<typename SquareMatrix , typename T >
  void Go::LUsolveSystem (SquareMatrix &A, int num_unknowns, T *vec)

- template<typename SquareMatrix , typename T >
  void Go::forwardSubstitution (const SquareMatrix &L, T *x, int num_unknowns)
- template<typename SquareMatrix >
  void Go::forwardSubstitution (const SquareMatrix &L, std::vector< double > *x, int num_unknowns)
- template<typename SquareMatrix , typename T >
  void Go::backwardSubstitution (const SquareMatrix &U, T *x, int num_unknowns)
- template<typename SquareMatrix >
  void Go::backwardSubstitution (const SquareMatrix &U, std::vector< double > *x, int num_unknowns)

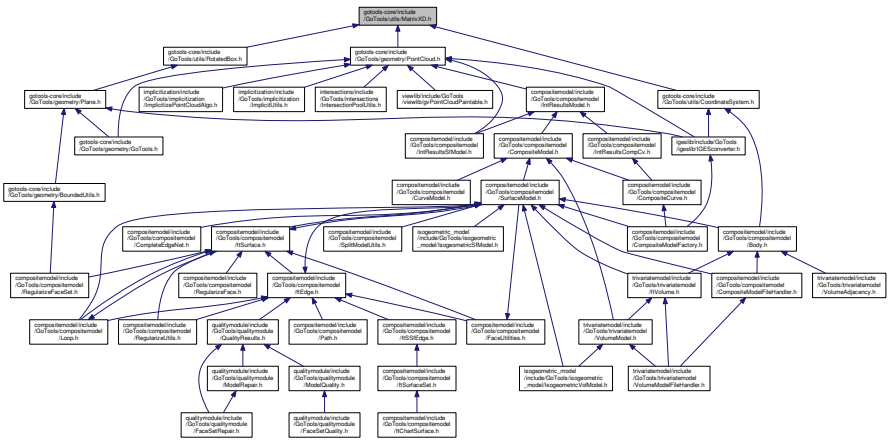
30.2002 gotools-core/include/GoTools/utils/MatrixXD.h File Reference

```
#include "GoTools/utils/errormacros.h"
#include "GoTools/utils/Array.h"
#include <algorithm>
#include <iostream>
#include <cmath>
#include <stdexcept>
```

Include dependency graph for MatrixXD.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::MatrixXD< T, Dim >

Namespaces

- Go

Functions

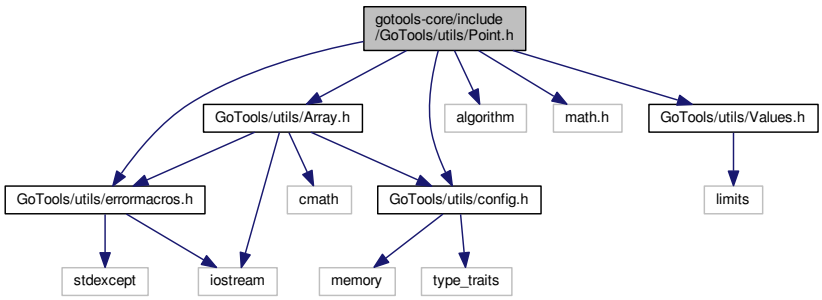
- template<typename T , int Dim>
  std::ostream & Go::operator<< (std::ostream &os, const MatrixXD< T, Dim > &m)

  output operator

30.2003 gotools-core/include/GoTools/utils/Point.h File Reference

```
#include "GoTools/utils/Array.h"
#include "GoTools/utils/errormacros.h"
#include <algorithm>
#include <math.h>
#include "GoTools/utils/config.h"
#include "GoTools/utils/Values.h"
```

Include dependency graph for Point.h:



Classes

- class Go::Point

Namespaces

- Go

Functions

- Point Go::operator∗ (double d, const Point &p)

  The product of a vector and a scalar.
- std::istream & Go::operator>> (std::istream &is, Go::Point &v)

  Stream extraction for Point.
- std::ostream & Go::operator<< (std::ostream &os, const Go::Point &v)

  Stream insertion for Point.
- bool Go::operator< (const Point &p1, const Point &p2)

  Less than operator.
- bool Go::operator== (const Point &p1, const Point &p2)

  Equal operator.

30.2004 gotools-core/include/GoTools/utils/randomnoise.h File Reference

Namespaces

- Go

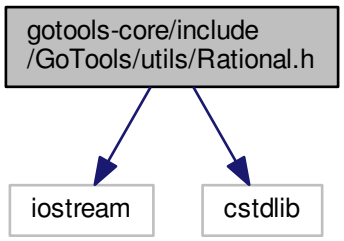
Functions

- void Go::normalNoise (double ∗res, double mean_err, int num_samples)
- void Go::uniformNoise (double ∗res, double lval, double uval, int num_samples)

30.2005 gotools-core/include/GoTools/utils/Rational.h File Reference

```
#include <iostream>
#include <cstdlib>
```

Include dependency graph for Rational.h:



Classes

- class Go::Rational

Namespaces

- Go

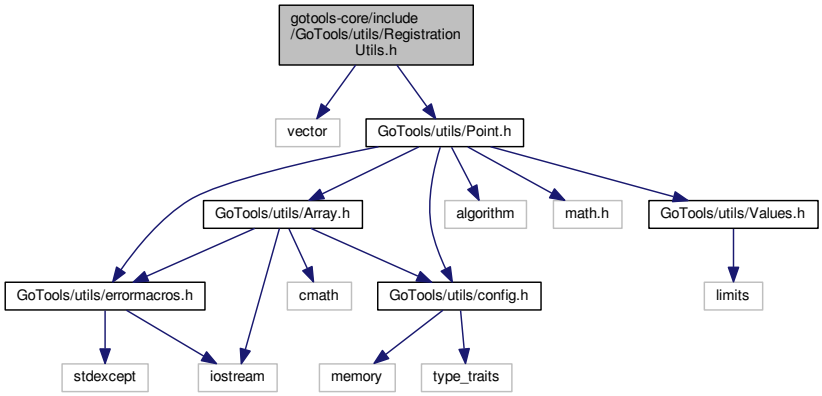
Functions

- Rational Go::operator+ (const Rational &r1, const Rational r2)
- Rational Go::operator- (const Rational &r1, const Rational r2)
- Rational Go::operator∗ (const Rational &r1, const Rational r2)
- Rational Go::operator/ (const Rational &r1, const Rational r2)
- std::ostream & Go::operator<< (std::ostream &os, const Rational &p)

30.2006 gotools-core/include/GoTools/utils/RegistrationUtils.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
```

Include dependency graph for RegistrationUtils.h:



Classes

- struct Go::RegistrationInput

  Struct for input to registration, either raw, fine or combined.
- struct Go::RegistrationResult

  Struct for result from registration process, either raw, fine or combined.

Namespaces

- Go

Enumerations

- enum Go::RegistrationReturnType {
  Go::RegistrationOK, Go::TooFewPoints, Go::PointSetSizeDiff, Go::AreaTooSmall,
  Go::SolveFailed }

Functions

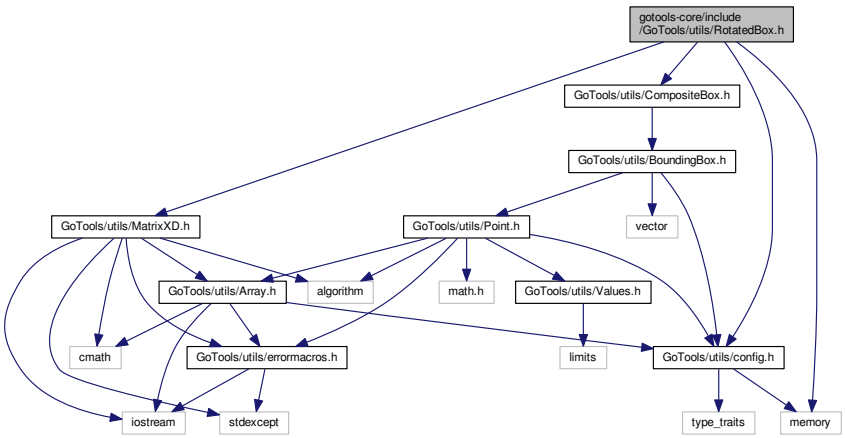
- RegistrationResult Go::rawRegistration (const std::vector< Point > &points_fixed, const std::vector< Point > &points_transform, bool allow_rescaling, RegistrationInput params)
- void Go::addToLinearSystem (int pt_idx, const std::vector< Point > &points_fixed, const std::vector< Point > &points_transform, bool allow_rescaling, const std::vector< std::vector< double > > &id, const Point &fine_R, const Point &fine_T, double fine_s, const std::vector< std::vector< double > > &m_rot_R, double s2, double R2, bool zero_R, const std::vector< std::vector< std::vector< double > > > &lhs_matrix, const std::vector< std::vector< double > > &rhs_matrix)

  Add the contribution from one single point to the linear system coefficients used during fine registration.
- RegistrationResult Go::fineRegistration (const std::vector< Point > &points_fixed, const std::vector< Point > &points_transform, bool allow_rescaling, RegistrationInput params)
- RegistrationResult Go::registration (const std::vector< Point > &points_fixed, const std::vector< Point > &points_transform, bool allow_rescaling, RegistrationInput params)

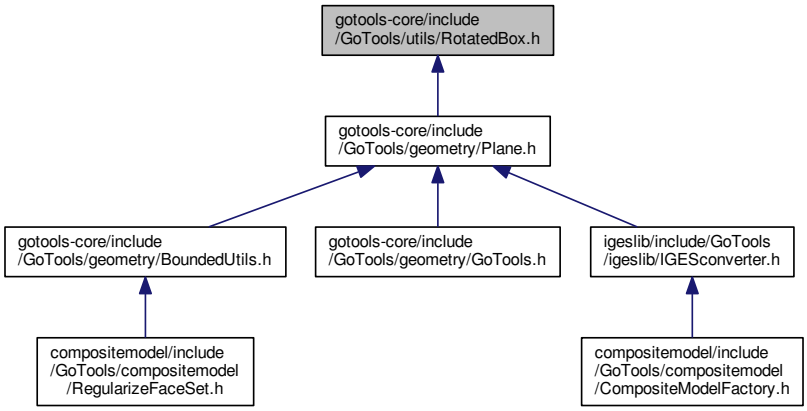
30.2007 gotools-core/include/GoTools/utils/RotatedBox.h File Reference

```
#include "GoTools/utils/CompositeBox.h"
#include "GoTools/utils/MatrixXD.h"
#include "GoTools/utils/config.h"
#include <memory>
```

Include dependency graph for RotatedBox.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::RotatedBox

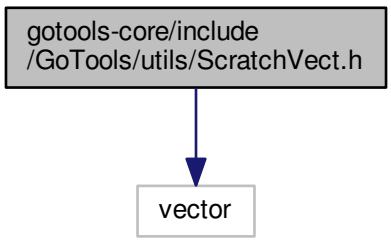
Namespaces

- Go

30.2008 gotools-core/include/GoTools/utils/ScratchVect.h File Reference

```
#include <vector>
```

Include dependency graph for ScratchVect.h:



This graph shows which files directly or indirectly include this file:

Classes

- class Go::ScratchVect< T, N >

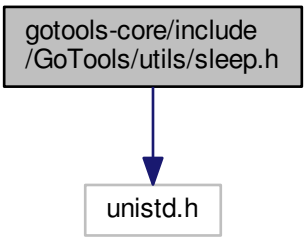
Namespaces

- Go

30.2009 gotools-core/include/GoTools/utils/sleep.h File Reference

```
#include <unistd.h>
```

Include dependency graph for sleep.h:



Macros

- #define msleep(t) usleep((t) * 1000)

30.2009.1 Macro Definition Documentation

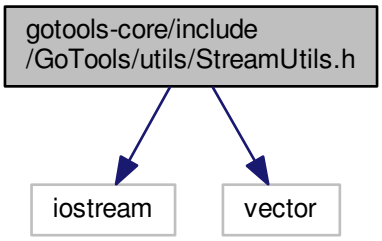
30.2009.1.1 #define msleep(*t*) usleep((t) * 1000)

Definition at line 57 of file sleep.h.

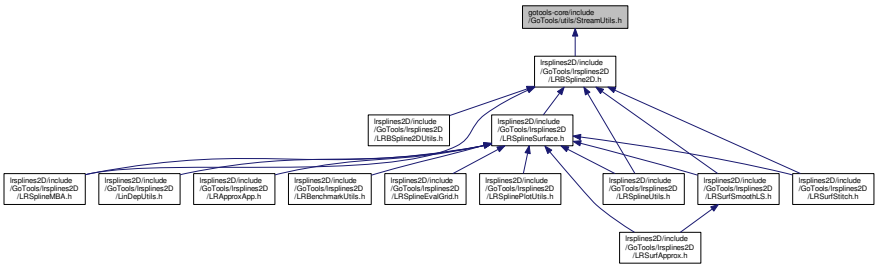
30.2010 gotools-core/include/GoTools/utils/StreamUtils.h File Reference

```
#include <iostream>
#include <vector>
```

Include dependency graph for StreamUtils.h:



This graph shows which files directly or indirectly include this file:



Functions

- template<typename T >
  void object_to_stream (std::ostream &os, const T &obj)
- template<typename T >
  void object_to_stream (std::wostream &os, const T &obj)
- template<typename T >
  void object_from_stream (std::istream &is, T &obj)
- template<typename T >
  void object_from_stream (std::wistream &is, T &obj)
- template<typename T >
  void object_to_stream (std::ostream &os, const std::vector< T > &v)
- template<typename T >
  void object_from_stream (std::istream &is, std::vector< T > &v)
- template<typename T >
  void object_to_stream (std::wostream &os, const std::vector< T > &v)
- template<typename T >
  void object_from_stream (std::wistream &is, std::vector< T > &v)

30.2010.1 Function Documentation

30.2010.1.1 template<typename T > void object_from_stream (std::istream & *is,* T & *obj*)

Definition at line 59 of file StreamUtils.h.

30.2010.1.2 template<typename T > void object_from_stream (std::wistream & *is,* T & *obj*)

Definition at line 60 of file StreamUtils.h.

30.2010.1.3 template<typename T > void object_from_stream (std::istream & *is,* std::vector< T > & *v*)

Definition at line 80 of file StreamUtils.h.

30.2010.1.4 template<typename T > void object_from_stream (std::wistream & *is,* std::vector< T > & *v*)

Definition at line 103 of file StreamUtils.h.

30.2010.1.5 template<typename T > void object_to_stream (std::ostream & *os,* const T & *obj*)

Definition at line 55 of file StreamUtils.h.

30.2010.1.6 template<typename T > void object_to_stream (std::wostream & *os,* const T & *obj*)

Definition at line 56 of file StreamUtils.h.

30.2010.1.7 template<typename T > void object_to_stream (std::ostream & *os,* const std::vector< T > & *v*)

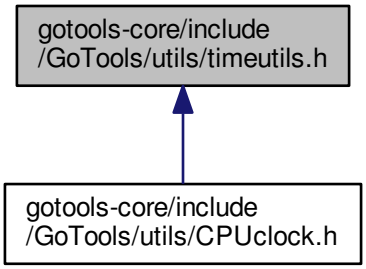
Definition at line 69 of file StreamUtils.h.

30.2010.1.8 template<typename T > void object_to_stream (std::wostream & *os,* const std::vector< T > & *v*)

Definition at line 92 of file StreamUtils.h.

30.2011 gotools-core/include/GoTools/utils/timeutils.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- Go

Functions

- double Go::getCurrentTime ()

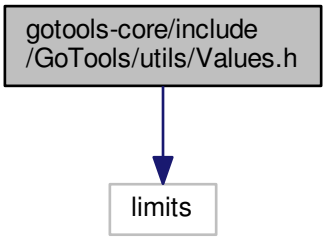
  Number of seconds since some (probably system-dependent) epoch.
- void Go::systemSleep (double sleep_time)

  Sleep for sleep_time seconds.

30.2012 gotools-core/include/GoTools/utils/Values.h File Reference

```
#include <limits>
```

Include dependency graph for Values.h:



This graph shows which files directly or indirectly include this file:

Macros

- #define DEFAULT_SPACE_EPSILON 1e-10
- #define DEFAULT_PARAMETER_EPSILON 1e-10

Variables

- const int MAXINT = std::numeric_limits<int>::max()
- const double MAXDOUBLE = std::numeric_limits<double>::max()
- const double M_PI = 3.14159265358979323846

30.2012.1 Detailed Description

Defines the constants MAXINT, MAXDOUBLE and M_PI if they are not defined by system.

30.2012.2 Macro Definition Documentation

30.2012.2.1 #define DEFAULT_PARAMETER_EPSILON 1e-10

Definition at line 71 of file Values.h.

30.2012.2.2 #define DEFAULT_SPACE_EPSILON 1e-10

Definition at line 66 of file Values.h.

30.2012.3 Variable Documentation

30.2012.3.1 const double M_PI = 3.14159265358979323846

Definition at line 62 of file Values.h.

30.2012.3.2 const double MAXDOUBLE = std::numeric_limits<double>::max()

Definition at line 58 of file Values.h.

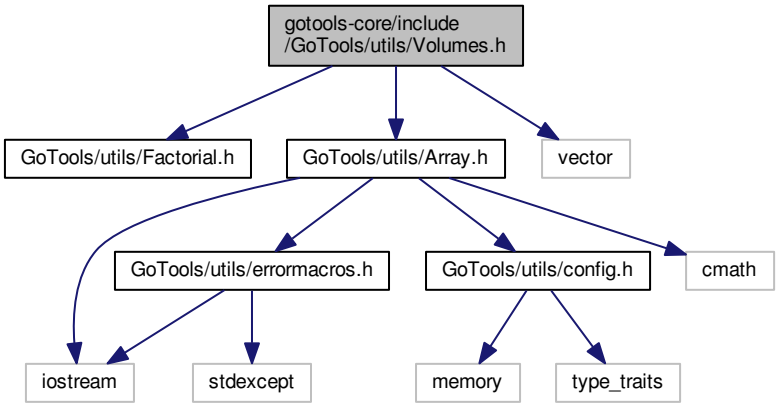
30.2012.3.3 const int MAXINT = std::numeric_limits<int>::max()

Definition at line 53 of file Values.h.

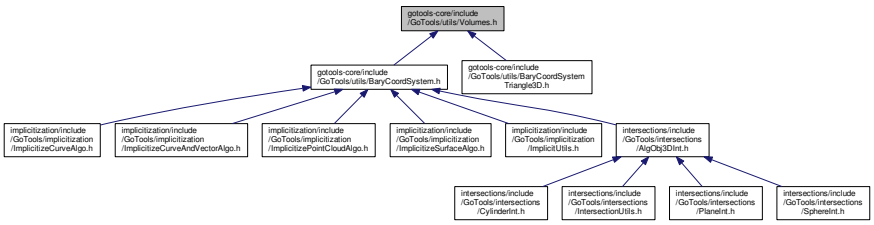
30.2013 gotools-core/include/GoTools/utils/Volumes.h File Reference

```
#include "GoTools/utils/Factorial.h"
#include "GoTools/utils/Array.h"
#include <vector>
```

Include dependency graph for Volumes.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- Go

Functions

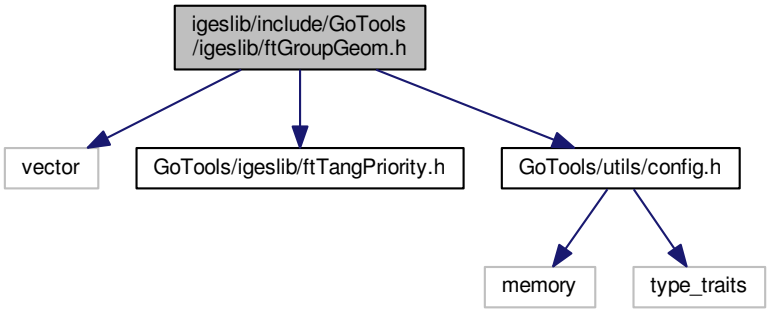
- template<typename T >
  T Go::determinantOf (const Array< T, 2 > *a)
- template<typename T >
  T Go::determinantOf (const Array< T, 3 > *a)
- template<typename T , int Dim>
  T Go::simplex_volume (const Array< T, Dim > *a)
- template<typename T >
  T Go::area (const Array< T, 2 > *c)
- template<typename T >
  T Go::area (const Array< T, 3 > *c)
- template<typename T >
  T Go::volume (const Array< T, 3 > *c)

  Computes the volume of a 3D simplex (embedded i 3D space).
- template<typename T >
  T Go::signed_area (const Array< T, 3 > *c, const Array< T, 3 > &normal)

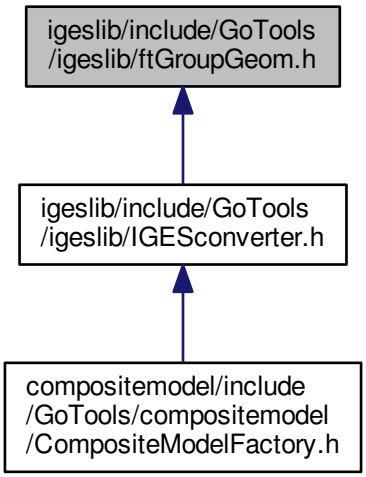
30.2014 igeslib/include/GoTools/igeslib/ftGroupGeom.h File Reference

```
#include <vector>
#include "GoTools/igeslib/ftTangPriority.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for ftGroupGeom.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ftGroupGeom

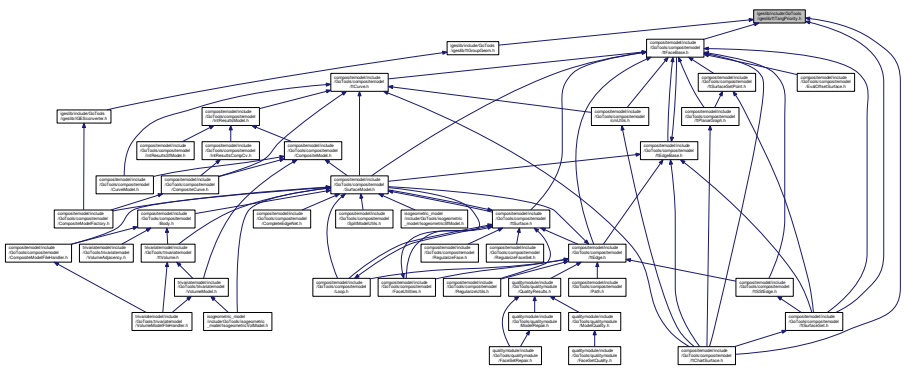
  A group of geometrical objects.

Namespaces

- Go

30.2015 igeslib/include/GoTools/igeslib/ftTangPriority.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- Go

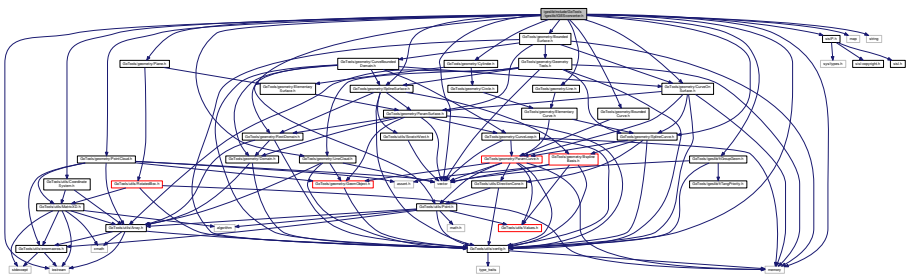
Enumerations

- enum Go::ftTangPriority { Go::ftNoType = 0, Go::ftMaster, Go::ftSlave }

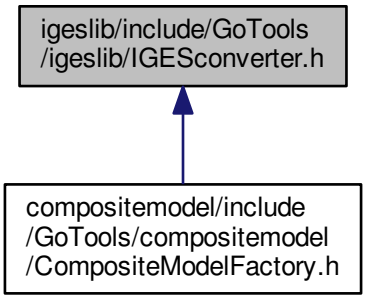
30.2016 igeslib/include/GoTools/igeslib/IGESconverter.h File Reference

```
#include "GoTools/utils/CoordinateSystem.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/LineCloud.h"
#include "GoTools/geometry/Line.h"
#include "GoTools/geometry/BoundedSurface.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/geometry/BoundedCurve.h"
#include "GoTools/geometry/Cylinder.h"
#include "GoTools/utils/Point.h"
#include "GoTools/igeslib/ftGroupGeom.h"
#include "GoTools/geometry/PointCloud.h"
#include "GoTools/geometry/Plane.h"
#include "GoTools/utils/config.h"
#include "sislP.h"
#include <memory>
#include <map>
#include <vector>
#include <string>
#include <iostream>
```

Include dependency graph for IGESconverter.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::IGESheader

  Storage of all data contained in the IGES header.
- struct Go::EntityList

  The entity number of all supported IGES entites.
- struct Go::IGESdirentry

  Storage of all data contained in an IGES directory entity.
- class Go::IGESconverter

Namespaces

- Go

Enumerations

- enum Go::FileFormat { Go::go, Go::disp, Go::IGES }
- enum Go::IGESSection {
  Go::S, Go::G, Go::D, Go::P,
  Go::T, Go::E }

30.2017 igeslib/include/GoTools/igeslib/igeslib_doxymain.h File Reference

Macros

- #define _IGESLIB -DOXYMAIN_H

30.2017.1 Macro Definition Documentation

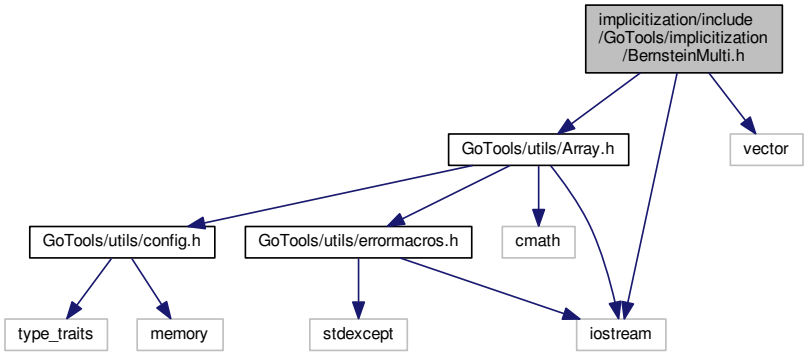
30.2017.1.1 #define _IGESLIB -DOXYMAIN_H

Definition at line 41 of file igeslib_doxymain.h.

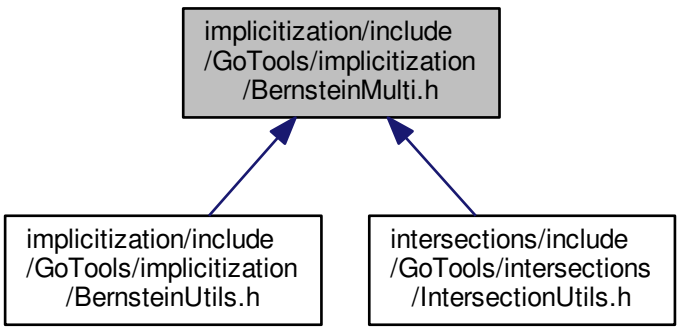
30.2018 implicitization/include/GoTools/implicitization/BernsteinMulti.h File Reference

```
#include "GoTools/utils/Array.h"
#include <vector>
#include <iostream>
```

Include dependency graph for BernsteinMulti.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BernsteinMulti

Namespaces

- Go
- std

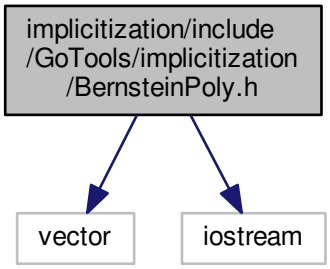
Functions

- BernsteinMulti Go::operator∗ (const BernsteinMulti &m1, const BernsteinMulti &m2)
  Multiplication of two polynomials.
- BernsteinMulti Go::operator∗ (const BernsteinMulti &m1, double c)
  Multiplication of a polynomial with a scalar.
- BernsteinMulti Go::operator∗ (double c, const BernsteinMulti &m1)
  Multiplication of a scalar with a polynomial.
- BernsteinMulti Go::operator+ (const BernsteinMulti &m1, const BernsteinMulti &m2)
  Addition of two polynomials.
- BernsteinMulti Go::operator+ (const BernsteinMulti &m, double c)
  Addition of a polynomial with a scalar.
- BernsteinMulti Go::operator+ (double c, const BernsteinMulti &m)
  Addition of a scalar with a polynomial.
- BernsteinMulti Go::operator- (const BernsteinMulti &m1, const BernsteinMulti &m2)
  Subtraction of two polynomials.
- BernsteinMulti Go::operator- (const BernsteinMulti &m, double c)
  Subtraction of a scalar from a polynomial.
- BernsteinMulti Go::operator- (double c, const BernsteinMulti &m)
  Subtraction of a polynomial from a scalar.
- BernsteinMulti Go::operator/ (const BernsteinMulti &m, double c)
  Division of a polynomial with a scalar.
- std::istream & std::operator>> (std::istream &is, Go::BernsteinMulti &m)
  Read BernsteinMulti from input stream.
- std::ostream & std::operator<< (std::ostream &os, const Go::BernsteinMulti &m)
  Write BernsteinMulti to output stream.

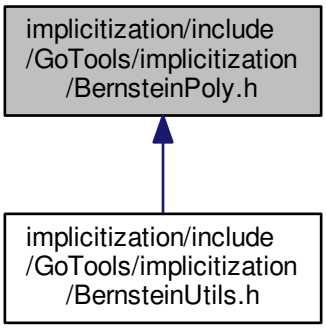
30.2019 implicitization/include/GoTools/implicitization/BernsteinPoly.h File Reference

```
#include <vector>
#include <iostream>
```

Include dependency graph for BernsteinPoly.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BernsteinPoly

Namespaces

- Go
- std

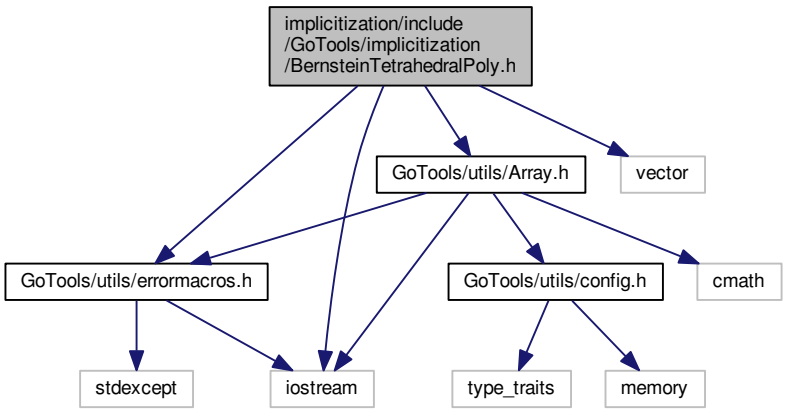
Functions

- BernsteinPoly Go::operator∗ (const BernsteinPoly &p1, const BernsteinPoly &p2)
  Multiplication of two polynomials.
- BernsteinPoly Go::operator∗ (const BernsteinPoly &p, double c)
  Multiplication of a polynomial with a scalar.
- BernsteinPoly Go::operator∗ (double c, const BernsteinPoly &p)
  Multiplication of a scalar with a polynomial.
- BernsteinPoly Go::operator+ (const BernsteinPoly &p1, const BernsteinPoly &p2)
  Addition of two polynomials.
- BernsteinPoly Go::operator+ (double c, const BernsteinPoly &p)
  Addition of a scalar with a polynomial.
- BernsteinPoly Go::operator+ (const BernsteinPoly &p, double c)
  Addition of a polynomial with a scalar.
- BernsteinPoly Go::operator- (const BernsteinPoly &p1, const BernsteinPoly &p2)
  Subtraction of two polynomials.
- BernsteinPoly Go::operator- (double c, const BernsteinPoly &p)
  Subtraction of a polynomial from a scalar.
- BernsteinPoly Go::operator- (const BernsteinPoly &p, double c)
  Subtraction of a scalar from a polynomial.
- BernsteinPoly Go::operator/ (const BernsteinPoly &p, double c)
  Division of a polynomial with a scalar.
- std::istream & std::operator>> (std::istream &is, Go::BernsteinPoly &p)
  Read BernsteinPoly from input stream.
- std::ostream & std::operator<< (std::ostream &os, const Go::BernsteinPoly &p)
  Write BernsteinPoly to output stream.

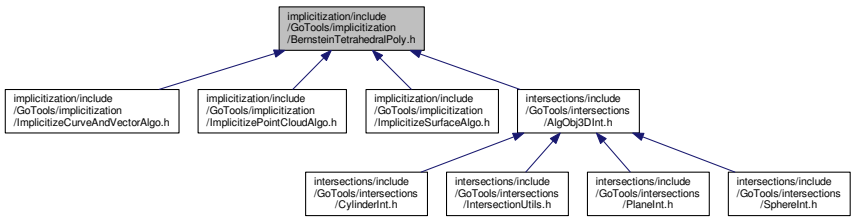
30.2020 implicitization/include/GoTools/implicitization/BernsteinTetrahedralPoly.h File Reference

```
#include "GoTools/utils/Array.h"
#include "GoTools/utils/errormacros.h"
#include <vector>
#include <iostream>
```

Include dependency graph for BernsteinTetrahedralPoly.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BernsteinTetrahedralPoly

Namespaces

- Go

Functions

- BernsteinTetrahedralPoly Go::operator∗ (const BernsteinTetrahedralPoly &p1, const BernsteinTetrahedral↩ Poly &p2)

  Multiplication of two polynomials.

- BernsteinTetrahedralPoly Go::operator∗ (const BernsteinTetrahedralPoly &p, double c)

  Multiplication of a polynomial with a scalar.

- BernsteinTetrahedralPoly Go::operator∗ (double c, const BernsteinTetrahedralPoly &p)

  Multiplication of a scalar with a polynomial.

- BernsteinTetrahedralPoly Go::operator+ (const BernsteinTetrahedralPoly &p1, const BernsteinTetrahedral↩ Poly &p2)

  Addition of two polynomials.

- BernsteinTetrahedralPoly Go::operator+ (double c, const BernsteinTetrahedralPoly &p)

  Addition of a scalar with a polynomial.

- BernsteinTetrahedralPoly Go::operator+ (const BernsteinTetrahedralPoly &p, double c)

  Addition of a polynomial with a scalar.

- BernsteinTetrahedralPoly Go::operator- (const BernsteinTetrahedralPoly &p1, const BernsteinTetrahedralPoly &p2)

  Subtraction of two polynomials.

- BernsteinTetrahedralPoly Go::operator- (double c, const BernsteinTetrahedralPoly &p)

  Subtraction of a polynomial from a scalar.

- BernsteinTetrahedralPoly Go::operator- (const BernsteinTetrahedralPoly &p, double c)

  Subtraction of a scalar from a polynomial.

- BernsteinTetrahedralPoly Go::operator/ (const BernsteinTetrahedralPoly &p, double c)

  Division of a polynomial with a scalar.

- std::istream & Go::operator>> (std::istream &is, Go::BernsteinTetrahedralPoly &p)

  Read BernsteinTetrahedralPoly from input stream.

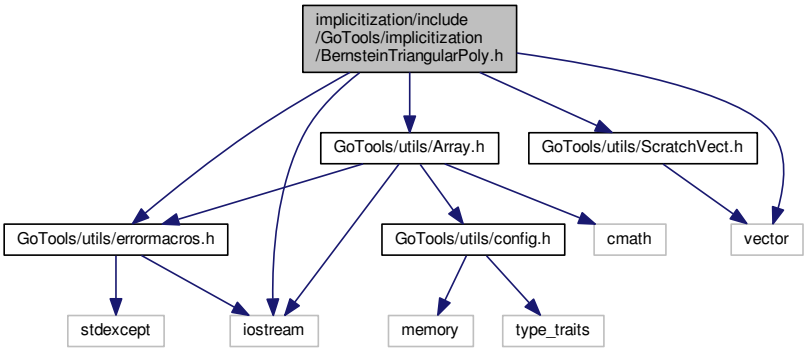
- std::ostream & Go::operator<< (std::ostream &os, const Go::BernsteinTetrahedralPoly &p)

  Write BernsteinTetrahedralPoly to output stream.

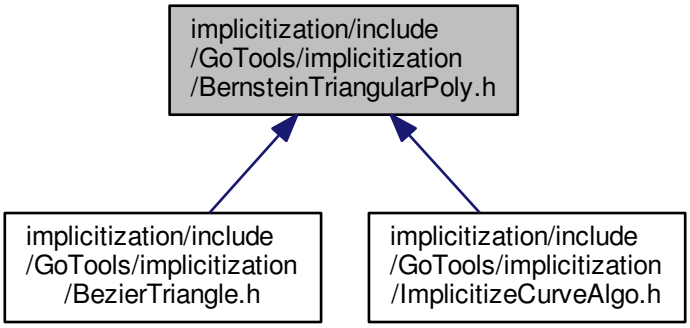
30.2021 implicitization/include/GoTools/implicitization/BernsteinTriangularPoly.h File Reference

```
#include "GoTools/utils/Array.h"
#include "GoTools/utils/ScratchVect.h"
#include "GoTools/utils/errormacros.h"
#include <vector>
#include <iostream>
```

Include dependency graph for BernsteinTriangularPoly.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BernsteinTriangularPoly

Namespaces

- Go

Functions

- BernsteinTriangularPoly Go::operator∗ (const BernsteinTriangularPoly &p1, const BernsteinTriangularPoly &p2)

  Multiplication of two polynomials.

- BernsteinTriangularPoly Go::operator* (const BernsteinTriangularPoly &p, double c)

  Multiplication of a polynomial with a scalar.
- BernsteinTriangularPoly Go::operator* (double c, const BernsteinTriangularPoly &p)

  Multiplication of a scalar with a polynomial.
- BernsteinTriangularPoly Go::operator+ (const BernsteinTriangularPoly &p1, const BernsteinTriangularPoly &p2)

  Addition of two polynomials.
- BernsteinTriangularPoly Go::operator+ (double c, const BernsteinTriangularPoly &p)

  Addition of a scalar with a polynomial.
- BernsteinTriangularPoly Go::operator+ (const BernsteinTriangularPoly &p, double c)

  Addition of a polynomial with a scalar.
- BernsteinTriangularPoly Go::operator- (const BernsteinTriangularPoly &p1, const BernsteinTriangularPoly &p2)

  Subtraction of two polynomials.
- BernsteinTriangularPoly Go::operator- (double c, const BernsteinTriangularPoly &p)

  Subtraction of a polynomial from a scalar.
- BernsteinTriangularPoly Go::operator- (const BernsteinTriangularPoly &p, double c)

  Subtraction of a scalar from a polynomial.
- BernsteinTriangularPoly Go::operator/ (const BernsteinTriangularPoly &p, double c)

  Division of a polynomial with a scalar.
- std::istream & Go::operator>> (std::istream &is, Go::BernsteinTriangularPoly &p)

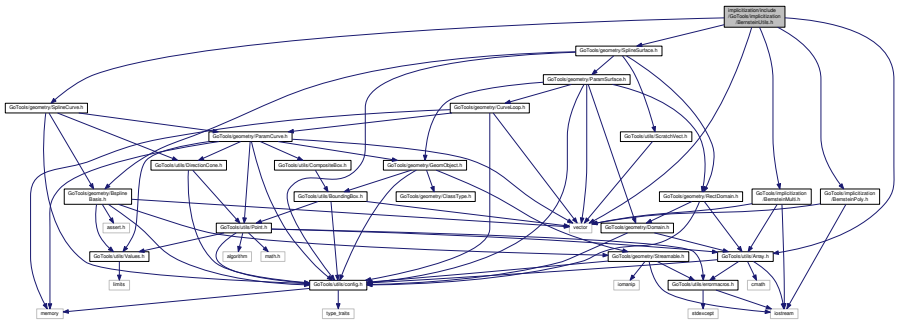
  Read BernsteinTriangularPoly from input stream.
- std::ostream & Go::operator<< (std::ostream &os, const Go::BernsteinTriangularPoly &p)

  Write BernsteinTriangularPoly to output stream.

30.2022 implicitization/include/GoTools/implicitization/BernsteinUtils.h File Reference

```
#include "GoTools/implicitization/BernsteinPoly.h"
#include "GoTools/implicitization/BernsteinMulti.h"
#include "GoTools/utils/Array.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include <vector>
```

Include dependency graph for BernsteinUtils.h:



Namespaces

- Go

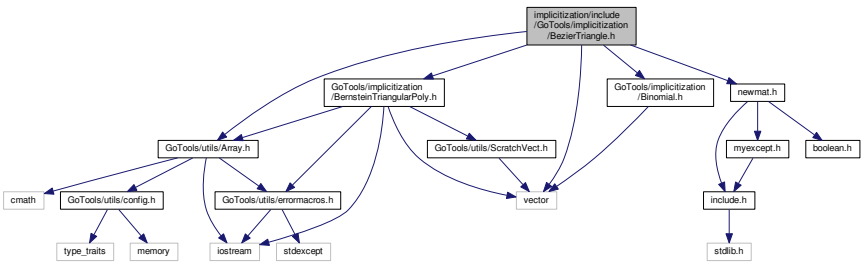
Functions

- void Go::spline_to_bernstein (const SplineCurve &seg, int dd, BernsteinPoly &bp)
- void Go::spline_to_bernstein (const SplineSurface &pat, int dd, BernsteinMulti &bm)
- void Go::spline_to_bernstein (const SplineCurve &seg, std::vector< BernsteinPoly > &seg_bp)
- void Go::spline_to_bernstein (const SplineSurface &pat, std::vector< BernsteinMulti > &pat_bm)
- template<int Ndim>
  void Go::splineToBernstein (const SplineCurve &segment, Array< BernsteinPoly, Ndim > &curve_bp)
- template<int Ndim>
  void Go::splineToBernstein (const SplineSurface &patch, Array< BernsteinMulti, Ndim > &surface_bm)
- template<int Ndim>
  void Go::bernsteinToSpline (const Array< BernsteinPoly, Ndim > &curve_bp, bool rational, SplineCurve &segment)
- template<int Ndim>
  void Go::bernsteinToSpline (const Array< BernsteinMulti, Ndim > &surface_bm, bool rational, SplineSurface &patch)

30.2023 implicitization/include/GoTools/implicitization/BezierTriangle.h File Reference

```
#include "GoTools/utils/Array.h"
#include "GoTools/implicitization/BernsteinTriangularPoly.h"
#include "newmat.h"
#include "GoTools/implicitization/Binomial.h"
#include <vector>
```

Include dependency graph for BezierTriangle.h:



Classes

- class Go::BezierTriangle< N >

  Not documented.

Namespaces

- std
- Go

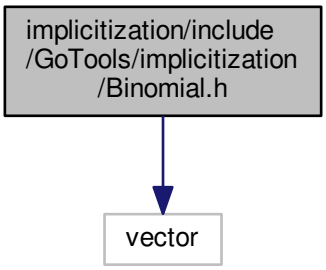
Functions

- template<class _Tp >
  _Tp std::identity_element (plus< _Tp >)
- template<class _Tp >
  _Tp std::identity_element (multiplies< _Tp >)
- template<class _Tp , class _Integer , class _MonoidOperation >
  _Tp std::__power (_Tp __x, _Integer __n, _MonoidOperation __oper)
- template<class _Tp , class _Integer >
  _Tp std::__power (_Tp __x, _Integer __n)
- template<class _Tp , class _Integer , class _MonoidOperation >
  _Tp std::power (_Tp __x, _Integer __n, _MonoidOperation __oper)
- template<class _Tp , class _Integer >
  _Tp std::power (_Tp __x, _Integer __n)

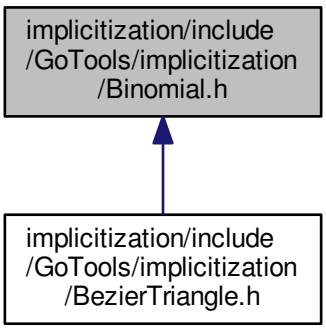
30.2024 implicitization/include/GoTools/implicitization/Binomial.h File Reference

```
#include <vector>
```

Include dependency graph for Binomial.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Binomial

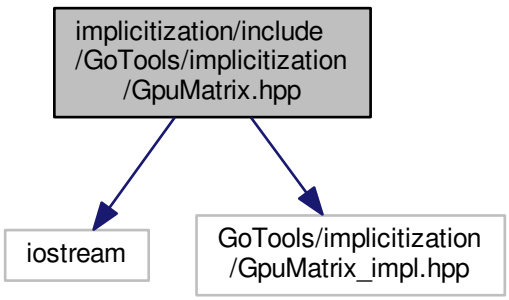
Namespaces

- Go

30.2025 implicitization/include/GoTools/implicitization/GpuMatrix.hpp File Reference

```
#include <iostream>
#include "GoTools/implicitization/GpuMatrix_impl.hpp"
```

Include dependency graph for GpuMatrix.hpp:



Classes

- class Go::GpuMatrix< T >

Namespaces

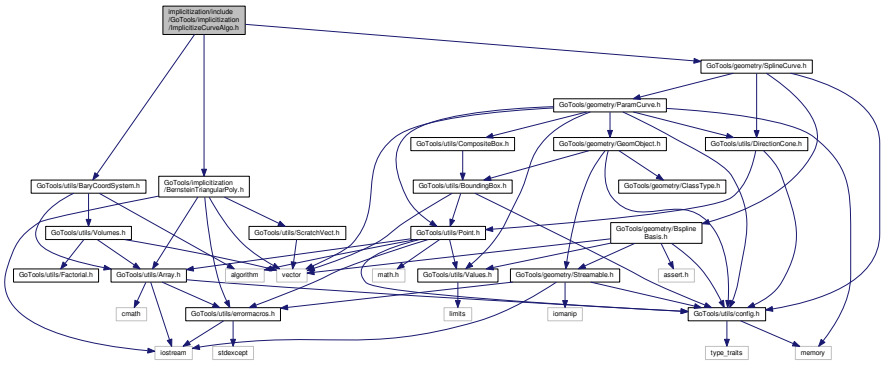
- Go

30.2026 implicitization/include/GoTools/implicitization/implicitization-doxymain.h File Reference

30.2027 implicitization/include/GoTools/implicitization/ImplicitizeCurveAlgo.h File Reference

```
#include "GoTools/implicitization/BernsteinTriangularPoly.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/utils/BaryCoordSystem.h"
```

Include dependency graph for ImplicitizeCurveAlgo.h:



Classes

- class Go::ImplicitizeCurveAlgo

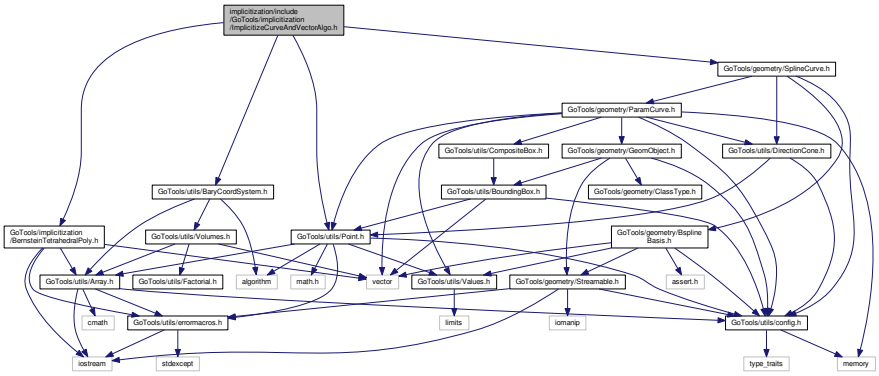
Namespaces

- Go

30.2028 implicitization/include/GoTools/implicitization/ImplicitizeCurveAndVectorAlgo.h File Reference

```
#include "GoTools/implicitization/BernsteinTetrahedralPoly.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/utils/Point.h"
#include "GoTools/utils/BaryCoordSystem.h"
```

Include dependency graph for ImplicitizeCurveAndVectorAlgo.h:



Classes

- class Go::ImplicitizeCurveAndVectorAlgo

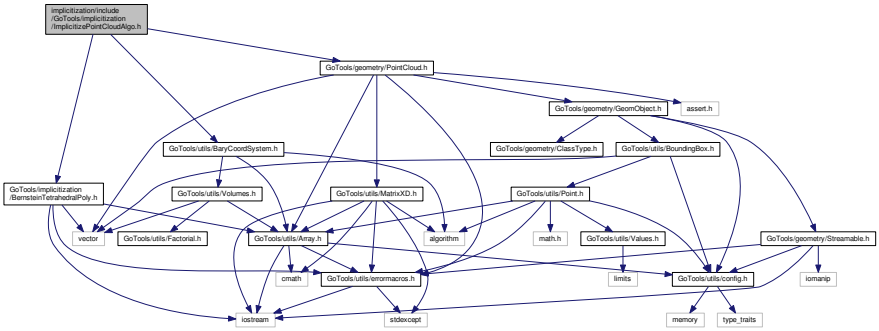
Namespaces

- Go

30.2029 implicitization/include/GoTools/implicitization/ImplicitizePointCloudAlgo.h File Reference

```
#include "GoTools/implicitization/BernsteinTetrahedralPoly.h"
#include "GoTools/geometry/PointCloud.h"
#include "GoTools/utils/BaryCoordSystem.h"
```

Include dependency graph for ImplicitizePointCloudAlgo.h:



Classes

- class Go::ImplicitizePointCloudAlgo

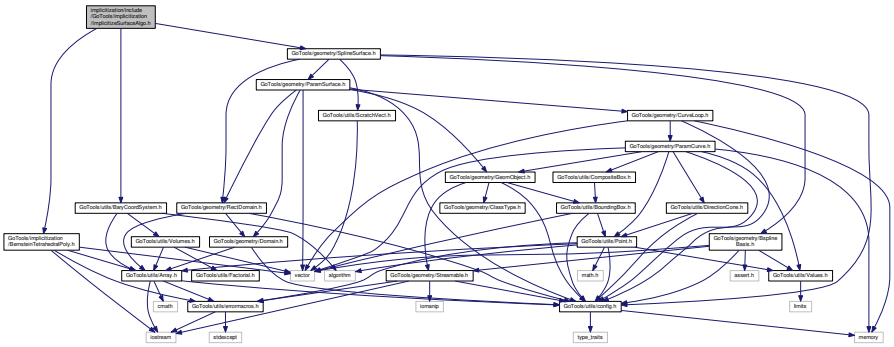
Namespaces

- Go

30.2030 implicitization/include/GoTools/implicitization/ImplicitizeSurfaceAlgo.h File Reference

```
#include "GoTools/implicitization/BernsteinTetrahedralPoly.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/utils/BaryCoordSystem.h"
```

Include dependency graph for ImplicitizeSurfaceAlgo.h:



Classes

- class Go::ImplicitizeSurfaceAlgo

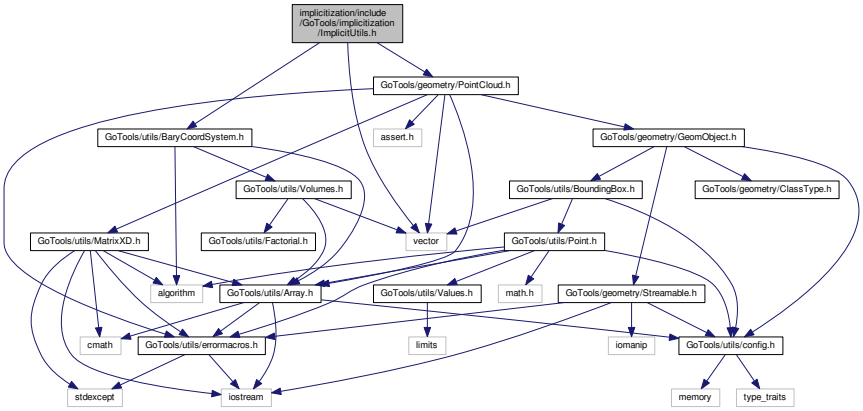
Namespaces

- Go

30.2031 implicitization/include/GoTools/implicitization/ImplicitUtils.h File Reference

```
#include "GoTools/utils/BaryCoordSystem.h"
#include "GoTools/geometry/PointCloud.h"
#include <vector>
```

Include dependency graph for ImplicitUtils.h:



Namespaces

- Go

Functions

- void Go::create_bary_coord_system2D (const SplineCurve &curve, BaryCoordSystem2D &bc)

  Creates a barycentric coordinate system from a given spline curve.
- void Go::create_bary_coord_system3D (const SplineCurve &curve, BaryCoordSystem3D &bc)

  Creates a barycentric coordinate system from a given 3D spline curve.
- void Go::create_bary_coord_system3D (const SplineSurface &surface, BaryCoordSystem3D &bc)

  Creates a barycentric coordinate system from a given spline surface.
- void Go::create_bary_coord_system3D (const PointCloud3D &cloud, BaryCoordSystem3D &bc)

  Creates a barycentric coordinate system from a point cloud.
- void Go::create_bary_coord_system3D (const BoundingBox &box, BaryCoordSystem3D &bc)

  Creates a barycentric coordinate system from a bounding box.
- void Go::cart_to_bary (const SplineCurve &cv, const BaryCoordSystem2D &bc, SplineCurve &cv_bc)
- void Go::cart_to_bary (const SplineCurve &cv, const BaryCoordSystem3D &bc, SplineCurve &cv_bc)
- void Go::cart_to_bary (const SplineSurface &sf, const BaryCoordSystem3D &bc, SplineSurface &sf_bc)
- void Go::cart_to_bary (const PointCloud3D &cloud, const BaryCoordSystem3D &bc, PointCloud4D &cloud↩_bc)
- void Go::make_matrix (const SplineCurve &curve, int deg, std::vector< std::vector< double > > &mat)

  Make the matrix D.
- void Go::make_matrix (const SplineSurface &surf, int deg, std::vector< std::vector< double > > &mat)

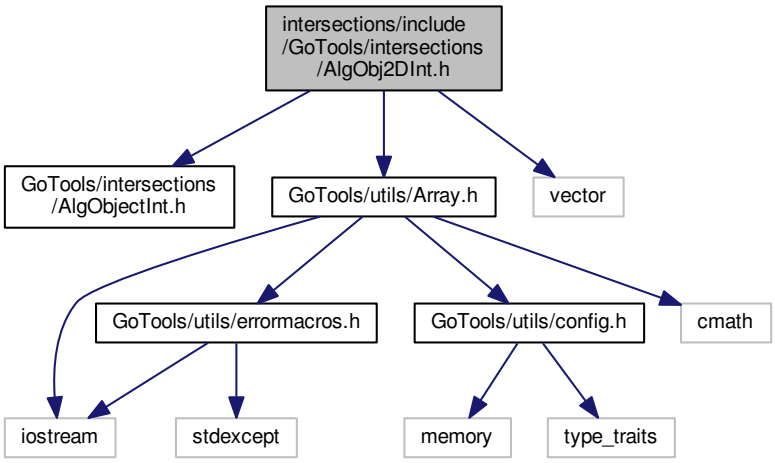
  Make the matrix D.
- void Go::make_matrix (const PointCloud4D &cloud, int deg, std::vector< std::vector< double > > &mat)

  Make the matrix D.
- void Go::make_implicit_svd (std::vector< std::vector< double > > &mat, std::vector< double > &b, double &sigma_min)
- void Go::make_implicit_gauss (std::vector< std::vector< double > > &mat, std::vector< double > &b)

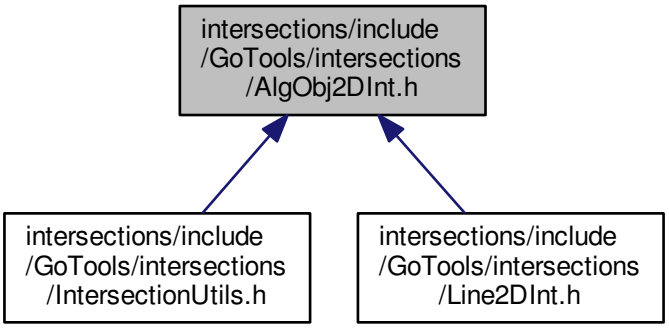
30.2032 intersections/include/GoTools/intersections/AlgObj2DInt.h File Reference

```
#include "GoTools/intersections/AlgObjectInt.h"
#include "GoTools/utils/Array.h"
#include <vector>
```

Include dependency graph for AlgObj2DInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::Alg2DElem
- class Go::AlgObj2DInt

  Class for 2-dimensional algebraic intersection objects.

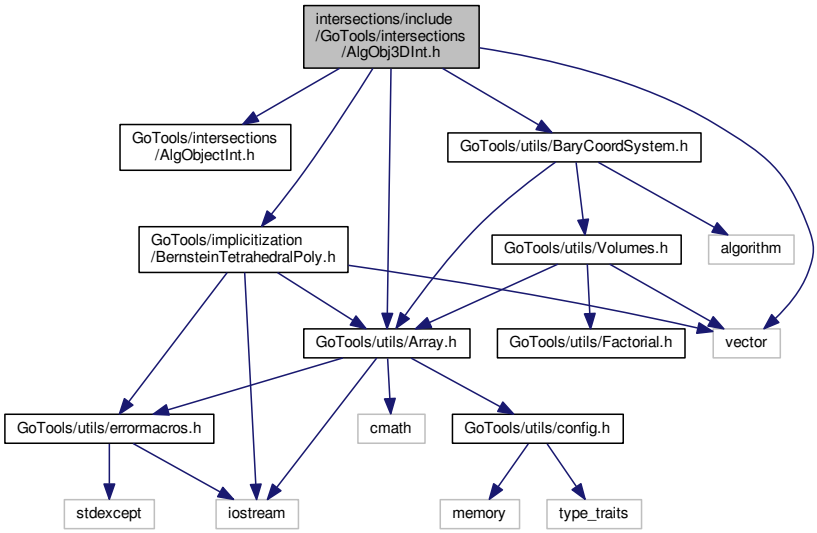
Namespaces

- Go

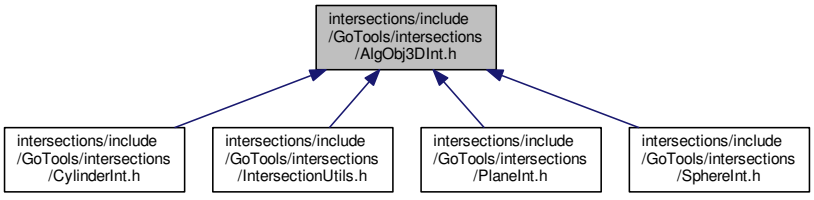
30.2033 intersections/include/GoTools/intersections/AlgObj3DInt.h File Reference

```
#include "GoTools/intersections/AlgObjectInt.h"
#include "GoTools/utils/Array.h"
#include "GoTools/implicitization/BernsteinTetrahedralPoly.h"
#include "GoTools/utils/BaryCoordSystem.h"
#include <vector>
```

Include dependency graph for AlgObj3DInt.h:



This graph shows which files directly or indirectly include this file:



Classes

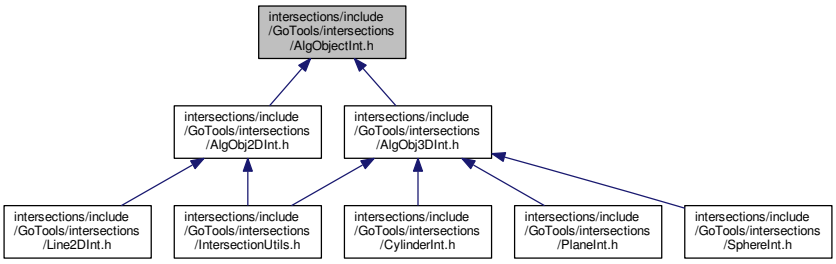
- struct Go::Alg3DElem
- class Go::AlgObj3DInt

Namespaces

- Go

30.2034 intersections/include/GoTools/intersections/AlgObjectInt.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- class Go::AlgObjectInt

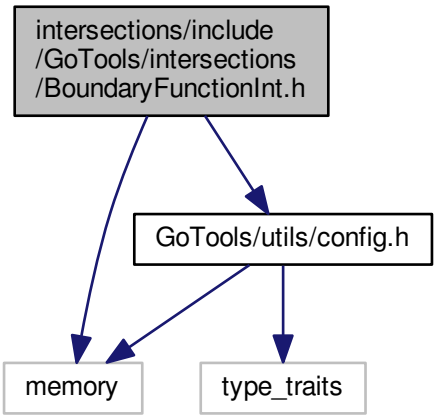
Namespaces

- Go

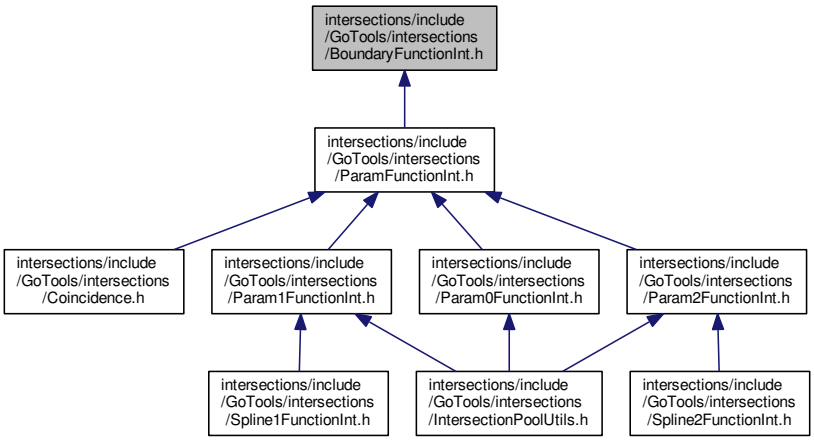
30.2035 intersections/include/GoTools/intersections/BoundaryFunctionInt.h File Reference

```
#include "GoTools/utils/config.h"
#include <memory>
```

Include dependency graph for BoundaryFunctionInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::BoundaryFunctionInt

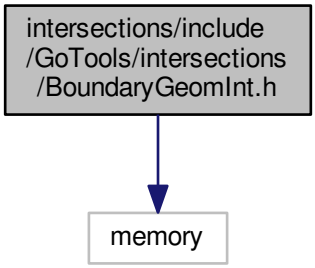
Namespaces

- Go

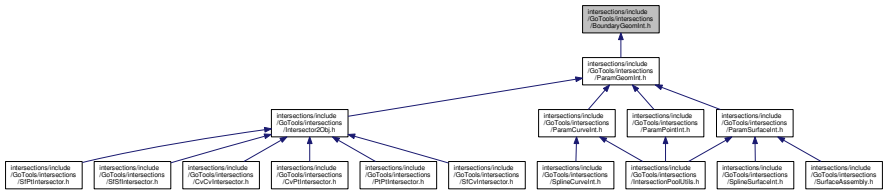
30.2036 intersections/include/GoTools/intersections/BoundaryGeomInt.h File Reference

```
#include <memory>
```

Include dependency graph for BoundaryGeomInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::BoundaryGeomInt

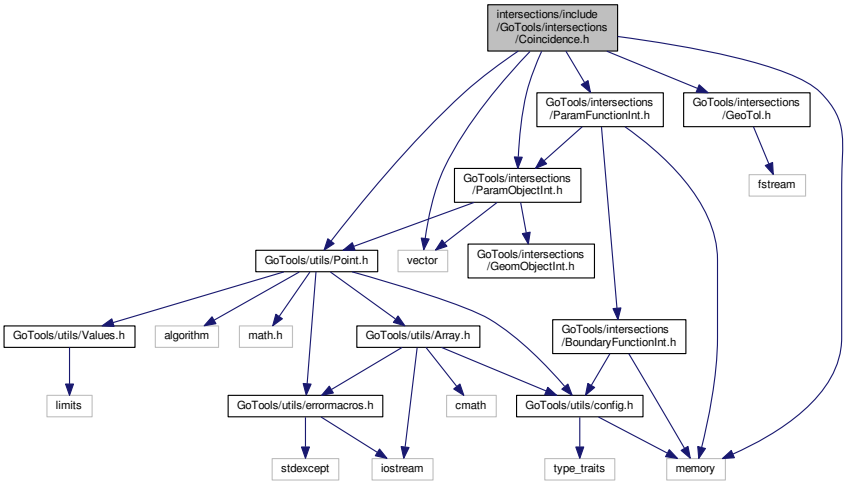
Namespaces

- Go

30.2037 intersections/include/GoTools/intersections/Coincidence.h File Reference

```
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/intersections/ParamObjectInt.h"
#include "GoTools/intersections/GeoTol.h"
#include "GoTools/intersections/ParamFunctionInt.h"
#include <vector>
```

Include dependency graph for Coincidence.h:



Namespaces

- Go

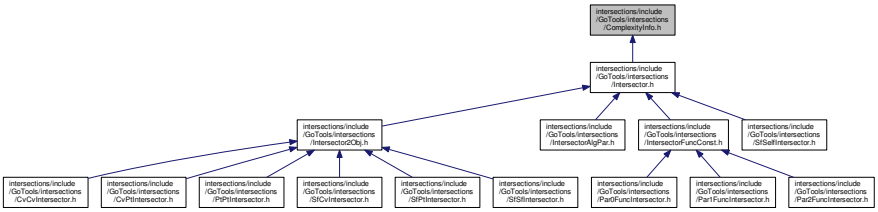
Functions

- int Go::checkCoincide (ParamCurveInt ∗curve, double start, double end, shared_ptr< GeoTol > tol, ParamCurveInt ∗other, double other_start, double other_end)
- int Go::checkCoincide (ParamCurveInt ∗curve, double start, double end, ParamSurfaceInt ∗surf, Point su_start, Point su_end, shared_ptr< GeoTol > tol)
- int Go::checkCoincide (ParamCurveInt ∗curve, double start, double end, SplineSurfaceInt ∗surf, const Point &su_start, const Point &su_end, shared_ptr< GeoTol > tol)
- int Go::checkCoincide (Param1FunctionInt ∗func1, double start, double end, Param0FunctionInt ∗C, shared_ptr< GeoTol > tol)
- int Go::checkCoincide (ParamSurfaceInt ∗surf1, ParamSurfaceInt ∗surf2, std::vector< double > &par_loop, const shared_ptr< GeoTol > tol)

  by the parameter values of the intersection points representing it
- int Go::stepLength (const std::vector< Point > &ft, const std::vector< Point > &gs, double delta, bool forward, double &delta_t)
- double Go::stepLength (const std::vector< Point > &ft, const std::vector< Point > &gs, bool forward, std::vector< Point > &cvder, double min_step, double max_step, double aepsge)
- int Go::evalProjectedCurve (const std::vector< Point > &ft, const std::vector< Point > &gs, std::vector< Point > &res)
- void Go::evalDistCurve (const std::vector< Point > &marching_curve, const std::vector< Point > &other_curve, std::vector< Point > &dist_curve)
- bool Go::determineCoincidenceRegion (const ParamObjectInt ∗obj1, const ParamObjectInt ∗obj2, shared_ptr< const GeoTol > tol, const double ∗current_params, int dir, bool forward, double &last_param_val_inside, double &first_param_val_outside)
- bool Go::determineCoincidenceRegion (const ParamFunctionInt ∗obj_1d, double C, shared_ptr< const GeoTol > tol, const double ∗current_params, int dir, bool forward, double &last_param_val_inside, double &first_param_val_outside)

30.2038 intersections/include/GoTools/intersections/ComplexityInfo.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- class Go::ComplexityInfo

Namespaces

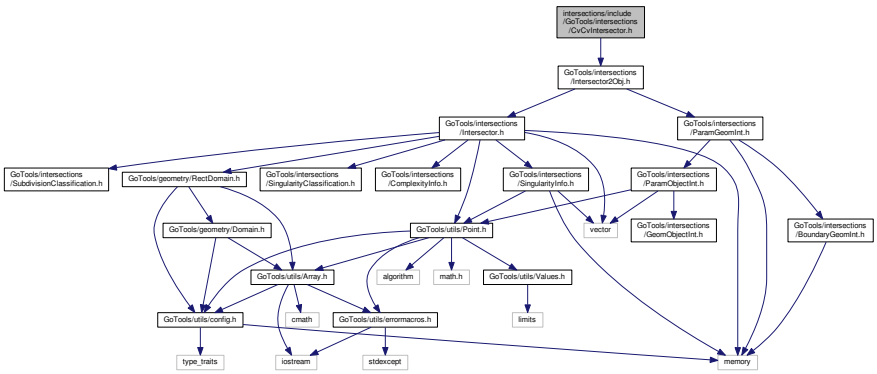
- Go

30.2039 intersections/include/GoTools/intersections/ConeInt.h File Reference

30.2040 intersections/include/GoTools/intersections/CvCvIntersector.h File Reference

```
#include "GoTools/intersections/Intersector2Obj.h"
```

Include dependency graph for CvCvIntersector.h:



Classes

- class Go::CvCvIntersector

  Class that performs intersection between two parametric curves.

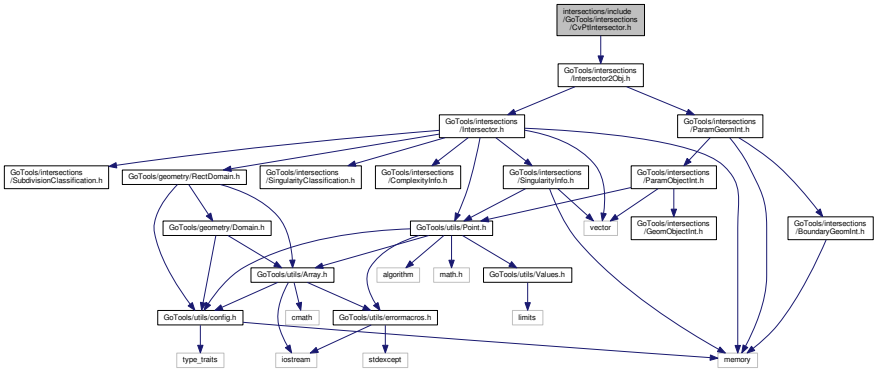
Namespaces

- Go

30.2041 intersections/include/GoTools/intersections/CvPtIntersector.h File Reference

```
#include "GoTools/intersections/Intersector2Obj.h"
```

Include dependency graph for CvPtIntersector.h:



Classes

- class Go::CvPtIntersector

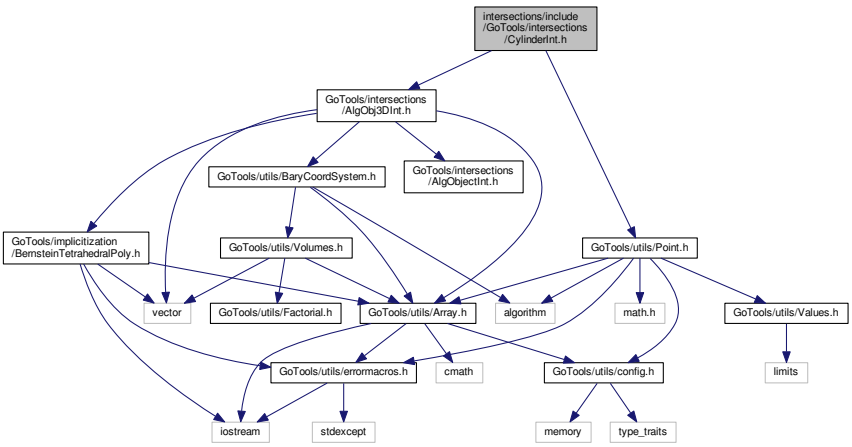
Namespaces

- Go

30.2042 intersections/include/GoTools/intersections/CylinderInt.h File Reference

```
#include "GoTools/intersections/AlgObj3DInt.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for CylinderInt.h:



Classes

- class Go::CylinderInt

  Class for cylindrical algebraic intersection objects.

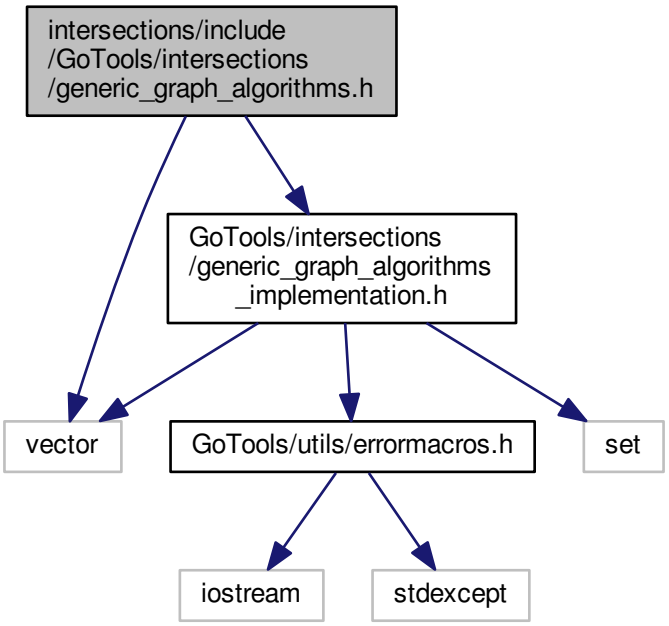
Namespaces

- Go

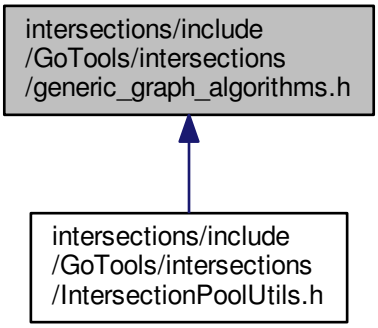
30.2043 intersections/include/GoTools/intersections/generic_graph_algorithms.h File Reference

```
#include <vector>
#include "GoTools/intersections/generic_graph_algorithms_implementation.h"
```

Include dependency graph for generic_graph_algorithms.h:



This graph shows which files directly or indirectly include this file:



Functions

- template<class FunctorConnectedTo >
  void get_fundamental_cycle_set (int num_nodes, FunctorConnectedTo connectedTo, std::vector< std::vector< int > > &result)
- void get_fundamental_cycle_set (int num_nodes, const std::vector< std::vector< int > > &table, std::vector< std::vector< int > > &result)
- template<class FunctorConnectedTo >
  bool is_path_connected (int node1_index, int node2_index, int num_nodes, FunctorConnectedTo connected_to)
- template<class FunctorConnectedTo >
  void get_individual_paths (int num_nodes, FunctorConnectedTo connectedTo, std::vector< std::vector< int > > &paths, std::vector< std::vector< int > > &cycles, std::vector< int > &isolated_nodes)

30.2043.1 Function Documentation

30.2043.1.1 template<class FunctorConnectedTo > void get_fundamental_cycle_set (int *num_nodes,* FunctorConnectedTo *connectedTo,* std::vector< std::vector< int > > & *result*)

Definition at line 128 of file generic_graph_algorithms_implementation.h.

30.2043.1.2 void get_fundamental_cycle_set (int *num_nodes,* const std::vector< std::vector< int > > & *table,* std::vector< std::vector< int > > & *result*)

Definition at line 139 of file generic_graph_algorithms_implementation.h.

30.2043.1.3 template<class FunctorConnectedTo > void get_individual_paths (int *num_nodes,* FunctorConnectedTo *connectedTo,* std::vector< std::vector< int > > & *paths,* std::vector< std::vector< int > > & *cycles,* std::vector< int > & *isolated_nodes*)

Definition at line 183 of file generic_graph_algorithms_implementation.h.

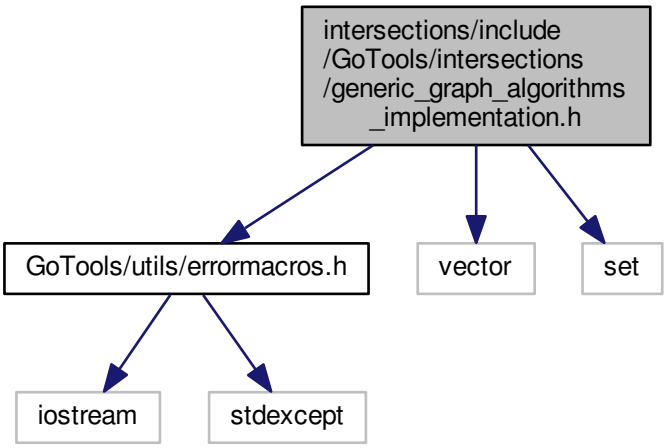
30.2043.1.4 template<class FunctorConnectedTo > bool is_path_connected (int *node1_index,* int *node2_index,* int *num_nodes,* FunctorConnectedTo *connected_to*)

Definition at line 158 of file generic_graph_algorithms_implementation.h.

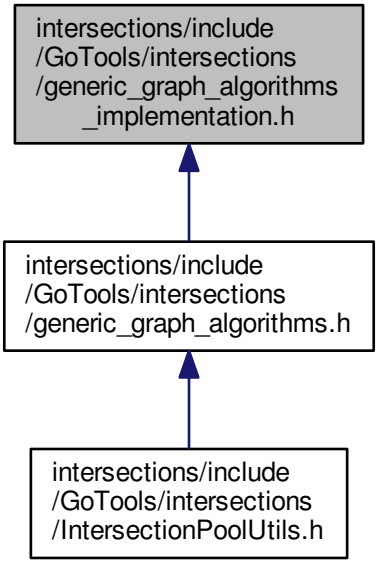
30.2044 intersections/include/GoTools/intersections/generic_graph_algorithms_implementation.h File Reference

```
#include "GoTools/utils/errormacros.h"
#include <vector>
#include <set>
```

Include dependency graph for generic_graph_algorithms_implementation.h:



This graph shows which files directly or indirectly include this file:



Enumerations

- enum NodeStatus

Functions

- template<class FunctorConnectedTo >
  void get_fundamental_cycle_set (int num_nodes, FunctorConnectedTo connectedTo, std::vector< std::vector< int > > &result)
- void get_fundamental_cycle_set (int num_nodes, const std::vector< std::vector< int > > &table, std::vector< std::vector< int > > &result)
- template<class FunctorConnectedTo >
  bool is_path_connected (int node1_index, int node2_index, int num_nodes, FunctorConnectedTo connected_to)
- template<class FunctorConnectedTo >
  void get_individual_paths (int num_nodes, FunctorConnectedTo connectedTo, std::vector< std::vector< int > > &paths, std::vector< std::vector< int > > &cycles, std::vector< int > &isolated_nodes)

30.2044.1 Enumeration Type Documentation

30.2044.1.1 enum NodeStatus

Definition at line 52 of file generic_graph_algorithms_implementation.h.

30.2044.2 Function Documentation

30.2044.2.1 template<class FunctorConnectedTo > void get_fundamental_cycle_set (int *num_nodes,* FunctorConnectedTo *connectedTo,* std::vector< std::vector< int > > & *result*)

Definition at line 128 of file generic_graph_algorithms_implementation.h.

30.2044.2.2 void get_fundamental_cycle_set (int *num_nodes,* const std::vector< std::vector< int > > & *table,* std::vector< std::vector< int > > & *result*)

Definition at line 139 of file generic_graph_algorithms_implementation.h.

30.2044.2.3 template<class FunctorConnectedTo > void get_individual_paths (int *num_nodes,* FunctorConnectedTo *connectedTo,* std::vector< std::vector< int > > & *paths,* std::vector< std::vector< int > > & *cycles,* std::vector< int > & *isolated_nodes*)

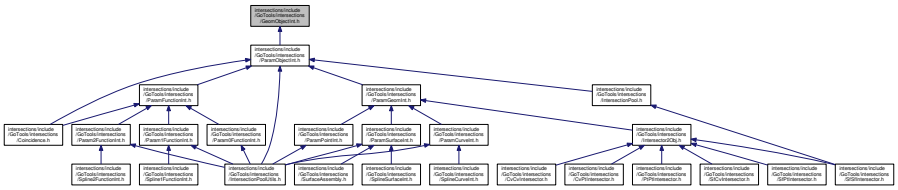
Definition at line 183 of file generic_graph_algorithms_implementation.h.

30.2044.2.4 template<class FunctorConnectedTo > bool is_path_connected (int *node1_index,* int *node2_index,* int *num_nodes,* FunctorConnectedTo *connected_to*)

Definition at line 158 of file generic_graph_algorithms_implementation.h.

30.2045 intersections/include/GoTools/intersections/GeomObjectInt.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- class Go::GeomObjectInt

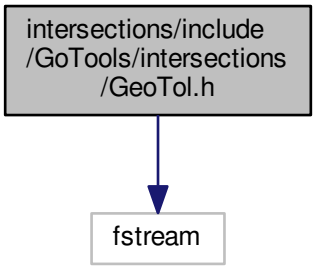
Namespaces

- Go

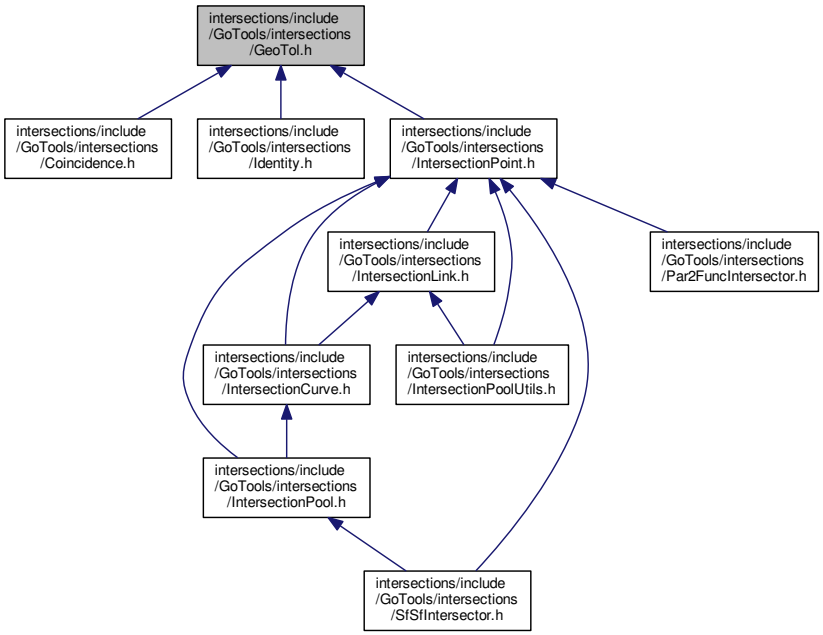
30.2046 intersections/include/GoTools/intersections/GeoTol.h File Reference

```
#include <fstream>
```

Include dependency graph for GeoTol.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::GeoTol

  Class handling various tolerances.

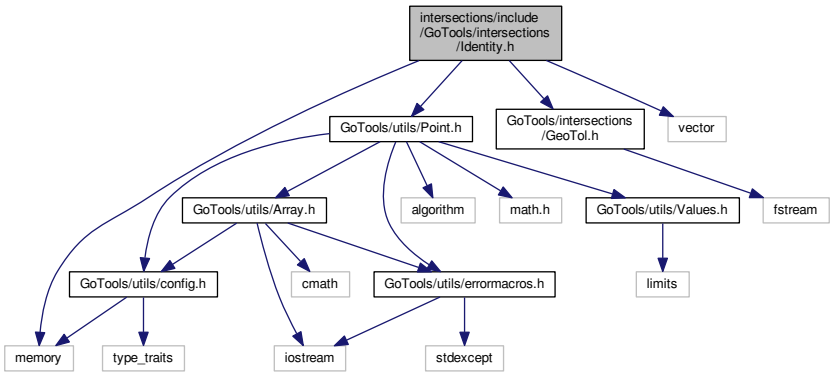
Namespaces

- Go

30.2047 intersections/include/GoTools/intersections/Identity.h File Reference

```
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/intersections/GeoTol.h"
#include <vector>
```

Include dependency graph for Identity.h:



Classes

- class Go::Identity

  Check coincidence.

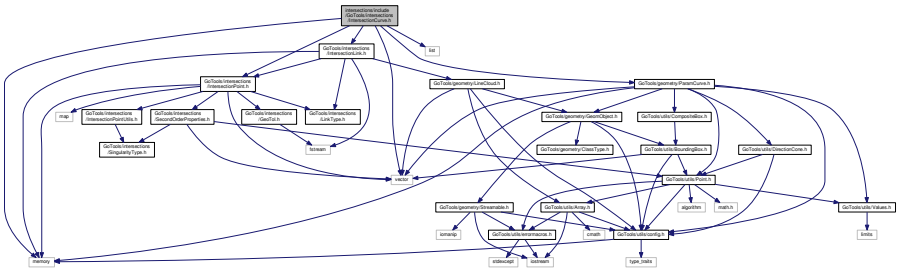
Namespaces

- Go

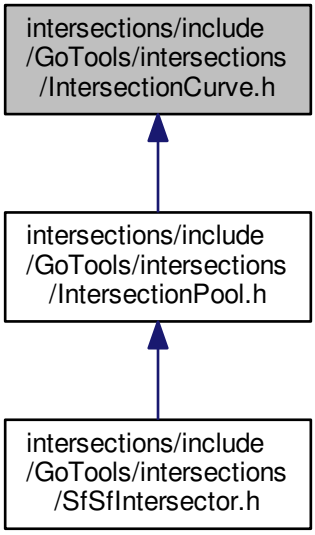
30.2048 intersections/include/GoTools/intersections/IntersectionCurve.h File Reference

```
#include "GoTools/intersections/IntersectionPoint.h"
#include "GoTools/intersections/IntersectionLink.h"
#include "GoTools/geometry/ParamCurve.h"
#include <memory>
#include <list>
#include <vector>
```

Include dependency graph for IntersectionCurve.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Zero_Parameter_Span_Error

  Error object used internally in IntersectionCurve.
- class Go::IntersectionCurve
- class Go::DegeneratedIntersectionCurve

  IntersectionCurve that is degenerated into a single point.
- class Go::NonEvaluableIntersectionCurve

  IntersectionCurve that cannot be evaluated.
- class Go::IsoparametricIntersectionCurve
- class Go::InterpolatedIntersectionCurve

Namespaces

- Go

Enumerations

- enum Go::EvalKind { Go::SPACECURVE, Go::PARAMCURVE_1, Go::PARAMCURVE_2 }
- enum Go::TangentDomain { Go::GEOM, Go::PARAM1, Go::PARAM2 }
- enum Go::EstimateDirection { Go::FORWARDS, Go::BACKWARDS }

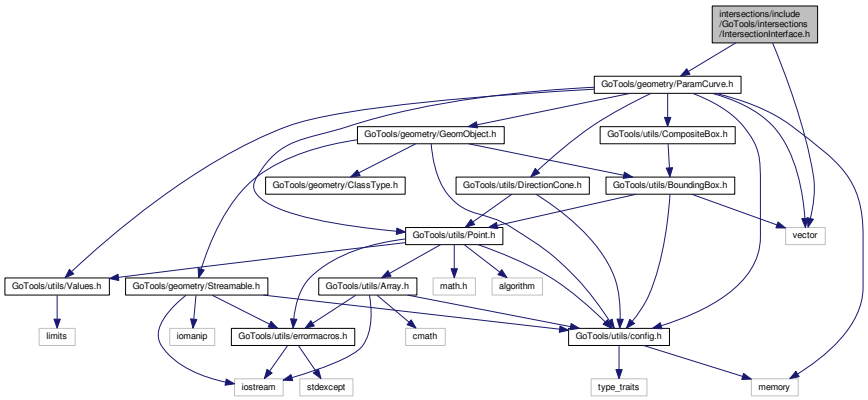
Functions

- template<class iterator >
  shared_ptr< IntersectionCurve > Go::constructIntersectionCurve (const iterator begin, const iterator end)

30.2049 intersections/include/GoTools/intersections/IntersectionInterface.h File Reference

```
#include "GoTools/geometry/ParamCurve.h"
#include <vector>
```

Include dependency graph for IntersectionInterface.h:



Namespaces

- Go

Functions

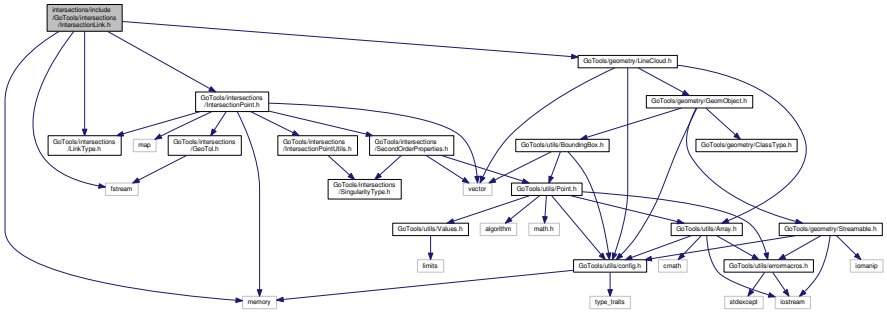
- void Go::intersectCurves (shared_ptr< ParamCurve > crv1, shared_ptr< ParamCurve > crv2, double tol, std::vector< std::pair< double, double > > &intersection_points)

  Intersection between two parametric curves.

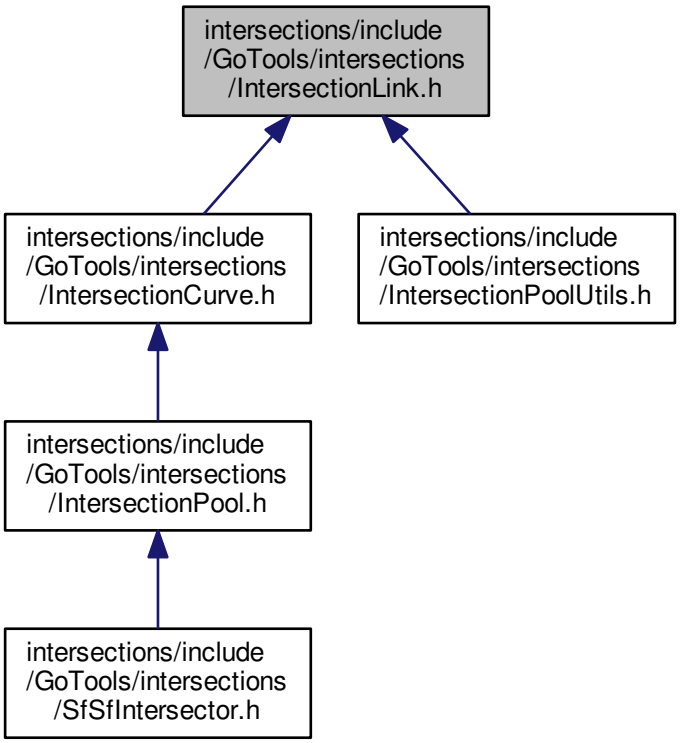
30.2050 intersections/include/GoTools/intersections/IntersectionLink.h File Reference

```
#include "GoTools/intersections/IntersectionPoint.h"
#include "GoTools/intersections/LinkType.h"
#include <memory>
#include <fstream>
#include "GoTools/geometry/LineCloud.h"
```

Include dependency graph for IntersectionLink.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IntersectionLink

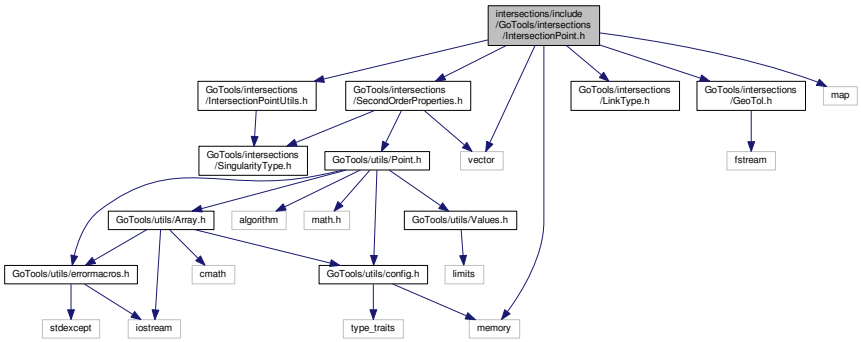
Namespaces

- Go

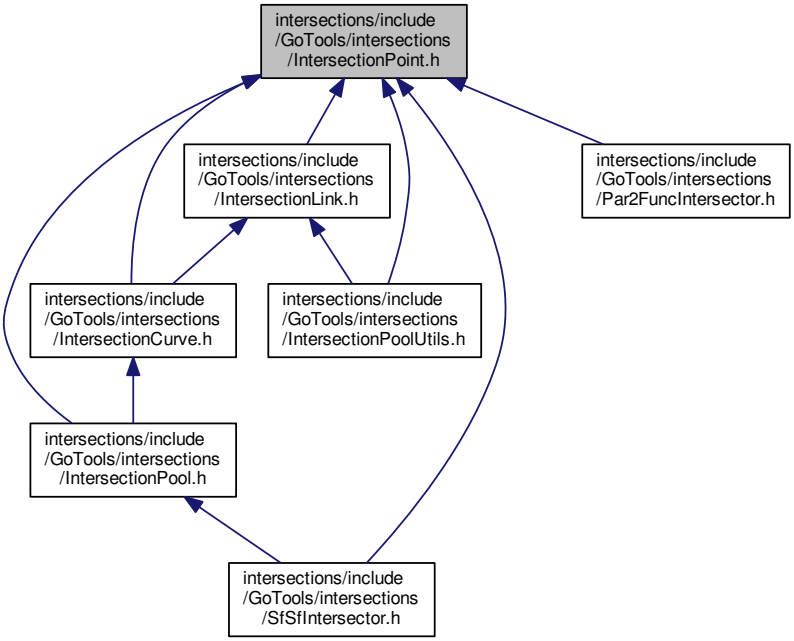
30.2051 intersections/include/GoTools/intersections/IntersectionPoint.h File Reference

```
#include "GoTools/intersections/IntersectionPointUtils.h"
#include "GoTools/intersections/LinkType.h"
#include "GoTools/intersections/GeoTol.h"
#include "GoTools/intersections/SecondOrderProperties.h"
#include <memory>
#include <vector>
#include <map>
```

Include dependency graph for IntersectionPoint.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IntersectionPoint

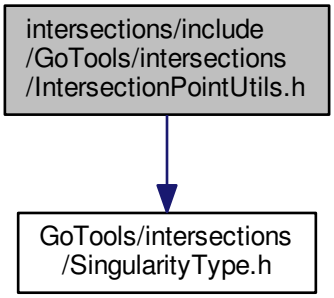
Namespaces

- Go

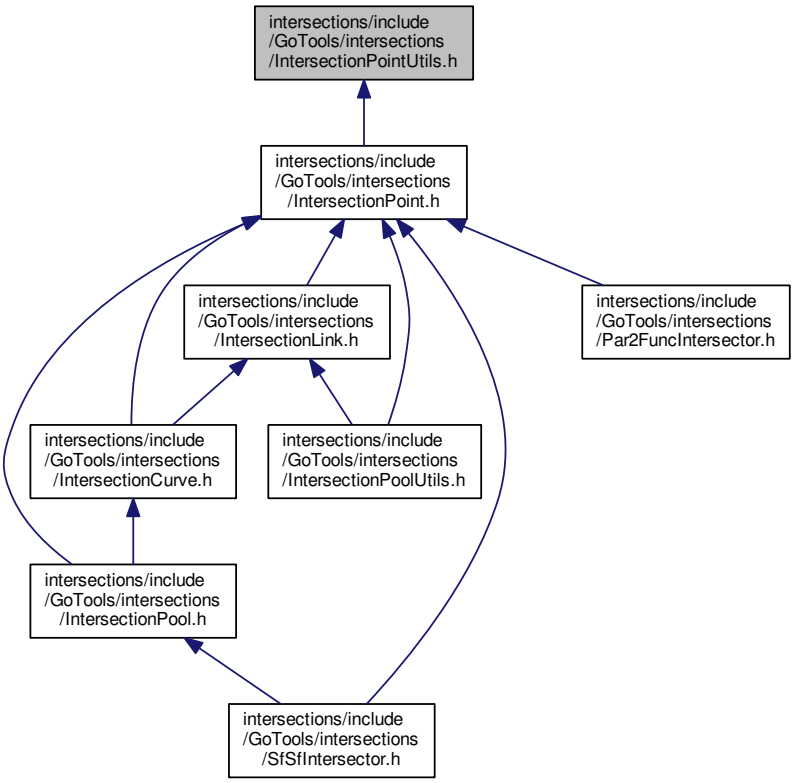
30.2052 intersections/include/GoTools/intersections/IntersectionPointUtils.h File Reference

```
#include "GoTools/intersections/SingularityType.h"
```

Include dependency graph for IntersectionPointUtils.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::CachedInterval

  Helper struct for saving bracketed bounds of influence areas.
- struct Go::IntPtInfo

Namespaces

- Go

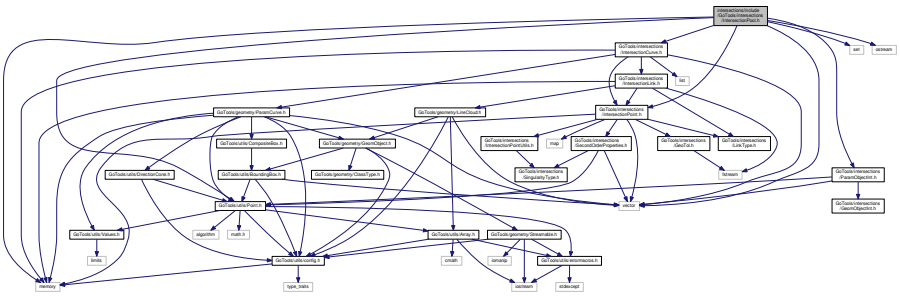
Enumerations

- enum Go::IntPtClassification {
  Go::DIR_UNDEF = 0, Go::DIR_IN, Go::DIR_OUT, Go::DIR_PARALLEL,
  Go::DIR_PERPENDICULAR, Go::DIR_HIGHLY_SINGULAR, Go::DIR_TOUCH }
- enum Go::IntPtLocation {
  Go::LOC_OUTSIDE_BOTH = 0, Go::LOC_INSIDE_BOTH, Go::LOC_EDGE_ONE, Go::LOC_CORNER_↩
  ONE,
  Go::LOC_CORNER_BOTH, Go::LOC_EDGE_BOTH }

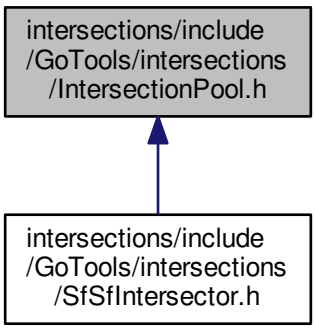
30.2053 intersections/include/GoTools/intersections/IntersectionPool.h File Reference

```
#include "GoTools/intersections/ParamObjectInt.h"
#include "GoTools/intersections/IntersectionPoint.h"
#include "GoTools/intersections/IntersectionCurve.h"
#include "GoTools/utils/Point.h"
#include <memory>
#include <vector>
#include <set>
#include <ostream>
```

Include dependency graph for IntersectionPool.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IntersectionPool
- struct Go::BoundaryIntersectionData

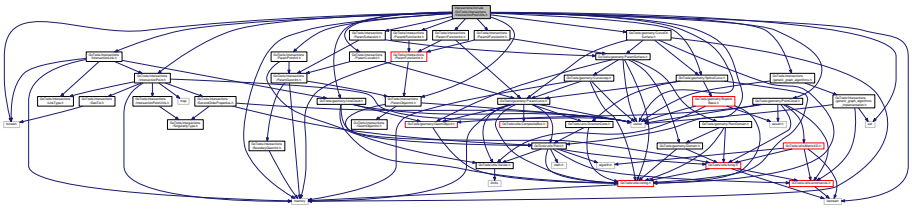
Namespaces

- Go

30.2054 intersections/include/GoTools/intersections/IntersectionPoolUtils.h File Reference

```
#include "GoTools/intersections/IntersectionPoint.h"
#include "GoTools/intersections/IntersectionLink.h"
#include "GoTools/intersections/ParamObjectInt.h"
#include "GoTools/intersections/ParamPointInt.h"
#include "GoTools/intersections/ParamCurveInt.h"
#include "GoTools/intersections/ParamSurfaceInt.h"
#include "GoTools/intersections/Param0FunctionInt.h"
#include "GoTools/intersections/Param1FunctionInt.h"
#include "GoTools/intersections/Param2FunctionInt.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/intersections/generic_graph_algorithms.h"
#include "GoTools/utils/Point.h"
#include "GoTools/geometry/LineCloud.h"
#include "GoTools/geometry/PointCloud.h"
#include <memory>
#include <vector>
#include <set>
#include <iostream>
#include <fstream>
```

Include dependency graph for IntersectionPoolUtils.h:



Classes

- struct Go::raw_pointer_comp< T >
- class Go::CrossesValue

  IntersectionPoolUtils. predicate for STL function.
- class Go::TestInDomain

  IntersectionPoolUtils. predicate for STL function.
- class Go::ClosestPointCalculator
- class Go::LockedDirDistFunc
- class Go::ConnectionFunctor

Namespaces

- Go

Functions

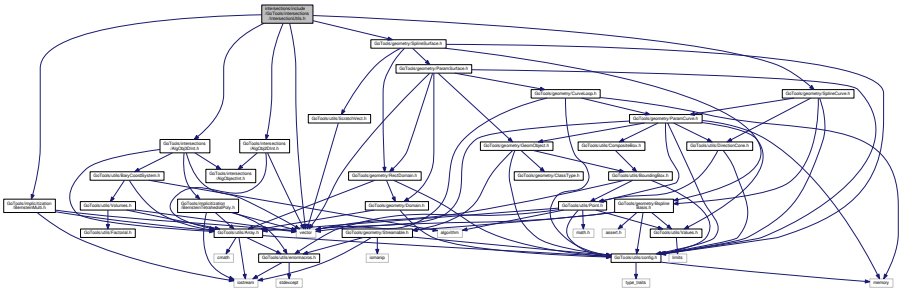
- void Go::debug_write_line (const Point &p1, const Point &p2, const char *fname)
- void Go::debug_write_point (const Point &p1, const char *fname)
- bool Go::no_parent (const shared_ptr< IntersectionPoint > &p)
- IntersectionPoint * Go::flip_intersecting_objects (IntersectionPoint *p)
- bool Go::link_is_iso_in (shared_ptr< IntersectionLink > link, int dir)
- bool Go::link_is_iso (shared_ptr< IntersectionLink > link)
- bool Go::link_is_iso_in_other_than (shared_ptr< IntersectionLink > link, int dir)
- template<class T1 , class T2 >
  bool Go::compare_first (const std::pair< T1, T2 > &x, const std::pair< T1, T2 > &y)
- void Go::add_reachables_from (const IntersectionPoint *pt, const IntersectionPoint *last_pt, std::set< IntersectionPoint * > &result)
- void Go::estimate_seed_by_interpolation (const IntersectionPoint *p1, const IntersectionPoint *p2, int fixed_dir, double fixed_value, double *result)
- void Go::determine_seed (double *par, int par_start, int par_end, const Point &pt, const IntersectionPoint *const ip1, const IntersectionPoint *const ip2)
- int Go::find_point_in (IntersectionPoint *p, const std::vector< shared_ptr< IntersectionPoint > > &vec)
- shared_ptr< const CurveOnSurface > Go::make_curve_on_surface (shared_ptr< const ParamSurface > surf, double u_start, double v_start, double u_end, double v_end, double p_start, double p_end)
- void Go::extract_chains (const std::vector< shared_ptr< IntersectionPoint > > pts, std::vector< std::vector< shared_ptr< IntersectionPoint > > > &chains)

30.2055 intersections/include/GoTools/intersections/intersections-doxymain.h File Reference

30.2056 intersections/include/GoTools/intersections/IntersectionUtils.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/intersections/AlgObj2DInt.h"
#include "GoTools/intersections/AlgObj3DInt.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/implicitization/BernsteinMulti.h"
#include <vector>
```

Include dependency graph for IntersectionUtils.h:



Namespaces

- Go
- Go::IntersectionUtils

  Various functions related to the intersection algorithms.

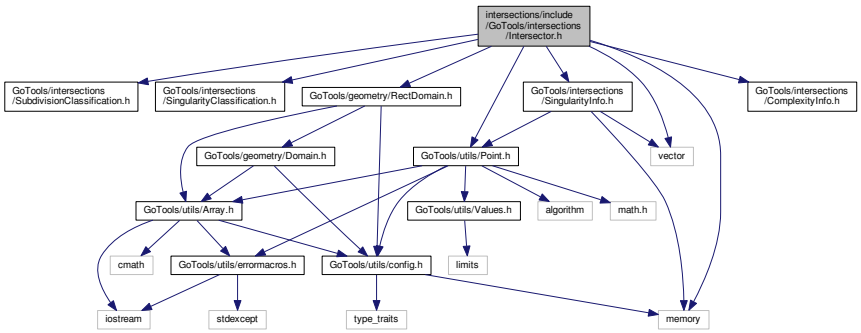
Functions

- shared_ptr< SplineCurve > Go::IntersectionUtils::create1DSplineCurve (const SplineCurve &cv, int dim_id)
- shared_ptr< SplineSurface > Go::IntersectionUtils::create1DSplineSurface (const SplineSurface &sf, int dim_id)
- shared_ptr< SplineCurve > Go::IntersectionUtils::splineCurveProduct (std::vector< shared_ptr< SplineCurve > > &cv, Alg2DElem term)
- shared_ptr< SplineSurface > Go::IntersectionUtils::splineSurfaceProduct (std::vector< shared_ptr< SplineSurface > > &sf, Alg3DElem term)
- shared_ptr< SplineCurve > Go::IntersectionUtils::insertCvInAlgcv (const SplineCurve &cv, AlgObj2DInt *alg_obj2d_int)
- shared_ptr< SplineSurface > Go::IntersectionUtils::insertSfInAlgsf (const SplineSurface &sf, AlgObj3DInt *alg_obj3d_int)
- shared_ptr< SplineSurface > Go::IntersectionUtils::insertSfInAlgsf2 (const SplineSurface &sf, AlgObj3DInt *alg_obj3d_int)
- shared_ptr< SplineSurface > Go::IntersectionUtils::insertSfInImplObj (const SplineSurface &spline_sf, const BernsteinTetrahedralPoly &impl, const BaryCoordSystem3D &bc)
- double Go::IntersectionUtils::distImplRepresentationCompFunction (const SplineSurface &spline_sf, const BernsteinTetrahedralPoly &impl, const BaryCoordSystem3D &bc, const SplineSurface &comp_1d_sf, double upar, double vpar)

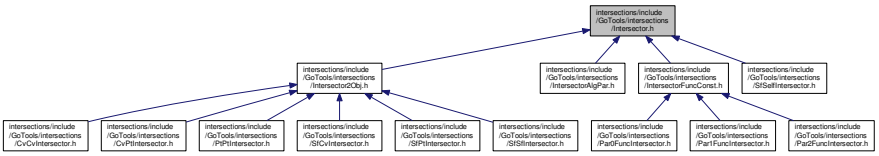
30.2057 intersections/include/GoTools/intersections/Intersector.h File Reference

```
#include "GoTools/intersections/SubdivisionClassification.h"
#include "GoTools/intersections/SingularityClassification.h"
#include "GoTools/intersections/SingularityInfo.h"
#include "GoTools/intersections/ComplexityInfo.h"
#include "GoTools/utils/Point.h"
#include "GoTools/geometry/RectDomain.h"
#include <vector>
#include <memory>
```

Include dependency graph for Intersector.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Intersector

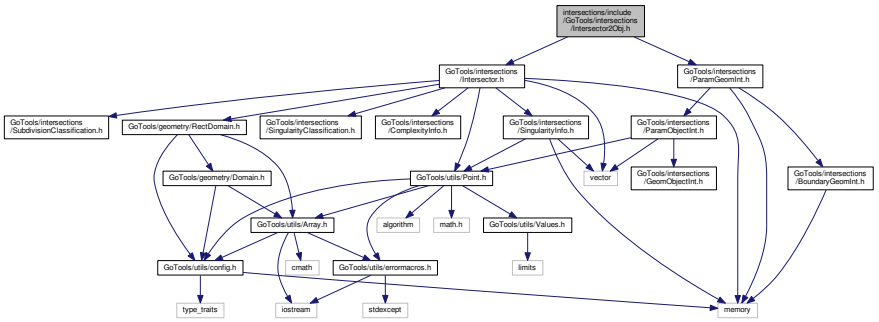
Namespaces

- Go

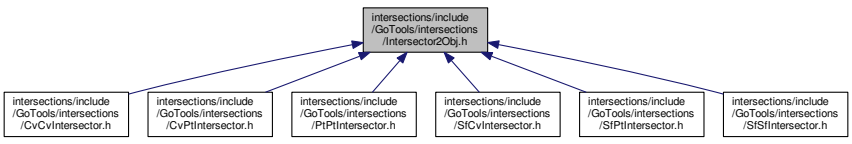
30.2058 intersections/include/GoTools/intersections/Intersector2Obj.h File Reference

```
#include "GoTools/intersections/Intersector.h"
#include "GoTools/intersections/ParamGeomInt.h"
```

Include dependency graph for Intersector2Obj.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Intersector2Obj

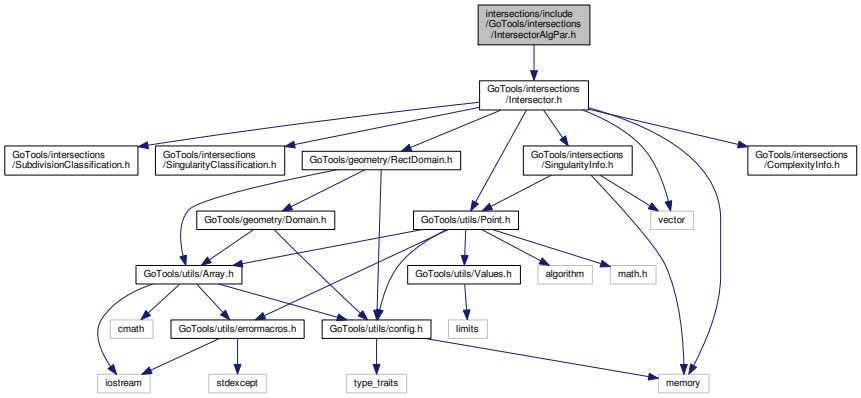
Namespaces

- Go

30.2059 intersections/include/GoTools/intersections/IntersectorAlgPar.h File Reference

```
#include "GoTools/intersections/Intersector.h"
```

Include dependency graph for IntersectorAlgPar.h:



Classes

- class Go::IntersectorAlgPar

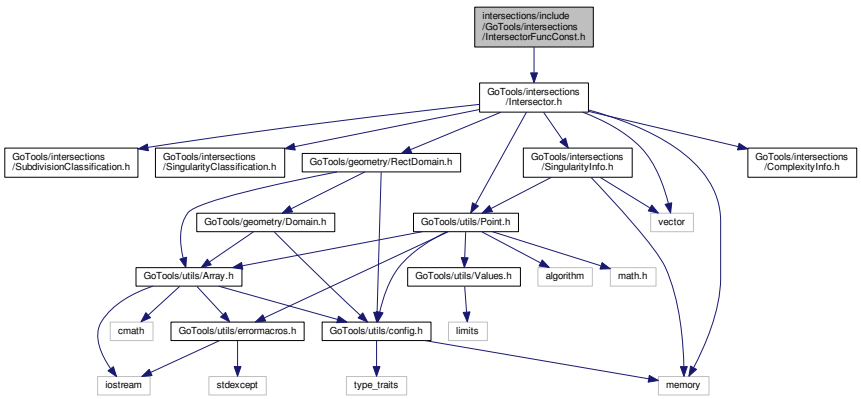
Namespaces

- Go

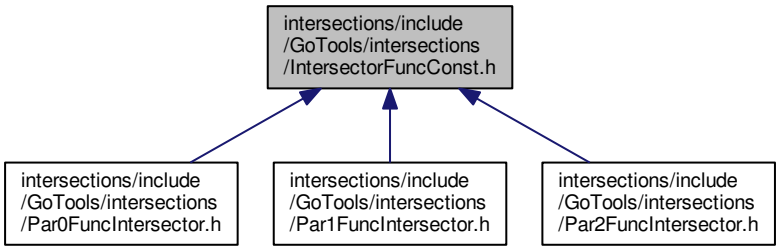
30.2060 intersections/include/GoTools/intersections/IntersectorFuncConst.h File Reference

```
#include "GoTools/intersections/Intersector.h"
```

Include dependency graph for IntersectorFuncConst.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IntersectorFuncConst

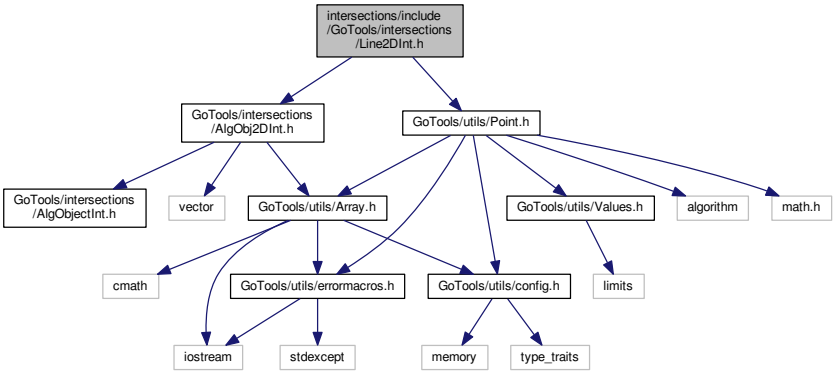
Namespaces

- Go

30.2061 intersections/include/GoTools/intersections/Line2DInt.h File Reference

```
#include "GoTools/intersections/AlgObj2DInt.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for Line2DInt.h:



Classes

- class Go::Line2DInt

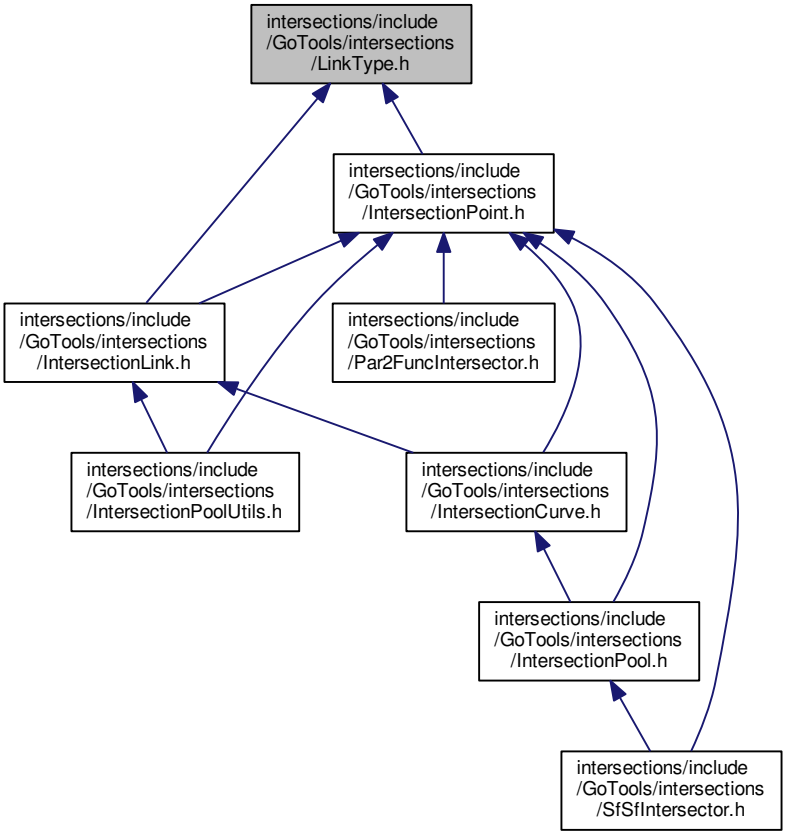
  Class representing an algebraic line in 2-dimensional space.

Namespaces

- Go

30.2062 intersections/include/GoTools/intersections/LinkType.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- Go

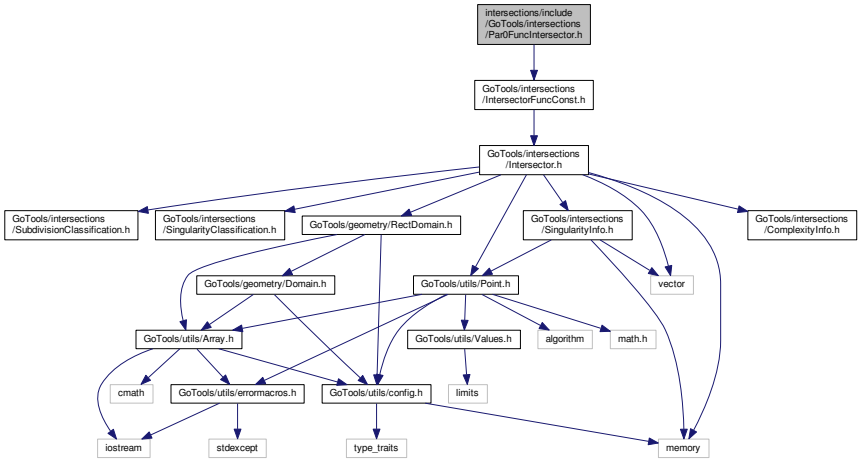
Enumerations

- enum Go::LinkType {
  Go::LINK_UNDEFINED = 0, Go::SIMPLE_CONE, Go::SIMPLE_MONOTONE, Go::SIMPLE_IMPLICIT,
  Go::SIMPLE_TWO_POINTS, Go::COINCIDENCE_CVPT, Go::COINCIDENCE_CVCV, Go::COINCIDENC↩
  E_SFCV,
  Go::COINCIDENCE_SFPT, Go::MICRO_CVCV, Go::MICRO_SFPT, Go::MICRO_SFCV,
  Go::MICRO_SFSF, Go::MICRO_PAR1FUNC, Go::MICRO_PAR2FUNC, Go::LINEAR_CVCV,
  Go::LINEAR_SFCV, Go::LINEAR_SFSF, Go::MERGED_UNDEFINED, Go::MERGED_SIMPLE_CONE,
  Go::MERGED_SIMPLE_MONOTONE, Go::MERGED_SIMPLE_CONE_MONOTONE, Go::MERGED_CO↩
  INCIDENCE_SFCV_SFCV, Go::DEG_TRIANGLE,
  Go::POST_ITERATE, Go::BRANCH_CONNECTION, Go::COMPLEX_SFSF, Go::SPLIT_LINK,
  Go::REPAIRED_MISSING_LINK, Go::INSIDE_OUTSIDE_SINGULARITY_BOX }

30.2063 intersections/include/GoTools/intersections/Par0FuncIntersector.h File Reference

```
#include "GoTools/intersections/IntersectorFuncConst.h"
```

Include dependency graph for Par0FuncIntersector.h:



Classes

- class Go::Par0FuncIntersector

  This class is performing intersections between two constants.

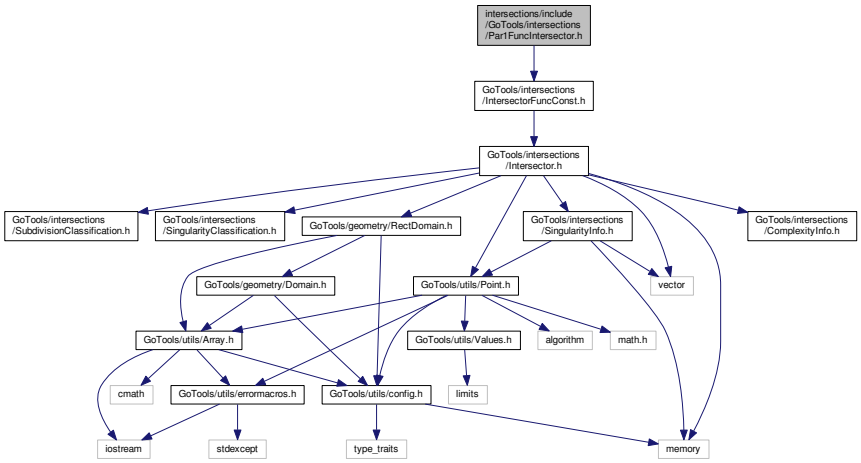
Namespaces

- Go

30.2064 intersections/include/GoTools/intersections/Par1FuncIntersector.h File Reference

```
#include "GoTools/intersections/IntersectorFuncConst.h"
```

Include dependency graph for Par1FuncIntersector.h:



Classes

- class Go::Par1FuncIntersector

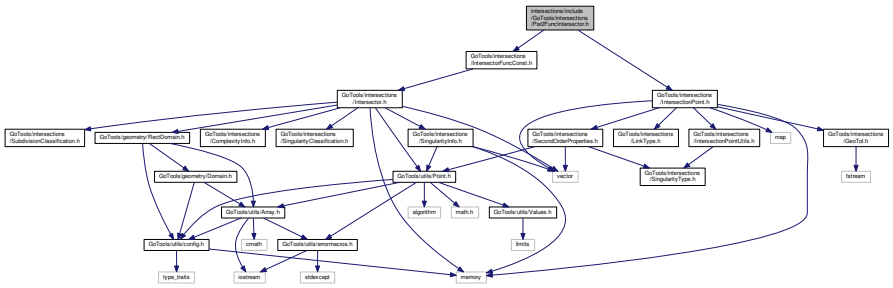
Namespaces

- Go

30.2065 intersections/include/GoTools/intersections/Par2FuncIntersector.h File Reference

```
#include "GoTools/intersections/IntersectorFuncConst.h"
#include "GoTools/intersections/IntersectionPoint.h"
```

Include dependency graph for Par2FuncIntersector.h:



Classes

- class Go::Par2FuncIntersector

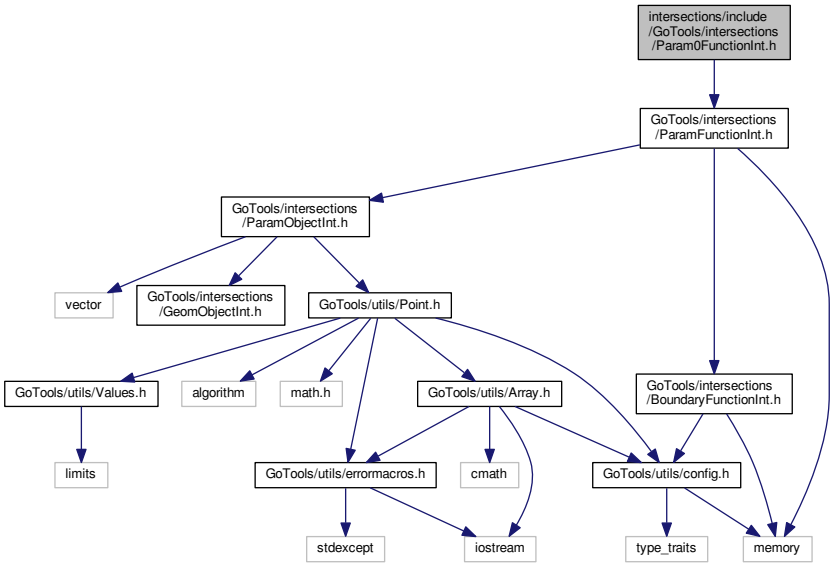
Namespaces

- Go

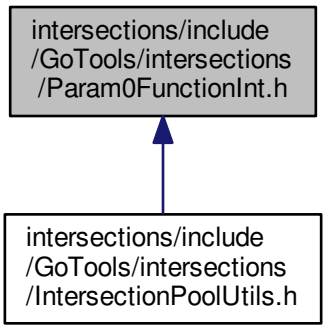
30.2066 intersections/include/GoTools/intersections/Param0FunctionInt.h File Reference

```
#include "GoTools/intersections/ParamFunctionInt.h"
```

Include dependency graph for Param0FunctionInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Param0FunctionInt

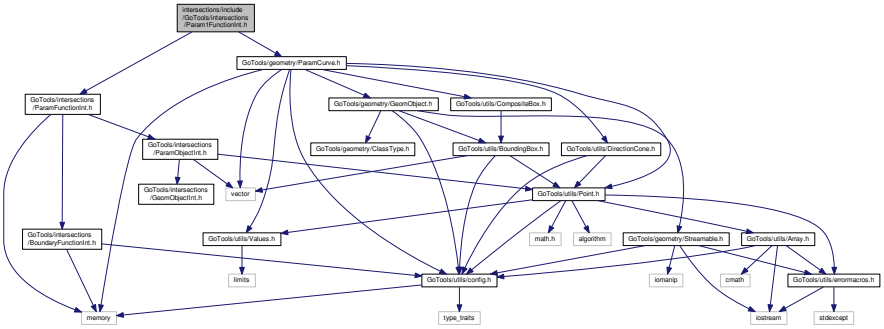
Namespaces

- Go

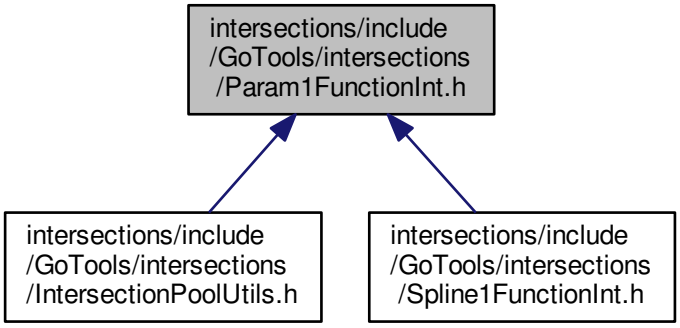
30.2067 intersections/include/GoTools/intersections/Param1FunctionInt.h File Reference

```
#include "GoTools/intersections/ParamFunctionInt.h"
#include "GoTools/geometry/ParamCurve.h"
```

Include dependency graph for Param1FunctionInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Param1FunctionInt

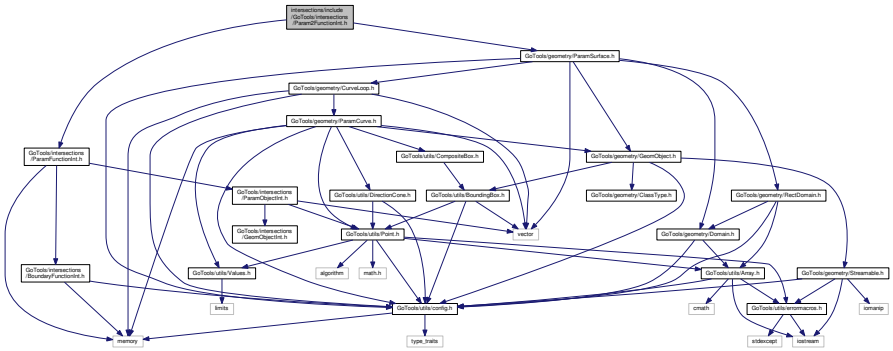
Namespaces

- Go

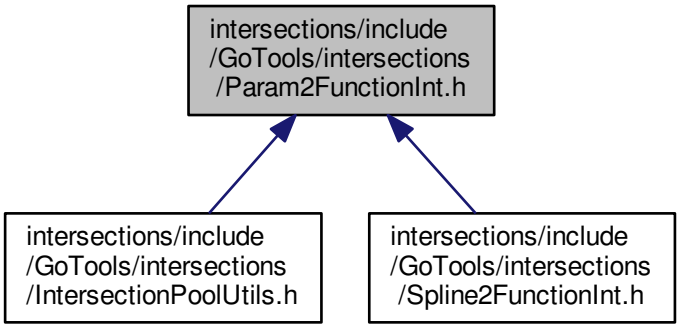
30.2068 intersections/include/GoTools/intersections/Param2FunctionInt.h File Reference

```
#include "GoTools/intersections/ParamFunctionInt.h"
#include "GoTools/geometry/ParamSurface.h"
```

Include dependency graph for Param2FunctionInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Param2FunctionInt

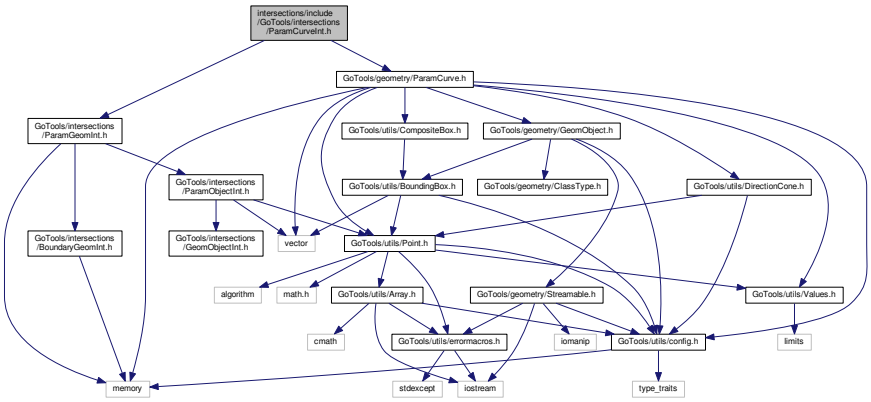
Namespaces

- Go

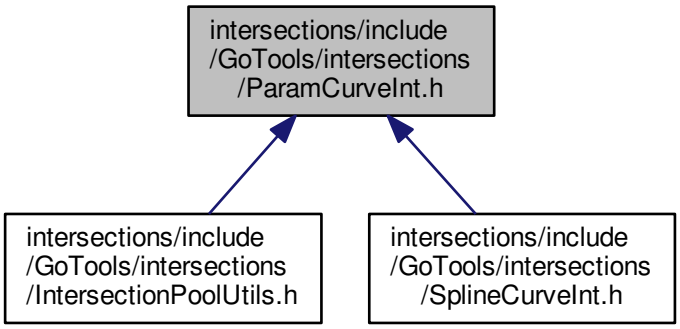
30.2069 intersections/include/GoTools/intersections/ParamCurveInt.h File Reference

```
#include "GoTools/intersections/ParamGeomInt.h"
#include "GoTools/geometry/ParamCurve.h"
```

Include dependency graph for ParamCurveInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ParamCurveInt

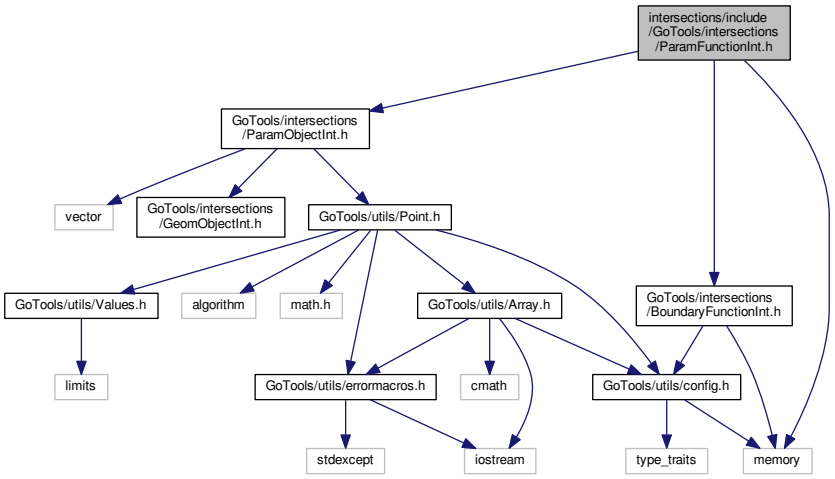
Namespaces

- Go

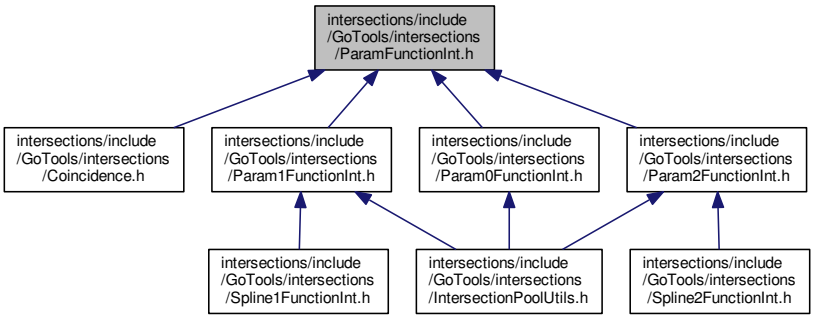
30.2070 intersections/include/GoTools/intersections/ParamFunctionInt.h File Reference

```
#include "GoTools/intersections/ParamObjectInt.h"
#include "GoTools/intersections/BoundaryFunctionInt.h"
#include <memory>
```

Include dependency graph for ParamFunctionInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ParamFunctionInt

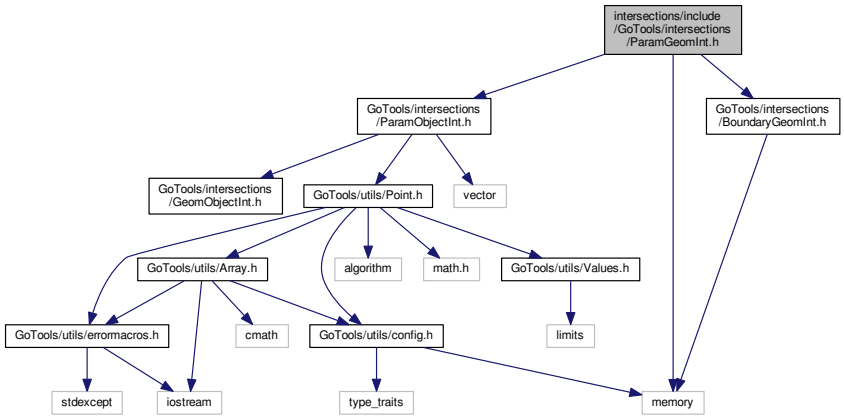
Namespaces

- Go

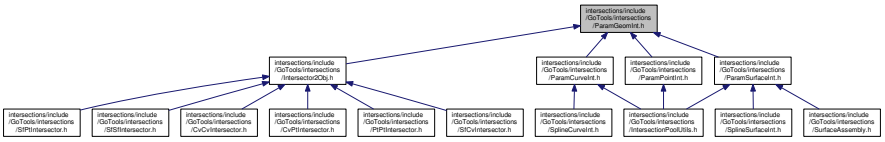
30.2071 intersections/include/GoTools/intersections/ParamGeomInt.h File Reference

```
#include "GoTools/intersections/ParamObjectInt.h"
#include "GoTools/intersections/BoundaryGeomInt.h"
#include <memory>
```

Include dependency graph for ParamGeomInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ParamGeomInt

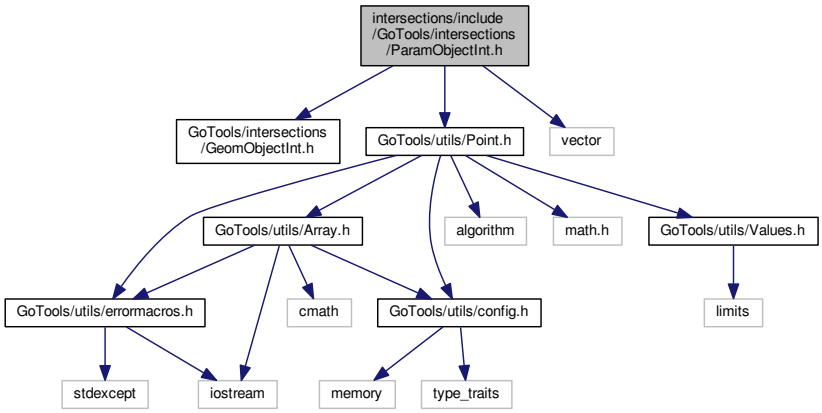
Namespaces

- Go

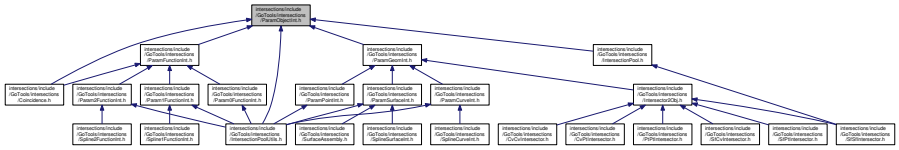
30.2072 intersections/include/GoTools/intersections/ParamObjectInt.h File Reference

```
#include "GoTools/intersections/GeomObjectInt.h"
#include "GoTools/utils/Point.h"
#include <vector>
```

Include dependency graph for ParamObjectInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ParamObjectInt

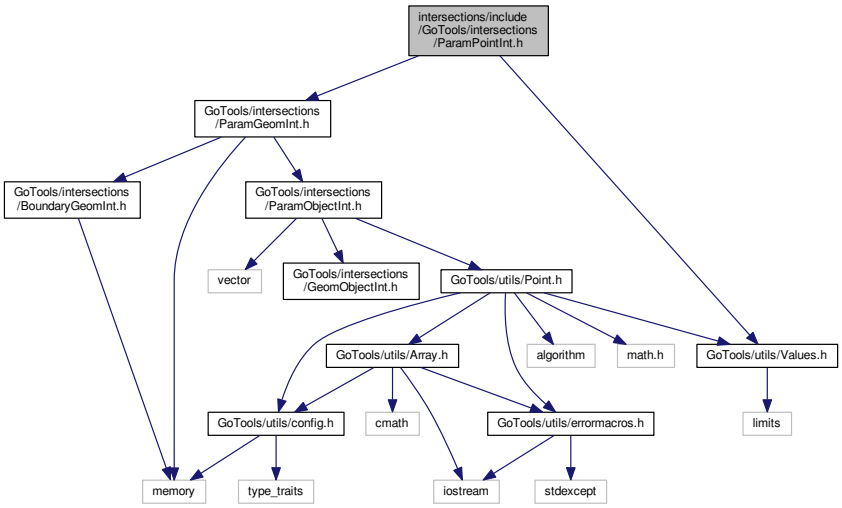
Namespaces

- Go

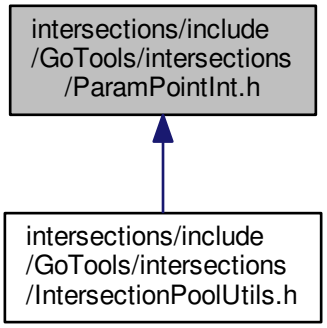
30.2073 intersections/include/GoTools/intersections/ParamPointInt.h File Reference

```
#include "GoTools/intersections/ParamGeomInt.h"
#include "GoTools/utils/Values.h"
```

Include dependency graph for ParamPointInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ParamPointInt

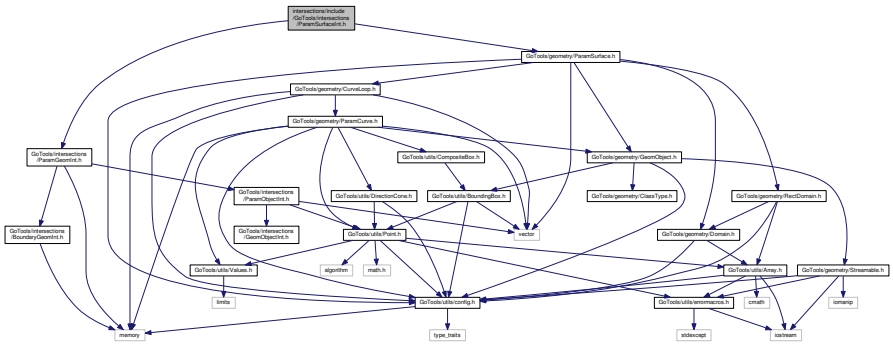
Namespaces

- Go

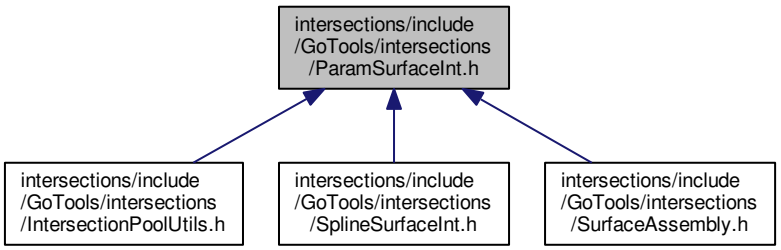
30.2074 intersections/include/GoTools/intersections/ParamSurfaceInt.h File Reference

```
#include "GoTools/intersections/ParamGeomInt.h"
#include "GoTools/geometry/ParamSurface.h"
```

Include dependency graph for ParamSurfaceInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ParamSurfaceInt

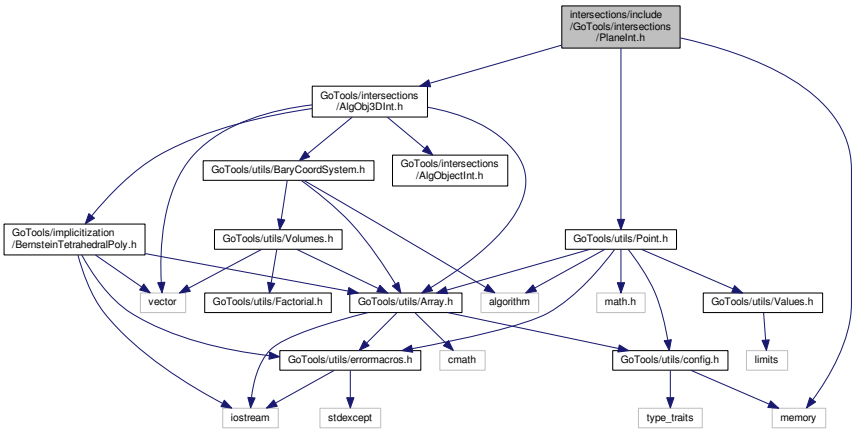
Namespaces

- Go

30.2075 intersections/include/GoTools/intersections/PlaneInt.h File Reference

```
#include "GoTools/intersections/AlgObj3DInt.h"
#include "GoTools/utils/Point.h"
#include <memory>
```

Include dependency graph for PlaneInt.h:



Classes

- class Go::PlaneInt

  Class representing planar algebraic intersection objects.

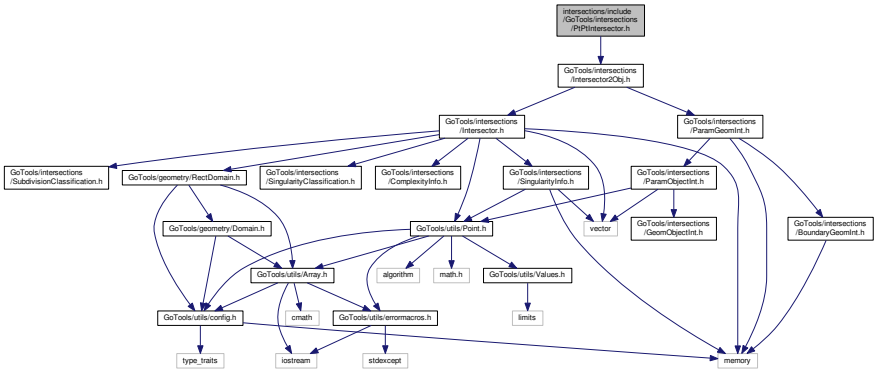
Namespaces

- Go

30.2076 intersections/include/GoTools/intersections/PtPtIntersector.h File Reference

```
#include "GoTools/intersections/Intersector2Obj.h"
```

Include dependency graph for PtPtIntersector.h:



Classes

- class Go::PtPtIntersector

  This class performs intersection between two points.

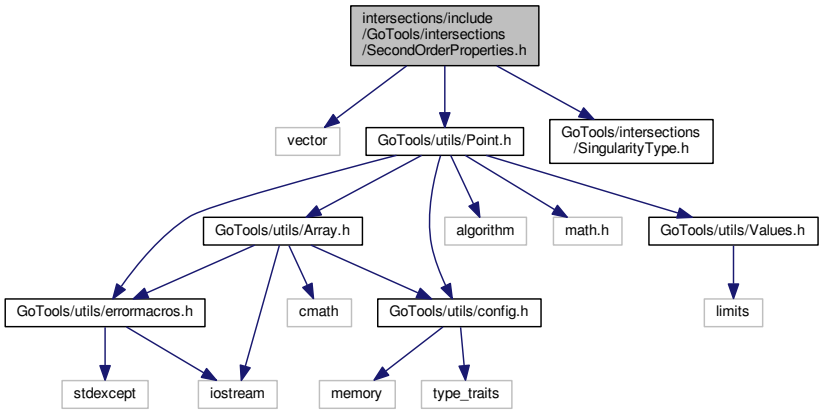
Namespaces

- Go

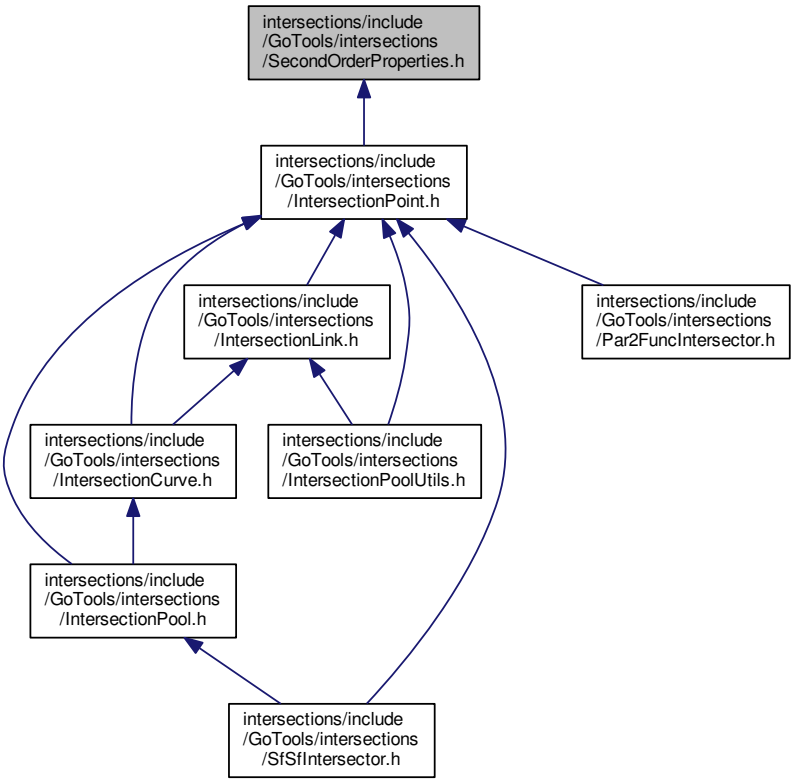
30.2077 intersections/include/GoTools/intersections/SecondOrderProperties.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
#include "GoTools/intersections/SingularityType.h"
```

Include dependency graph for SecondOrderProperties.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::SecondOrderProperties

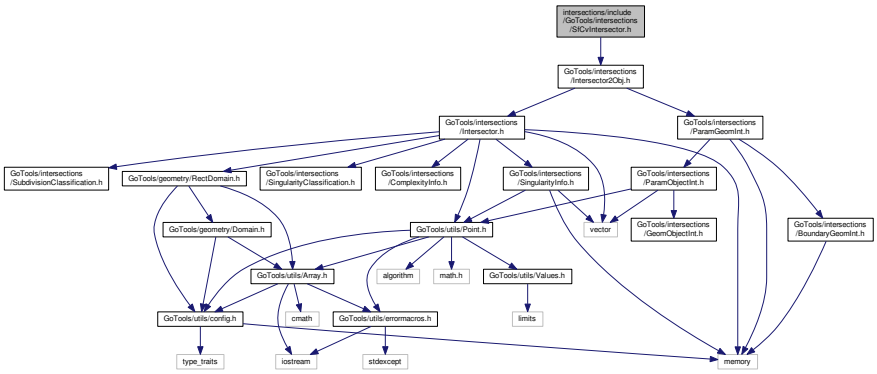
Namespaces

- Go

30.2078 intersections/include/GoTools/intersections/SfCvIntersector.h File Reference

```
#include "GoTools/intersections/Intersector2Obj.h"
```

Include dependency graph for SfCvIntersector.h:



Classes

- class Go::SfCvIntersector

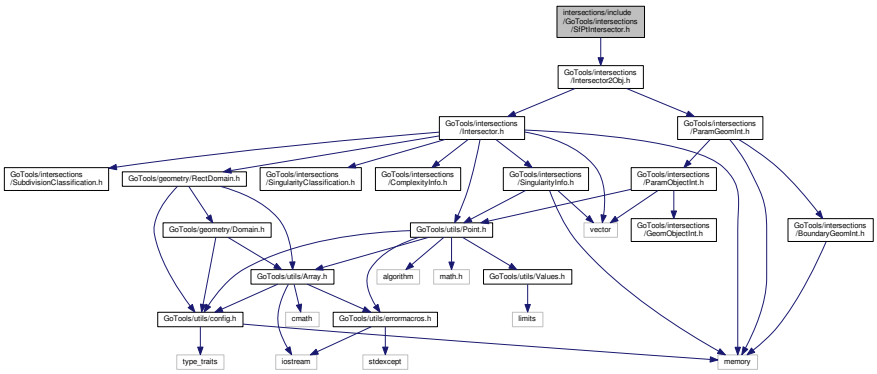
Namespaces

- Go

30.2079 intersections/include/GoTools/intersections/SfPtIntersector.h File Reference

```
#include "GoTools/intersections/Intersector2Obj.h"
```

Include dependency graph for SfPtIntersector.h:



Classes

- class Go::SfPtIntersector

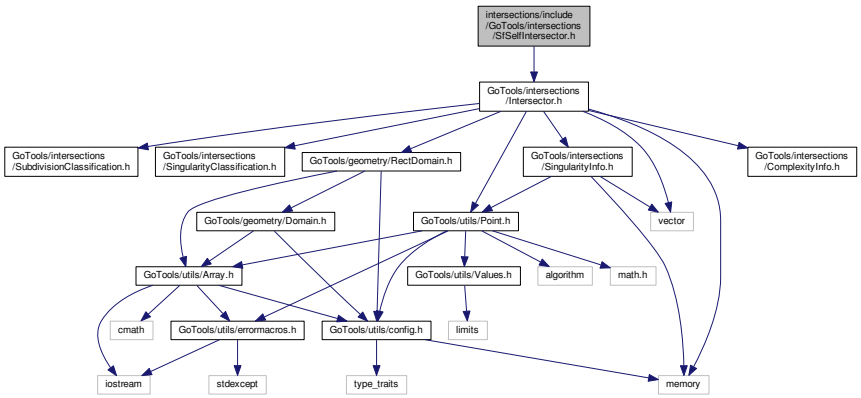
Namespaces

- Go

30.2080 intersections/include/GoTools/intersections/SfSelfIntersector.h File Reference

```
#include "GoTools/intersections/Intersector.h"
```

Include dependency graph for SfSelfIntersector.h:



Classes

- struct Go::SingBox
- struct Go::SingUnion
- class Go::SfSelfIntersector

  This class finds self-intersections for a parametric surface.

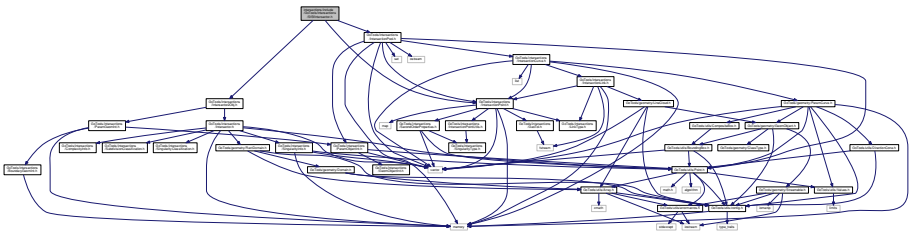
Namespaces

- Go

30.2081 intersections/include/GoTools/intersections/SfSfIntersector.h File Reference

```
#include "GoTools/intersections/Intersector2Obj.h"
#include "GoTools/intersections/IntersectionPoint.h"
#include "GoTools/intersections/IntersectionPool.h"
```

Include dependency graph for SfSfIntersector.h:



Classes

- class Go::SfSfIntersector

  This class performs intersection between two parametric surfaces.

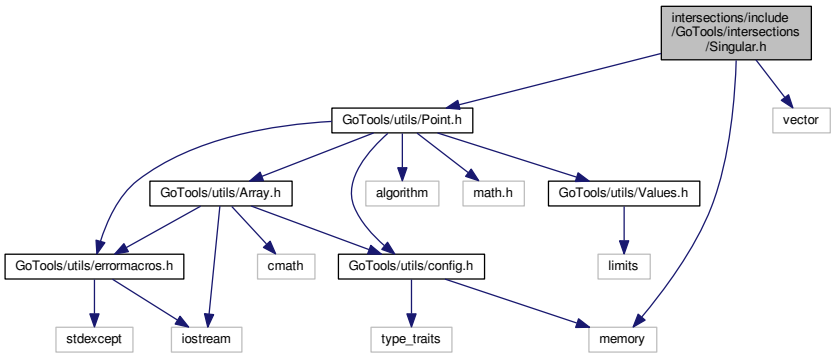
Namespaces

- Go

30.2082 intersections/include/GoTools/intersections/Singular.h File Reference

```
#include "GoTools/utils/Point.h"
#include <vector>
#include <memory>
```

Include dependency graph for Singular.h:



Namespaces

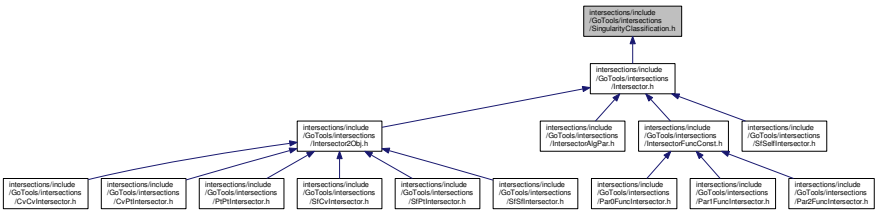
- Go
- Go::Singular

Functions

- void Go::Singular::vanishingNormal (shared_ptr< ParamSurface > srf, double tol, std::vector< Point > &singular_pts, std::vector< std::vector< Point > > &singular_sequences)
- void Go::Singular::vanishingTangent (shared_ptr< ParamCurve > crv, double start, double end, double tol, std::vector< double > &singular_pts, std::vector< std::vector< double > > &singular_sequences)

30.2083 intersections/include/GoTools/intersections/SingularityClassification.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- Go

Enumerations

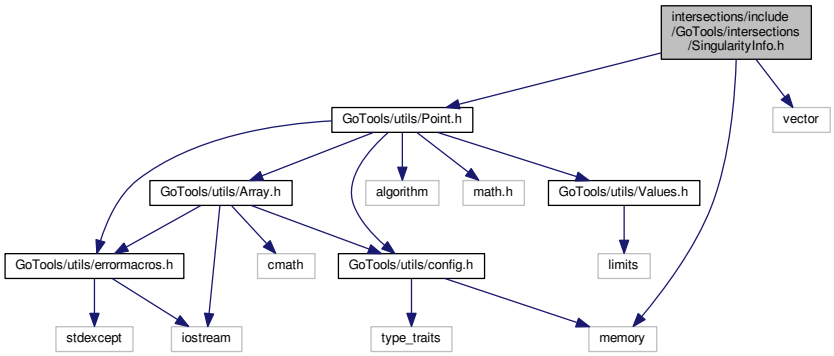
- enum Go::SingularityClassification { Go::NO_SING = 0, Go::INIT_SING, Go::DIVIDED_SING, Go::KEEP_↩ SING }

  This enum classifies the type of singularity.

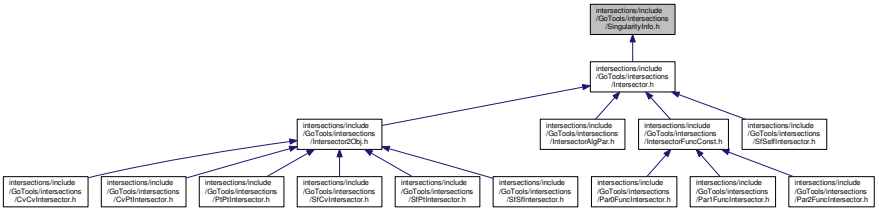
30.2084 intersections/include/GoTools/intersections/SingularityInfo.h File Reference

```
#include "GoTools/utils/Point.h"
#include <vector>
#include <memory>
```

Include dependency graph for SingularityInfo.h:



This graph shows which files directly or indirectly include this file:



Classes

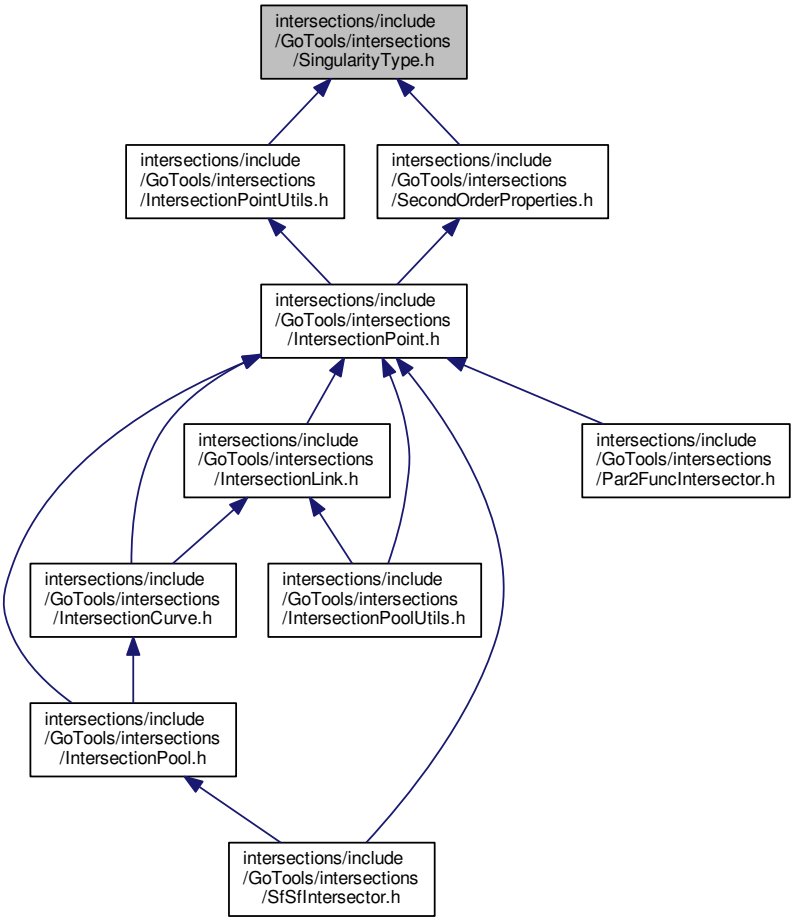
- class Go::SingularityInfo

Namespaces

- Go

30.2085 intersections/include/GoTools/intersections/SingularityType.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- Go

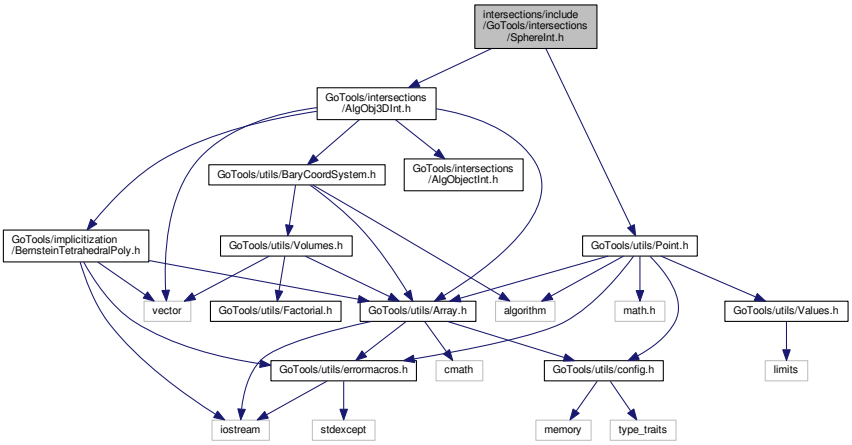
Enumerations

- enum Go::SingularityType { Go::ORDINARY_POINT = 0, Go::TANGENTIAL_POINT, Go::ISOLATED_POINT, Go::BRANCH_POINT, Go::HIGHER_ORDER_POINT }

30.2086 intersections/include/GoTools/intersections/SphereInt.h File Reference

```
#include "GoTools/intersections/AlgObj3DInt.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for SphereInt.h:



Classes

- class Go::SphereInt

  Class representing spherical algebraic intersection objects.

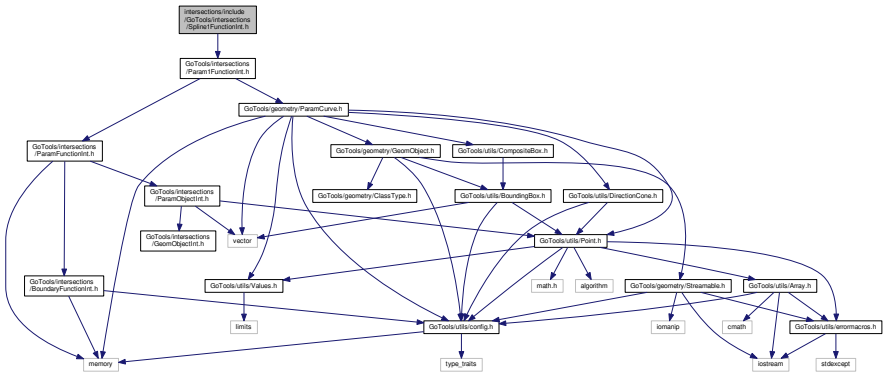
Namespaces

- Go

30.2087 intersections/include/GoTools/intersections/Spline1FunctionInt.h File Reference

```
#include "GoTools/intersections/Param1FunctionInt.h"
```

Include dependency graph for Spline1FunctionInt.h:



Classes

- class Go::Spline1FunctionInt

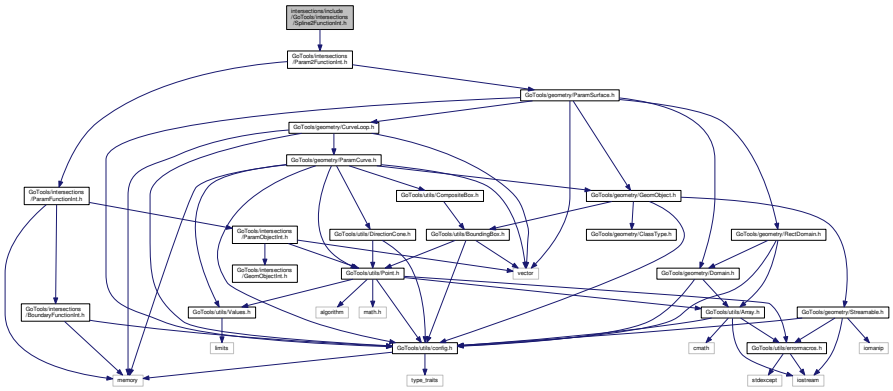
Namespaces

- Go

30.2088 intersections/include/GoTools/intersections/Spline2FunctionInt.h File Reference

```
#include "GoTools/intersections/Param2FunctionInt.h"
```

Include dependency graph for Spline2FunctionInt.h:



Classes

- class Go::Spline2FunctionInt

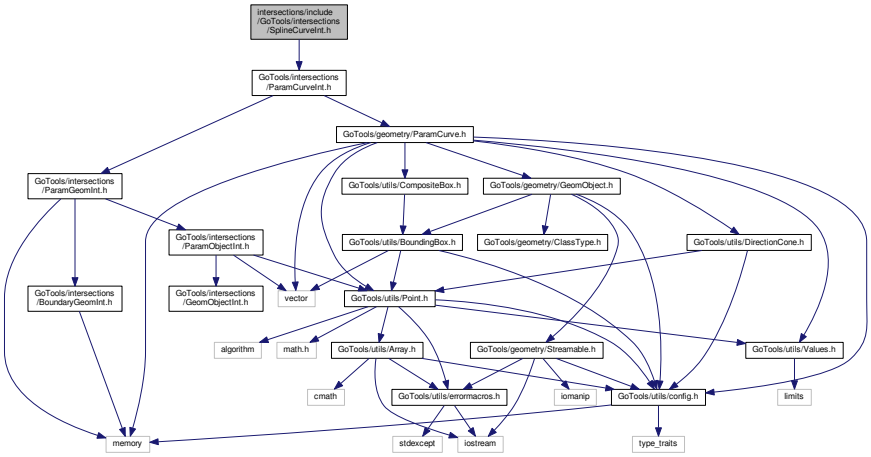
Namespaces

- Go

30.2089 intersections/include/GoTools/intersections/SplineCurveInt.h File Reference

```
#include "GoTools/intersections/ParamCurveInt.h"
```

Include dependency graph for SplineCurveInt.h:



Classes

- class Go::SplineCurveInt

  Class representing the "intersection object" of a spline curve.

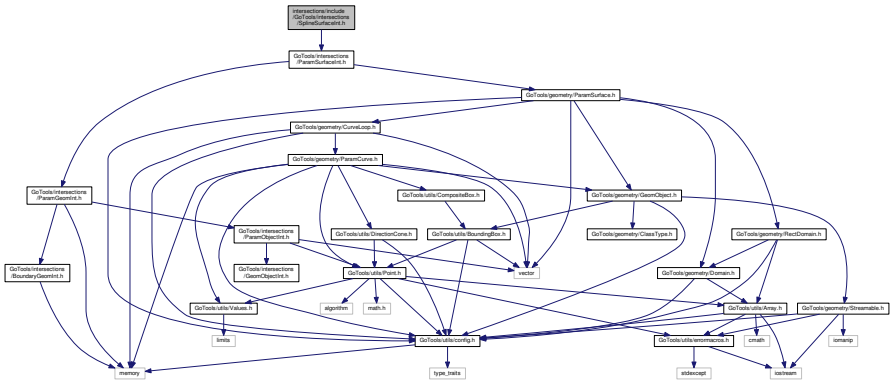
Namespaces

- Go

30.2090 intersections/include/GoTools/intersections/SplineSurfaceInt.h File Reference

```
#include "GoTools/intersections/ParamSurfaceInt.h"
```

Include dependency graph for SplineSurfaceInt.h:



Classes

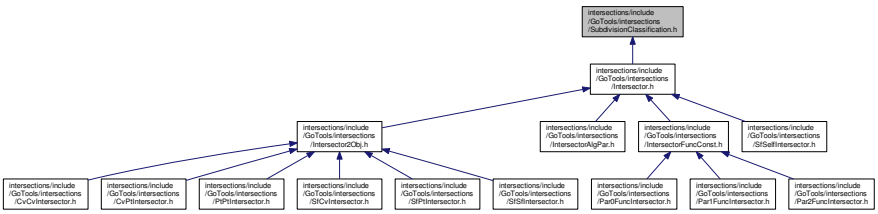
- class Go::SplineSurfaceInt

Namespaces

- Go

30.2091 intersections/include/GoTools/intersections/SubdivisionClassification.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- Go

Enumerations

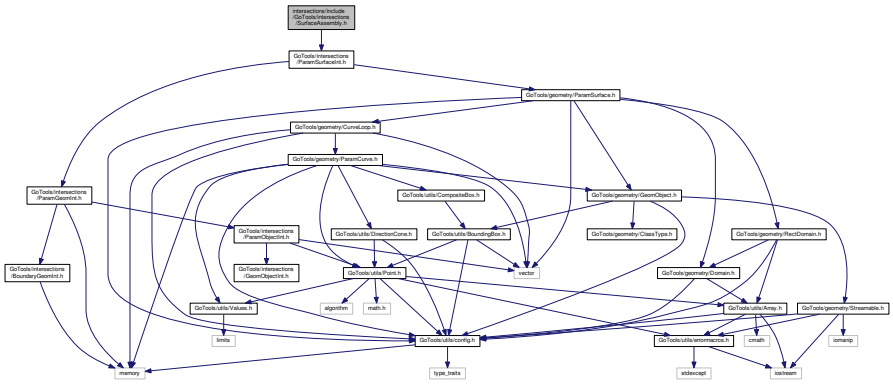
- enum Go::SubdivisionClassification {
  Go::CANNOT_SUBDIVIDE = 0, Go::DIVIDE_DEG, Go::DIVIDE_CRITICAL, Go::DIVIDE_HIGH_SING, Go::DIVIDE_SING, Go::DIVIDE_KNOT, Go::DIVIDE_INT, Go::DIVIDE_PAR }

  This enum classifies the type of subdivision.

30.2092 intersections/include/GoTools/intersections/SurfaceAssembly.h File Reference

```
#include "GoTools/intersections/ParamSurfaceInt.h"
```

Include dependency graph for SurfaceAssembly.h:



Classes

- class Go::SurfaceAssembly

Namespaces

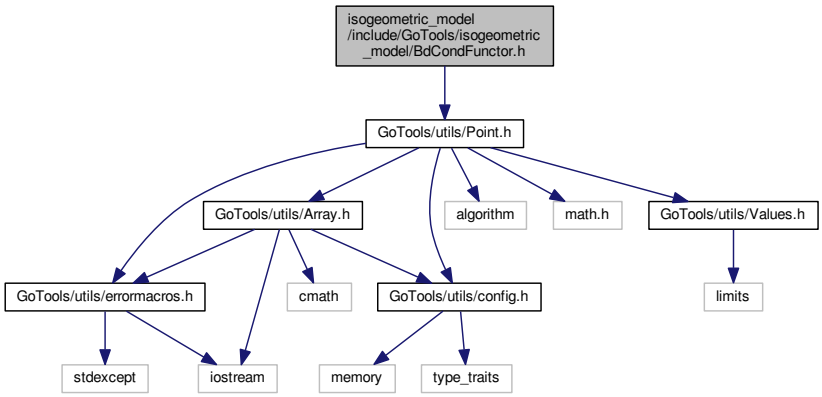
- Go

30.2093 intersections/include/GoTools/intersections/TorusInt.h File Reference

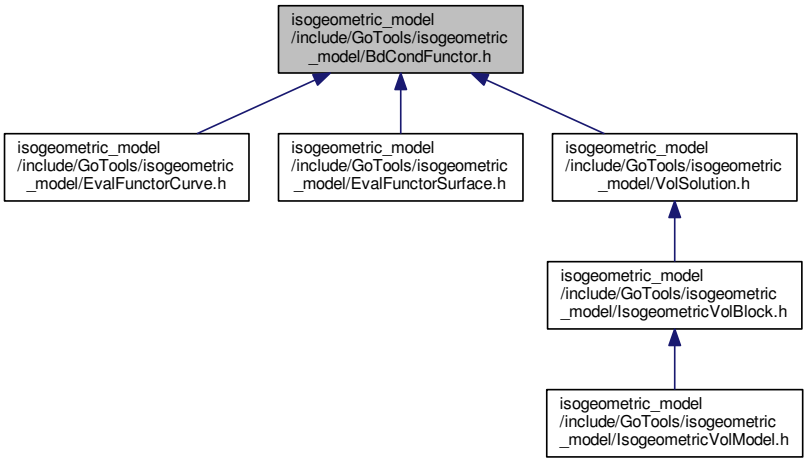
30.2094 isogeometric_model/include/GoTools/isogeometric_model/BdCondFunctor.h File Reference

```
#include "GoTools/utils/Point.h"
```

Include dependency graph for BdCondFunctor.h:



This graph shows which files directly or indirectly include this file:



Classes

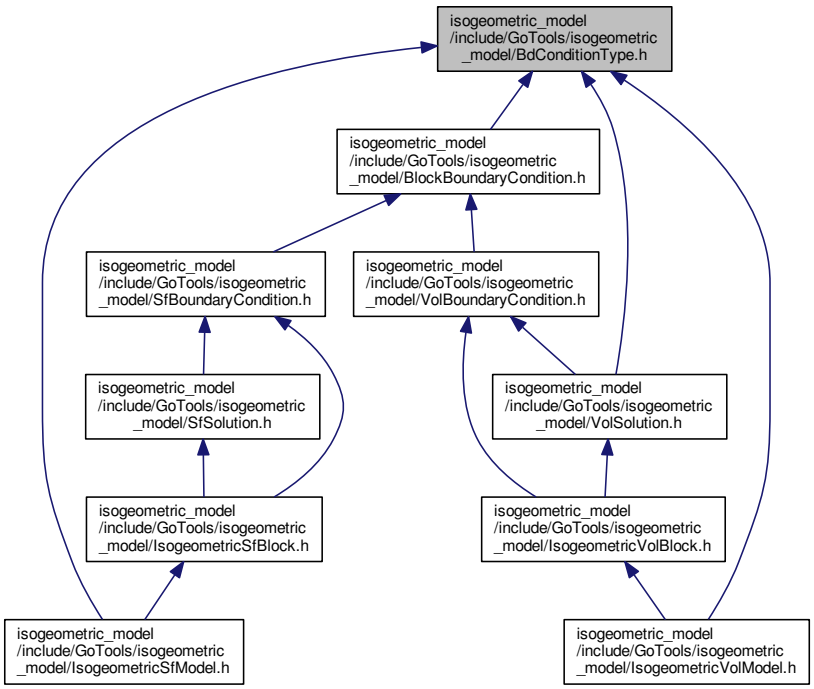
- class Go::BdCondFunctor

Namespaces

- Go

30.2095 isogeometric_model/include/GoTools/isogeometric_model/BdConditionType.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- Go

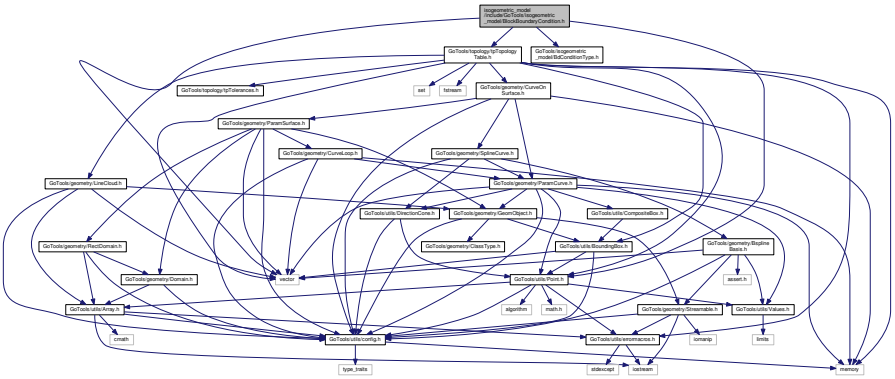
Enumerations

- enum Go::BdConditionType {
  Go::UNKNOWN = 0, Go::ZERO_DIRICHLET, Go::CONSTANT_DIRICHLET, Go::DIRICHLET,
  Go::ZERO_NEUMANN, Go::NEUMANN, Go::SYMMETRY }

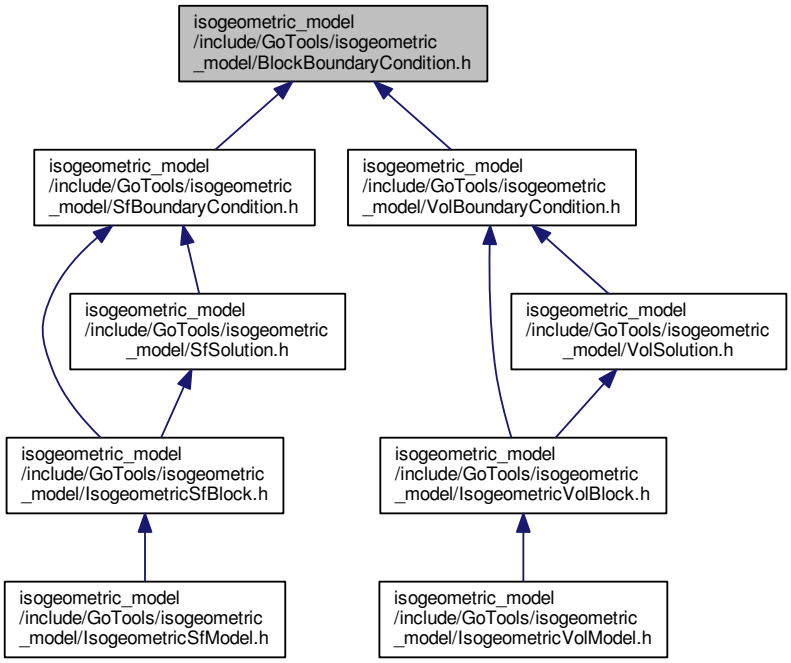
30.2096 isogeometric_model/include/GoTools/isogeometric_model/BlockBoundaryCondition.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
#include "GoTools/isogeometric_model/BdConditionType.h"
#include "GoTools/topology/tpTopologyTable.h"
```

Include dependency graph for BlockBoundaryCondition.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BlockBoundaryCondition

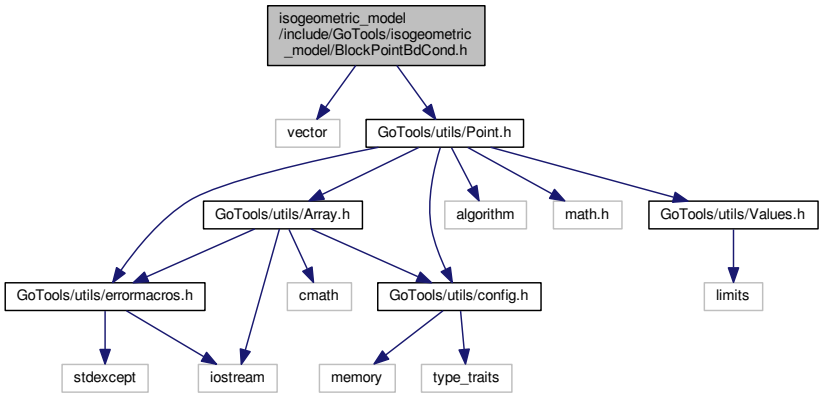
Namespaces

- Go

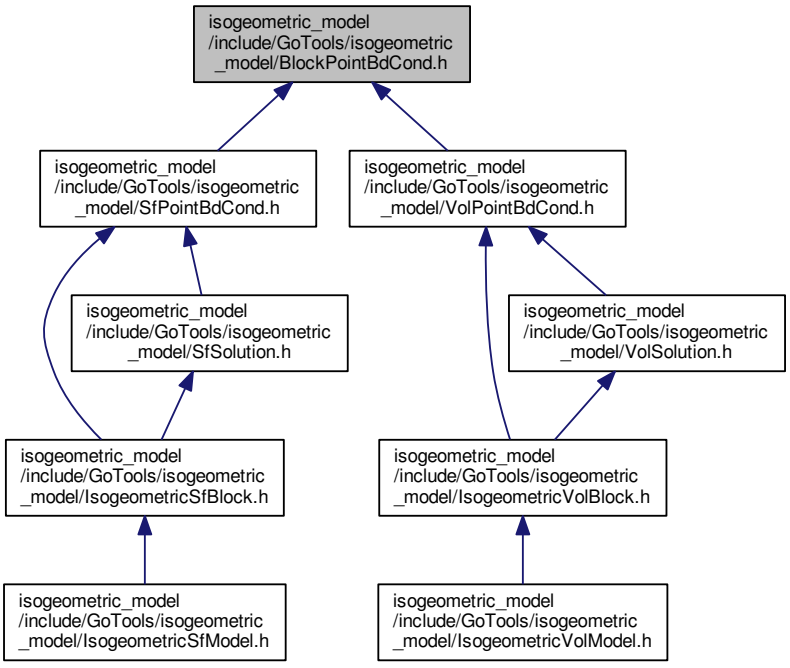
30.2097 isogeometric_model/include/GoTools/isogeometric_model/BlockPointBdCond.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
```

Include dependency graph for BlockPointBdCond.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BlockPointBdCond

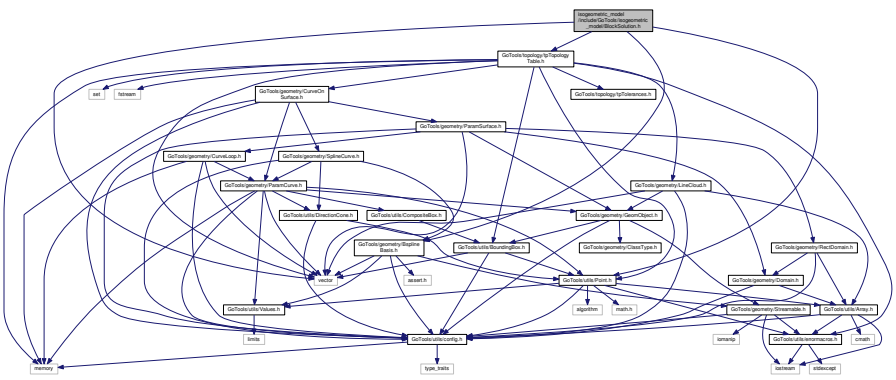
Namespaces

- Go

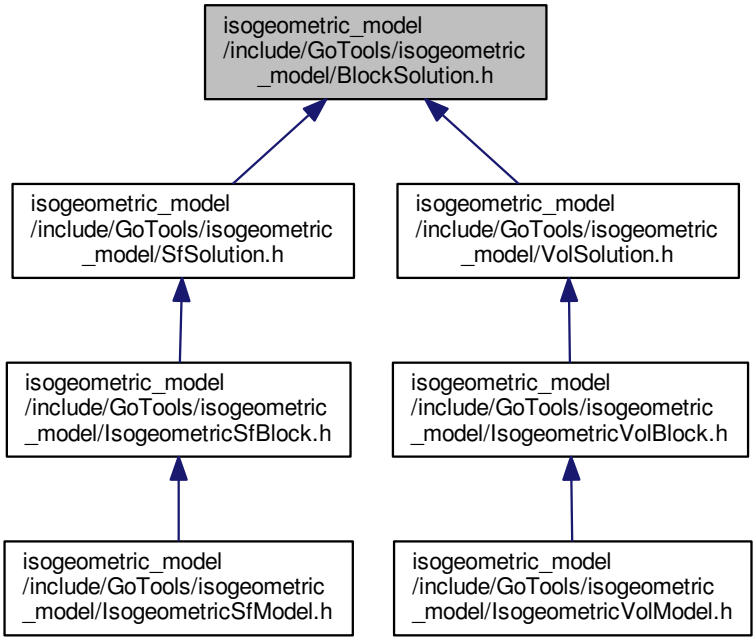
30.2098 isogeometric_model/include/GoTools/isogeometric_model/BlockSolution.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/topology/tpTopologyTable.h"
```

Include dependency graph for BlockSolution.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::BlockSolution

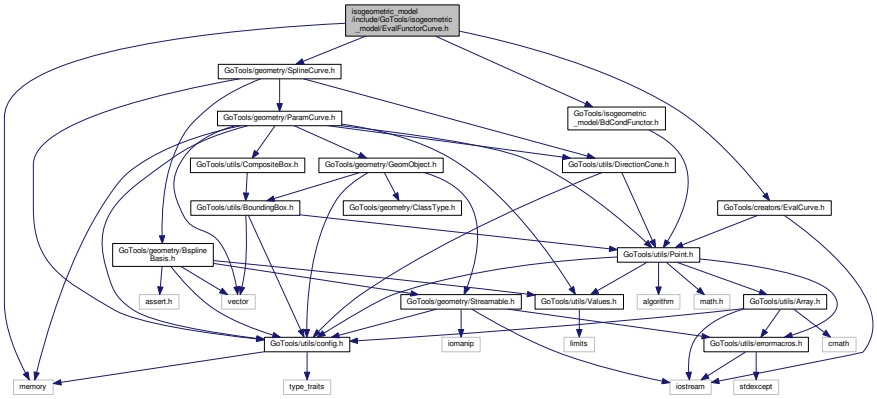
Namespaces

- Go

30.2099 isogeometric_model/include/GoTools/isogeometric_model/EvalFunctorCurve.h File Reference

```
#include <memory>
#include "GoTools/creators/EvalCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/isogeometric_model/BdCondFunctor.h"
```

Include dependency graph for EvalFunctorCurve.h:



Classes

- class Go::EvalFunctorCurve

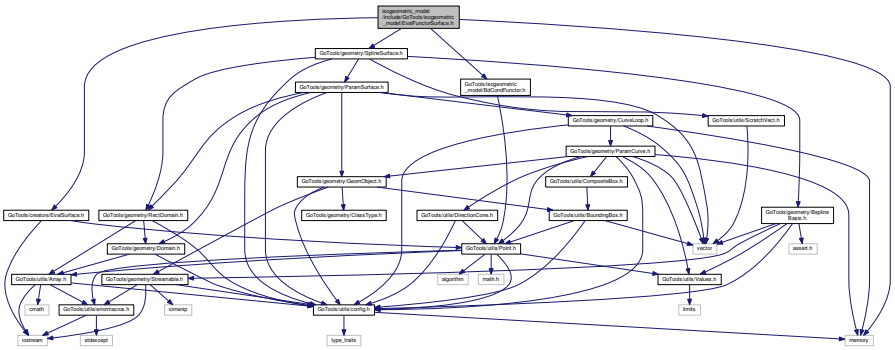
Namespaces

- Go

30.2100 isogeometric_model/include/GoTools/isogeometric_model/EvalFunctorSurface.h File Reference

```
#include <memory>
#include "GoTools/creators/EvalSurface.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/isogeometric_model/BdCondFunctor.h"
```

Include dependency graph for EvalFunctorSurface.h:



Classes

- class Go::EvalFunctorSurface

Namespaces

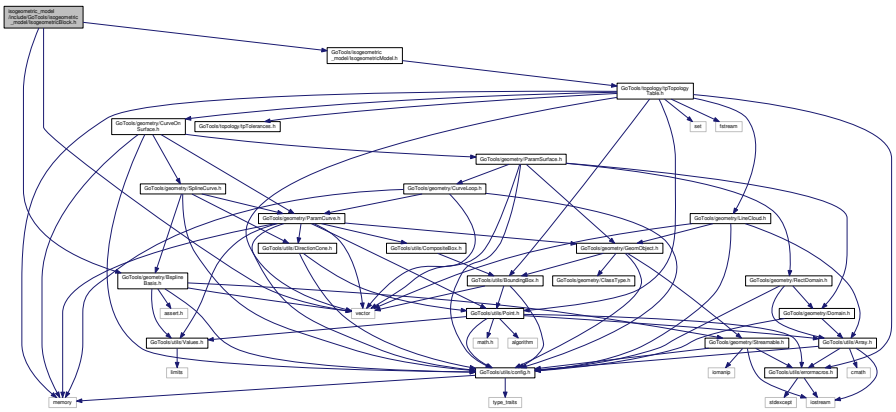
- Go

30.2101 isogeometric_model/include/GoTools/isogeometric_model/isogeometric_↩ model-doxymain.h File Reference

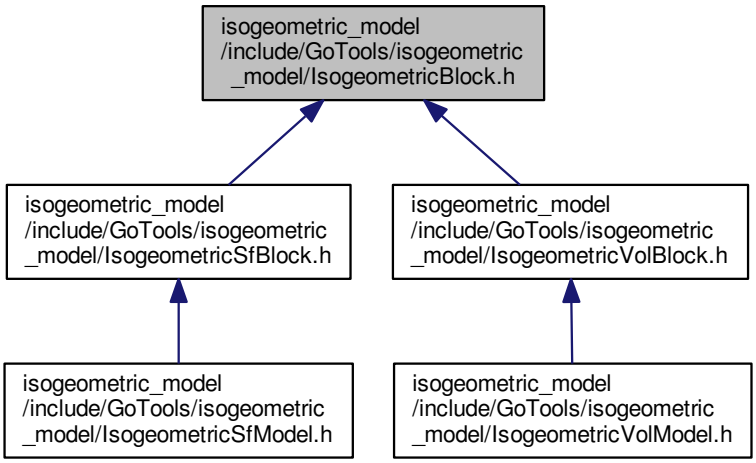
30.2102 isogeometric_model/include/GoTools/isogeometric_model/IsogeometricBlock.h File Reference

```
#include <vector>
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/isogeometric_model/IsogeometricModel.h"
```

Include dependency graph for IsogeometricBlock.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IsogeometricBlock

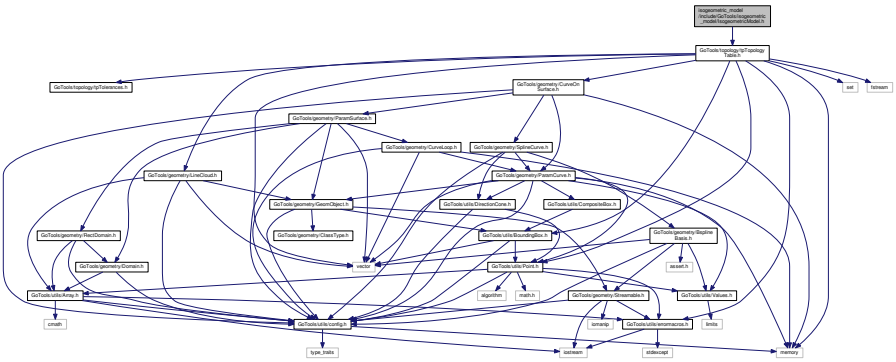
Namespaces

- Go

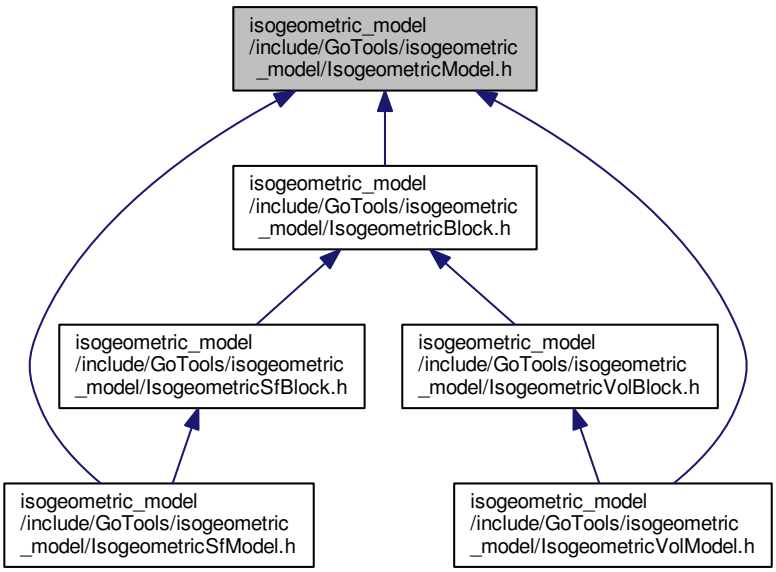
30.2103 isogeometric_model/include/GoTools/isogeometric_model/IsogeometricModel.h File Reference

```
#include "GoTools/topology/tpTopologyTable.h"
```

Include dependency graph for IsogeometricModel.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IsogeometricModel

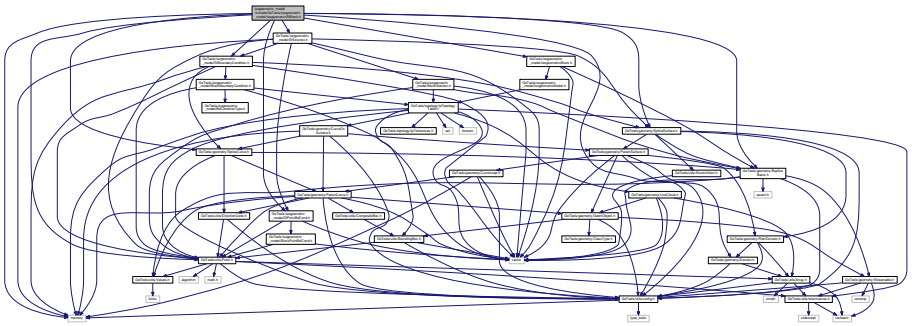
Namespaces

- Go

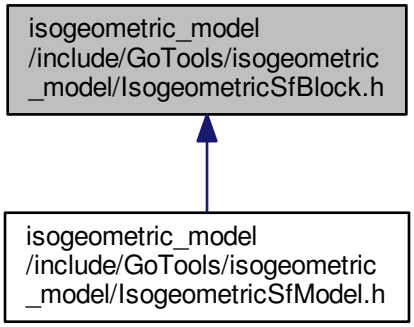
30.2104 isogeometric_model/include/GoTools/isogeometric_model/IsogeometricSfBlock.h File Reference

```
#include <vector>
#include <memory>
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/utils/Point.h"
#include "GoTools/isogeometric_model/IsogeometricBlock.h"
#include "GoTools/isogeometric_model/SfSolution.h"
#include "GoTools/isogeometric_model/SfBoundaryCondition.h"
#include "GoTools/isogeometric_model/SfPointBdCond.h"
```

Include dependency graph for IsogeometricSfBlock.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IsogeometricSfBlock

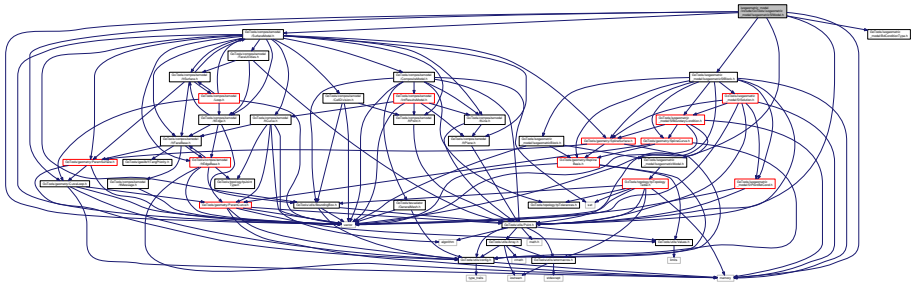
Namespaces

- Go

30.2105 isogeometric_model/include/GoTools/isogeometric_model/IsogeometricSf↩ Model.h File Reference

```
#include <vector>
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/compositemodel/SurfaceModel.h"
#include "GoTools/geometry/CurveLoop.h"
#include "GoTools/isogeometric_model/IsogeometricModel.h"
#include "GoTools/isogeometric_model/BdConditionType.h"
#include "GoTools/isogeometric_model/IsogeometricSfBlock.h"
```

Include dependency graph for IsogeometricSfModel.h:



Classes

- class Go::IsogeometricSfModel

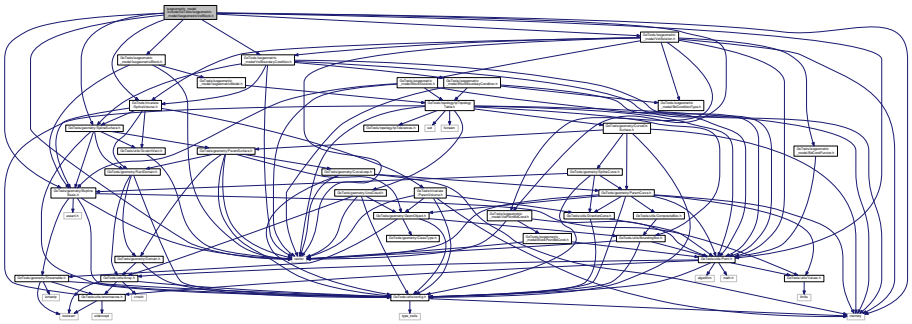
Namespaces

- Go

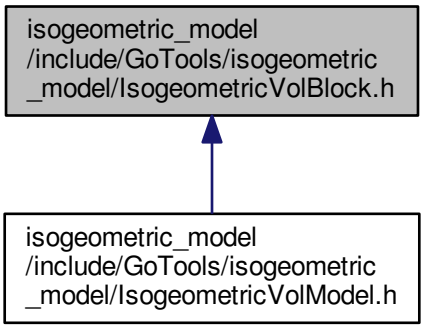
30.2106 isogeometric_model/include/GoTools/isogeometric_model/IsogeometricVolBlock.h File Reference

```
#include <vector>
#include <memory>
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/utils/Point.h"
#include "GoTools/trivariate/SplineVolume.h"
#include "GoTools/isogeometric_model/IsogeometricBlock.h"
#include "GoTools/isogeometric_model/VolSolution.h"
#include "GoTools/isogeometric_model/VolBoundaryCondition.h"
#include "GoTools/isogeometric_model/VolPointBdCond.h"
```

Include dependency graph for IsogeometricVolBlock.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IsogeometricVolBlock

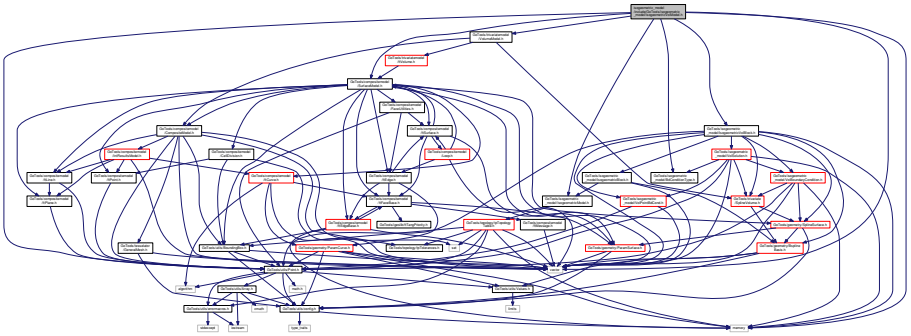
Namespaces

- Go

30.2107 isogeometric_model/include/GoTools/isogeometric_model/IsogeometricVolModel.h File Reference

```
#include <vector>
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/compositemodel/SurfaceModel.h"
#include "GoTools/trivariatemodel/VolumeModel.h"
#include "GoTools/isogeometric_model/IsogeometricModel.h"
#include "GoTools/isogeometric_model/BdConditionType.h"
#include "GoTools/isogeometric_model/IsogeometricVolBlock.h"
```

Include dependency graph for IsogeometricVolModel.h:



Classes

- class Go::IsogeometricVolModel

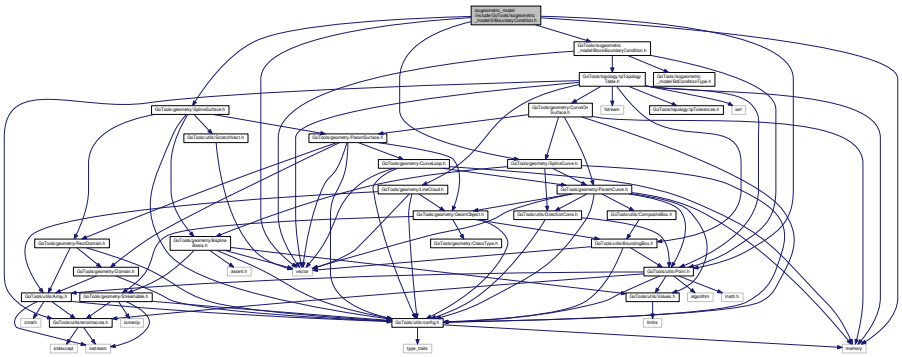
Namespaces

- Go

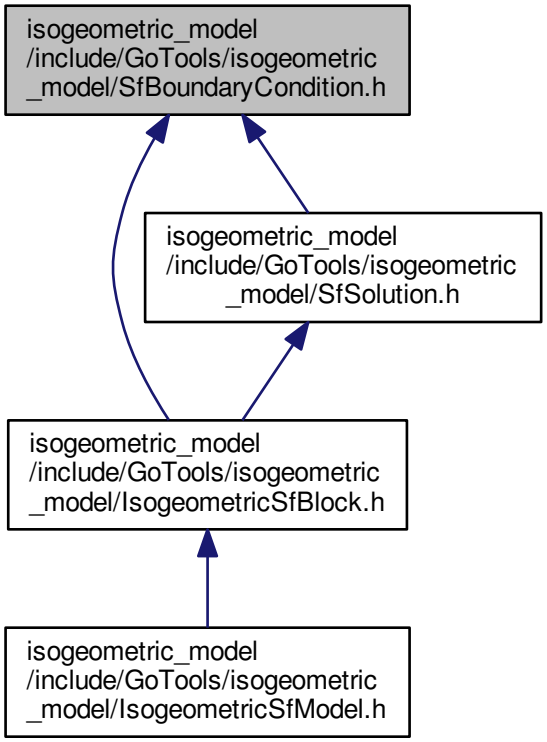
30.2108 isogeometric_model/include/GoTools/isogeometric_model/SfBoundaryCondition.h File Reference

```
#include <vector>
#include <memory>
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/utils/Point.h"
#include "GoTools/isogeometric_model/BlockBoundaryCondition.h"
```

Include dependency graph for SfBoundaryCondition.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::SfBoundaryCondition

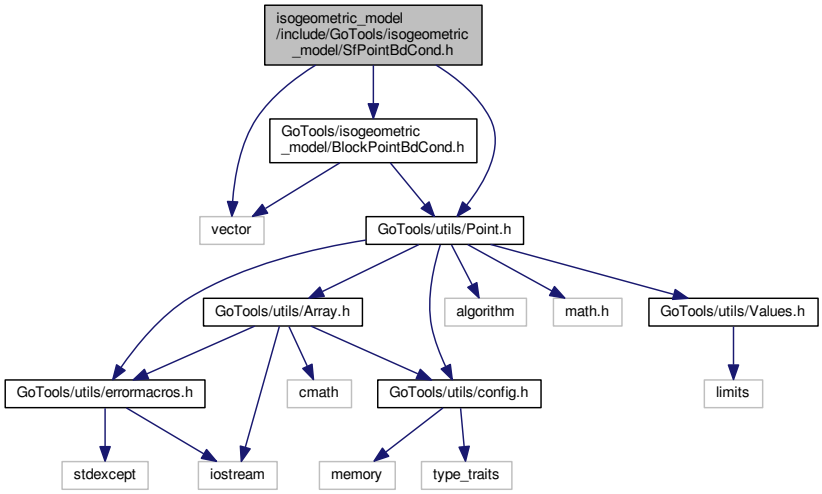
Namespaces

- Go

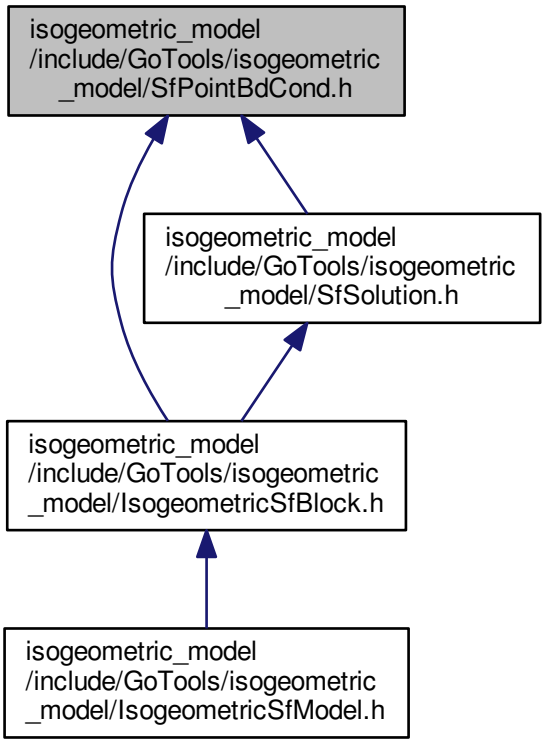
30.2109 isogeometric_model/include/GoTools/isogeometric_model/SfPointBdCond.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
#include "GoTools/isogeometric_model/BlockPointBdCond.h"
```

Include dependency graph for SfPointBdCond.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::SfPointBdCond

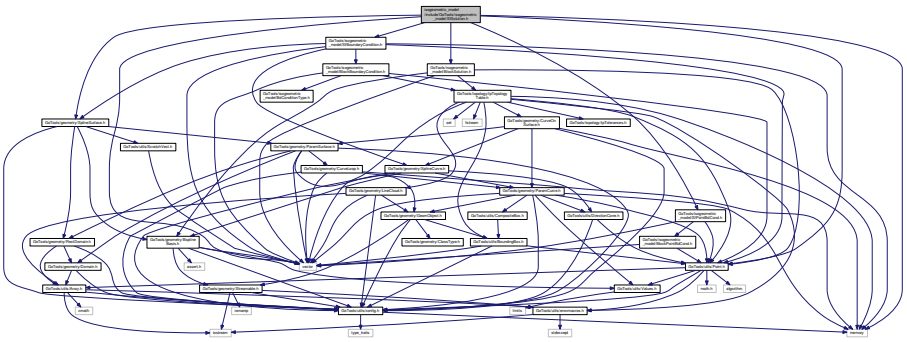
Namespaces

- Go

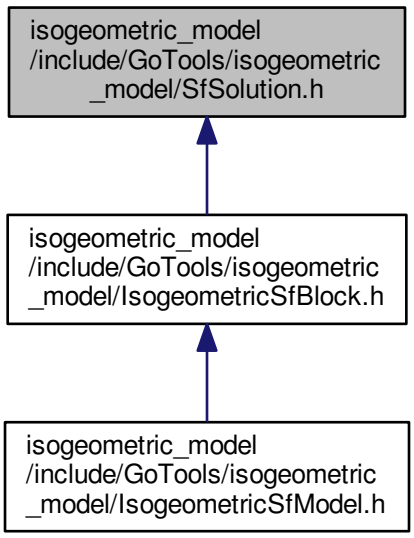
30.2110 isogeometric_model/include/GoTools/isogeometric_model/SfSolution.h File Reference

```
#include <vector>
#include <memory>
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/utils/Point.h"
#include "GoTools/isogeometric_model/BlockSolution.h"
#include "GoTools/isogeometric_model/SfBoundaryCondition.h"
#include "GoTools/isogeometric_model/SfPointBdCond.h"
```

Include dependency graph for SfSolution.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::preEvaluationSf
- class Go::SfSolution

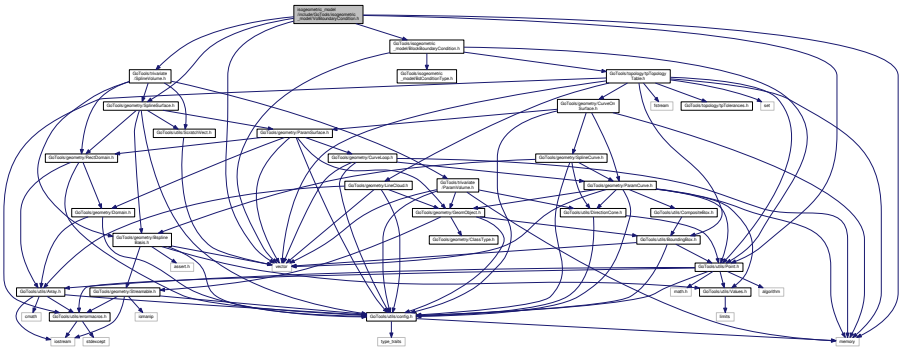
Namespaces

- Go

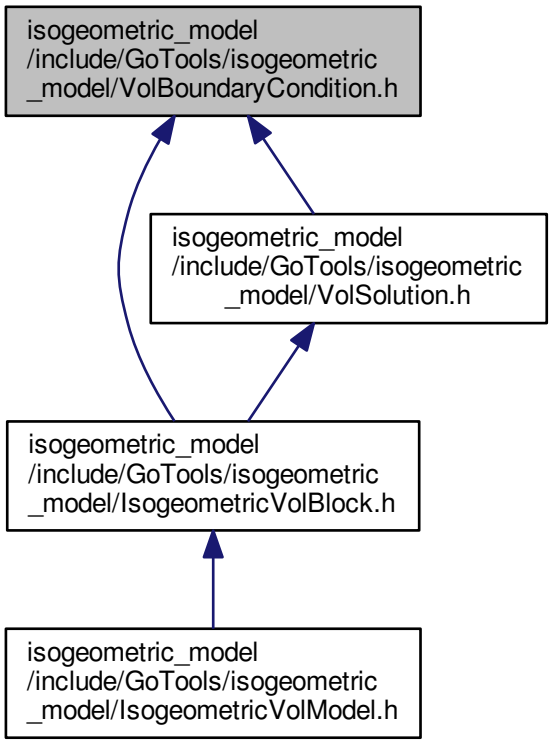
30.2111 isogeometric_model/include/GoTools/isogeometric_model/VolBoundaryCondition.h File Reference

```
#include <vector>
#include <memory>
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/utils/Point.h"
#include "GoTools/trivariate/SplineVolume.h"
#include "GoTools/isogeometric_model/BlockBoundaryCondition.h"
```

Include dependency graph for VolBoundaryCondition.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::VolBoundaryCondition

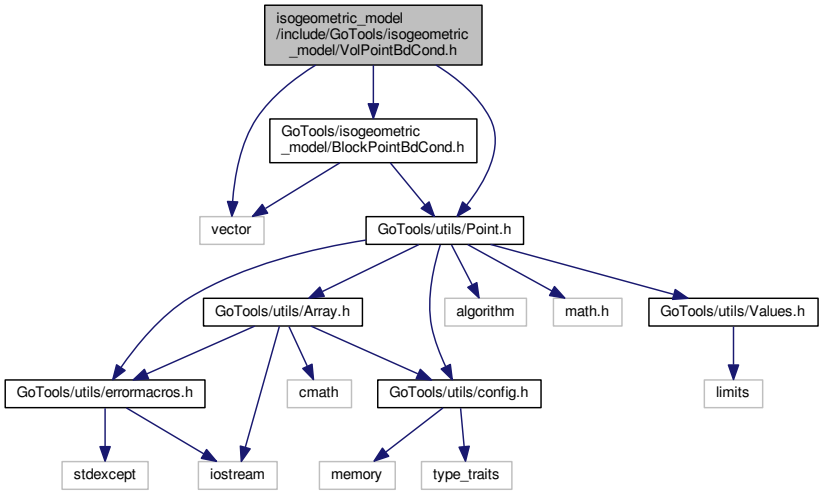
Namespaces

- Go

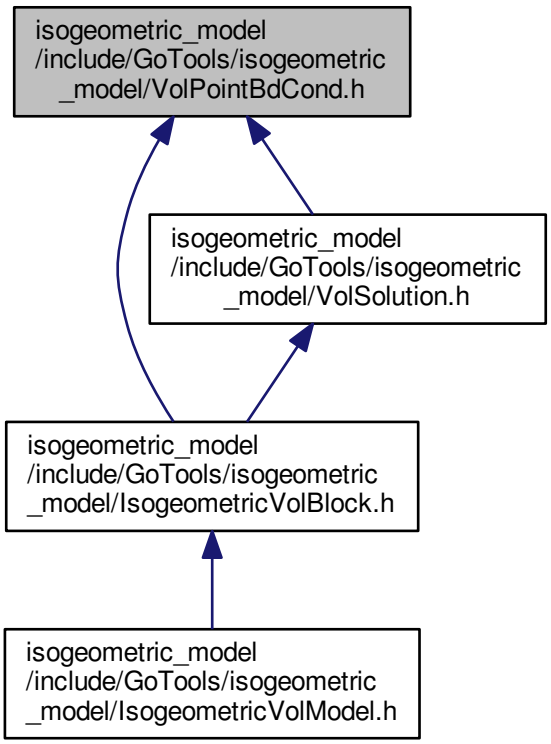
30.2112 isogeometric_model/include/GoTools/isogeometric_model/VolPointBdCond.h File Reference

```
#include <vector>
#include "GoTools/utils/Point.h"
#include "GoTools/isogeometric_model/BlockPointBdCond.h"
```

Include dependency graph for VolPointBdCond.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::VolPointBdCond

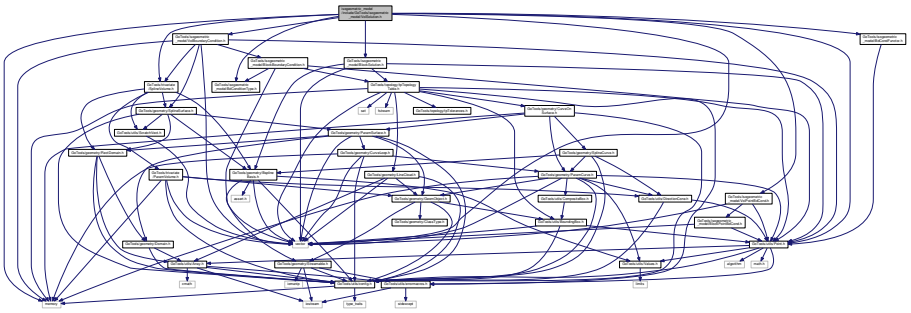
Namespaces

- Go

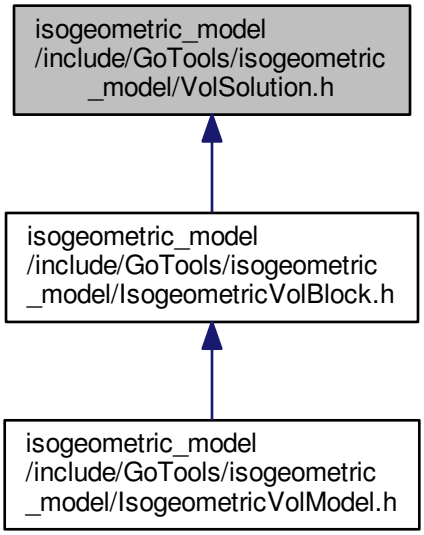
30.2113 isogeometric_model/include/GoTools/isogeometric_model/VolSolution.h File Reference

```
#include "GoTools/utils/Point.h"
#include "GoTools/trivariate/SplineVolume.h"
#include "GoTools/isogeometric_model/VolBoundaryCondition.h"
#include "GoTools/isogeometric_model/BlockSolution.h"
#include "GoTools/isogeometric_model/VolPointBdCond.h"
#include "GoTools/isogeometric_model/BdConditionType.h"
#include "GoTools/isogeometric_model/BdCondFunctor.h"
#include <vector>
#include <memory>
```

Include dependency graph for VolSolution.h:



This graph shows which files directly or indirectly include this file:



Classes

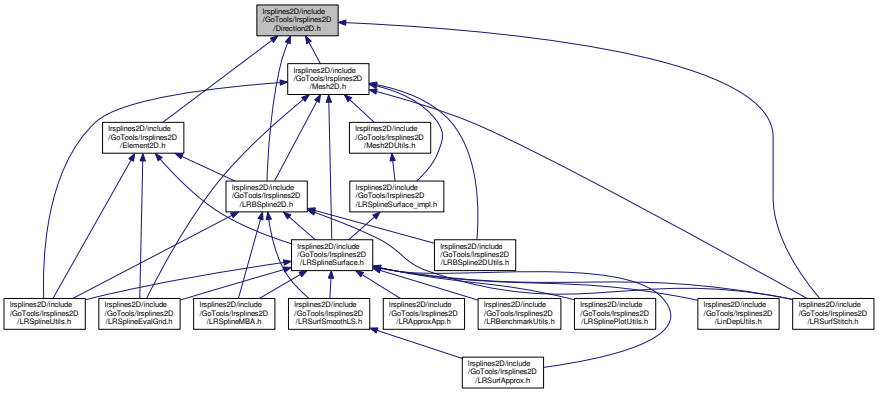
- struct Go::preEvaluationVol
- class Go::VolSolution

Namespaces

- Go

30.2114 lrsplines2D/include/GoTools/lrsplines2D/Direction2D.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- Go

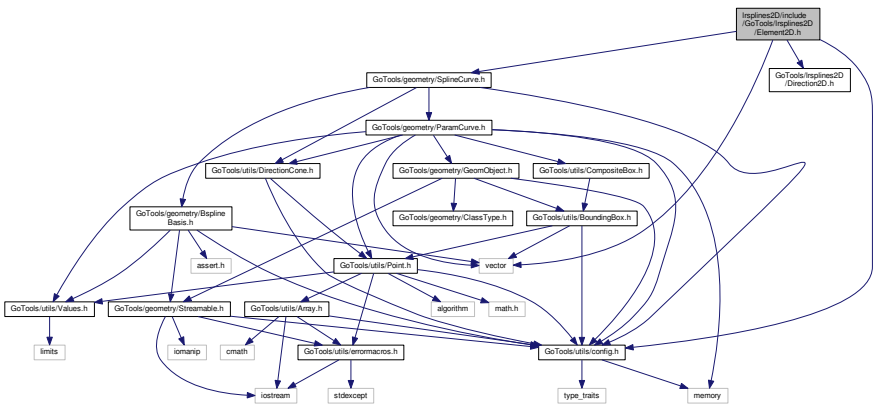
Enumerations

- enum Go::Direction2D { Go::XFIXED =0, Go::YFIXED =1 }

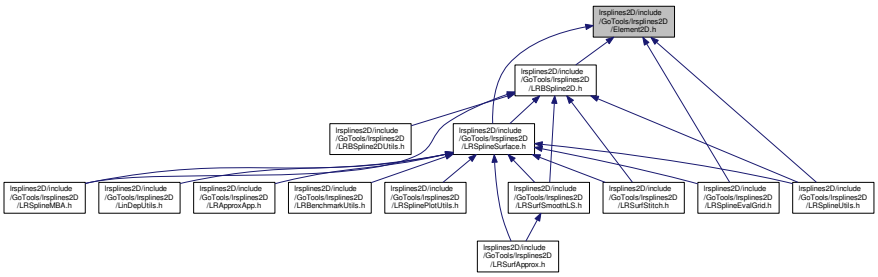
30.2115 lrsplines2D/include/GoTools/lrsplines2D/Element2D.h File Reference

```
#include <vector>
#include "GoTools/utils/config.h"
#include "GoTools/lrsplines2D/Direction2D.h"
#include "GoTools/geometry/SplineCurve.h"
```

Include dependency graph for Element2D.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::LSSmoothData
- class Go::Element2D

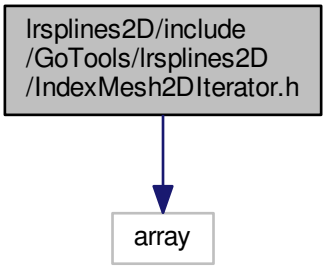
Namespaces

- Go

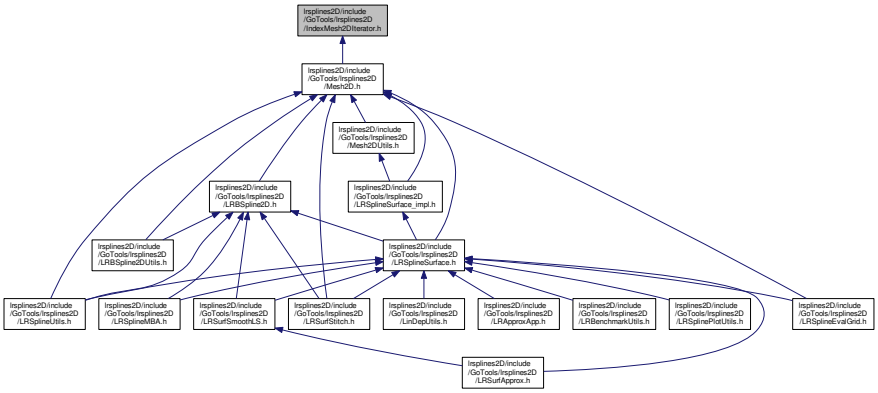
30.2116 lrsplines2D/include/GoTools/lrsplines2D/IndexMesh2DIterator.h File Reference

```
#include <array>
```

Include dependency graph for IndexMesh2DIterator.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::IndexMesh2DIterator

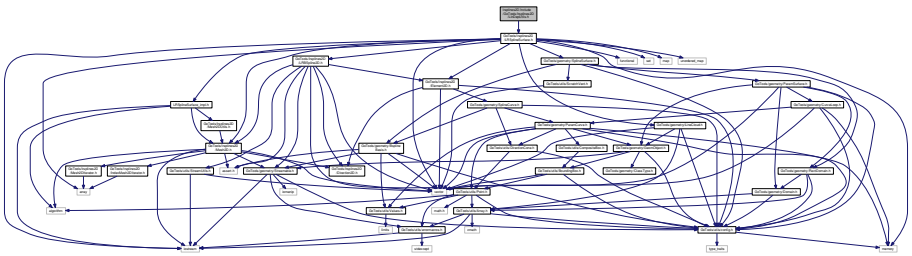
Namespaces

- Go

30.2117 lrsplines2D/include/GoTools/lrsplines2D/LinDepUtils.h File Reference

```
#include "GoTools/lrsplines2D/LRSplineSurface.h"
```

Include dependency graph for LinDepUtils.h:



Namespaces

- Go
- Go::LinDepUtils

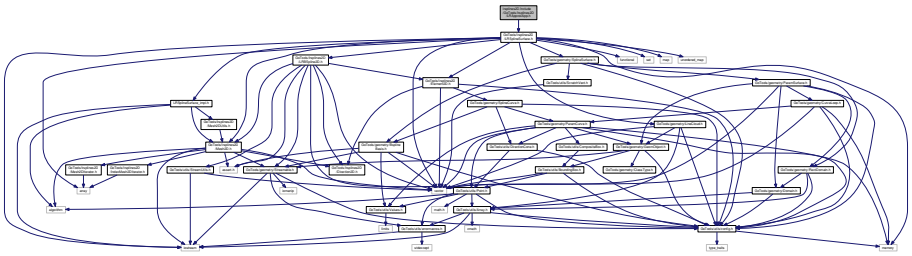
Functions

- bool Go::LinDepUtils::isPeelable (const LRSplineSurface &)
- std::vector< LRBSpline2D * > Go::LinDepUtils::unpeelableBasisFunctions (const LRSplineSurface &)

30.2118 lrsplines2D/include/GoTools/lrsplines2D/LRApproxApp.h File Reference

```
#include "GoTools/lrsplines2D/LRSplineSurface.h"
```

Include dependency graph for LRApproxApp.h:



Namespaces

- Go
- Go::LRApproxApp

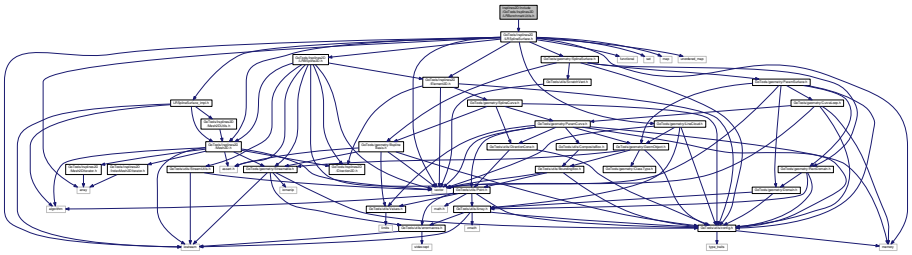
Functions

- void Go::LRApproxApp::pointCloud2Spline (std::vector< double > &points, int dim, double domain[ ], double reduced_domain[ ], double eps, int max_iter, shared_ptr< LRSplineSurface > &surf, double &maxdist, double &avdist, double &avdist_out, int &nmb_out)
- void Go::LRApproxApp::computeDistPointSpline (std::vector< double > &points, shared_ptr< LRSpline↩ Surface > &surf, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< double > &pointsdist)
- void Go::LRApproxApp::computeDistPointSpline_omp (std::vector< double > &points, shared_ptr< LR↩ SplineSurface > &surf, double &max_above, double &max_below, double &avdist, int &nmb_points, std↩ ::vector< double > &pointsdist)
- void Go::LRApproxApp::classifyCloudFromDist (std::vector< double > &points, shared_ptr< LRSpline↩ Surface > &surf, std::vector< double > &limits, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< std::vector< double > > &level_points, std::vector< int > &nmb_group)
- void Go::LRApproxApp::classifyCloudFromDist_omp (std::vector< double > &points, shared_ptr< LR↩ SplineSurface > &surf, std::vector< double > &limits, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< std::vector< double > > &level_points, std::vector< int > &nmb_↩ group)
- void Go::LRApproxApp::categorizeCloudFromDist (std::vector< double > &points, shared_ptr< LRSpline↩ Surface > &surf, std::vector< double > &limits, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< int > &classification, std::vector< int > &nmb_group)
- void Go::LRApproxApp::categorizeCloudFromDist_omp (std::vector< double > &points, shared_ptr< LR↩ SplineSurface > &surf, std::vector< double > &limits, double &max_above, double &max_below, double &avdist, int &nmb_points, std::vector< int > &classification, std::vector< int > &nmb_group)

30.2119 lrsplines2D/include/GoTools/lrsplines2D/LRBenchmarkUtils.h File Reference

```
#include "GoTools/lrsplines2D/LRSplineSurface.h"
```

Include dependency graph for LRBenchmarkUtils.h:



Namespaces

- Go

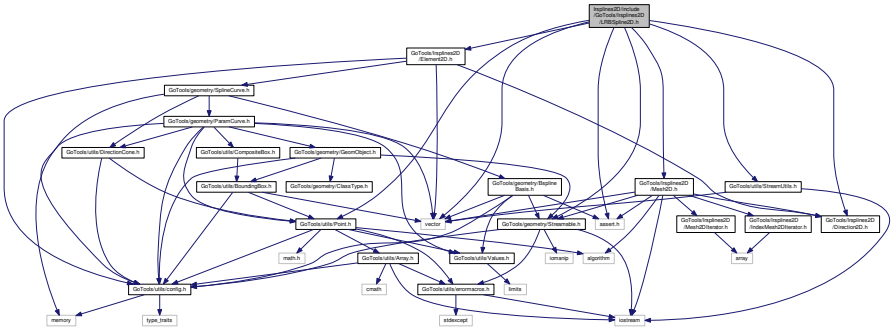
Functions

- double Go::benchmarkSfRefinement (LRSplineSurface &lr_sf, const std::vector< LRSplineSurface::↩ Refinement2D > &refs, bool single_insertions=false)

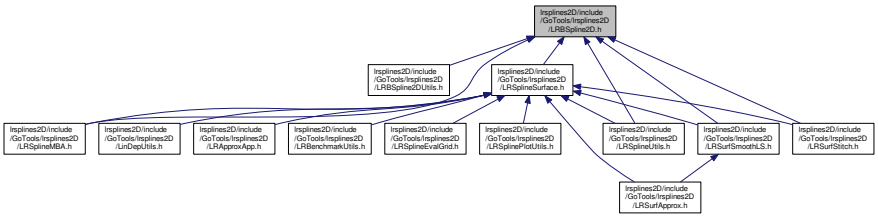
30.2120 lrsplines2D/include/GoTools/lrsplines2D/LRBSpline2D.h File Reference

```
#include <vector>
#include <assert.h>
#include "GoTools/utils/Point.h"
#include "GoTools/lrsplines2D/Direction2D.h"
#include "GoTools/lrsplines2D/Element2D.h"
#include "GoTools/lrsplines2D/Mesh2D.h"
#include "GoTools/utils/StreamUtils.h"
#include "GoTools/geometry/Streamable.h"
```

Include dependency graph for LRBSpline2D.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::LRBSpline2D

Namespaces

- Go

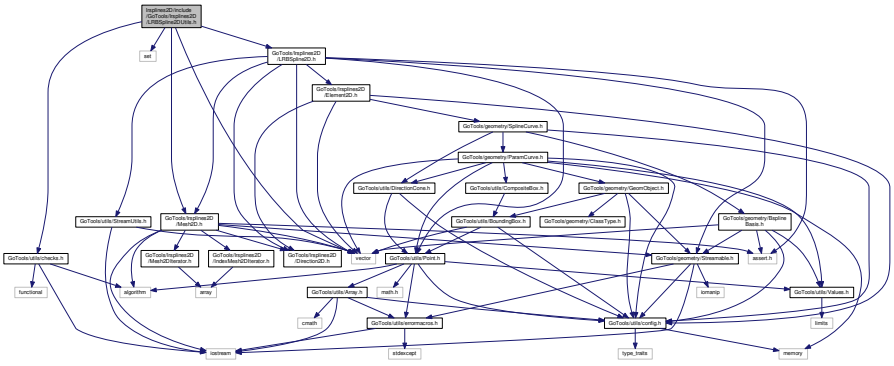
Functions

- std::ostream & Go::operator<< (std::ostream &os, const LRBSpline2D &b)
- std::istream & Go::operator>> (std::istream &is, LRBSpline2D &b)

30.2121 lrsplines2D/include/GoTools/lrsplines2D/LRBSpline2DUtils.h File Reference

```
#include <vector>
#include <set>
#include "GoTools/utils/checks.h"
#include "GoTools/lrsplines2D/Mesh2D.h"
#include "GoTools/lrsplines2D/LRBSpline2D.h"
```

Include dependency graph for LRBSpline2DUtils.h:



Namespaces

- Go
- Go::LRBSpline2DUtils

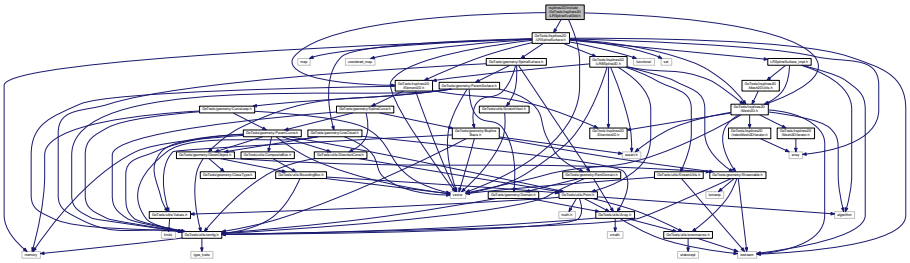
Functions

- std::vector< int > Go::LRBSpline2DUtils::derive_knots (const Mesh2D &m, Direction2D d, int beg, int end, int orto_min, int orto_max)
- void Go::LRBSpline2DUtils::split_several (const double *knotvals, const std::vector< int > &k_vec_in, const std::vector< int > &new_knots, std::vector< int > &k_vec_out, std::vector< double > &b_spline_weigths)
- void Go::LRBSpline2DUtils::split_function (const LRBSpline2D &orig, const Mesh2D &mesh, Direction2D d, const double *const knotvalues, int new_knot_ix, LRBSpline2D *&new_1, LRBSpline2D *&new_2)
- bool Go::LRBSpline2DUtils::try_split_once (const LRBSpline2D &b, const Mesh2D &mesh, LRBSpline2D *&b1, LRBSpline2D *&b2)

30.2122 lrsplines2D/include/GoTools/lrsplines2D/LRSplineEvalGrid.h File Reference

```
#include "GoTools/lrsplines2D/LRSplineSurface.h"
#include "GoTools/lrsplines2D/Element2D.h"
#include "GoTools/lrsplines2D/Mesh2D.h"
#include <vector>
```

Include dependency graph for LRSplineEvalGrid.h:



Classes

- class Go::LRSplineEvalGrid

Namespaces

- Go

Macros

- #define _LRSPLINEEVAVGRID_H

Typedefs

- typedef Element2D Go::simpleElement

30.2122.1 Macro Definition Documentation

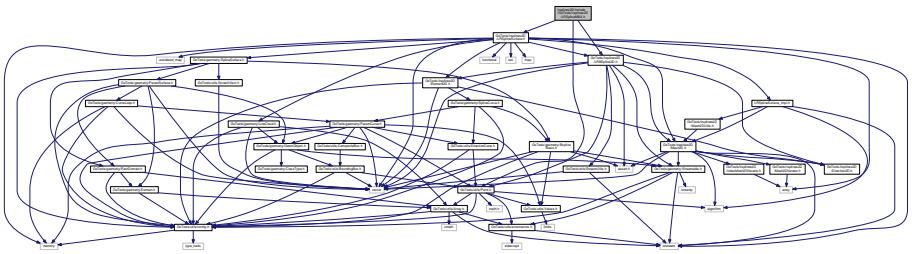
30.2122.1.1 #define _LRSPLINEEVAVGRID_H

Definition at line 41 of file LRSplineEvalGrid.h.

30.2123 lrsplines2D/include/GoTools/lrsplines2D/LRSplineMBA.h File Reference

```
#include "GoTools/lrsplines2D/LRSplineSurface.h"
#include "GoTools/lrsplines2D/LRBSpline2D.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for LRSplineMBA.h:



Namespaces

- Go
- Go::LRSplineMBA

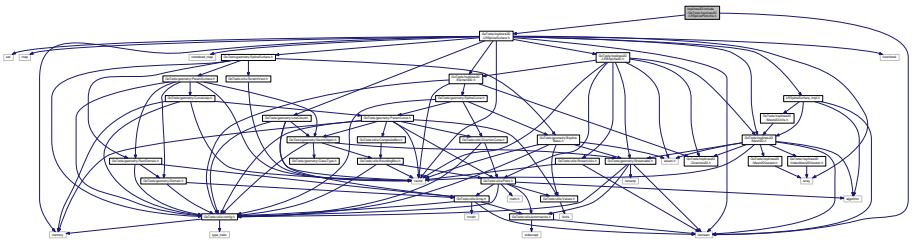
Functions

- void Go::LRSplineMBA::MBADistAndUpdate (LRSplineSurface ∗srf)
- void Go::LRSplineMBA::MBADistAndUpdate_omp (LRSplineSurface ∗srf)
- void Go::LRSplineMBA::MBAUpdate (LRSplineSurface ∗srf)
- void Go::LRSplineMBA::MBAUpdate_omp (LRSplineSurface ∗srf)
- void Go::LRSplineMBA::MBAUpdate (LRSplineSurface ∗srf, std::vector< Element2D ∗ > &elems, std::vector< Element2D ∗ > &elems2)
- void Go::LRSplineMBA::add_contribution (int dim, std::map< const LRBSpline2D ∗, Array< double, 2 > > &target, const LRBSpline2D ∗bspline, double nom[ ], double denom)
- void Go::LRSplineMBA::add_contribution2 (int dim, std::map< const LRBSpline2D ∗, Array< double, 4 > > &target, const LRBSpline2D ∗bspline, double nom[ ], double denom)

30.2124 lrsplines2D/include/GoTools/lrsplines2D/LRSplinePlotUtils.h File Reference

```
#include "GoTools/lrsplines2D/LRSplineSurface.h"
#include <iostream>
```

Include dependency graph for LRSplinePlotUtils.h:



Namespaces

- Go

Functions

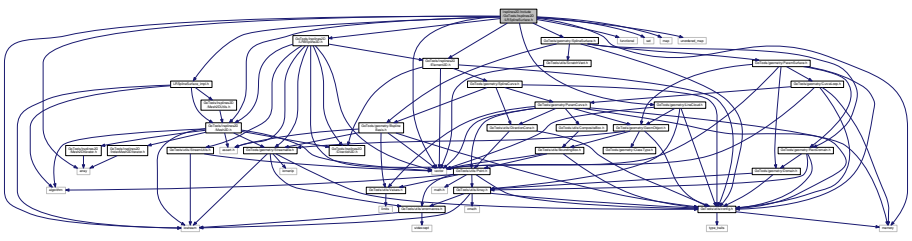
- void Go::writePostscriptMesh (Go::LRSplineSurface &lr_spline_sf, std::ostream &out, const bool close=true)

30.2125 lrsplines2D/include/GoTools/lrsplines2D/lrsplines2d-doxymain.h File Reference

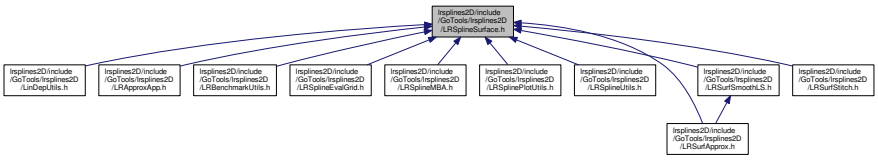
30.2126 lrsplines2D/include/GoTools/lrsplines2D/LRSplineSurface.h File Reference

```
#include <array>
#include <functional>
#include <set>
#include <map>
#include <vector>
#include <unordered_map>
#include <iostream>
#include <memory>
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/LineCloud.h"
#include "GoTools/lrsplines2D/Mesh2D.h"
#include "GoTools/lrsplines2D/LRBSpline2D.h"
#include "GoTools/lrsplines2D/Element2D.h"
#include "LRSplineSurface_impl.h"
```

Include dependency graph for LRSplineSurface.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::LRSplineSurface
- struct Go::LRSplineSurface::Refinement2D
- struct Go::LRSplineSurface::BSKey
- struct Go::LRSplineSurface::double_pair_hash
- struct Go::LRSplineSurface::ElemKey

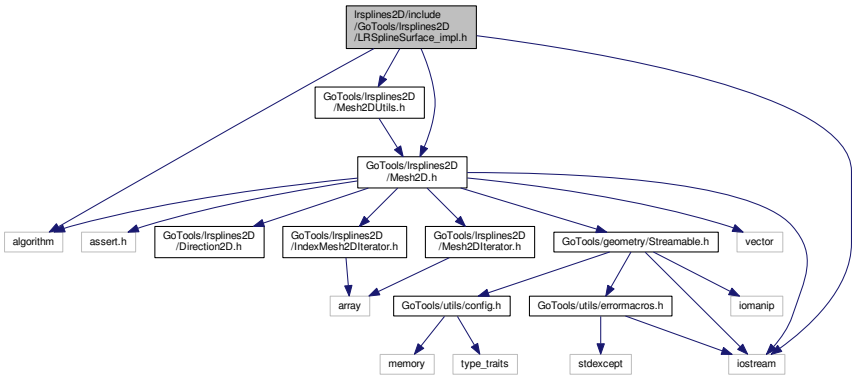
Namespaces

- Go

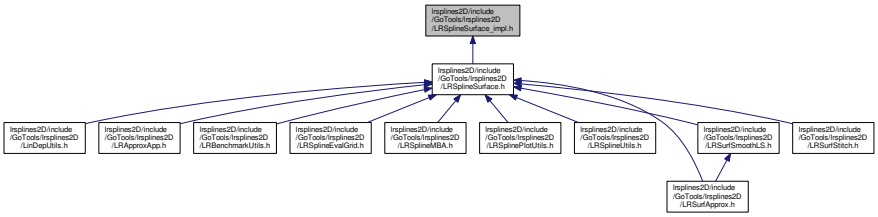
30.2127 lrsplines2D/include/GoTools/lrsplines2D/LRSplineSurface_impl.h File Reference

```
#include <algorithm>
#include <iostream>
#include "GoTools/lrsplines2D/Mesh2DUtils.h"
#include "GoTools/lrsplines2D/Mesh2D.h"
```

Include dependency graph for LRSplineSurface_impl.h:



This graph shows which files directly or indirectly include this file:



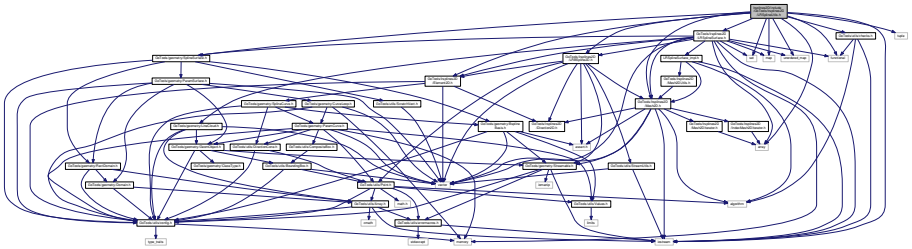
Namespaces

- Go

30.2128 lrsplines2D/include/GoTools/lrsplines2D/LRSplineUtils.h File Reference

```
#include <array>
#include <functional>
#include <set>
#include <map>
#include <unordered_map>
#include <tuple>
#include <iostream>
#include "GoTools/utils/checks.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/lrsplines2D/LRSplineSurface.h"
#include "GoTools/lrsplines2D/Mesh2D.h"
#include "GoTools/lrsplines2D/LRBSpline2D.h"
#include "GoTools/lrsplines2D/Element2D.h"
```

Include dependency graph for LRSplineUtils.h:



Classes

- struct Go::LRSplineUtils::support_compare

Namespaces

- Go
- Go::LRSplineUtils

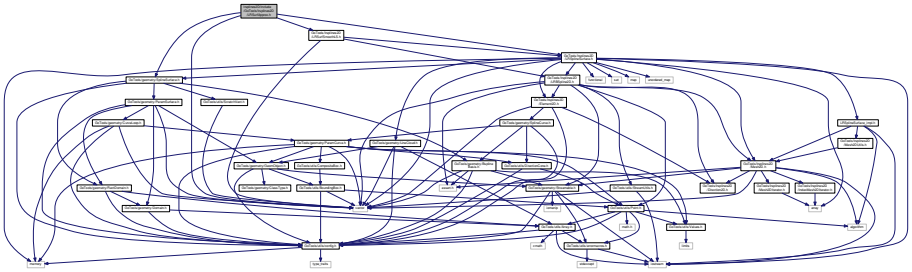
Functions

- LRSplineSurface::ElementMap Go::LRSplineUtils::identify_elements_from_mesh (const Mesh2D &m)
- void Go::LRSplineUtils::update_elements_with_single_bspline (LRBSpline2D *b, LRSplineSurface::ElementMap &emap, const Mesh2D &mesh, bool remove)
- int Go::LRSplineUtils::locate_interval (const Mesh2D &m, Direction2D d, double value, double other_value, bool at_end)
- void Go::LRSplineUtils::increment_knotvec_indices (LRSplineSurface::BSplineMap &bmap, Direction2D d, int from_ix)
- LRBSpline2D * Go::LRSplineUtils::insert_basis_function (std::unique_ptr< LRBSpline2D > &b, const Mesh2D &mesh, LRSplineSurface::BSplineMap &bmap)
- std::vector< int > Go::LRSplineUtils::set_uniform_meshlines (Direction2D d, Mesh2D &mesh)
- bool Go::LRSplineUtils::all_meshlines_uniform (Direction2D d, const Mesh2D &m)
- double Go::LRSplineUtils::compute_greville (const std::vector< int > &v_ixs, const double *const vals)
- std::vector< double > Go::LRSplineUtils::compute_greville (int deg, const std::vector< int > &k_vec_in, const double *const knotvals)
- std::vector< int > Go::LRSplineUtils::knots_to_insert (const std::vector< int > &ref, const std::vector< int > &mults)
- double Go::LRSplineUtils::compute_alpha (int degree, const int *const oldvec_ix, const int *const newvec_ix, const double *const kvals)
- std::tuple< std::vector< double >, std::vector< int > > Go::LRSplineUtils::insert_knots (const std::vector< int > &new_knots, std::unique_ptr< LRBSpline2D > &bfun, const Direction2D d, const double *const kvals)
- void Go::LRSplineUtils::tensor_split (std::unique_ptr< LRBSpline2D > &bfun, const std::vector< int > &x_mults, const std::vector< int > &y_mults, const Mesh2D &tensor_mesh, LRSplineSurface::BSplineMap &bmap)
- void Go::LRSplineUtils::iteratively_split (std::vector< std::unique_ptr< LRBSpline2D > > &bfuns, const Mesh2D &mesh)
- void Go::LRSplineUtils::iteratively_split2 (std::vector< LRBSpline2D * > &bsplines, const Mesh2D &mesh, LRSplineSurface::BSplineMap &bmap, double domain[])
- std::tuple< int, int, int, int > Go::LRSplineUtils::refine_mesh (Direction2D d, double fixed_val, double start, double end, int mult, bool absolute, int spline_degree, double knot_tol, Mesh2D &mesh, LRSplineSurface::BSplineMap &bmap)
- bool Go::LRSplineUtils::support_equal (const LRBSpline2D *b1, const LRBSpline2D *b2)
- bool Go::LRSplineUtils::elementOK (const Element2D *elem, const Mesh2D &m)
- void Go::LRSplineUtils::insertParameterFunctions (LRSplineSurface *lr_spline_sf)
- SplineSurface * Go::LRSplineUtils::fullTensorProductSurface (const LRSplineSurface &lr_spline_sf)
- LRBSpline2D * Go::LRSplineUtils::mostComparableBspline (LRSplineSurface *lr_spline_sf, Point pos)
- std::vector< std::vector< double > > Go::LRSplineUtils::elementLineClouds (const LRSplineSurface &lr_spline_sf)
- void Go::LRSplineUtils::distributeDataPoints (LRSplineSurface *srf, std::vector< double > &points, bool add_distance_field=false, bool primary_points=true)

30.2129 lrsplines2D/include/GoTools/lrsplines2D/LRSurfApprox.h File Reference

```
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/lrsplines2D/LRSplineSurface.h"
#include "GoTools/lrsplines2D/LRSurfSmoothLS.h"
#include <vector>
```

Include dependency graph for LRSurfApprox.h:



Classes

- class Go::LRSurfApprox

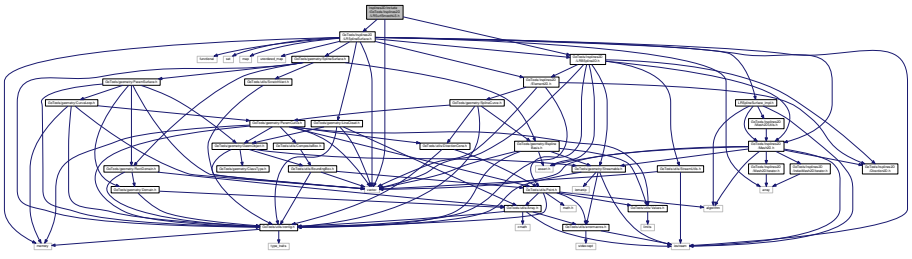
Namespaces

- Go

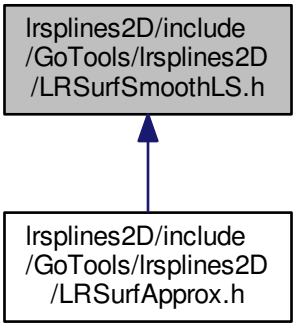
30.2130 lrsplines2D/include/GoTools/lrsplines2D/LRSurfSmoothLS.h File Reference

```
#include <vector>
#include "GoTools/lrsplines2D/LRSplineSurface.h"
#include "GoTools/lrsplines2D/LRBSpline2D.h"
```

Include dependency graph for LRSurfSmoothLS.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::LRSurfSmoothLS

Namespaces

- Go

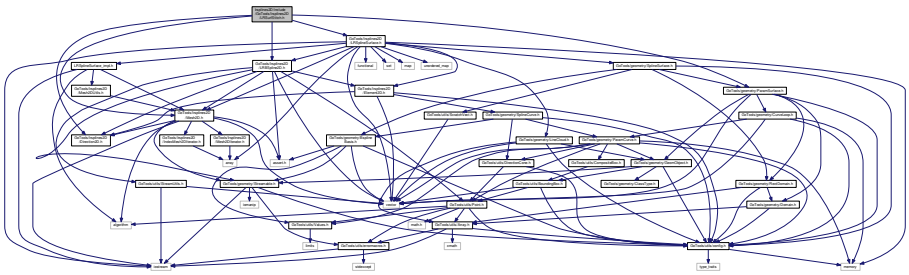
Typedefs

- typedef std::map< LRBSpline2D *, size_t > Go::BsplineIndexMap

30.2131 lrsplines2D/include/GoTools/lrsplines2D/LRSurfStitch.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/lrsplines2D/LRSplineSurface.h"
#include "GoTools/lrsplines2D/Direction2D.h"
#include "GoTools/lrsplines2D/Mesh2D.h"
#include "GoTools/lrsplines2D/LRBSpline2D.h"
```

Include dependency graph for LRSurfStitch.h:



Namespaces

- Go
- Go::LRSurfStitch

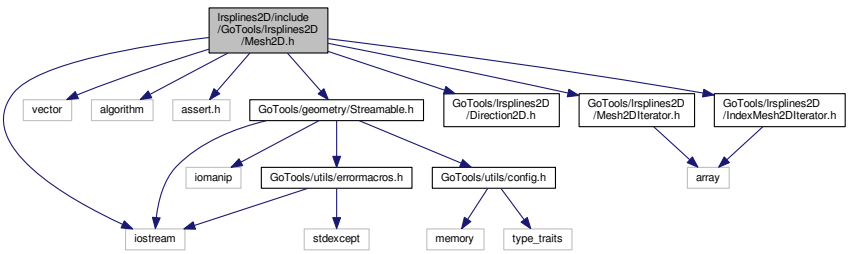
Functions

- int Go::LRSurfStitch::averageCorner (std::vector< std::pair< shared_ptr< ParamSurface >, int > > &sfs, double tol)
- bool Go::LRSurfStitch::averageEdge (shared_ptr< ParamSurface > surf1, int edge1, shared_ptr< ParamSurface > surf2, int edge2, double tol)
- bool Go::LRSurfStitch::averageEdge (shared_ptr< LRSplineSurface > surf1, int edge1, shared_ptr< LRSplineSurface > surf2, int edge2, double tol)
- void Go::LRSurfStitch::fetchEdgeCorners (shared_ptr< LRSplineSurface > surf, int edge, double &u1, double &v1, double &u2, double &v2)
- void Go::LRSurfStitch::extractMissingKnots (std::vector< double > &union_vec, std::vector< double > &vec, double tol, int order, std::vector< double > &resvec)
- void Go::LRSurfStitch::defineRefinements (const Mesh2D &mesh, Direction2D dir, int edge, int ix, std::vector< double > &knot_vals, int element_width, std::vector< LRSplineSurface::Refinement2D > &refs)
- void Go::LRSurfStitch::extractBoundaryBsplines (shared_ptr< LRSplineSurface > surf, int edge, std::vector< LRBSpline2D * > &bsplines)

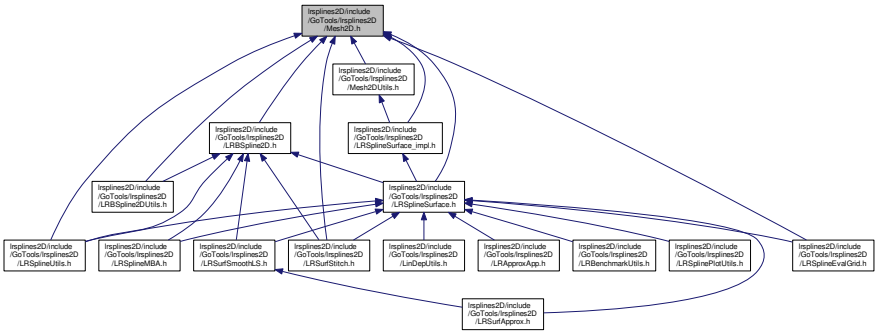
30.2132 lrsplines2D/include/GoTools/lrsplines2D/Mesh2D.h File Reference

```
#include <iostream>
#include <vector>
#include <algorithm>
#include <assert.h>
#include "GoTools/geometry/Streamable.h"
#include "GoTools/lrsplines2D/Direction2D.h"
#include "GoTools/lrsplines2D/Mesh2DIterator.h"
#include "GoTools/lrsplines2D/IndexMesh2DIterator.h"
```

Include dependency graph for Mesh2D.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::GPos
- class Go::Mesh2D

Namespaces

- Go

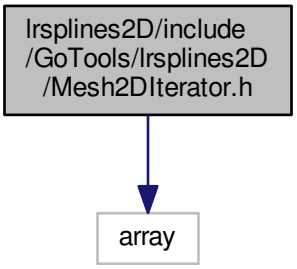
Functions

- Direction2D Go::flip (Direction2D d)
- std::ostream & Go::operator<< (std::ostream &os, const GPos &g)
- std::istream & Go::operator>> (std::istream &is, GPos &g)
- std::ostream & Go::operator<< (std::ostream &os, const Mesh2D &m)
- std::istream & Go::operator>> (std::istream &is, Mesh2D &m)

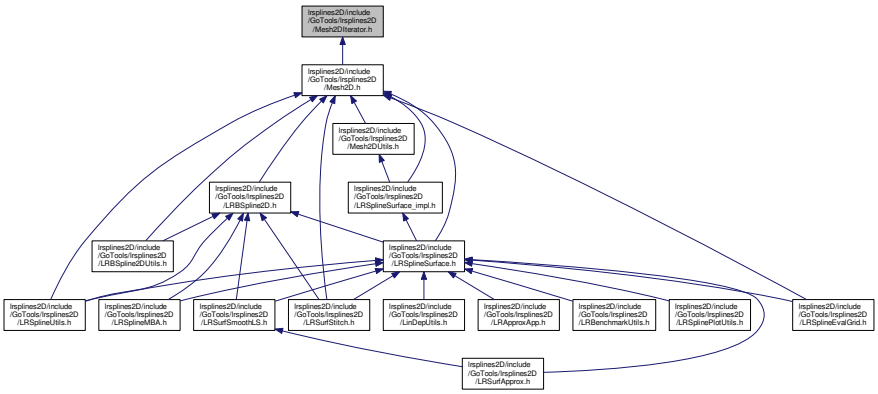
30.2133 lrsplines2D/include/GoTools/lrsplines2D/Mesh2DIterator.h File Reference

```
#include <array>
```

Include dependency graph for Mesh2DIterator.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::Mesh2DIterator

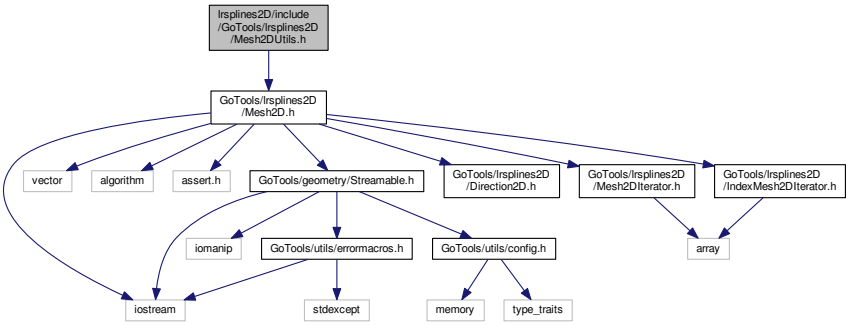
Namespaces

- Go

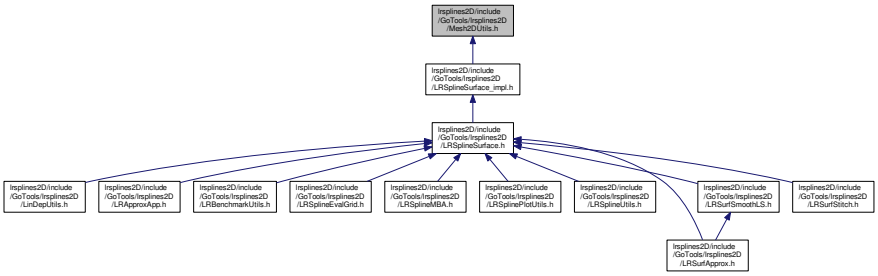
30.2134 lrsplines2D/include/GoTools/lrsplines2D/Mesh2DUtils.h File Reference

```
#include "GoTools/lrsplines2D/Mesh2D.h"
```

Include dependency graph for Mesh2DUtils.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- Go
- Go::Mesh2DUtils

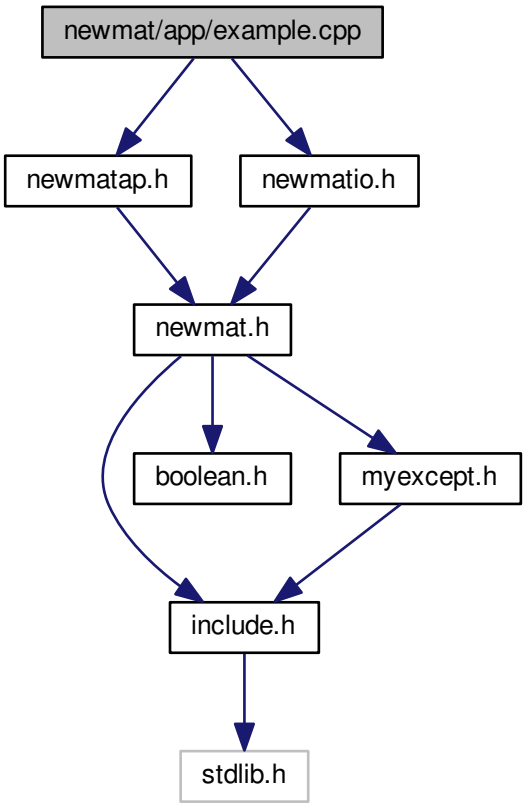
Functions

- int Go::Mesh2DUtils::last_nonlarger_knotvalue_ix (const Mesh2D &m, Direction2D d, double par)
- int Go::Mesh2DUtils::first_larger_knotvalue_ix (const Mesh2D &m, Direction2D d, double par)
- bool Go::Mesh2DUtils::identify_patch_lower_left (const Mesh2D &m, double u, double v, int &x_ix, int &y_ix)
- bool Go::Mesh2DUtils::identify_patch_upper_right (const Mesh2D &m, double u, double v, int &x_ix, int &y_ix)
- int Go::Mesh2DUtils::search_downwards_for_nonzero_multiplicity (const Mesh2D &m, Direction2D d, int start_ix, int other_ix)
- int Go::Mesh2DUtils::search_upwards_for_nonzero_multiplicity (const Mesh2D &m, Direction2D d, int start↩ _ix, int other_ix)
- int Go::Mesh2DUtils::search_downwards_for_nonzero_multiplicity (const Mesh2D &m, Direction2D d, int start_ix, int ix1, int ix2)
- int Go::Mesh2DUtils::search_upwards_for_nonzero_multiplicity (const Mesh2D &m, Direction2D d, int start↩ _ix, int ix1, int ix2)

30.2135 newmat/app/example.cpp File Reference

```
#include "newmatap.h"
#include "newmatio.h"
```

Include dependency graph for example.cpp:



Macros

- #define WANT_STREAM
- #define WANT_MATH

Functions

- void test1 (Real *y, Real *x1, Real *x2, int nobs, int npred)
- void test2 (Real *y, Real *x1, Real *x2, int nobs, int npred)
- void test3 (Real *y, Real *x1, Real *x2, int nobs, int npred)
- void test4 (Real *y, Real *x1, Real *x2, int nobs, int npred)
- void test5 (Real *y, Real *x1, Real *x2, int nobs, int npred)
- int main ()

30.2135.1 Macro Definition Documentation

30.2135.1.1 #define WANT_MATH

Definition at line 4 of file example.cpp.

30.2135.1.2 #define WANT_STREAM

Definition at line 3 of file example.cpp.

30.2135.2 Function Documentation

30.2135.2.1 int main ( )

Definition at line 288 of file example.cpp.

30.2135.2.2 void test1 (Real * *y*, Real * *x1*, Real * *x2*, int *nobs*, int *npred*)

Definition at line 19 of file example.cpp.

30.2135.2.3 void test2 (Real * *y*, Real * *x1*, Real * *x2*, int *nobs*, int *npred*)

Definition at line 78 of file example.cpp.

30.2135.2.4 void test3 (Real * *y*, Real * *x1*, Real * *x2*, int *nobs*, int *npred*)

Definition at line 157 of file example.cpp.

30.2135.2.5 void test4 (Real * *y*, Real * *x1*, Real * *x2*, int *nobs*, int *npred*)

Definition at line 213 of file example.cpp.

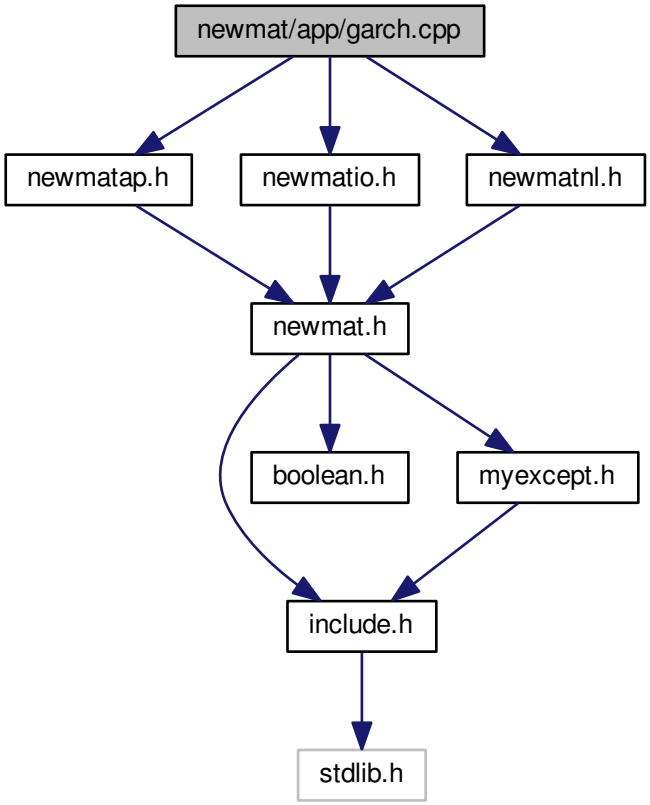
30.2135.2.6 void test5 (Real * *y*, Real * *x1*, Real * *x2*, int *nobs*, int *npred*)

Definition at line 251 of file example.cpp.

30.2136 newmat/app/garch.cpp File Reference

```
#include "newmatap.h"
#include "newmatio.h"
#include "newmatnl.h"
```

Include dependency graph for garch.cpp:



Classes

- class GARCH11_LL

Macros

- #define WANT_STREAM
- #define WANT_MATH
- #define WANT_FSTREAM

Functions

- Real square (Real x)
- int main ()

30.2136.1 Macro Definition Documentation

30.2136.1.1 #define WANT_FSTREAM

Definition at line 4 of file garch.cpp.

30.2136.1.2 #define WANT_MATH

Definition at line 3 of file garch.cpp.

30.2136.1.3 #define WANT_STREAM

Definition at line 2 of file garch.cpp.

30.2136.2 Function Documentation

30.2136.2.1 int main ( )

Definition at line 141 of file garch.cpp.

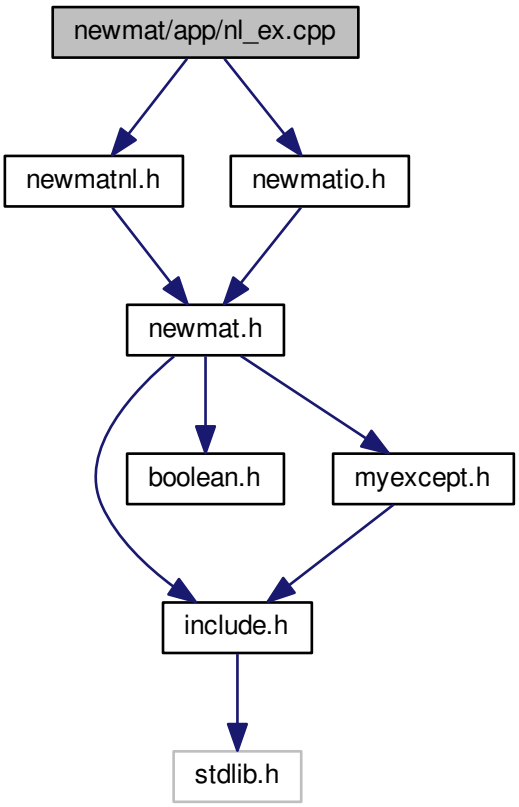
30.2136.2.2 Real square (Real *x*) [inline]

Definition at line 27 of file garch.cpp.

30.2137 newmat/app/nl_ex.cpp File Reference

```
#include "newmatnl.h"
#include "newmatio.h"
```

Include dependency graph for nl_ex.cpp:



Classes

- class Model_3pe

Macros

- #define WANT_STREAM
- #define WANT_MATH

Functions

- int main ()

30.2137.1 Macro Definition Documentation

30.2137.1.1 #define WANT_MATH

Definition at line 9 of file nl_ex.cpp.

30.2137.1.2 #define WANT_STREAM

Definition at line 8 of file nl_ex.cpp.

30.2137.2 Function Documentation

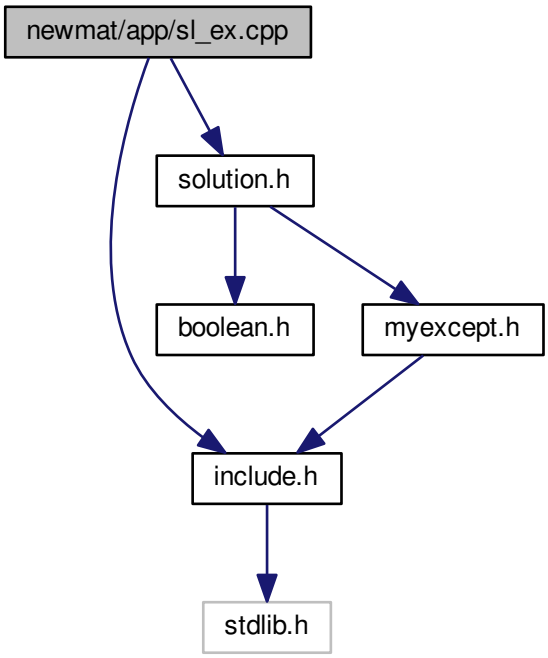
30.2137.2.1 int main ( )

Definition at line 45 of file nl_ex.cpp.

30.2138 newmat/app/sl_ex.cpp File Reference

```
#include "include.h"
#include "solution.h"
```

Include dependency graph for sl_ex.cpp:



Classes

- class Cube

Macros

- #define WANT_STREAM
- #define WANT_MATH

Functions

- int main ()

30.2138.1 Macro Definition Documentation

30.2138.1.1 #define WANT_MATH

Definition at line 7 of file sl_ex.cpp.

30.2138.1.2 #define WANT_STREAM

Definition at line 6 of file sl_ex.cpp.

30.2138.2 Function Documentation

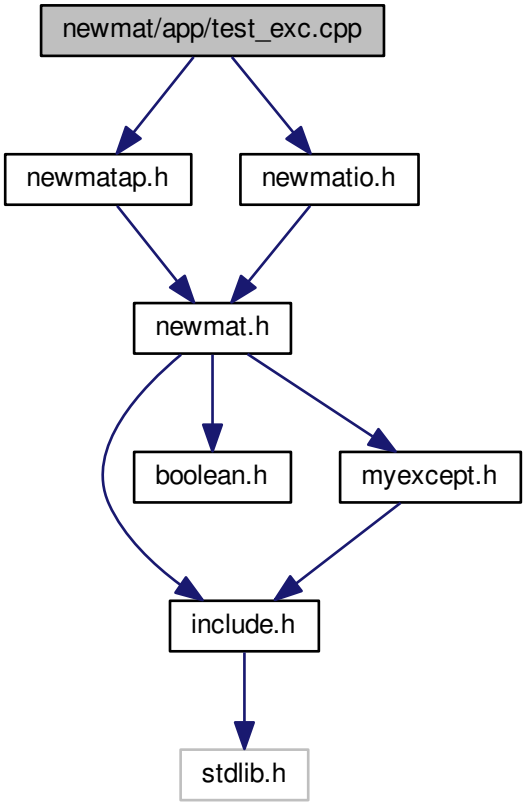
30.2138.2.1 int main ( )

Definition at line 22 of file sl_ex.cpp.

30.2139 newmat/app/test_exc.cpp File Reference

```
#include "newmatap.h"
#include "newmatio.h"
```

Include dependency graph for test_exc.cpp:



Macros

- #define WANT_STREAM

Functions

- int main ()

30.2139.1 Macro Definition Documentation

30.2139.1.1 #define WANT_STREAM

Definition at line 1 of file test_exc.cpp.

30.2139.2 Function Documentation

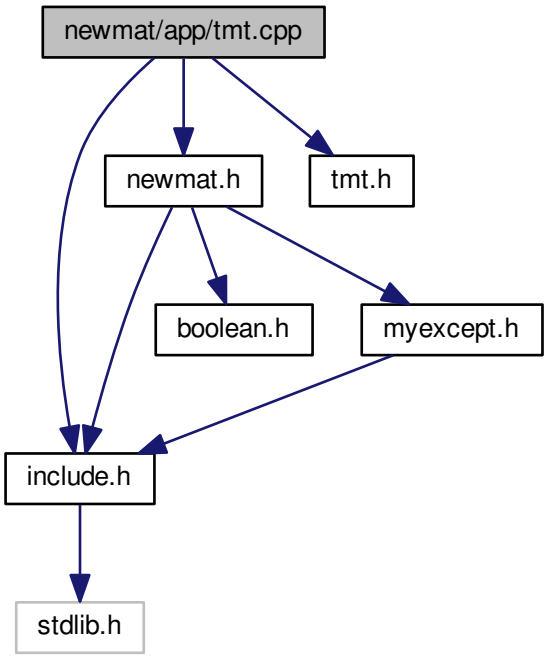
30.2139.2.1 int main ( )

Definition at line 15 of file test_exc.cpp.

30.2140 newmat/app/tmt.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmt.cpp:



Classes

- class PrintCounter

Macros

- #define WANT_STREAM

Functions

- PrintCounter PCZ ("Number of non-zero matrices (should be 1) = ")
- PrintCounter PCN ("Number of matrices tested = ")
- void Print (const Matrix &X)
- void Print (const UpperTriangularMatrix &X)
- void Print (const DiagonalMatrix &X)
- void Print (const SymmetricMatrix &X)
- void Print (const LowerTriangularMatrix &X)
- void Clean (Matrix &A, Real c)
- void Clean (DiagonalMatrix &A, Real c)
- void PentiumCheck (Real N, Real D)
- void TestTypeAdd ()
- void TestTypeMult ()
- void TestTypeConcat ()
- void TestTypeSP ()
- void TestTypeKP ()
- void TestTypeOrder ()
- int main ()

30.2140.1 Macro Definition Documentation

30.2140.1.1 #define WANT_STREAM

Definition at line 1 of file tmt.cpp.

30.2140.2 Function Documentation

30.2140.2.1 void Clean (Matrix & *A*, Real *c*)

Definition at line 121 of file tmt.cpp.

30.2140.2.2 void Clean (DiagonalMatrix & *A*, Real *c*)

Definition at line 131 of file tmt.cpp.

30.2140.2.3 int main ( )

Definition at line 162 of file tmt.cpp.

30.2140.2.4 PrintCounter PCN ( )

30.2140.2.5 PrintCounter PCZ ( )

30.2140.2.6 void PentiumCheck (Real *N*, Real *D*)

Definition at line 138 of file tmt.cpp.

30.2140.2.7 void Print (const Matrix & *X*)

Definition at line 35 of file tmt.cpp.

30.2140.2.8 void Print (const UpperTriangularMatrix & *X*)

Definition at line 51 of file tmt.cpp.

30.2140.2.9 void Print (const DiagonalMatrix & *X*)

Definition at line 69 of file tmt.cpp.

30.2140.2.10 void Print (const SymmetricMatrix & *X*)

Definition at line 86 of file tmt.cpp.

30.2140.2.11 void Print (const LowerTriangularMatrix & *X*)

Definition at line 104 of file tmt.cpp.

30.2140.2.12 void TestTypeAdd ( )

Definition at line 258 of file tmt.cpp.

30.2140.2.13 void TestTypeConcat ( )

Definition at line 315 of file tmt.cpp.

30.2140.2.14 void TestTypeKP ( )

Definition at line 373 of file tmt.cpp.

30.2140.2.15 void TestTypeMult ( )

Definition at line 286 of file tmt.cpp.

30.2140.2.16 void TestTypeOrder ( )

Definition at line 402 of file tmt.cpp.

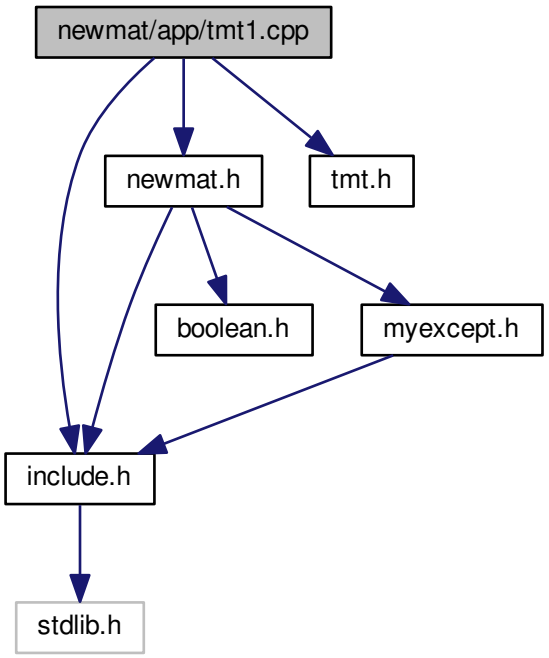
30.2140.2.17 void TestTypeSP ( )

Definition at line 344 of file tmt.cpp.

30.2141 newmat/app/tmt1.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmt1.cpp:



Macros

- #define WANT_STREAM

Functions

- void trymat1 ()

30.2141.1 Macro Definition Documentation

30.2141.1.1 #define WANT_STREAM

Definition at line 2 of file tmt1.cpp.

30.2141.2 Function Documentation

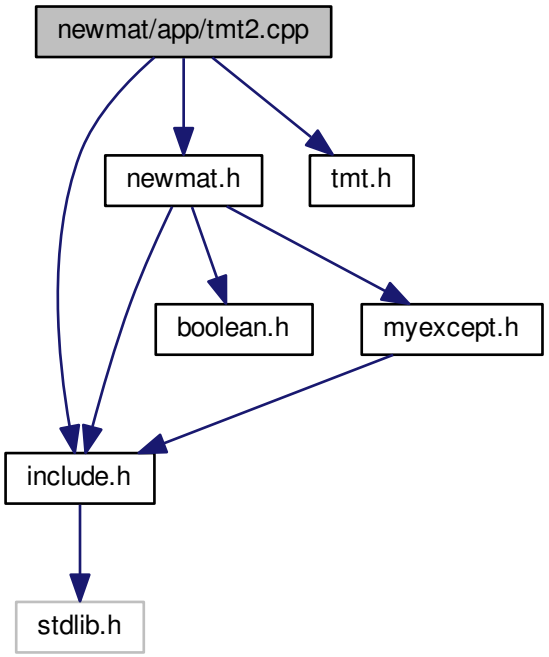
30.2141.2.1 void trymat1 ( )

Definition at line 20 of file tmt1.cpp.

30.2142 newmat/app/tmt2.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmt2.cpp:



Functions

- void trymat2 ()

30.2142.1 Function Documentation

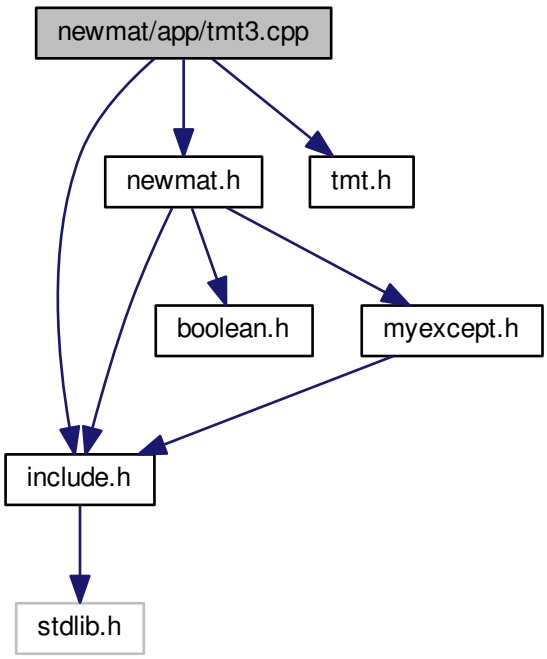
30.2142.1.1 void trymat2 ( )

Definition at line 19 of file tmt2.cpp.

30.2143 newmat/app/tmt3.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmt3.cpp:



Functions

- void trymat3 ()

30.2143.1 Function Documentation

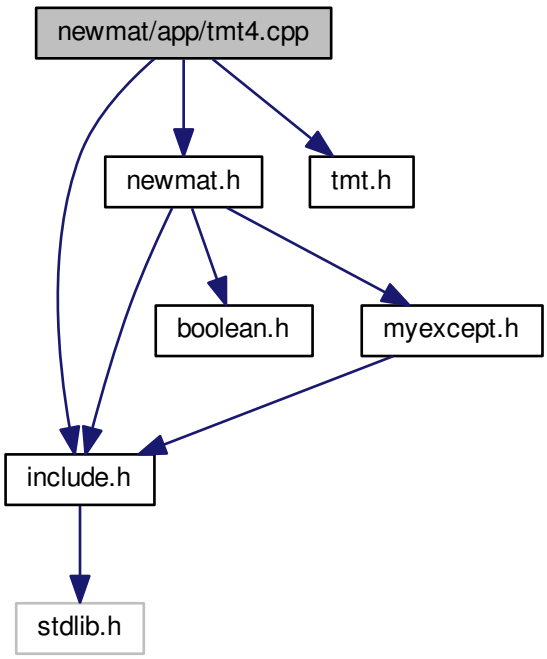
30.2143.1.1 void trymat3 ( )

Definition at line 17 of file tmt3.cpp.

30.2144 newmat/app/tmt4.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmt4.cpp:



Functions

- void trymat4 ()

30.2144.1 Function Documentation

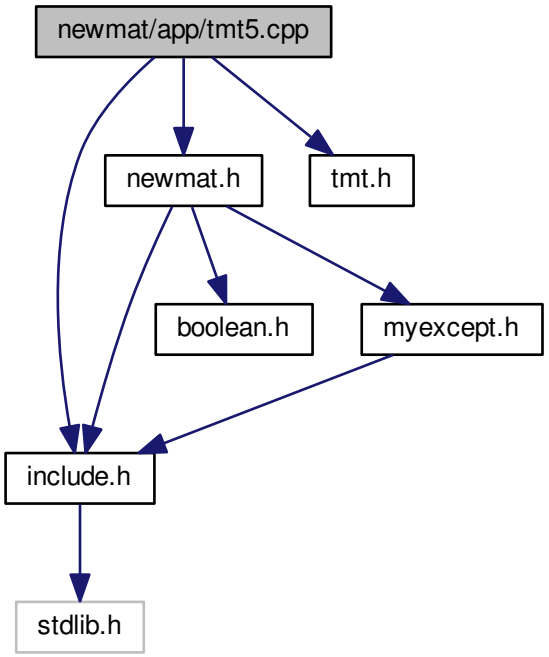
30.2144.1.1 void trymat4 ( )

Definition at line 19 of file tmt4.cpp.

30.2145 newmat/app/tmt5.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmt5.cpp:



Functions

- ReturnMatrix Returner0 (const GenericMatrix &GM)
- ReturnMatrix Returner1 (const GenericMatrix &GM)
- ReturnMatrix Returner2 (const GenericMatrix &GM)
- ReturnMatrix Returner3 (const GenericMatrix &GM)
- ReturnMatrix Returner4 (const GenericMatrix &GM)
- ReturnMatrix Returner5 (const GenericMatrix &GM)
- ReturnMatrix Returner6 (const GenericMatrix &GM)
- ReturnMatrix Returner7 (const GenericMatrix &GM)
- void trymat5 ()

30.2145.1 Function Documentation

30.2145.1.1 ReturnMatrix Returner0 (const GenericMatrix & *GM*)

Definition at line 19 of file tmt5.cpp.

30.2145.1.2 ReturnMatrix Returner1 (const GenericMatrix & *GM*)

Definition at line 22 of file tmt5.cpp.

30.2145.1.3 ReturnMatrix Returner2 (const GenericMatrix & *GM*)

Definition at line 25 of file tmt5.cpp.

30.2145.1.4 ReturnMatrix Returner3 (const GenericMatrix & *GM*)

Definition at line 28 of file tmt5.cpp.

30.2145.1.5 ReturnMatrix Returner4 (const GenericMatrix & *GM*)

Definition at line 31 of file tmt5.cpp.

30.2145.1.6 ReturnMatrix Returner5 (const GenericMatrix & *GM*)

Definition at line 34 of file tmt5.cpp.

30.2145.1.7 ReturnMatrix Returner6 (const GenericMatrix & *GM*)

Definition at line 37 of file tmt5.cpp.

30.2145.1.8 ReturnMatrix Returner7 (const GenericMatrix & *GM*)

Definition at line 40 of file tmt5.cpp.

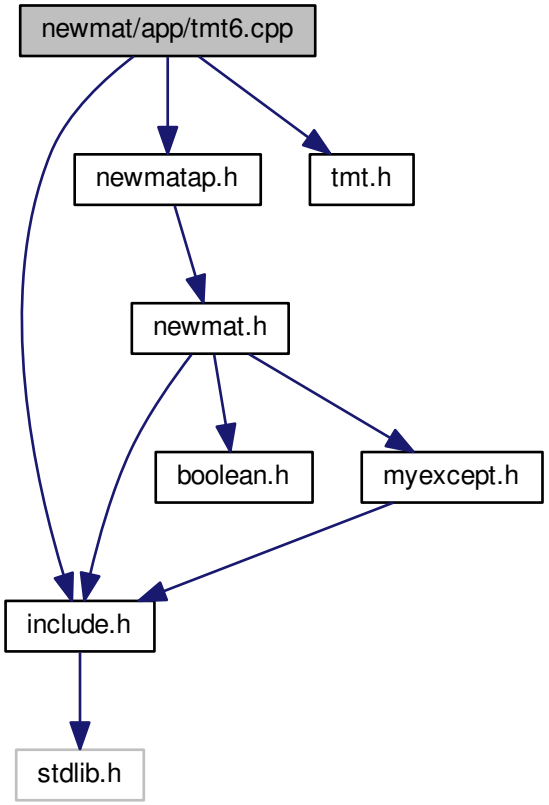
30.2145.1.9 void trymat5 ( )

Definition at line 43 of file tmt5.cpp.

30.2146 newmat/app/tmt6.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmt6.cpp:



Macros

- #define WANT_MATH

Functions

- void trymat6 ()

30.2146.1 Macro Definition Documentation

30.2146.1.1 #define WANT_MATH

Definition at line 3 of file tmt6.cpp.

30.2146.2 Function Documentation

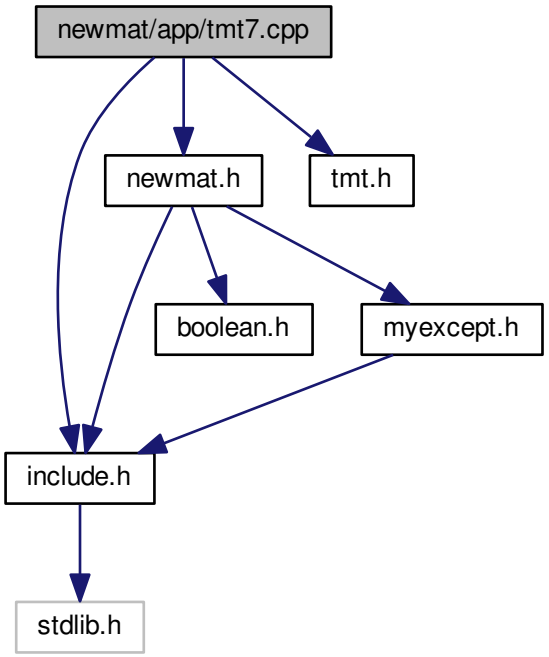
30.2146.2.1 void trymat6 ( )

Definition at line 60 of file tmt6.cpp.

30.2147 newmat/app/tmt7.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmt7.cpp:



Functions

- void trymat7 ()

30.2147.1 Function Documentation

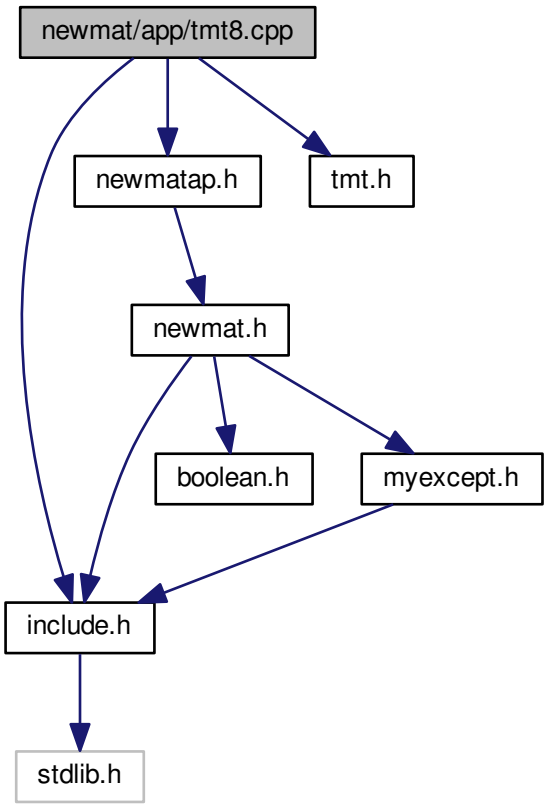
30.2147.1.1 void trymat7 ( )

Definition at line 18 of file tmt7.cpp.

30.2148 newmat/app/tmt8.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmt8.cpp:



Functions

- void Transposer (const GenericMatrix &GM1, GenericMatrix &GM2)
- ReturnMatrix TestReturn (const GeneralMatrix &gm)
- void trymat8 ()

30.2148.1 Function Documentation

30.2148.1.1 ReturnMatrix TestReturn (const GeneralMatrix & *gm*)

Definition at line 33 of file tmt8.cpp.

30.2148.1.2 void Transposer (const GenericMatrix & *GM1,* GenericMatrix & *GM2*)

Definition at line 19 of file tmt8.cpp.

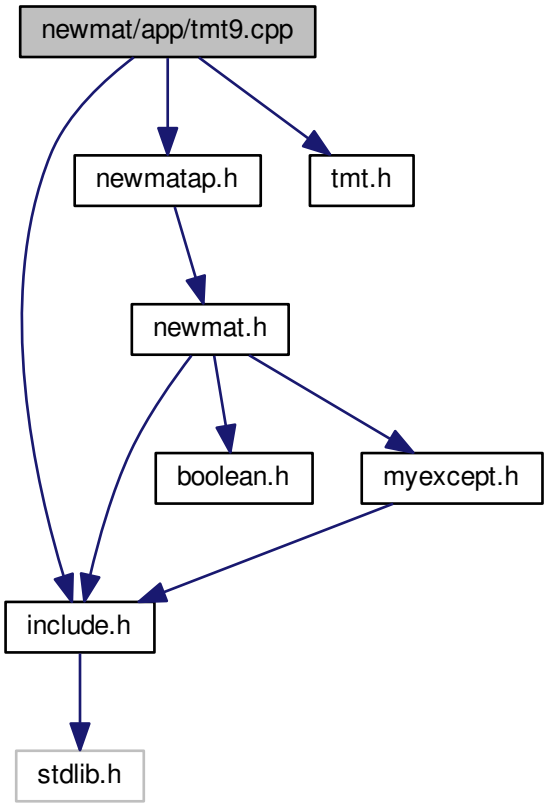
30.2148.1.3 void trymat8 ( )

Definition at line 35 of file tmt8.cpp.

30.2149 newmat/app/tmt9.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmt9.cpp:



Functions

- void trymat9 ()

30.2149.1 Function Documentation

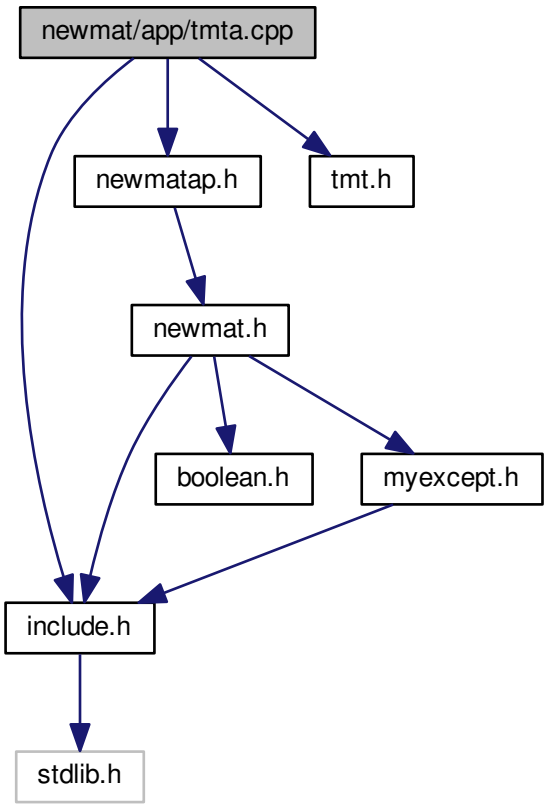
30.2149.1.1 void trymat9 ( )

Definition at line 16 of file tmt9.cpp.

30.2150 newmat/app/tmta.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmta.cpp:



Functions

- void trymata ()

30.2150.1 Function Documentation

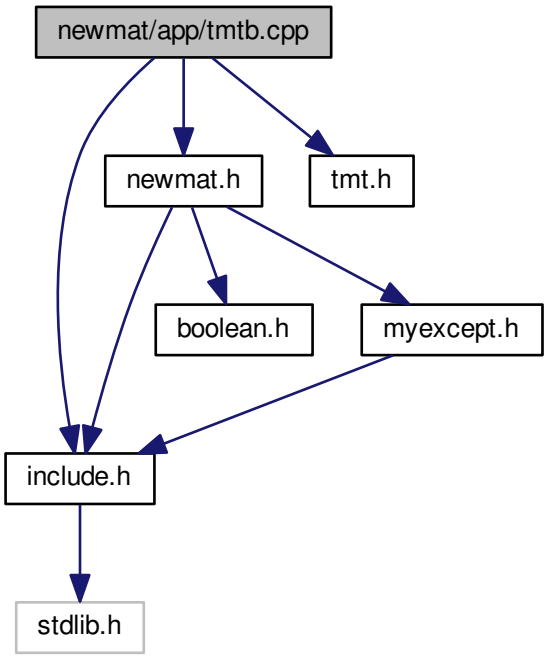
30.2150.1.1 void trymata ( )

Definition at line 32 of file tmta.cpp.

30.2151 newmat/app/tmtb.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmtb.cpp:



Classes

- class TestClass

Functions

- void trymatb ()

30.2151.1 Function Documentation

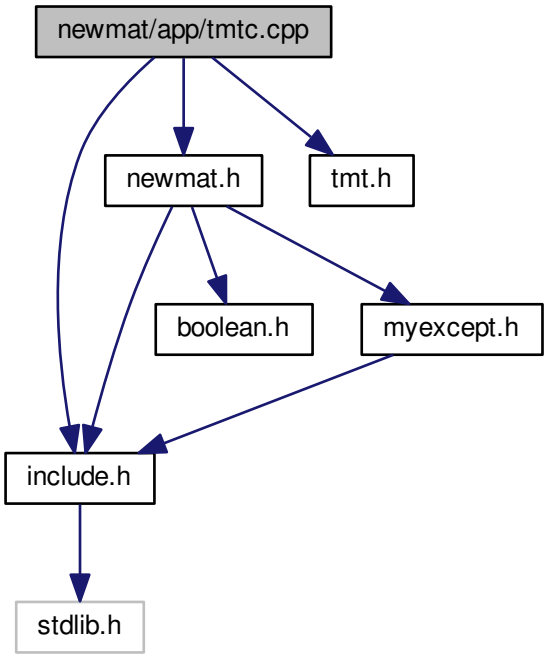
30.2151.1.1 void trymatb ( )

Definition at line 43 of file tmtb.cpp.

30.2152 newmat/app/tmtc.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmtc.cpp:



Functions

- void trymatc ()

30.2152.1 Function Documentation

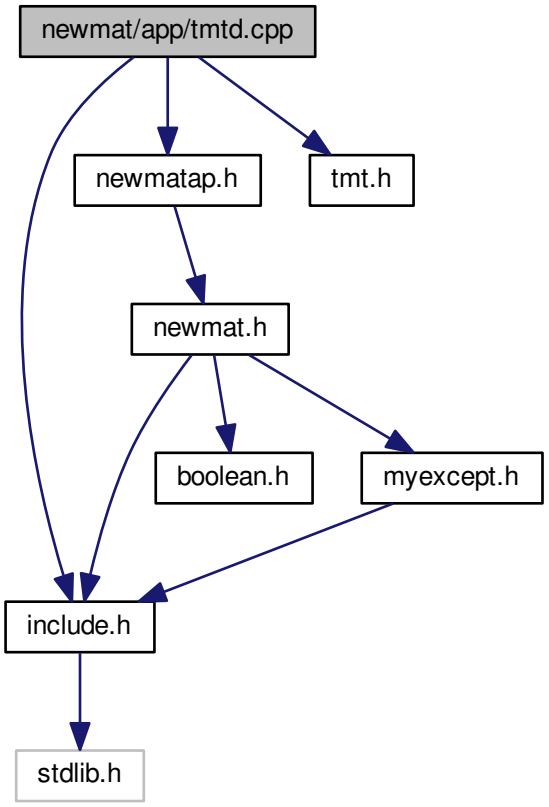
30.2152.1.1 void trymatc ( )

Definition at line 17 of file tmtc.cpp.

30.2153 newmat/app/tmtd.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmtd.cpp:



Functions

- ReturnMatrix Inverter (const CroutMatrix &X)
- void trymatd ()

30.2153.1 Function Documentation

30.2153.1.1 ReturnMatrix Inverter (const CroutMatrix & *X*)

Definition at line 13 of file tmtd.cpp.

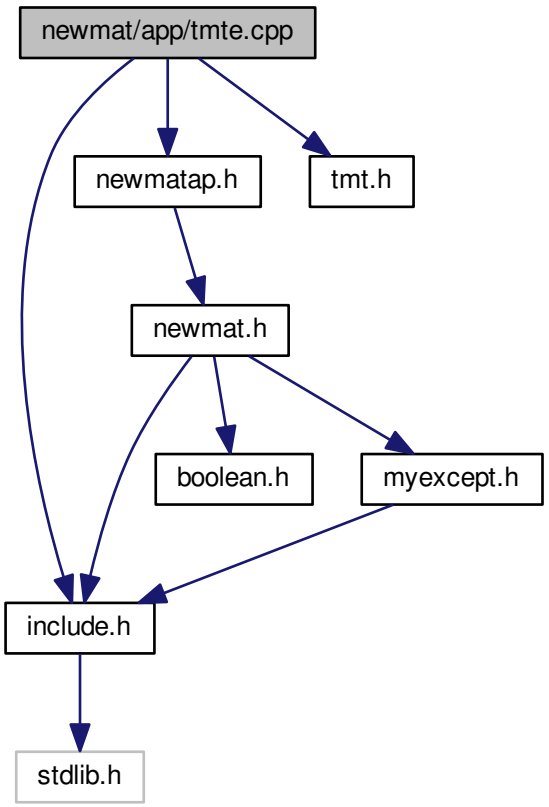
30.2153.1.2 void trymatd ( )

Definition at line 21 of file tmtd.cpp.

30.2154 newmat/app/tmte.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmte.cpp:



Macros

- #define WANT_MATH

Functions

- void CheckIsSorted (const DiagonalMatrix &D, bool ascending=false)
- void trymate ()

30.2154.1 Macro Definition Documentation

30.2154.1.1 #define WANT_MATH

Definition at line 3 of file tmte.cpp.

30.2154.2 Function Documentation

30.2154.2.1 void CheckIsSorted (const DiagonalMatrix & *D,* bool *ascending* = false)

Definition at line 17 of file tmte.cpp.

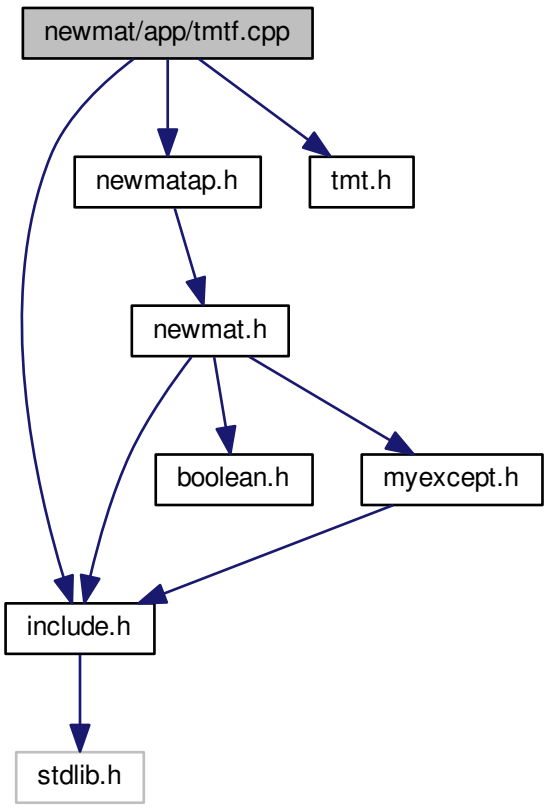
30.2154.2.2 void trymate ( )

Definition at line 26 of file tmte.cpp.

30.2155 newmat/app/tmtf.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmtf.cpp:



Macros

- #define WANT_MATH

Functions

- void trymatf ()

30.2155.1 Macro Definition Documentation

30.2155.1.1 #define WANT_MATH

Definition at line 3 of file tmtf.cpp.

30.2155.2 Function Documentation

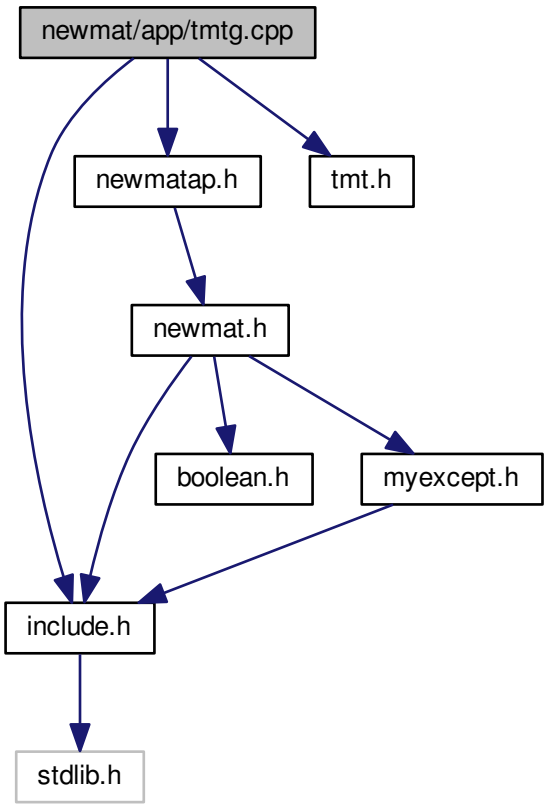
30.2155.2.1 void trymatf ( )

Definition at line 295 of file tmtf.cpp.

30.2156 newmat/app/tmtg.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmtg.cpp:



Macros

- #define WANT_MATH

Functions

- void trymatg ()

30.2156.1 Macro Definition Documentation

30.2156.1.1 #define WANT_MATH

Definition at line 4 of file tmtg.cpp.

30.2156.2 Function Documentation

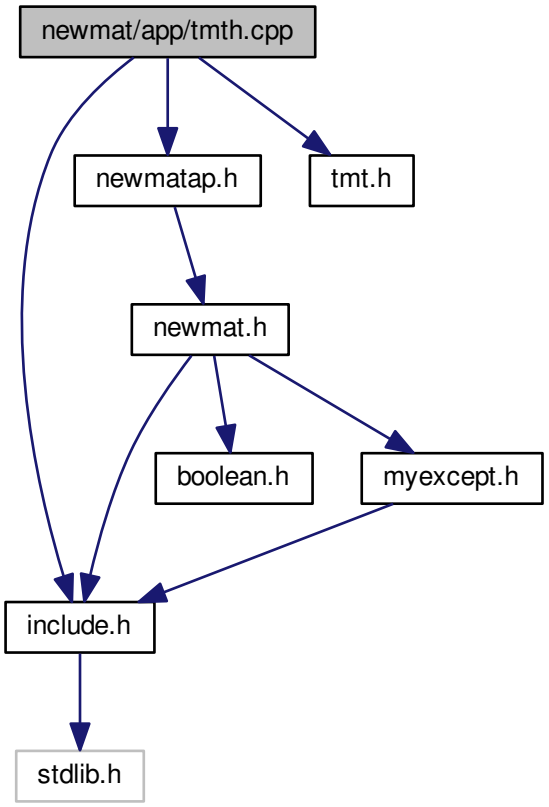
30.2156.2.1 void trymatg ( )

Definition at line 18 of file tmtg.cpp.

30.2157 newmat/app/tmth.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmth.cpp:



Functions

- void BandFunctions (int l1, int u1, int l2, int u2)
- void LowerBandFunctions (int l1, int l2)
- void UpperBandFunctions (int u1, int u2)
- void SymmetricBandFunctions (int l1, int l2)
- void trymath ()

30.2157.1 Function Documentation

30.2157.1.1 void BandFunctions (int *l1*, int *u1*, int *l2*, int *u2*)

Definition at line 20 of file tmth.cpp.

30.2157.1.2 void LowerBandFunctions (int *l1*, int *l2*)

Definition at line 98 of file tmth.cpp.

30.2157.1.3 void SymmetricBandFunctions (int *l1*, int *l2*)

Definition at line 248 of file tmth.cpp.

30.2157.1.4 void trymath ( )

Definition at line 365 of file tmth.cpp.

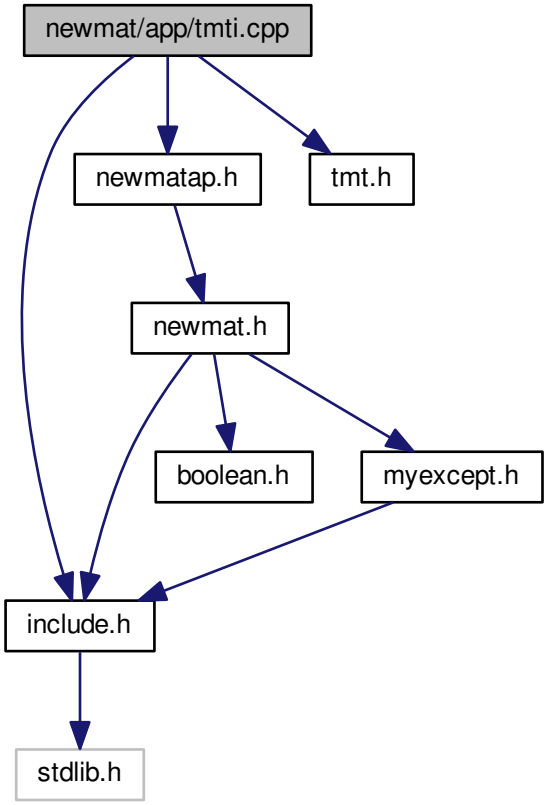
30.2157.1.5 void UpperBandFunctions (int *u1*, int *u2*)

Definition at line 173 of file tmth.cpp.

30.2158 newmat/app/tmti.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmti.cpp:



Functions

- void WillNotConverge ()
- void ReSizeMatrix (Matrix &A)
- void trymati ()

30.2158.1 Function Documentation

30.2158.1.1 void ReSizeMatrix (Matrix & *A*)

Definition at line 22 of file tmti.cpp.

30.2158.1.2 void trymati ( )

Definition at line 26 of file tmti.cpp.

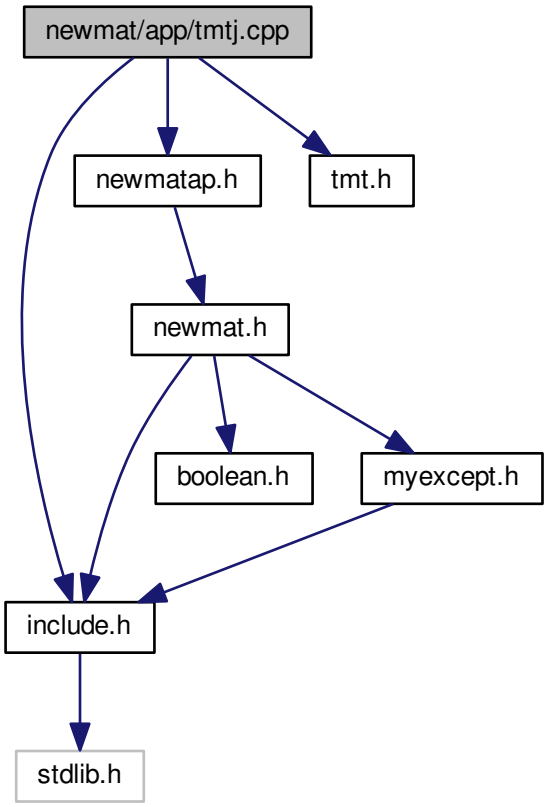
30.2158.1.3 void WillNotConverge ( )

Definition at line 16 of file tmti.cpp.

30.2159 newmat/app/tmtj.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "tmt.h"
```

Include dependency graph for tmtj.cpp:



Functions

- void trymatj ()

30.2159.1 Function Documentation

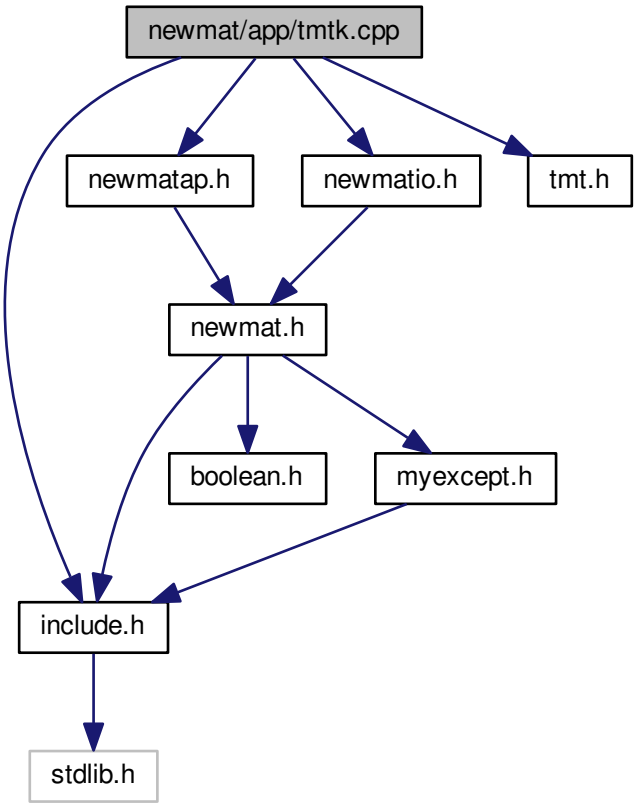
30.2159.1.1 void trymatj ( )

Definition at line 16 of file tmtj.cpp.

30.2160 newmat/app/tmtk.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "newmatio.h"
#include "tmt.h"
```

Include dependency graph for tmtk.cpp:



Macros

- #define WANT_STREAM

Functions

- void trymatk ()

30.2160.1 Macro Definition Documentation

30.2160.1.1 #define WANT_STREAM

Definition at line 2 of file tmtk.cpp.

30.2160.2 Function Documentation

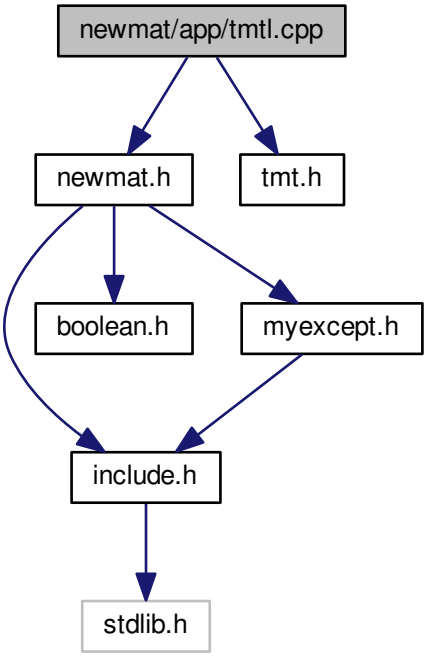
30.2160.2.1 void trymatk ( )

Definition at line 180 of file tmtk.cpp.

30.2161 newmat/app/tmtl.cpp File Reference

```
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmtl.cpp:



Macros

- #define WANT_STREAM
- #define WANT_MATH

Functions

- Real TestMax (const GenericMatrix &GM)
- void trymatl ()

30.2161.1 Macro Definition Documentation

30.2161.1.1 #define WANT_MATH

Definition at line 4 of file tmtl.cpp.

30.2161.1.2 #define WANT_STREAM

Definition at line 2 of file tmtl.cpp.

30.2161.2 Function Documentation

30.2161.2.1 Real TestMax (const GenericMatrix & *GM*)

Definition at line 18 of file tmtl.cpp.

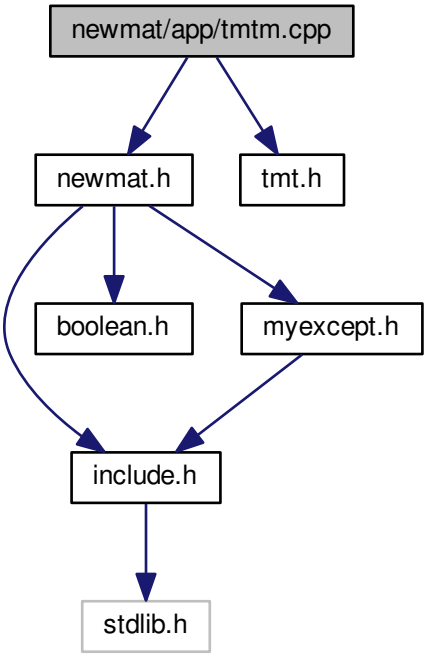
30.2161.2.2 void trymatl ( )

Definition at line 132 of file tmtl.cpp.

30.2162 newmat/app/tmtm.cpp File Reference

```
#include "newmat.h"
#include "tmt.h"
```

Include dependency graph for tmtm.cpp:



Macros

- #define WANT_STREAM
- #define WANT_MATH

Functions

- void trymatm ()

30.2162.1 Macro Definition Documentation

30.2162.1.1 #define WANT_MATH

Definition at line 4 of file tmtm.cpp.

30.2162.1.2 #define WANT_STREAM

Definition at line 2 of file tmtm.cpp.

30.2162.2 Function Documentation

30.2162.2.1 void trymatm ( )

Definition at line 19 of file tmtm.cpp.

30.2163 newmat/include/boolean.h File Reference

This graph shows which files directly or indirectly include this file:

Classes

- class bool

Macros

- #define bool_LIB 0

Variables

- const bool true = 1
- const bool false = 0

30.2163.1 Macro Definition Documentation

30.2163.1.1 #define bool_LIB 0

Definition at line 6 of file boolean.h.

30.2163.2 Variable Documentation

30.2163.2.1 const bool false = 0

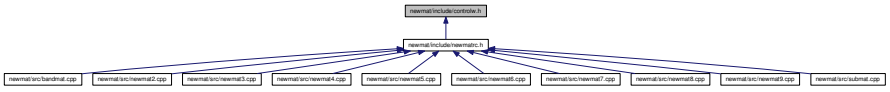
Definition at line 26 of file boolean.h.

30.2163.2.2 const bool true = 1

Definition at line 25 of file boolean.h.

30.2164 newmat/include/controlw.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- class ControlWord

Macros

- #define CONTROL_WORD_LIB 0

30.2164.1 Macro Definition Documentation

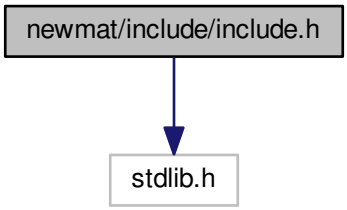
30.2164.1.1 #define CONTROL_WORD_LIB 0

Definition at line 4 of file controlw.h.

30.2165 newmat/include/include.h File Reference

```
#include <stdlib.h>
```

Include dependency graph for include.h:



This graph shows which files directly or indirectly include this file:

Namespaces

- RBD_COMMON
- RBD_LIBRARIES

Macros

- #define use_namespace
- #define UseExceptions
- #define USING_DOUBLE
- #define bool_LIB 0
- #define TypeDefException
- #define DEFAULT_HEADER
- #define ATandT

Typedefs

- typedef double RBD_COMMON::Real
- typedef long double RBD_COMMON::long_Real

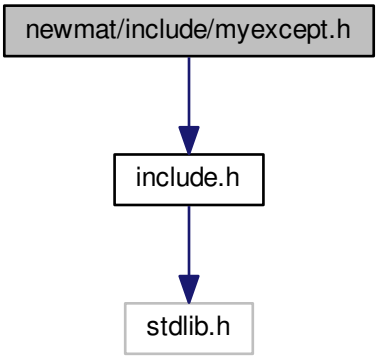
30.2165.1 Detailed Description

Set options and and details of include files.

30.2166 newmat/include/myexcept.h File Reference

```
#include "include.h"
```

Include dependency graph for myexcept.h:



This graph shows which files directly or indirectly include this file:

Classes

- class RBD_COMMON::Tracer
- class RBD_COMMON::BaseException
- class RBD_COMMON::Janitor
- class RBD_COMMON::Logic_error
- class RBD_COMMON::Runtime_error
- class RBD_COMMON::Domain_error
- class RBD_COMMON::Invalid_argument
- class RBD_COMMON::Length_error
- class RBD_COMMON::Out_of_range
- class RBD_COMMON::Range_error
- class RBD_COMMON::Overflow_error
- class RBD_COMMON::Bad_alloc

Namespaces

- RBD_COMMON

Macros

- #define Try try
- #define Throw(E) throw E
- #define ReThrow throw
- #define Catch catch
- #define CatchAll catch(...)
- #define CatchAndThrow {}
- #define FREE_CHECK(Class) public:
- #define MONITOR_REAL_NEW(Operation, Size, Pointer) {}
- #define MONITOR_INT_NEW(Operation, Size, Pointer) {}
- #define MONITOR_REAL_DELETE(Operation, Size, Pointer) {}
- #define MONITOR_INT_DELETE(Operation, Size, Pointer) {}
- #define NEW_DELETE(Class) FREE_CHECK(Class)

Typedefs

- typedef BaseException RBD_COMMON::Exception

Functions

- void RBD_COMMON::Terminate ()

30.2166.1 Detailed Description

Exception handler. The low level classes for

- my exception class hierarchy
- the functions needed for my simulated exceptions
- the Tracer mechanism
- routines for checking whether new and delete calls are balanced

30.2166.2 Macro Definition Documentation

30.2166.2.1 #define Catch catch

Definition at line 193 of file myexcept.h.

30.2166.2.2 #define CatchAll catch(...)

Definition at line 194 of file myexcept.h.

30.2166.2.3 #define CatchAndThrow {}

Definition at line 195 of file myexcept.h.

30.2166.2.4 #define FREE_CHECK(*Class*) public:

Definition at line 328 of file myexcept.h.

30.2166.2.5 #define MONITOR_INT_DELETE(*Operation, Size, Pointer*) {}

Definition at line 332 of file myexcept.h.

30.2166.2.6 #define MONITOR_INT_NEW(*Operation, Size, Pointer*) {}

Definition at line 330 of file myexcept.h.

30.2166.2.7 #define MONITOR_REAL_DELETE(*Operation, Size, Pointer*) {}

Definition at line 331 of file myexcept.h.

30.2166.2.8 #define MONITOR_REAL_NEW(*Operation, Size, Pointer*) {}

Definition at line 329 of file myexcept.h.

30.2166.2.9 #define NEW_DELETE(*Class*) FREE_CHECK(Class)

Definition at line 350 of file myexcept.h.

30.2166.2.10 #define ReThrow throw

Definition at line 192 of file myexcept.h.

30.2166.2.11 #define Throw(*E*) throw E

Definition at line 191 of file myexcept.h.

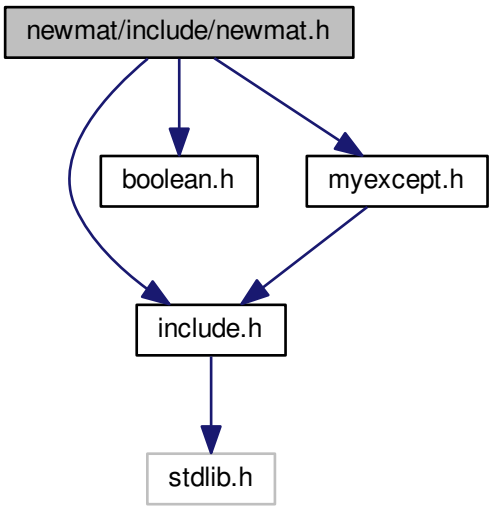
30.2166.2.12 #define Try try

Definition at line 190 of file myexcept.h.

30.2167 newmat/include/newmat.h File Reference

```
#include "include.h"
#include "boolean.h"
#include "myexcept.h"
```

Include dependency graph for newmat.h:



This graph shows which files directly or indirectly include this file:

Classes

- class NEWMAT::LogAndSign
- class NEWMAT::MatrixType
- class NEWMAT::MatrixBandWidth
- class NEWMAT::ArrayLengthSpecifier
- class NEWMAT::BaseMatrix
- class NEWMAT::GeneralMatrix
- class NEWMAT::Matrix
- class NEWMAT::nricMatrix
- class NEWMAT::SymmetricMatrix
- class NEWMAT::UpperTriangularMatrix
- class NEWMAT::LowerTriangularMatrix
- class NEWMAT::DiagonalMatrix
- class NEWMAT::RowVector
- class NEWMAT::ColumnVector
- class NEWMAT::CroutMatrix

- class NEWMAT::BandMatrix
- class NEWMAT::UpperBandMatrix
- class NEWMAT::LowerBandMatrix
- class NEWMAT::SymmetricBandMatrix
- class NEWMAT::BandLUMatrix
- class NEWMAT::IdentityMatrix
- class NEWMAT::GenericMatrix
- class NEWMAT::MultipliedMatrix
- class NEWMAT::AddedMatrix
- class NEWMAT::SPMatrix
- class NEWMAT::KPMatrix
- class NEWMAT::ConcatenatedMatrix
- class NEWMAT::StackedMatrix
- class NEWMAT::SolvedMatrix
- class NEWMAT::SubtractedMatrix
- class NEWMAT::ShiftedMatrix
- class NEWMAT::NegShiftedMatrix
- class NEWMAT::ScaledMatrix
- class NEWMAT::NegatedMatrix
- class NEWMAT::TransposedMatrix
- class NEWMAT::ReversedMatrix
- class NEWMAT::InvertedMatrix
- class NEWMAT::RowedMatrix
- class NEWMAT::ColedMatrix
- class NEWMAT::DiagedMatrix
- class NEWMAT::MatedMatrix
- class NEWMAT::ReturnMatrixX
- class NEWMAT::GetSubMatrix
- class NEWMAT::LinearEquationSolver
- class NEWMAT::MatrixInput
- class NEWMAT::SimpleIntArray
- class NEWMAT::NPDException
- class NEWMAT::ConvergenceException
- class NEWMAT::SingularException
- class NEWMAT::OverflowException
- class NEWMAT::ProgramException
- class NEWMAT::IndexException
- class NEWMAT::VectorException
- class NEWMAT::NotSquareException
- class NEWMAT::SubMatrixDimensionException
- class NEWMAT::IncompatibleDimensionsException
- class NEWMAT::NotDefinedException
- class NEWMAT::CannotBuildException
- class NEWMAT::InternalException

Namespaces

- NEWMAT
- RBD_LIBRARIES

Macros

- #define NEWMAT_LIB 0
- #define ReturnMatrix ReturnMatrixX
- #define MatrixTypeUnSp 0

Functions

- void NEWMAT::MatrixErrorNoSpace (void *)
- bool NEWMAT::operator== (const GeneralMatrix &A, const GeneralMatrix &B)
- bool NEWMAT::operator== (const BaseMatrix &A, const BaseMatrix &B)
- bool NEWMAT::operator!= (const GeneralMatrix &A, const GeneralMatrix &B)
- bool NEWMAT::operator!= (const BaseMatrix &A, const BaseMatrix &B)
- bool NEWMAT::operator<= (const BaseMatrix &A, const BaseMatrix &)
- bool NEWMAT::operator>= (const BaseMatrix &A, const BaseMatrix &)
- bool NEWMAT::operator< (const BaseMatrix &A, const BaseMatrix &)
- bool NEWMAT::operator> (const BaseMatrix &A, const BaseMatrix &)
- bool NEWMAT::IsZero (const BaseMatrix &A)
- bool NEWMAT::Rectangular (MatrixType a, MatrixType b, MatrixType c)
- bool NEWMAT::Compare (const MatrixType &, MatrixType &)
- Real NEWMAT::DotProduct (const Matrix &A, const Matrix &B)
- SPMatrix NEWMAT::SP (const BaseMatrix &, const BaseMatrix &)
- KPMatrix NEWMAT::KP (const BaseMatrix &, const BaseMatrix &)
- ShiftedMatrix NEWMAT::operator+ (Real f, const BaseMatrix &BM)
- NegShiftedMatrix NEWMAT::operator- (Real, const BaseMatrix &)
- ScaledMatrix NEWMAT::operator* (Real f, const BaseMatrix &BM)
- LogAndSign NEWMAT::LogDeterminant (const BaseMatrix &B)
- Real NEWMAT::Determinant (const BaseMatrix &B)
- Real NEWMAT::SumSquare (const BaseMatrix &B)
- Real NEWMAT::NormFrobenius (const BaseMatrix &B)
- Real NEWMAT::Trace (const BaseMatrix &B)
- Real NEWMAT::SumAbsoluteValue (const BaseMatrix &B)
- Real NEWMAT::Sum (const BaseMatrix &B)
- Real NEWMAT::MaximumAbsoluteValue (const BaseMatrix &B)
- Real NEWMAT::MinimumAbsoluteValue (const BaseMatrix &B)
- Real NEWMAT::Maximum (const BaseMatrix &B)
- Real NEWMAT::Minimum (const BaseMatrix &B)
- Real NEWMAT::Norm1 (const BaseMatrix &B)
- Real NEWMAT::Norm1 (RowVector &RV)
- Real NEWMAT::NormInfinity (const BaseMatrix &B)
- Real NEWMAT::NormInfinity (ColumnVector &CV)
- bool NEWMAT::IsZero (const GeneralMatrix &A)

30.2167.1 Macro Definition Documentation

30.2167.1.1 #define MatrixTypeUnSp 0

Definition at line 271 of file newmat.h.

30.2167.1.2 #define NEWMAT_LIB 0

Definition at line 6 of file newmat.h.

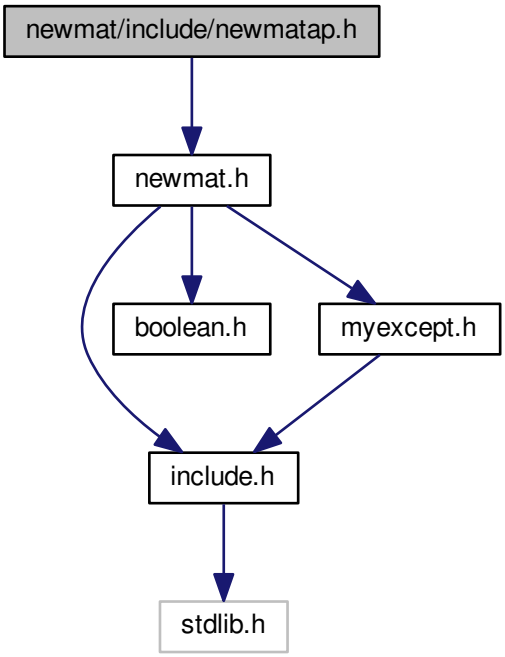
30.2167.1.3 #define ReturnMatrix ReturnMatrixX

Definition at line 35 of file newmat.h.

30.2168 newmat/include/newmatap.h File Reference

```
#include "newmat.h"
```

Include dependency graph for newmatap.h:



This graph shows which files directly or indirectly include this file:

Classes

- class NEWMAT::SymmetricEigenAnalysis
- class NEWMAT::FFT_Controller
- class NEWMAT::MultiRadixCounter

Namespaces

- NEWMAT

Macros

- #define NEWMATAP_LIB 0

Functions

- void NEWMAT::QRZT (Matrix &, LowerTriangularMatrix &)
- void NEWMAT::QRZT (const Matrix &, Matrix &, Matrix &)
- void NEWMAT::QRZ (Matrix &, UpperTriangularMatrix &)
- void NEWMAT::QRZ (const Matrix &, Matrix &, Matrix &)
- void NEWMAT::HHDecompose (Matrix &X, LowerTriangularMatrix &L)
- void NEWMAT::HHDecompose (const Matrix &X, Matrix &Y, Matrix &M)
- ReturnMatrix NEWMAT::Cholesky (const SymmetricMatrix &)
- ReturnMatrix NEWMAT::Cholesky (const SymmetricBandMatrix &)
- void NEWMAT::SVD (const Matrix &, DiagonalMatrix &, Matrix &, Matrix &, bool=true, bool=true)
- void NEWMAT::SVD (const Matrix &, DiagonalMatrix &)
- void NEWMAT::SVD (const Matrix &A, DiagonalMatrix &D, Matrix &U, bool withU=true)
- void NEWMAT::SortSV (DiagonalMatrix &D, Matrix &U, bool ascending=false)
- void NEWMAT::SortSV (DiagonalMatrix &D, Matrix &U, Matrix &V, bool ascending=false)
- void NEWMAT::Jacobi (const SymmetricMatrix &, DiagonalMatrix &)
- void NEWMAT::Jacobi (const SymmetricMatrix &, DiagonalMatrix &, SymmetricMatrix &)
- void NEWMAT::Jacobi (const SymmetricMatrix &, DiagonalMatrix &, Matrix &)
- void NEWMAT::Jacobi (const SymmetricMatrix &, DiagonalMatrix &, SymmetricMatrix &, Matrix &, bool=true)
- void NEWMAT::EigenValues (const SymmetricMatrix &, DiagonalMatrix &)
- void NEWMAT::EigenValues (const SymmetricMatrix &, DiagonalMatrix &, SymmetricMatrix &)
- void NEWMAT::EigenValues (const SymmetricMatrix &, DiagonalMatrix &, Matrix &)
- void NEWMAT::SortAscending (GeneralMatrix &)
- void NEWMAT::SortDescending (GeneralMatrix &)
- void NEWMAT::FFT (const ColumnVector &, const ColumnVector &, ColumnVector &, ColumnVector &)
- void NEWMAT::FFTI (const ColumnVector &, const ColumnVector &, ColumnVector &, ColumnVector &)
- void NEWMAT::RealFFT (const ColumnVector &, ColumnVector &, ColumnVector &)
- void NEWMAT::RealFFTI (const ColumnVector &, const ColumnVector &, ColumnVector &)
- void NEWMAT::DCT_II (const ColumnVector &, ColumnVector &)
- void NEWMAT::DCT_II_inverse (const ColumnVector &, ColumnVector &)
- void NEWMAT::DST_II (const ColumnVector &, ColumnVector &)
- void NEWMAT::DST_II_inverse (const ColumnVector &, ColumnVector &)
- void NEWMAT::DCT (const ColumnVector &, ColumnVector &)
- void NEWMAT::DCT_inverse (const ColumnVector &, ColumnVector &)
- void NEWMAT::DST (const ColumnVector &, ColumnVector &)
- void NEWMAT::DST_inverse (const ColumnVector &, ColumnVector &)

30.2168.1 Macro Definition Documentation

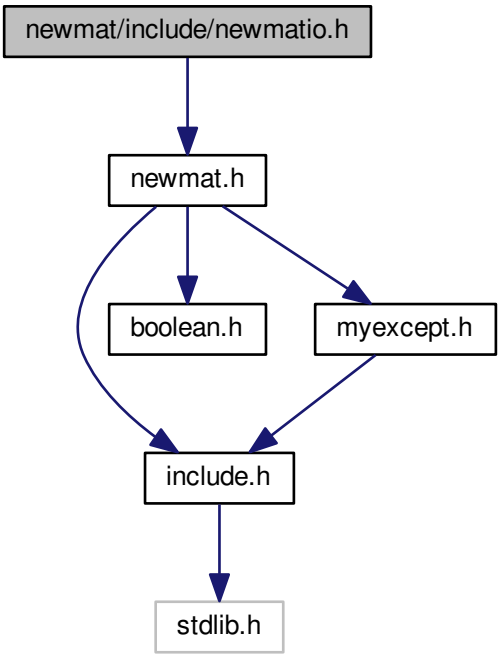
30.2168.1.1 #define NEWMATAP_LIB 0

Definition at line 6 of file newmatap.h.

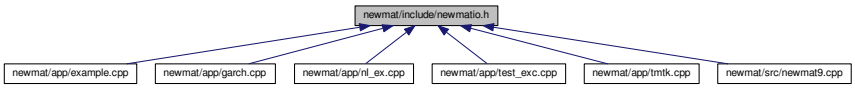
30.2169 newmat/include/newmatio.h File Reference

```
#include "newmat.h"
```

Include dependency graph for newmatio.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- NEWMAT

Macros

- #define NEWMATIO_LIB 0

Functions

- std::ostream & NEWMAT::operator<< (std::ostream &, const BaseMatrix &)
- std::ostream & NEWMAT::operator<< (std::ostream &, const GeneralMatrix &)

30.2169.1 Macro Definition Documentation

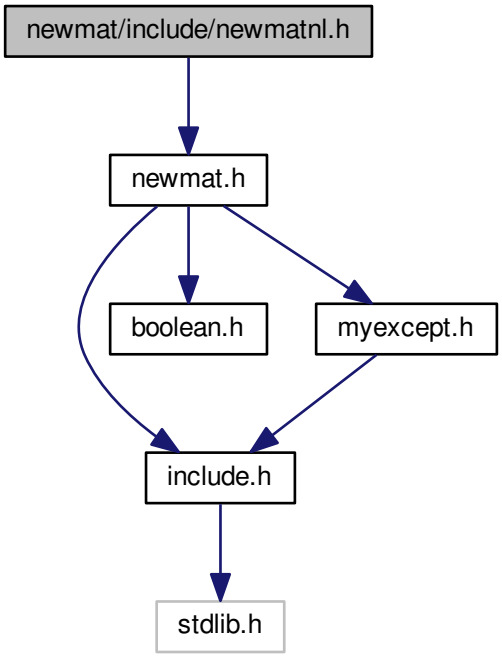
30.2169.1.1 #define NEWMATIO_LIB 0

Definition at line 6 of file newmatio.h.

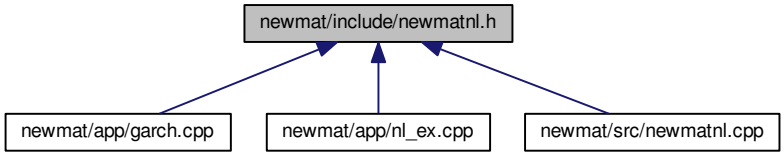
30.2170 newmat/include/newmatnl.h File Reference

```
#include "newmat.h"
```

Include dependency graph for newmatnl.h:



This graph shows which files directly or indirectly include this file:



Classes

- class NEWMAT::FindMaximum2
- class NEWMAT::R1_Col_I_D
- class NEWMAT::NonLinearLeastSquares
- class NEWMAT::LL_D_FI
- class NEWMAT::MLE_D_FI

Namespaces

- NEWMAT

Macros

- #define NEWMATNL_LIB 0

30.2170.1 Macro Definition Documentation

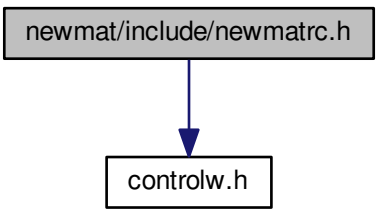
30.2170.1.1 #define NEWMATNL_LIB 0

Definition at line 6 of file newmatnl.h.

30.2171 newmat/include/newmatrc.h File Reference

```
#include "controlw.h"
```

Include dependency graph for newmatrc.h:



This graph shows which files directly or indirectly include this file:

Classes

- class LoadAndStoreFlag
- class MatrixRowCol
- class MatrixRow
- class MatrixCol
- class MatrixColX

Macros

- #define NEWMATRC_LIB 0

Enumerations

- enum LSF {
  LoadOnEntry =1, StoreOnExit =2, DirectPart =4, StoreHere =8,
  HaveStore =16 }

30.2171.1 Macro Definition Documentation

30.2171.1.1 #define NEWMATRC_LIB 0

Definition at line 6 of file newmatrc.h.

30.2171.2 Enumeration Type Documentation

30.2171.2.1 enum LSF

Enumerator

LoadOnEntry

StoreOnExit

DirectPart

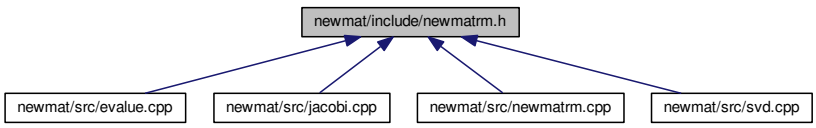
StoreHere

HaveStore

Definition at line 21 of file newmatrc.h.

30.2172 newmat/include/newmatrm.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- class RectMatrixRowCol
- class RectMatrixRow
- class RectMatrixCol
- class RectMatrixDiag

Macros

- #define NEWMATRM_LIB 0

Functions

- Real square (Real x)
- Real sign (Real x, Real y)

30.2172.1 Macro Definition Documentation

30.2172.1.1 #define NEWMATRM_LIB 0

Definition at line 6 of file newmatrm.h.

30.2172.2 Function Documentation

30.2172.2.1 Real sign (Real *x*, Real *y*) [inline]

Definition at line 106 of file newmatrm.h.

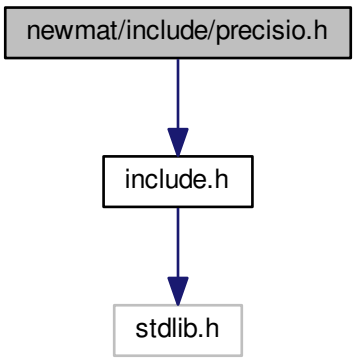
30.2172.2.2 Real square (Real *x*) [inline]

Definition at line 105 of file newmatrm.h.

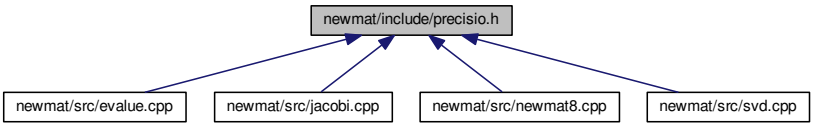
30.2173 newmat/include/precisio.h File Reference

```
#include "include.h"
```

Include dependency graph for precisio.h:



This graph shows which files directly or indirectly include this file:



Classes

- class NEWMAT::FloatingPointPrecision

  Floating point precision (type double).

Namespaces

- NEWMAT

Macros

- #define PRECISION_LIB 0
- #define WANT_MATH

30.2173.1 Detailed Description

Floating point precision constants.

30.2173.2 Macro Definition Documentation

30.2173.2.1 #define PRECISION_LIB 0

Definition at line 8 of file precisio.h.

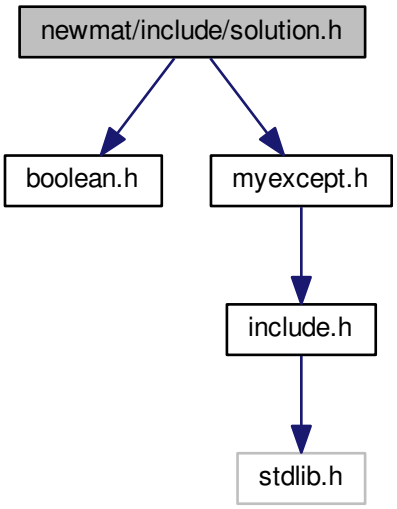
30.2173.2.2 #define WANT_MATH

Definition at line 10 of file precisio.h.

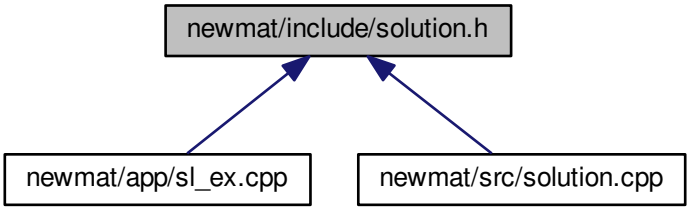
30.2174 newmat/include/solution.h File Reference

```
#include "boolean.h"
#include "myexcept.h"
```

Include dependency graph for solution.h:



This graph shows which files directly or indirectly include this file:



Classes

- class RBD_COMMON::R1_R1
- class RBD_COMMON::SolutionException
- class RBD_COMMON::OneDimSolve

Namespaces

- RBD_COMMON

30.2175 newmat/include/tmt.h File Reference

This graph shows which files directly or indirectly include this file:

Classes

- class time_lapse

Functions

- void Print (const Matrix &X)
- void Print (const UpperTriangularMatrix &X)
- void Print (const DiagonalMatrix &X)
- void Print (const SymmetricMatrix &X)
- void Print (const LowerTriangularMatrix &X)
- void Clean (Matrix &, Real)
- void Clean (DiagonalMatrix &, Real)
- void trymat1 ()
- void trymat2 ()

- void trymat3 ()
- void trymat4 ()
- void trymat5 ()
- void trymat6 ()
- void trymat7 ()
- void trymat8 ()
- void trymat9 ()
- void trymata ()
- void trymatb ()
- void trymatc ()
- void trymatd ()
- void trymate ()
- void trymatf ()
- void trymatg ()
- void trymath ()
- void trymati ()
- void trymatj ()
- void trymatk ()
- void trymatl ()
- void trymatm ()

30.2175.1 Function Documentation

30.2175.1.1 void Clean (Matrix & , Real)

Definition at line 121 of file tmt.cpp.

30.2175.1.2 void Clean (DiagonalMatrix & , Real)

Definition at line 131 of file tmt.cpp.

30.2175.1.3 void Print (const Matrix & *X*)

Definition at line 35 of file tmt.cpp.

30.2175.1.4 void Print (const UpperTriangularMatrix & *X*)

Definition at line 51 of file tmt.cpp.

30.2175.1.5 void Print (const DiagonalMatrix & *X*)

Definition at line 69 of file tmt.cpp.

30.2175.1.6 void Print (const SymmetricMatrix & *X*)

Definition at line 86 of file tmt.cpp.

30.2175.1.7 void Print (const LowerTriangularMatrix & *X*)

Definition at line 104 of file tmt.cpp.

30.2175.1.8 void trymat1 ( )

Definition at line 20 of file tmt1.cpp.

30.2175.1.9 void trymat2 ( )

Definition at line 19 of file tmt2.cpp.

30.2175.1.10 void trymat3 ( )

Definition at line 17 of file tmt3.cpp.

30.2175.1.11 void trymat4 ( )

Definition at line 19 of file tmt4.cpp.

30.2175.1.12 void trymat5 ( )

Definition at line 43 of file tmt5.cpp.

30.2175.1.13 void trymat6 ( )

Definition at line 60 of file tmt6.cpp.

30.2175.1.14 void trymat7 ( )

Definition at line 18 of file tmt7.cpp.

30.2175.1.15 void trymat8 ( )

Definition at line 35 of file tmt8.cpp.

30.2175.1.16 void trymat9 ( )

Definition at line 16 of file tmt9.cpp.

30.2175.1.17 void trymata ( )

Definition at line 32 of file tmta.cpp.

30.2175.1.18 void trymatb ( )

Definition at line 43 of file tmtb.cpp.

30.2175.1.19 void trymatc ( )

Definition at line 17 of file tmtc.cpp.

30.2175.1.20 void trymatd ( )

Definition at line 21 of file tmtd.cpp.

30.2175.1.21 void trymate ( )

Definition at line 26 of file tmte.cpp.

30.2175.1.22 void trymatf ( )

Definition at line 295 of file tmtf.cpp.

30.2175.1.23 void trymatg ( )

Definition at line 18 of file tmtg.cpp.

30.2175.1.24 void trymath ( )

Definition at line 365 of file tmth.cpp.

30.2175.1.25 void trymati ( )

Definition at line 26 of file tmti.cpp.

30.2175.1.26 void trymatj ( )

Definition at line 16 of file tmtj.cpp.

30.2175.1.27 void trymatk ( )

Definition at line 180 of file tmtk.cpp.

30.2175.1.28 void trymatl ( )

Definition at line 132 of file tmtl.cpp.

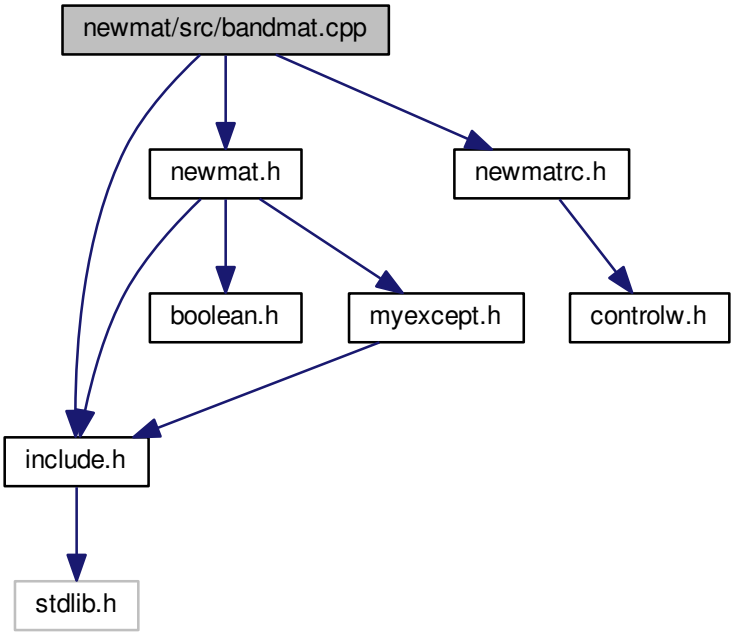
30.2175.1.29 void trymatm ( )

Definition at line 19 of file tmtm.cpp.

30.2176 newmat/src/bandmat.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "newmatrc.h"
```

Include dependency graph for bandmat.cpp:



Macros

- #define WANT_MATH
- #define REPORT {}

Functions

- Real square (Real x)

30.2176.1 Macro Definition Documentation

30.2176.1.1 #define REPORT {}

Definition at line 23 of file bandmat.cpp.

30.2176.1.2 #define WANT_MATH

Definition at line 5 of file bandmat.cpp.

30.2176.2 Function Documentation

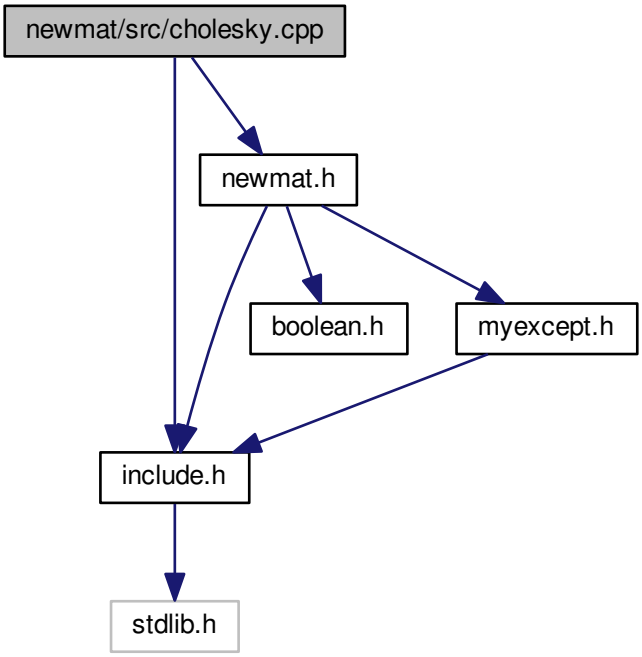
30.2176.2.1 Real square (Real *x*) [inline]

Definition at line 532 of file bandmat.cpp.

30.2177 newmat/src/cholesky.cpp File Reference

```
#include "include.h"
#include "newmat.h"
```

Include dependency graph for cholesky.cpp:



Macros

- #define WANT_MATH
- #define REPORT {}

Functions

- Real square (Real x)
- ReturnMatrix Cholesky (const SymmetricMatrix &S)
- ReturnMatrix Cholesky (const SymmetricBandMatrix &S)

30.2177.1 Macro Definition Documentation

30.2177.1.1 #define REPORT {}

Definition at line 19 of file cholesky.cpp.

30.2177.1.2 #define WANT_MATH

Definition at line 5 of file cholesky.cpp.

30.2177.2 Function Documentation

30.2177.2.1 ReturnMatrix Cholesky (const SymmetricMatrix & *S*)

Definition at line 29 of file cholesky.cpp.

30.2177.2.2 ReturnMatrix Cholesky (const SymmetricBandMatrix & *S*)

Definition at line 54 of file cholesky.cpp.

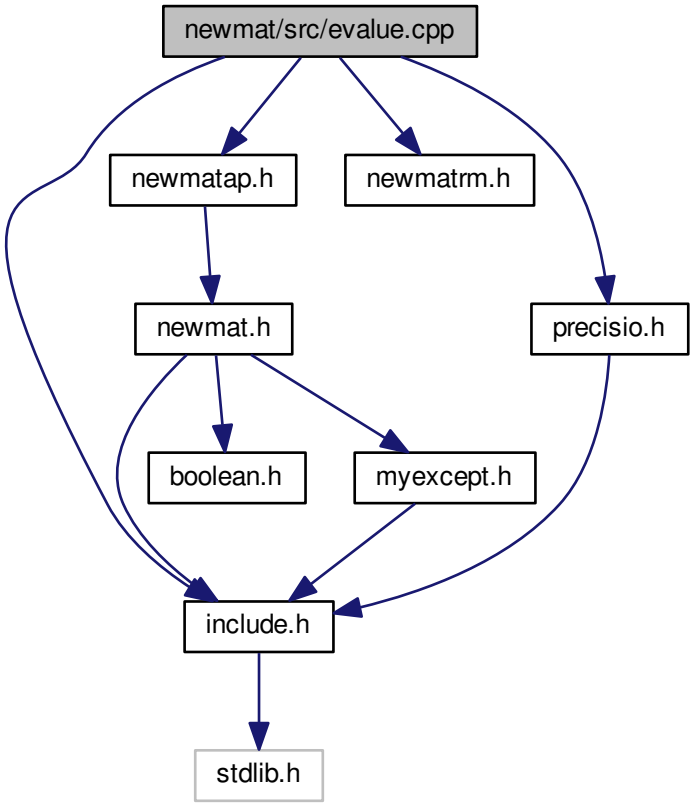
30.2177.2.3 Real square (Real *x*) [inline]

Definition at line 27 of file cholesky.cpp.

30.2178 newmat/src/evalue.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "newmatrm.h"
#include "precisio.h"
```

Include dependency graph for evalue.cpp:



Macros

- #define WANT_MATH
- #define REPORT {}

Functions

- void EigenValues (const SymmetricMatrix &A, DiagonalMatrix &D, Matrix &Z)
- void EigenValues (const SymmetricMatrix &X, DiagonalMatrix &D)
- void EigenValues (const SymmetricMatrix &X, DiagonalMatrix &D, SymmetricMatrix &A)

30.2178.1 Macro Definition Documentation

30.2178.1.1 #define REPORT {}

Definition at line 19 of file evalue.cpp.

30.2178.1.2 #define WANT_MATH

Definition at line 5 of file evalue.cpp.

30.2178.2 Function Documentation

30.2178.2.1 void EigenValues (const SymmetricMatrix & *A*, DiagonalMatrix & *D*, Matrix & *Z*)

Definition at line 283 of file evalue.cpp.

30.2178.2.2 void EigenValues (const SymmetricMatrix & *X*, DiagonalMatrix & *D*)

Definition at line 286 of file evalue.cpp.

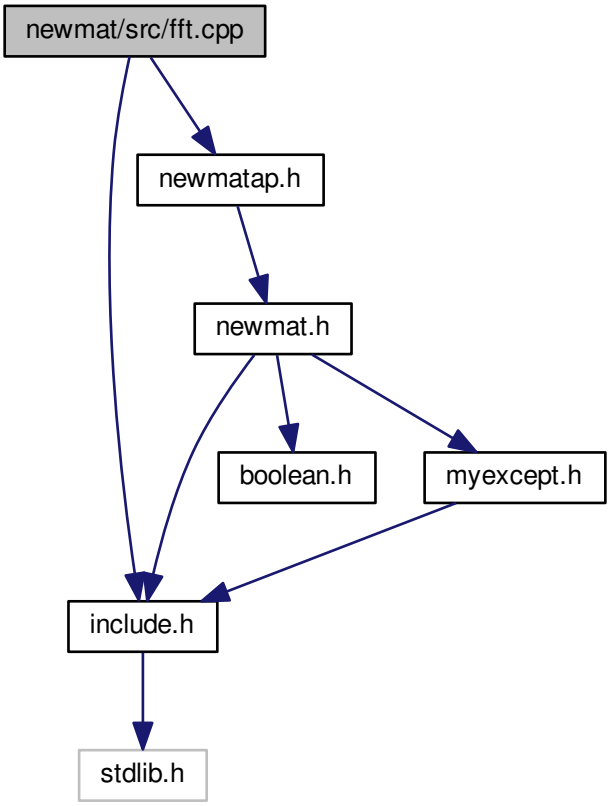
30.2178.2.3 void EigenValues (const SymmetricMatrix & *X*, DiagonalMatrix & *D*, SymmetricMatrix & *A*)

Definition at line 289 of file evalue.cpp.

30.2179 newmat/src/fft.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
```

Include dependency graph for fft.cpp:



Macros

- #define WANT_MATH
- #define REPORT {}

Functions

- void FFTI (const ColumnVector &U, const ColumnVector &V, ColumnVector &X, ColumnVector &Y)
- void RealFFT (const ColumnVector &U, ColumnVector &X, ColumnVector &Y)
- void RealFFTI (const ColumnVector &A, const ColumnVector &B, ColumnVector &U)
- void FFT (const ColumnVector &U, const ColumnVector &V, ColumnVector &X, ColumnVector &Y)
- void DCT_II (const ColumnVector &U, ColumnVector &V)
- void DCT_II_inverse (const ColumnVector &V, ColumnVector &U)
- void DST_II (const ColumnVector &U, ColumnVector &V)
- void DST_II_inverse (const ColumnVector &V, ColumnVector &U)
- void DCT_inverse (const ColumnVector &V, ColumnVector &U)
- void DCT (const ColumnVector &U, ColumnVector &V)
- void DST_inverse (const ColumnVector &V, ColumnVector &U)
- void DST (const ColumnVector &U, ColumnVector &V)

30.2179.1 Macro Definition Documentation

30.2179.1.1 #define REPORT {}

Definition at line 22 of file fft.cpp.

30.2179.1.2 #define WANT_MATH

Definition at line 6 of file fft.cpp.

30.2179.2 Function Documentation

30.2179.2.1 void DCT (const ColumnVector & *U,* ColumnVector & *V*)

Definition at line 398 of file fft.cpp.

30.2179.2.2 void DCT_II (const ColumnVector & *U,* ColumnVector & *V*)

Definition at line 254 of file fft.cpp.

30.2179.2.3 void DCT_II_inverse (const ColumnVector & *V,* ColumnVector & *U*)

Definition at line 282 of file fft.cpp.

30.2179.2.4 void DCT_inverse (const ColumnVector & *V,* ColumnVector & *U*)

Definition at line 364 of file fft.cpp.

30.2179.2.5 void DST (const ColumnVector & *U,* ColumnVector & *V*)

Definition at line 435 of file fft.cpp.

30.2179.2.6 void DST_II (const ColumnVector & *U,* ColumnVector & *V*)

Definition at line 309 of file fft.cpp.

30.2179.2.7 void DST_II_inverse (const ColumnVector & *V,* ColumnVector & *U*)

Definition at line 337 of file fft.cpp.

30.2179.2.8 void DST_inverse (const ColumnVector & *V,* ColumnVector & *U*)

Definition at line 407 of file fft.cpp.

30.2179.2.9 void FFT (const ColumnVector & *U,* const ColumnVector & *V,* ColumnVector & *X,* ColumnVector & *Y*)

Definition at line 196 of file fft.cpp.

30.2179.2.10 void FFTI (const ColumnVector & *U,* const ColumnVector & *V,* ColumnVector & *X,* ColumnVector & *Y*)

Definition at line 115 of file fft.cpp.

30.2179.2.11 void RealFFT (const ColumnVector & *U,* ColumnVector & *X,* ColumnVector & *Y*)

Definition at line 125 of file fft.cpp.

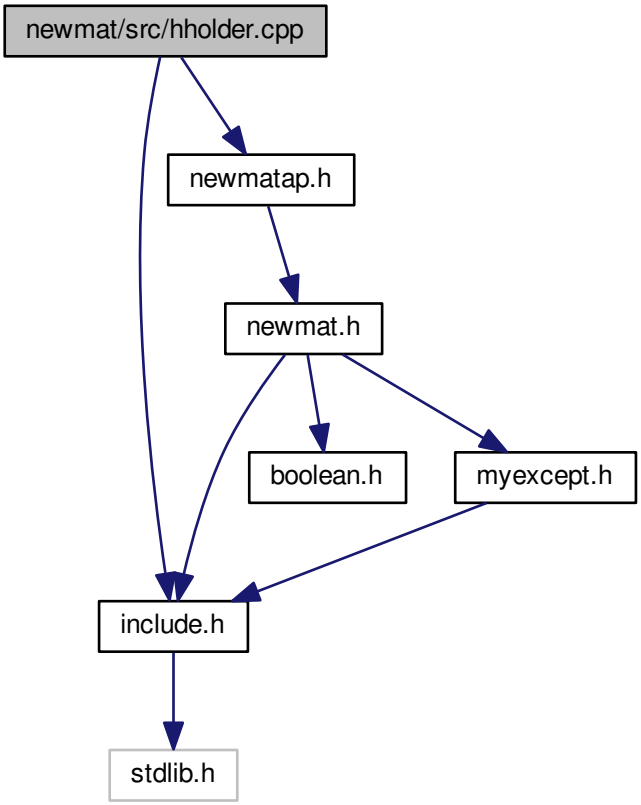
30.2179.2.12 void RealFFTI (const ColumnVector & *A,* const ColumnVector & *B,* ColumnVector & *U*)

Definition at line 161 of file fft.cpp.

30.2180 newmat/src/hholder.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
```

Include dependency graph for hholder.cpp:



Macros

- #define WANT_MATH
- #define REPORT {}

Functions

- Real square (Real x)
- void QRZT (Matrix &X, LowerTriangularMatrix &L)
- void QRZT (const Matrix &X, Matrix &Y, Matrix &M)
- void QRZ (Matrix &X, UpperTriangularMatrix &U)
- void QRZ (const Matrix &X, Matrix &Y, Matrix &M)

30.2180.1 Macro Definition Documentation

30.2180.1.1 #define REPORT {}

Definition at line 18 of file hholder.cpp.

30.2180.1.2 #define WANT_MATH

Definition at line 5 of file hholder.cpp.

30.2180.2 Function Documentation

30.2180.2.1 void QRZ (Matrix & *X,* UpperTriangularMatrix & *U*)

Definition at line 101 of file hholder.cpp.

30.2180.2.2 void QRZ (const Matrix & *X,* Matrix & *Y,* Matrix & *M*)

Definition at line 136 of file hholder.cpp.

30.2180.2.3 void QRZT (Matrix & *X,* LowerTriangularMatrix & *L*)

Definition at line 26 of file hholder.cpp.

30.2180.2.4 void QRZT (const Matrix & *X,* Matrix & *Y,* Matrix & *M*)

Definition at line 50 of file hholder.cpp.

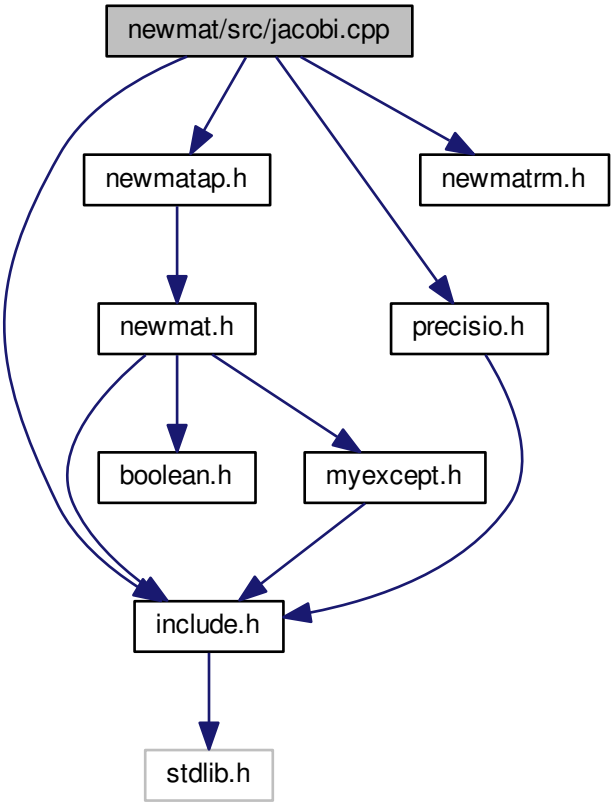
30.2180.2.5 Real square (Real *x*) [inline]

Definition at line 24 of file hholder.cpp.

30.2181 newmat/src/jacobi.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "precisio.h"
#include "newmatrm.h"
```

Include dependency graph for jacobi.cpp:



Macros

- #define WANT_MATH
- #define REPORT {}

Functions

- void Jacobi (const SymmetricMatrix &X, DiagonalMatrix &D, SymmetricMatrix &A, Matrix &V, bool eivec)
- void Jacobi (const SymmetricMatrix &X, DiagonalMatrix &D)
- void Jacobi (const SymmetricMatrix &X, DiagonalMatrix &D, SymmetricMatrix &A)
- void Jacobi (const SymmetricMatrix &X, DiagonalMatrix &D, Matrix &V)

30.2181.1 Macro Definition Documentation

30.2181.1.1 #define REPORT {}

Definition at line 23 of file jacobi.cpp.

30.2181.1.2 #define WANT_MATH

Definition at line 9 of file jacobi.cpp.

30.2181.2 Function Documentation

30.2181.2.1 void Jacobi (const SymmetricMatrix & *X*, DiagonalMatrix & *D*, SymmetricMatrix & *A*, Matrix & *V*, bool *eivec*)

Definition at line 27 of file jacobi.cpp.

30.2181.2.2 void Jacobi (const SymmetricMatrix & *X*, DiagonalMatrix & *D*)

Definition at line 110 of file jacobi.cpp.

30.2181.2.3 void Jacobi (const SymmetricMatrix & *X*, DiagonalMatrix & *D*, SymmetricMatrix & *A*)

Definition at line 113 of file jacobi.cpp.

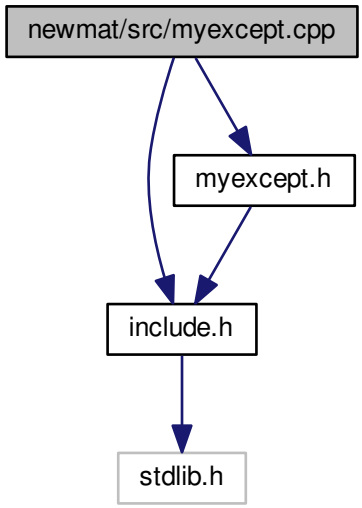
30.2181.2.4 void Jacobi (const SymmetricMatrix & *X*, DiagonalMatrix & *D*, Matrix & *V*)

Definition at line 116 of file jacobi.cpp.

30.2182 newmat/src/myexcept.cpp File Reference

```
#include "include.h"
#include "myexcept.h"
```

Include dependency graph for myexcept.cpp:



- #define WANT_STREAM
- #define WANT_STRING
- void Terminate ()

30.2182.1 Detailed Description

Exception handler. The low level classes for

- my exception class hierarchy
- the functions needed for my simulated exceptions
- the Tracer mechanism
- routines for checking whether new and delete calls are balanced

30.2182.2 Macro Definition Documentation

30.2182.2.1 #define WANT_STREAM

Definition at line 16 of file myexcept.cpp.

30.2182.2.2 #define WANT_STRING

Definition at line 17 of file myexcept.cpp.

30.2182.3 Function Documentation

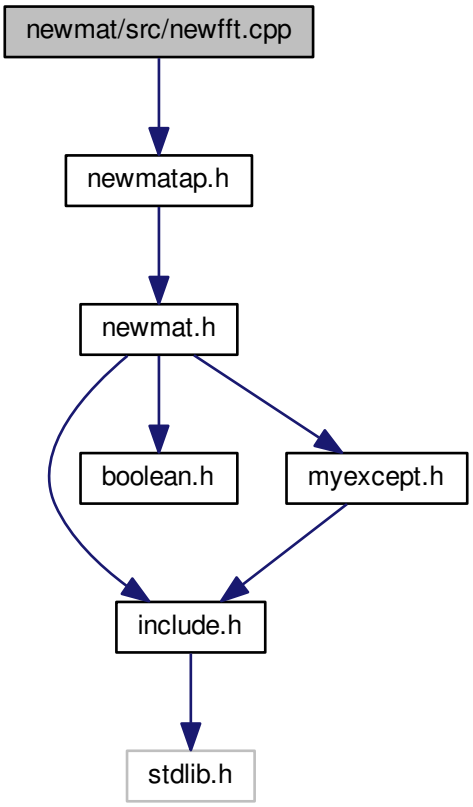
30.2182.3.1 void Terminate ( )

Definition at line 226 of file myexcept.cpp.

30.2183 newmat/src/newfft.cpp File Reference

```
#include "newmatap.h"
```

Include dependency graph for newfft.cpp:



Macros

- #define WANT_STREAM
- #define WANT_MATH
- #define REPORT {}

Functions

- Real square (Real x)
- int square (int x)

30.2183.1 Macro Definition Documentation

30.2183.1.1 #define REPORT {}

Definition at line 107 of file newfft.cpp.

30.2183.1.2 #define WANT_MATH

Definition at line 96 of file newfft.cpp.

30.2183.1.3 #define WANT_STREAM

Definition at line 94 of file newfft.cpp.

30.2183.2 Function Documentation

30.2183.2.1 Real square (Real *x*) [inline]

Definition at line 110 of file newfft.cpp.

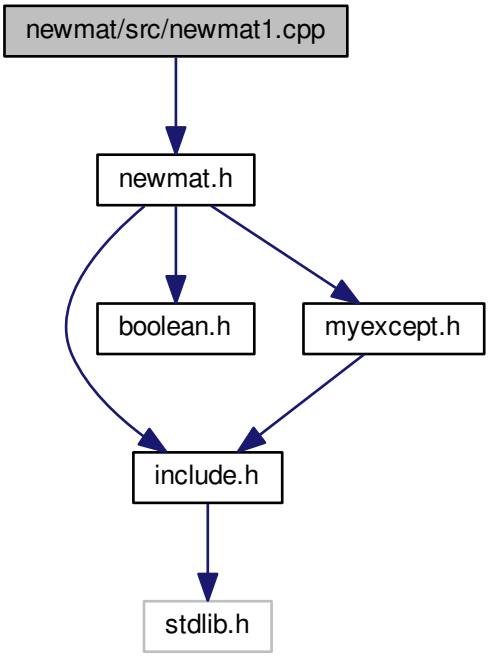
30.2183.2.2 int square (int *x*) [inline]

Definition at line 111 of file newfft.cpp.

30.2184 newmat/src/newmat1.cpp File Reference

```
#include "newmat.h"
```

Include dependency graph for newmat1.cpp:



Macros

- #define REPORT {}

Functions

- bool Rectangular (MatrixType a, MatrixType b, MatrixType c)

30.2184.1 Macro Definition Documentation

30.2184.1.1 #define REPORT {}

Definition at line 16 of file newmat1.cpp.

30.2184.2 Function Documentation

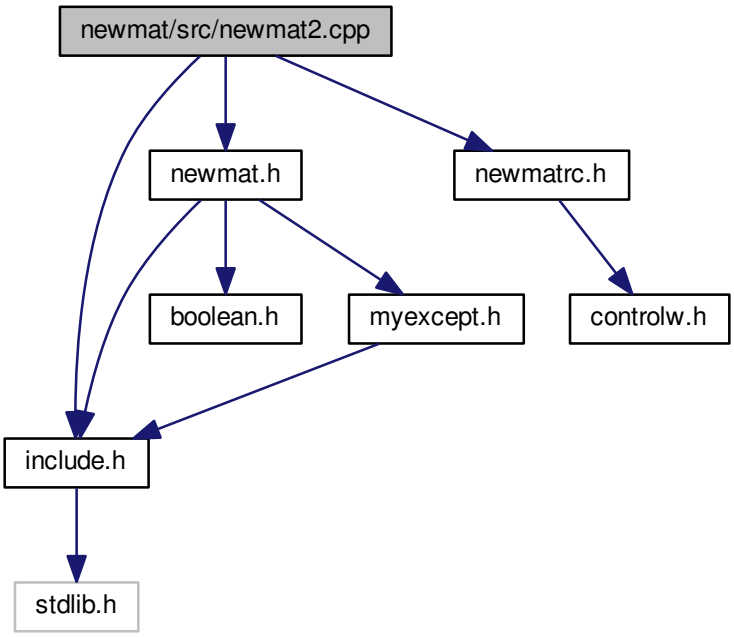
30.2184.2.1 bool Rectangular (MatrixType *a,* MatrixType *b,* MatrixType *c*)

Definition at line 88 of file newmat1.cpp.

30.2185 newmat/src/newmat2.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "newmatrc.h"
```

Include dependency graph for newmat2.cpp:



Macros

- #define WANT_MATH
- #define REPORT {}
- #define MONITOR(what, store, storage) {}

Functions

- Real DotProd (const MatrixRowCol &mrc1, const MatrixRowCol &mrc2)

30.2185.1 Macro Definition Documentation

30.2185.1.1 #define MONITOR(*what, store, storage*) {}

Definition at line 25 of file newmat2.cpp.

30.2185.1.2 #define REPORT {}

Definition at line 20 of file newmat2.cpp.

30.2185.1.3 #define WANT_MATH

Definition at line 5 of file newmat2.cpp.

30.2185.2 Function Documentation

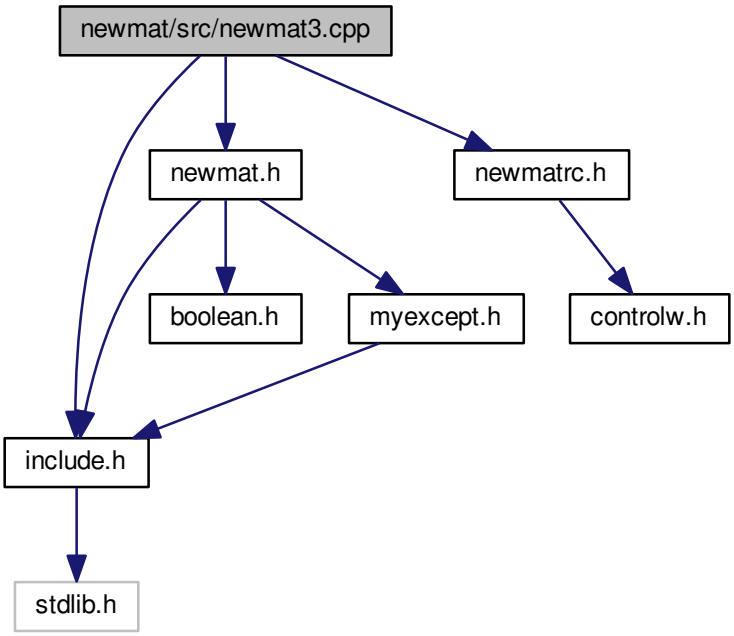
30.2185.2.1 Real DotProd (const MatrixRowCol & *mrc1,* const MatrixRowCol & *mrc2*)

Definition at line 73 of file newmat2.cpp.

30.2186 newmat/src/newmat3.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "newmatrc.h"
```

Include dependency graph for newmat3.cpp:



Macros

- #define REPORT {}
- #define MONITOR(what, store, storage) {}

30.2186.1 Macro Definition Documentation

30.2186.1.1 #define MONITOR(*what, store, storage*) {}

Definition at line 26 of file newmat3.cpp.

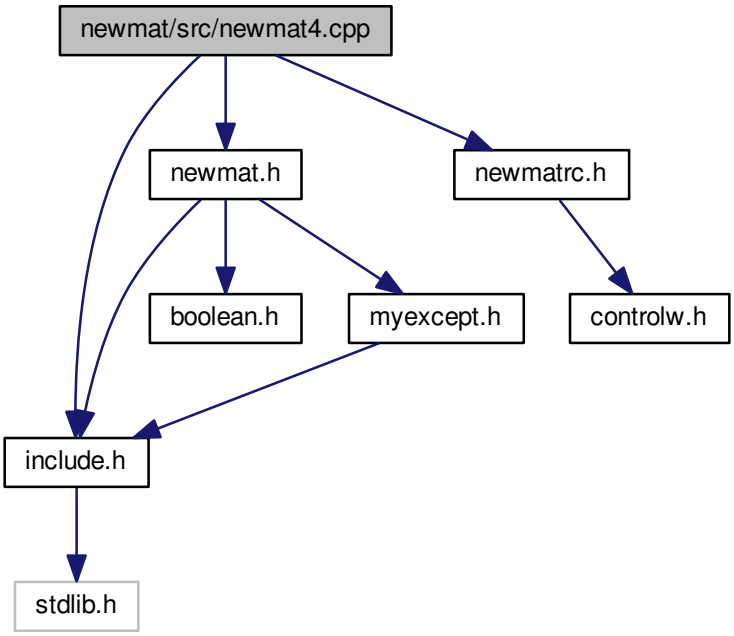
30.2186.1.2 #define REPORT {}

Definition at line 20 of file newmat3.cpp.

30.2187 newmat/src/newmat4.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "newmatrc.h"
```

Include dependency graph for newmat4.cpp:



Macros

- #define REPORT {}
- #define DO_SEARCH

Functions

- bool Compare (const MatrixType &source, MatrixType &destination)

30.2187.1 Macro Definition Documentation

30.2187.1.1 #define DO_SEARCH

Definition at line 23 of file newmat4.cpp.

30.2187.1.2 #define REPORT {}

Definition at line 19 of file newmat4.cpp.

30.2187.2 Function Documentation

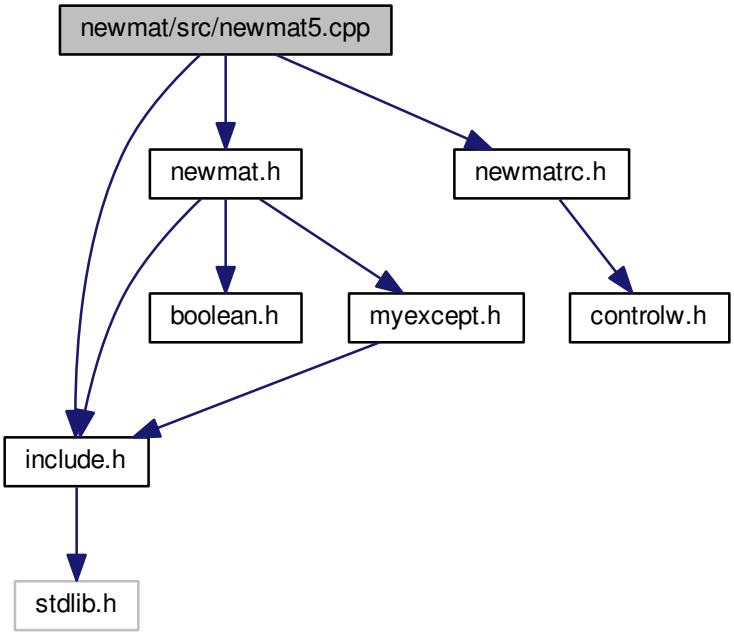
30.2187.2.1 bool Compare (const MatrixType & *source*, MatrixType & *destination*)

Definition at line 681 of file newmat4.cpp.

30.2188 newmat/src/newmat5.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "newmatrc.h"
```

Include dependency graph for newmat5.cpp:



Macros

- #define REPORT {}

30.2188.1 Macro Definition Documentation

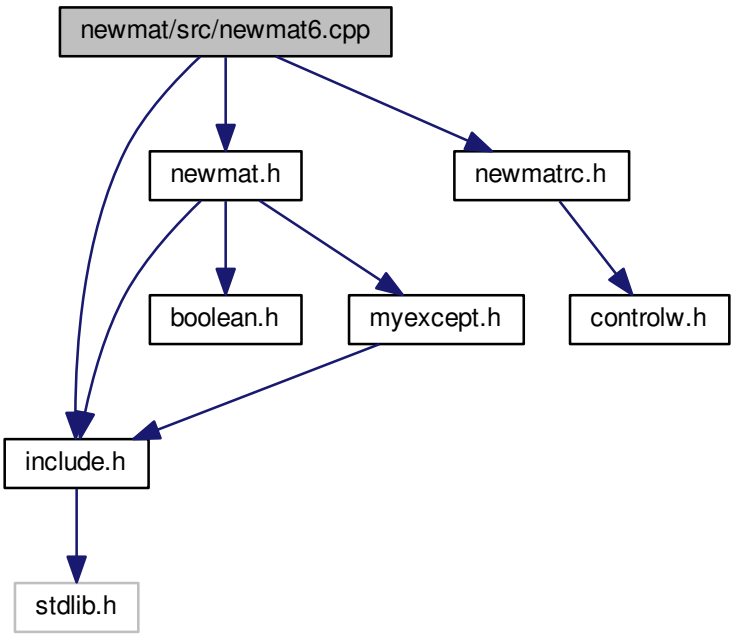
30.2188.1.1 #define REPORT {}

Definition at line 20 of file newmat5.cpp.

30.2189 newmat/src/newmat6.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "newmatrc.h"
```

Include dependency graph for newmat6.cpp:



Macros

- #define REPORT {}

Functions

- SPMatrix SP (const BaseMatrix &bm1, const BaseMatrix &bm2)
- KPMatrix KP (const BaseMatrix &bm1, const BaseMatrix &bm2)
- NegShiftedMatrix operator- (Real f, const BaseMatrix &bm)

30.2189.1 Macro Definition Documentation

30.2189.1.1 #define REPORT {}

Definition at line 19 of file newmat6.cpp.

30.2189.2 Function Documentation

30.2189.2.1 KPMatrix KP (const BaseMatrix & *bm1,* const BaseMatrix & *bm2*)

Definition at line 451 of file newmat6.cpp.

30.2189.2.2 NegShiftedMatrix operator- (Real *f,* const BaseMatrix & *bm*)

Definition at line 472 of file newmat6.cpp.

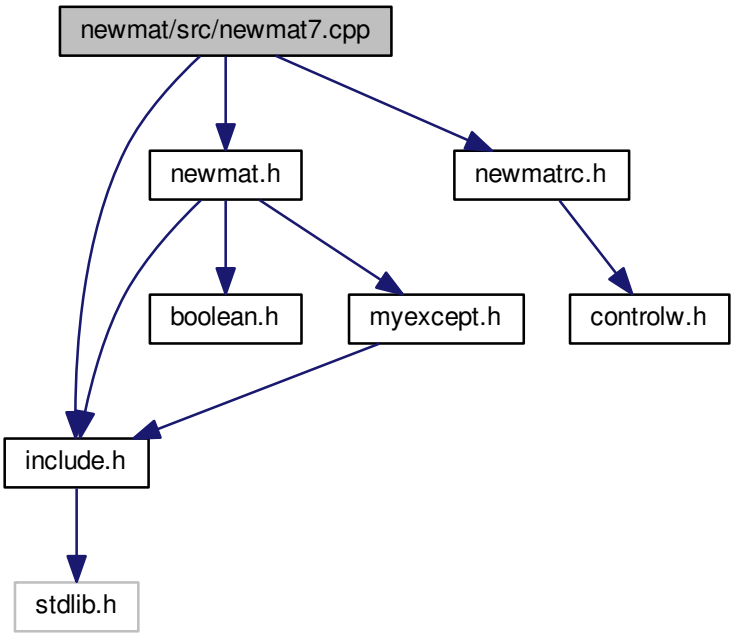
30.2189.2.3 SPMatrix SP (const BaseMatrix & *bm1,* const BaseMatrix & *bm2*)

Definition at line 448 of file newmat6.cpp.

30.2190 newmat/src/newmat7.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "newmatrc.h"
```

Include dependency graph for newmat7.cpp:



Macros

- #define REPORT {}

Functions

- bool operator== (const BaseMatrix &A, const BaseMatrix &B)
- bool operator== (const GeneralMatrix &A, const GeneralMatrix &B)
- bool IsZero (const BaseMatrix &A)

30.2190.1 Macro Definition Documentation

30.2190.1.1 #define REPORT {}

Definition at line 18 of file newmat7.cpp.

30.2190.2 Function Documentation

30.2190.2.1 bool IsZero (const BaseMatrix & *A*)

Definition at line 982 of file newmat7.cpp.

30.2190.2.2 bool operator== (const BaseMatrix & *A*, const BaseMatrix & *B*)

Definition at line 905 of file newmat7.cpp.

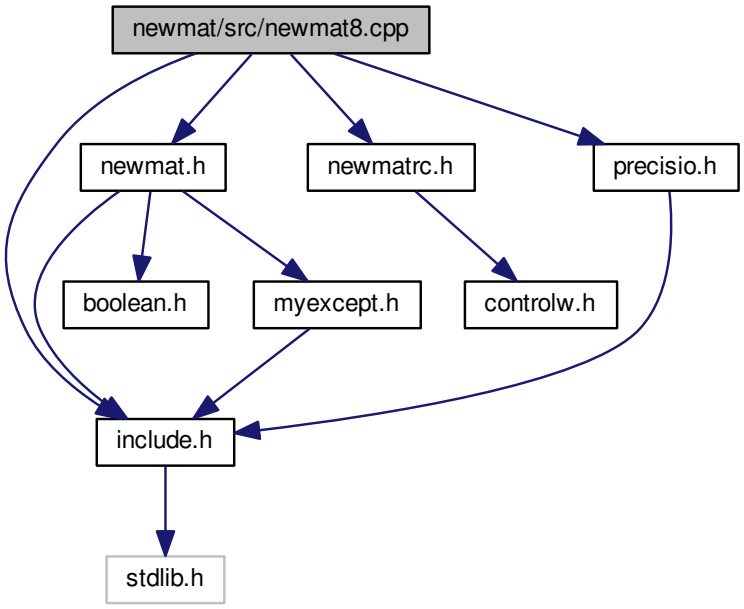
30.2190.2.3 bool operator== (const GeneralMatrix & *A*, const GeneralMatrix & *B*)

Definition at line 943 of file newmat7.cpp.

30.2191 newmat/src/newmat8.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "newmatrc.h"
#include "precisio.h"
```

Include dependency graph for newmat8.cpp:



Macros

- #define WANT_MATH
- #define REPORT {}

Functions

- Real square (Real x)
- Real DotProduct (const Matrix &A, const Matrix &B)

30.2191.1 Macro Definition Documentation

30.2191.1.1 #define REPORT {}

Definition at line 21 of file newmat8.cpp.

30.2191.1.2 #define WANT_MATH

Definition at line 5 of file newmat8.cpp.

30.2191.2 Function Documentation

30.2191.2.1 Real DotProduct (const Matrix & *A*, const Matrix & *B*)

Definition at line 524 of file newmat8.cpp.

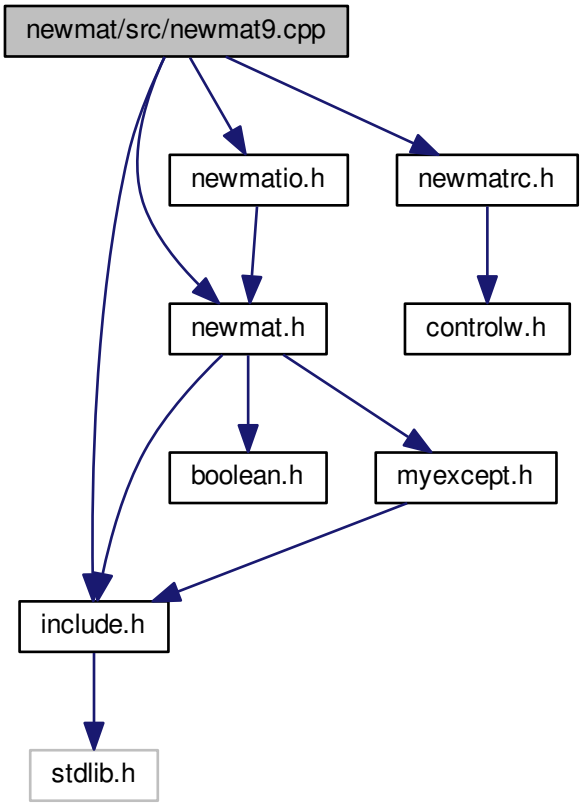
30.2191.2.2 Real square (Real *x*) [inline]

Definition at line 148 of file newmat8.cpp.

30.2192 newmat/src/newmat9.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "newmatio.h"
#include "newmatrc.h"
```

Include dependency graph for newmat9.cpp:



Macros

- #define WANT_FSTREAM
- #define REPORT {}
- #define ios_format_flags long

Functions

- ostream & operator<< (ostream &s, const BaseMatrix &X)
- ostream & operator<< (ostream &s, const GeneralMatrix &X)

30.2192.1 Macro Definition Documentation

30.2192.1.1 #define ios_format_flags long

Definition at line 28 of file newmat9.cpp.

30.2192.1.2 #define REPORT {}

Definition at line 23 of file newmat9.cpp.

30.2192.1.3 #define WANT_FSTREAM

Definition at line 6 of file newmat9.cpp.

30.2192.2 Function Documentation

30.2192.2.1 ostream& operator<< (ostream & *s*, const BaseMatrix & *X*)

Definition at line 31 of file newmat9.cpp.

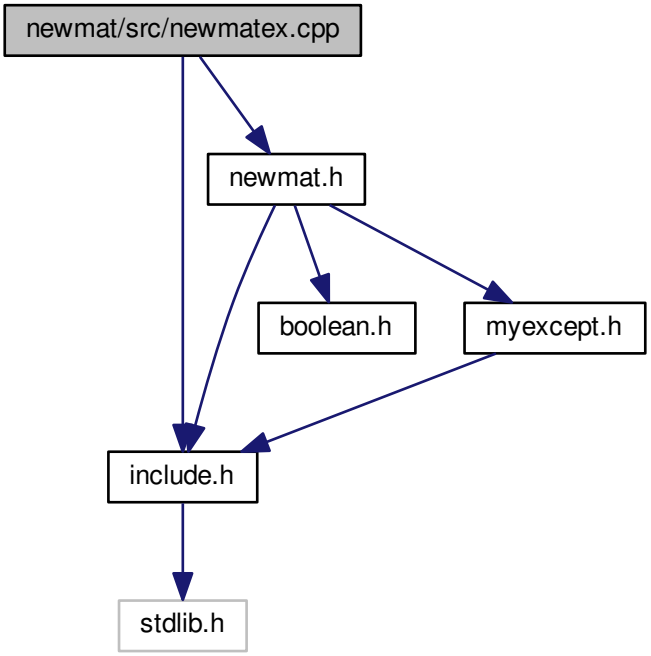
30.2192.2.2 ostream& operator<< (ostream & *s*, const GeneralMatrix & *X*)

Definition at line 38 of file newmat9.cpp.

30.2193 newmat/src/newmatex.cpp File Reference

```
#include "include.h"
#include "newmat.h"
```

Include dependency graph for newmatex.cpp:



Macros

- #define WANT_STREAM

Functions

- void MatrixErrorNoSpace (void *v)

30.2193.1 Macro Definition Documentation

30.2193.1.1 #define WANT_STREAM

Definition at line 5 of file newmatex.cpp.

30.2193.2 Function Documentation

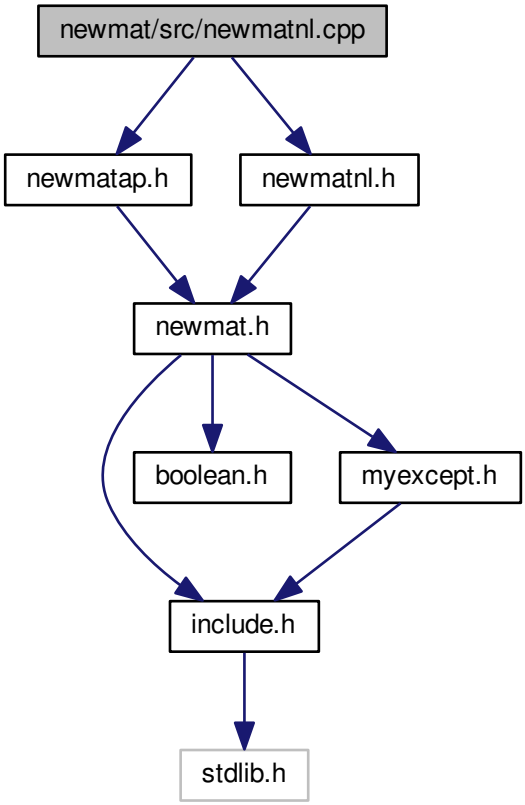
30.2193.2.1 void MatrixErrorNoSpace (void * v)

Definition at line 275 of file newmatex.cpp.

30.2194 newmat/src/newmatnl.cpp File Reference

```
#include "newmatap.h"
#include "newmatnl.h"
```

Include dependency graph for newmatnl.cpp:



Macros

- #define WANT_MATH
- #define WANT_STREAM

30.2194.1 Macro Definition Documentation

30.2194.1.1 #define WANT_MATH

Definition at line 6 of file newmatnl.cpp.

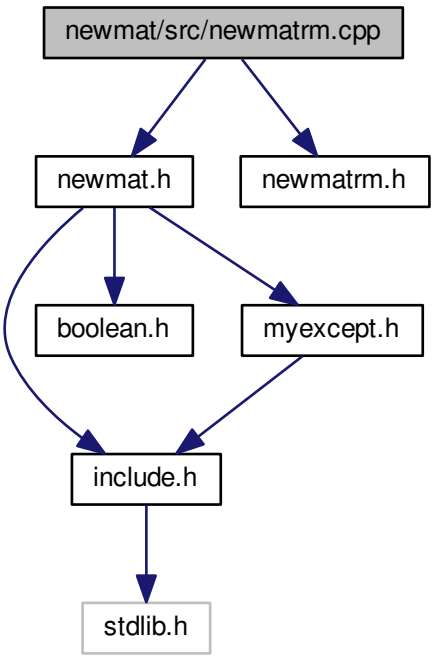
30.2194.1.2 #define WANT_STREAM

Definition at line 7 of file newmatnl.cpp.

30.2195 newmat/src/newmatrm.cpp File Reference

```
#include "newmat.h"
#include "newmatrm.h"
```

Include dependency graph for newmatrm.cpp:



Macros

- #define REPORT {}

Functions

- void ComplexScale (RectMatrixCol &U, RectMatrixCol &V, Real x, Real y)
- void Rotate (RectMatrixCol &U, RectMatrixCol &V, Real tau, Real s)

30.2195.1 Macro Definition Documentation

30.2195.1.1 #define REPORT {}

Definition at line 17 of file newmatrm.cpp.

30.2195.2 Function Documentation

30.2195.2.1 void ComplexScale (RectMatrixCol & *U,* RectMatrixCol & *V,* Real *x,* Real *y*)

Definition at line 131 of file newmatrm.cpp.

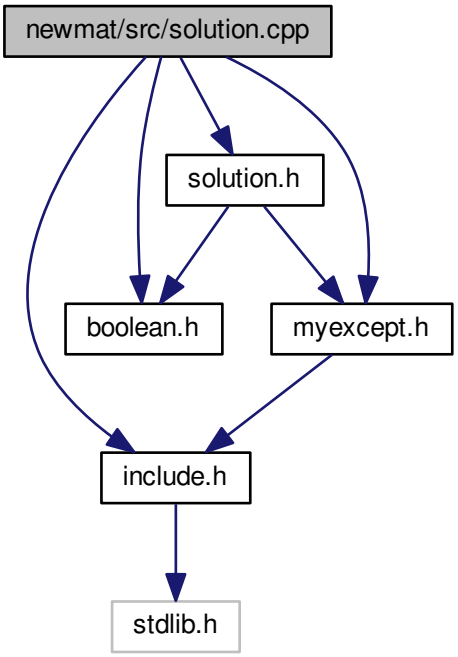
30.2195.2.2 void Rotate (RectMatrixCol & *U,* RectMatrixCol & *V,* Real *tau,* Real *s*)

Definition at line 155 of file newmatrm.cpp.

30.2196 newmat/src/solution.cpp File Reference

```
#include "include.h"
#include "boolean.h"
#include "myexcept.h"
#include "solution.h"
```

Include dependency graph for solution.cpp:



Macros

- #define WANT_STREAM
- #define WANT_MATH

Functions

- Real square (Real x)

30.2196.1 Macro Definition Documentation

30.2196.1.1 #define WANT_MATH

Definition at line 7 of file solution.cpp.

30.2196.1.2 #define WANT_STREAM

Definition at line 6 of file solution.cpp.

30.2196.2 Function Documentation

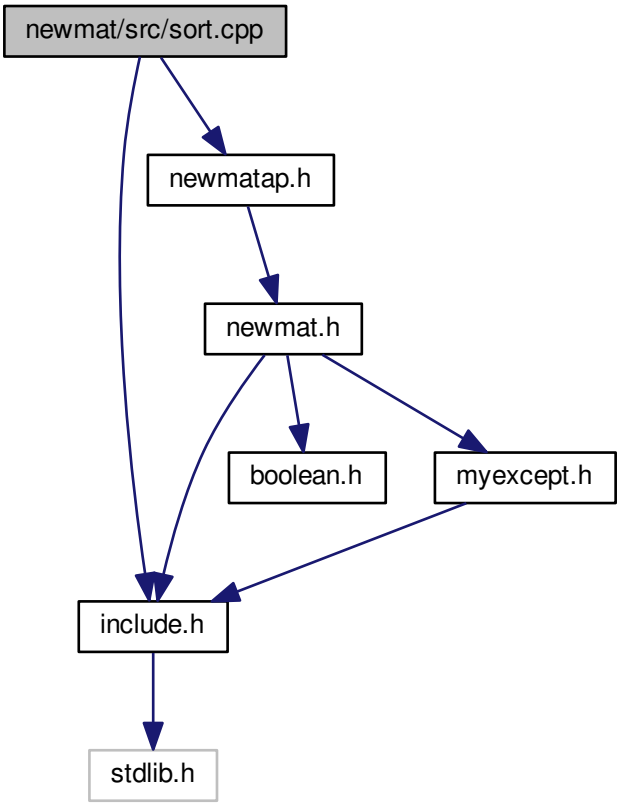
30.2196.2.1 Real square (Real *x*) [inline]

Definition at line 44 of file solution.cpp.

30.2197 newmat/src/sort.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
```

Include dependency graph for sort.cpp:



Macros

- #define WANT_MATH
- #define REPORT {}
- #define DoSimpleSort 17
- #define MaxDepth 50

Functions

- void SortDescending (GeneralMatrix &GM)
- void SortAscending (GeneralMatrix &GM)
- void SortSV (DiagonalMatrix &D, Matrix &U, bool ascending)
- void SortSV (DiagonalMatrix &D, Matrix &U, Matrix &V, bool ascending)

30.2197.1 Macro Definition Documentation

30.2197.1.1 #define DoSimpleSort 17

Definition at line 32 of file sort.cpp.

30.2197.1.2 #define MaxDepth 50

Definition at line 33 of file sort.cpp.

30.2197.1.3 #define REPORT {}

Definition at line 18 of file sort.cpp.

30.2197.1.4 #define WANT_MATH

Definition at line 5 of file sort.cpp.

30.2197.2 Function Documentation

30.2197.2.1 void SortAscending (GeneralMatrix & *GM*)

Definition at line 121 of file sort.cpp.

30.2197.2.2 void SortDescending (GeneralMatrix & *GM*)

Definition at line 45 of file sort.cpp.

30.2197.2.3 void SortSV (DiagonalMatrix & *D,* Matrix & *U,* bool *ascending*)

Definition at line 190 of file sort.cpp.

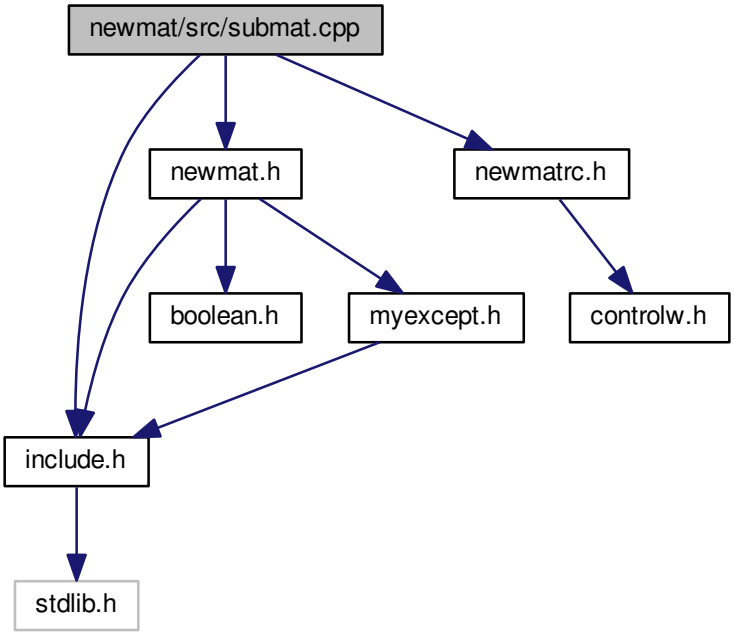
30.2197.2.4 void SortSV (DiagonalMatrix & *D,* Matrix & *U,* Matrix & *V,* bool *ascending*)

Definition at line 224 of file sort.cpp.

30.2198 newmat/src/submat.cpp File Reference

```
#include "include.h"
#include "newmat.h"
#include "newmatrc.h"
```

Include dependency graph for submat.cpp:



Macros

- #define REPORT {}

30.2198.1 Macro Definition Documentation

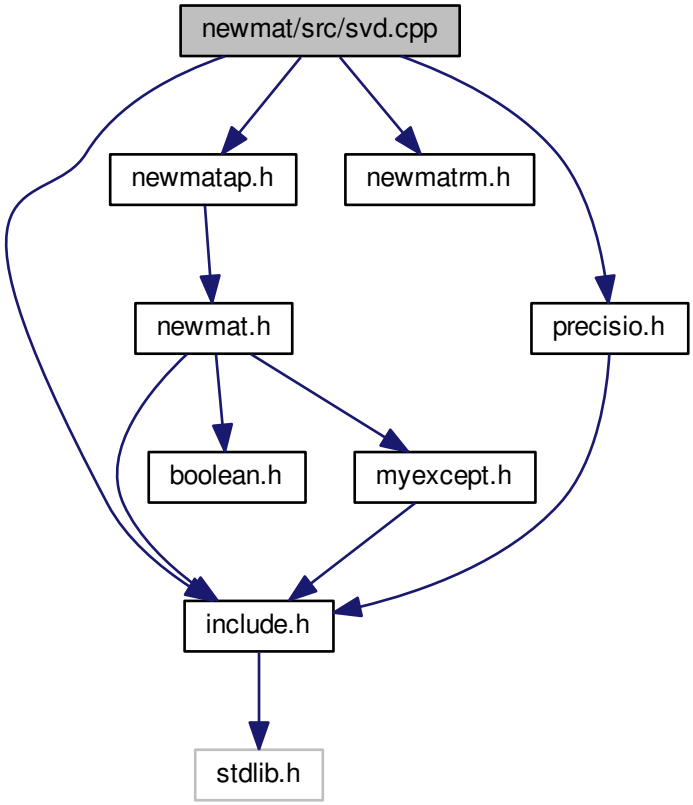
30.2198.1.1 #define REPORT {}

Definition at line 17 of file submat.cpp.

30.2199 newmat/src/svd.cpp File Reference

```
#include "include.h"
#include "newmatap.h"
#include "newmatrm.h"
#include "precisio.h"
```

Include dependency graph for svd.cpp:



Macros

- #define WANT_MATH
- #define REPORT {}

Functions

- void SVD (const Matrix &A, DiagonalMatrix &Q, Matrix &U, Matrix &V, bool withU, bool withV)
- void SVD (const Matrix &A, DiagonalMatrix &D)

30.2199.1 Macro Definition Documentation

30.2199.1.1 #define REPORT {}

Definition at line 20 of file svd.cpp.

30.2199.1.2 #define WANT_MATH

Definition at line 6 of file svd.cpp.

30.2199.2 Function Documentation

30.2199.2.1 void SVD (const Matrix & *A*, DiagonalMatrix & *Q*, Matrix & *U*, Matrix & *V*, bool *withU*, bool *withV*)

Definition at line 49 of file svd.cpp.

30.2199.2.2 void SVD (const Matrix & *A*, DiagonalMatrix & *D*)

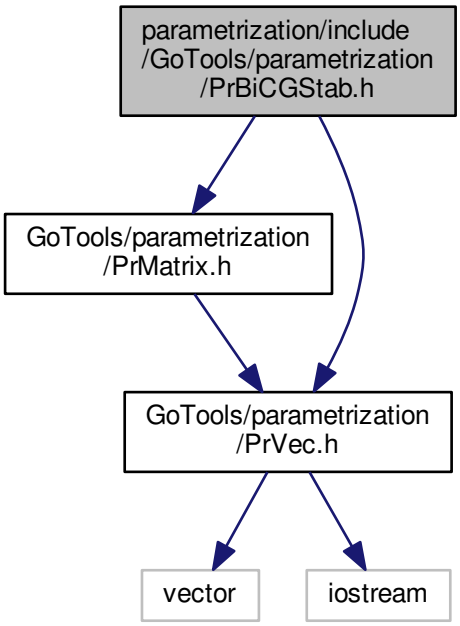
Definition at line 219 of file svd.cpp.

30.2200 parametrization/include/GoTools/parametrization/parametrization-doxymain.h File Reference

30.2201 parametrization/include/GoTools/parametrization/PrBiCGStab.h File Reference

```
#include "GoTools/parametrization/PrMatrix.h"
#include "GoTools/parametrization/PrVec.h"
```

Include dependency graph for PrBiCGStab.h:



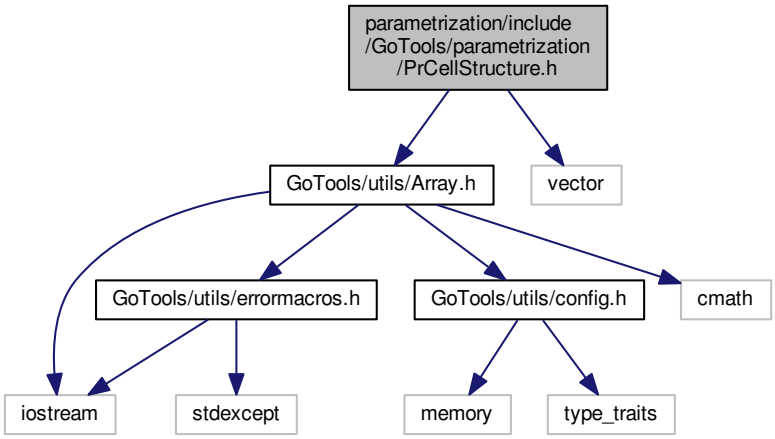
Classes

- class PrBiCGStab

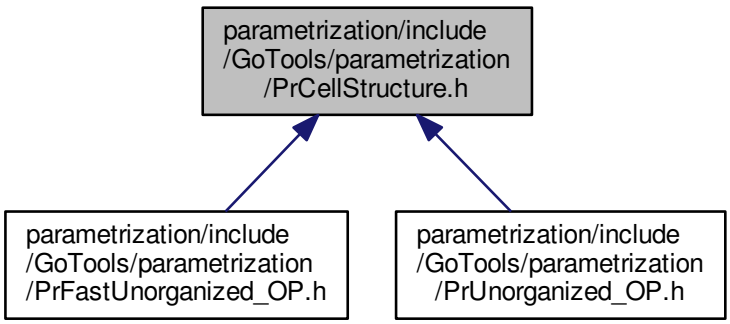
30.2202 parametrization/include/GoTools/parametrization/PrCellStructure.h File Reference

```
#include "GoTools/utils/Array.h"
#include <vector>
```

Include dependency graph for PrCellStructure.h:



This graph shows which files directly or indirectly include this file:



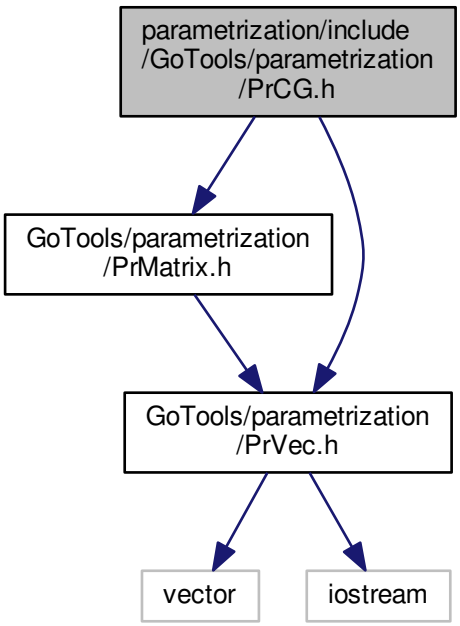
Classes

- class PrCellStructure

30.2203 parametrization/include/GoTools/parametrization/PrCG.h File Reference

```
#include "GoTools/parametrization/PrMatrix.h"
#include "GoTools/parametrization/PrVec.h"
```

Include dependency graph for PrCG.h:



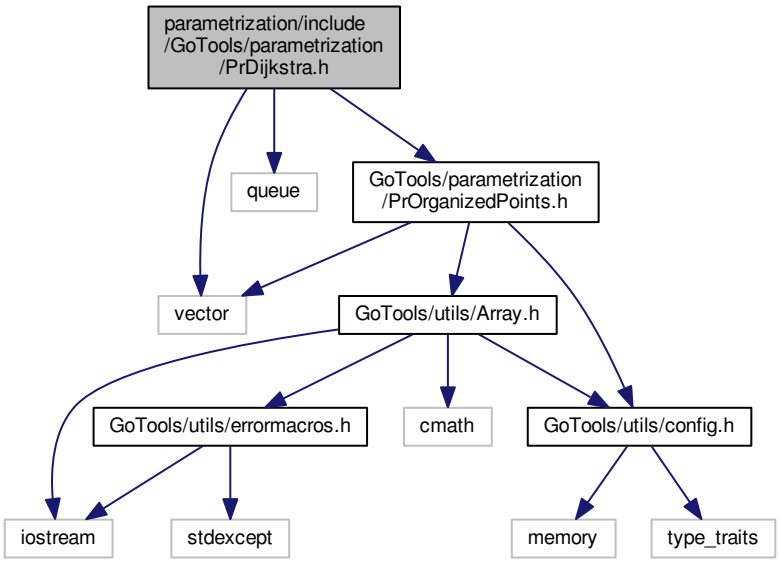
Classes

- class PrCG

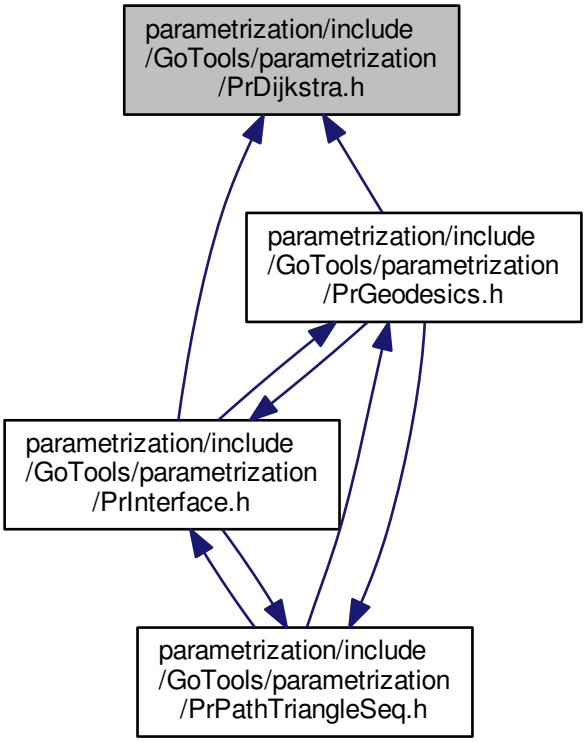
30.2204 parametrization/include/GoTools/parametrization/PrDijkstra.h File Reference

```
#include <vector>
#include <queue>
#include "GoTools/parametrization/PrOrganizedPoints.h"
```

Include dependency graph for PrDijkstra.h:



This graph shows which files directly or indirectly include this file:



Classes

- class HeapNode
- class Dijkstra

Macros

- #define GraphType PrOrganizedPoints

Typedefs

- typedef std::priority_queue< HeapNode, vector< HeapNode >, std::greater< HeapNode > > HeapType

30.2204.1 Macro Definition Documentation

30.2204.1.1 #define GraphType PrOrganizedPoints

Definition at line 46 of file PrDijkstra.h.

30.2204.2 Typedef Documentation

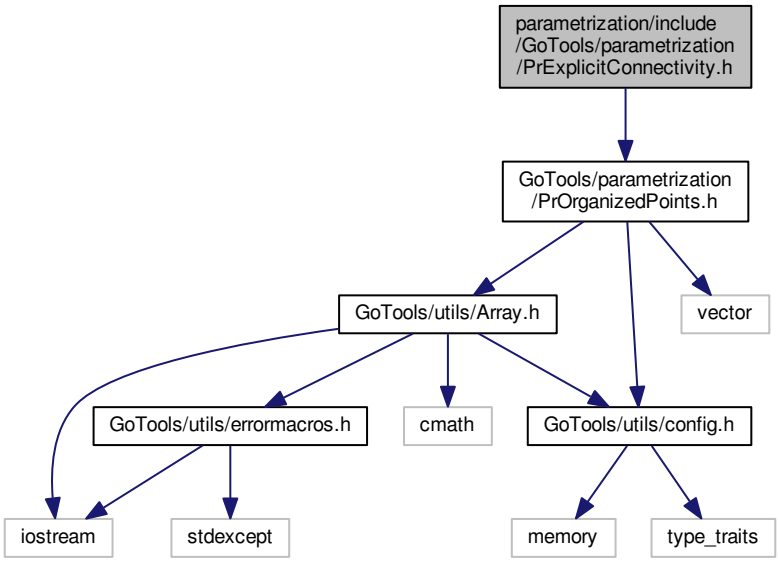
30.2204.2.1 typedef std::priority_queue< HeapNode, vector<HeapNode>, std::greater<HeapNode> > HeapType

Definition at line 70 of file PrDijkstra.h.

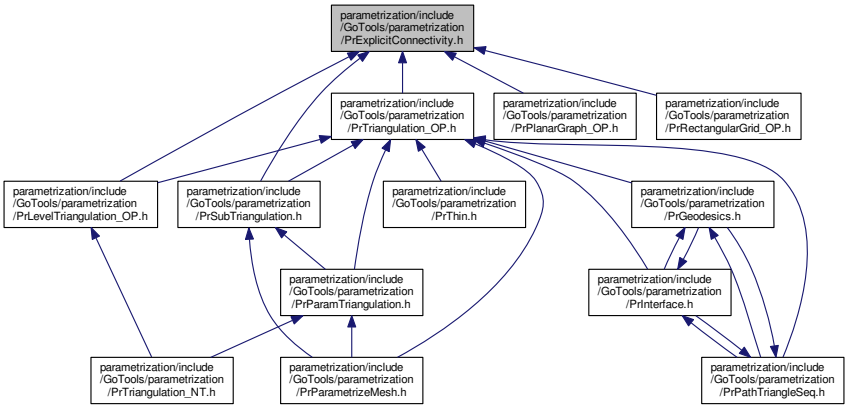
30.2205 parametrization/include/GoTools/parametrization/PrExplicitConnectivity.h File Reference

```
#include "GoTools/parametrization/PrOrganizedPoints.h"
```

Include dependency graph for PrExplicitConnectivity.h:



This graph shows which files directly or indirectly include this file:



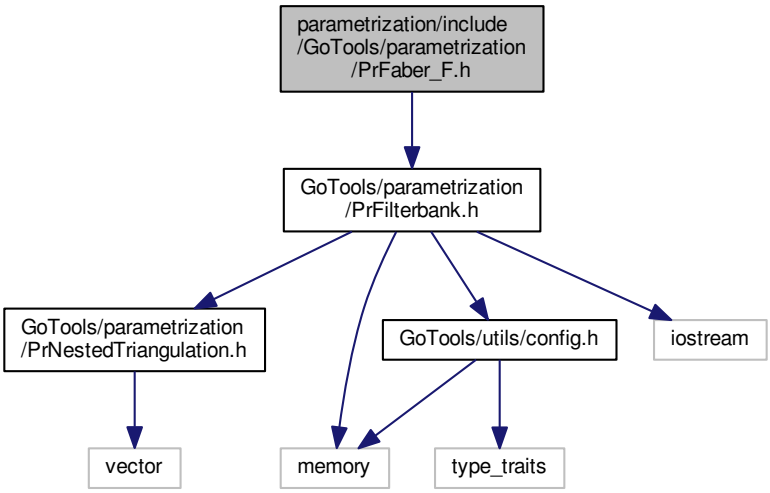
Classes

- class PrExplicitConnectivity

30.2206 parametrization/include/GoTools/parametrization/PrFaber_F.h File Reference

```
#include "GoTools/parametrization/PrFilterbank.h"
```

Include dependency graph for PrFaber_F.h:



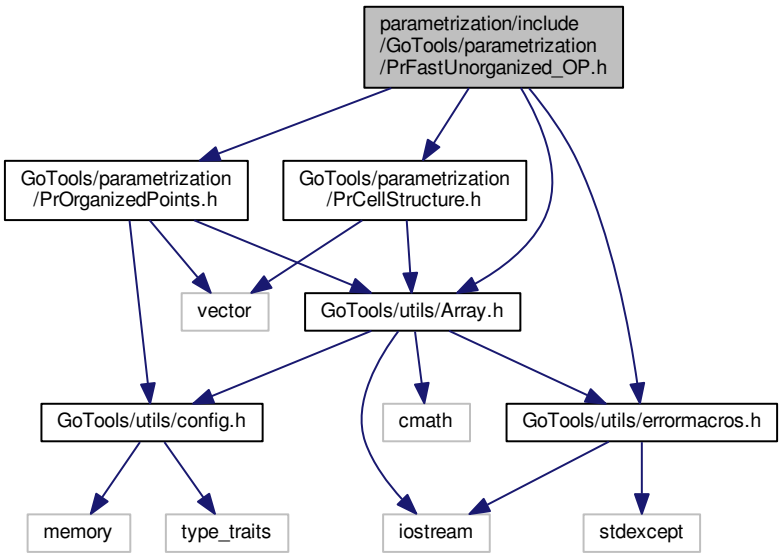
Classes

- class PrFaber_F

30.2207 parametrization/include/GoTools/parametrization/PrFastUnorganized_OP.h File Reference

```
#include "GoTools/parametrization/PrOrganizedPoints.h"
#include "GoTools/parametrization/PrCellStructure.h"
#include "GoTools/utils/Array.h"
#include "GoTools/utils/errormacros.h"
```

Include dependency graph for PrFastUnorganized_OP.h:



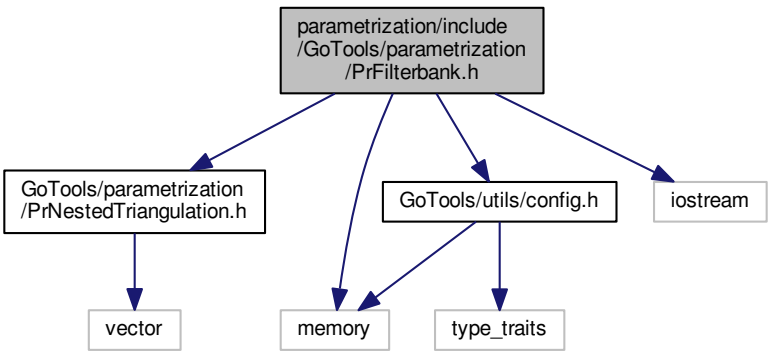
Classes

- class PrFastUnorganized_OP

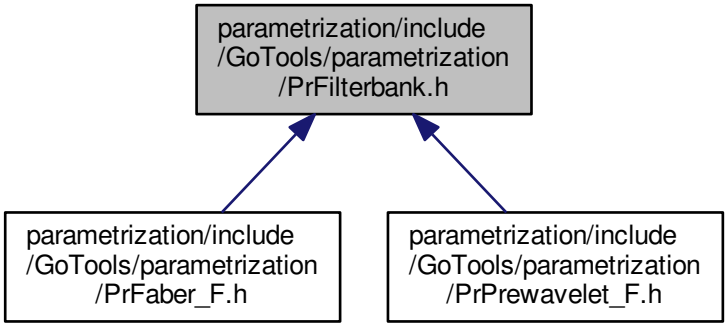
30.2208 parametrization/include/GoTools/parametrization/PrFilterbank.h File Reference

```
#include "GoTools/parametrization/PrNestedTriangulation.h"
#include "GoTools/utils/config.h"
#include <memory>
#include <iostream>
```

Include dependency graph for PrFilterbank.h:



This graph shows which files directly or indirectly include this file:



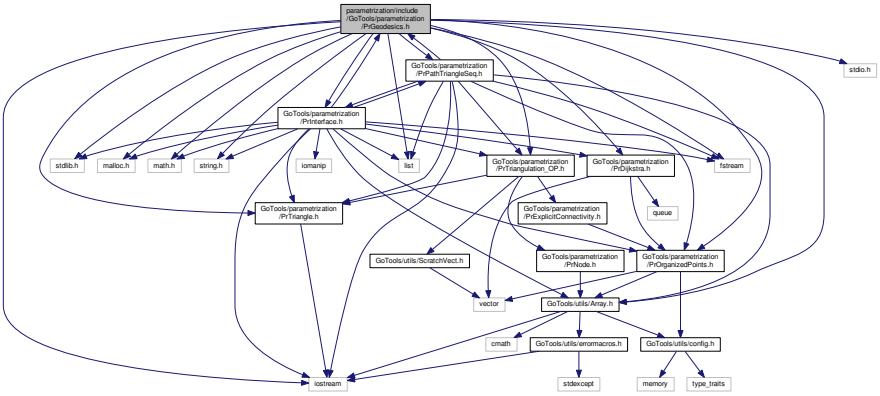
Classes

- class PrFilterbank

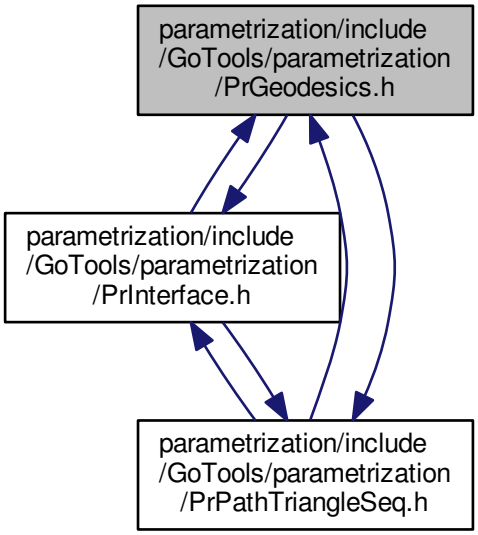
30.2209 parametrization/include/GoTools/parametrization/PrGeodesics.h File Reference

```
#include <stdlib.h>
#include <stdio.h>
#include <malloc.h>
#include <math.h>
#include <string.h>
#include <fstream>
#include <iostream>
#include <list>
#include "GoTools/parametrization/PrPathTriangleSeq.h"
#include "GoTools/parametrization/PrInterface.h"
#include "GoTools/parametrization/PrOrganizedPoints.h"
#include "GoTools/parametrization/PrTriangulation_OP.h"
#include "GoTools/parametrization/PrTriangle.h"
#include "GoTools/parametrization/PrDijkstra.h"
#include "GoTools/utils/Array.h"
```

Include dependency graph for PrGeodesics.h:



This graph shows which files directly or indirectly include this file:



Macros

- #define EPS 1e-8

Functions

- void GeodesicPT (PrTriangulation_OP &triangulation, int sce_vertex, int dest_vertex, vector< Vector3D > &current_path, vector< int > &tr_seq3d)
- std::vector< int > DijkstraPT (PrTriangulation_OP &triangulation, int sce_vertex, int dest_vertex)

- vector< Vector3D > point3D_from_indice (PrTriangulation_OP &t, const vector< int > &ind_path)

  3D points from their indices in the triangulation
- vector< int > tr_crossed_by_path_vertices (PrTriangulation_OP &t, vector< int > &vert_path)
- bool update_triangle_sequence_around_pivot (PrTriangulation_OP &t, vector< int > &tr_seq, int pivot)
- std::list< int > tr_sequence_around_vertex (PrTriangulation_OP &t, int vertex)

  triangles containing a vertex, ordered clockwise.
- std::list< int > tr_sequence_around_vertex (PrTriangulation_OP &t, int vertex, int first_tr)

  triangles containing a vertex, ordered clockwise, starting from first_tr.
- bool pivot_in_new_list (std::list< int > &list_pivots, std::vector< int >::const_iterator &tried_begin, std::vector< int >::const_iterator &tried_end, std::list< int >::iterator &iter_pivot)
- bool pivot_in_new_list (std::list< int > &list_pivots, const std::list< int > &list_pivots_prec, int nb_steps, const vector< double > &lengths, std::list< int >::iterator &iter_pivot, int pivot)
- bool next_pivot (std::list< int > &list_pivots, std::list< int >::iterator &iter_pivot, int prec_pivot)

  the treated pivot belongs to the boundary, consider the next one in the list.
- bool decreasing_length (const int nb_steps, const vector< double > &lengths)
- double dist3D (Vector3D &a, Vector3D &b)

  distance between two R3 points
- double dist2D (Vector2D &a, Vector2D &b)

  distance between two R2 points
- double sqr (double x)
- double length_polygonal_path (const vector< Vector3D > &path)

30.2209.1 Macro Definition Documentation

30.2209.1.1 #define EPS 1e-8

Definition at line 67 of file PrGeodesics.h.

30.2209.2 Function Documentation

30.2209.2.1 bool decreasing_length (const int *nb_steps*, const vector< double > & *lengths*)

30.2209.2.2 std::vector<int> DijkstraPT (PrTriangulation_OP & *triangulation*, int *sce_vertex*, int *dest_vertex*)

Dijkstra computes the shortest path between sce_vertex and dest_vertex, along the edges of the triangulation. It returns the polygonal solution path given by its vertices, vertices of the triangulation.

30.2209.2.3 double dist2D (Vector2D & *a*, Vector2D & *b*)

distance between two R2 points

30.2209.2.4 double dist3D (Vector3D & *a*, Vector3D & *b*)

distance between two R3 points

30.2209.2.5 void GeodesicPT (PrTriangulation_OP & *triangulation,* int *sce_vertex,* int *dest_vertex,* vector< Vector3D > & *current_path,* vector< int > & *tr_seq3d*)

Computes a geodesic path (ie locally shortest path) between the vertices indexed by sce_vertex and dest_vertex. iterativ method consisting in :

1. Initialisation of a path with the Dijkstra method which computes a shortest path following the edges of the triangulation.
2. Improves locally the current path and associated sequence with an update of the sequence around pivot vertices, ie vertices where the path is not locally optimal. properties:

- decreasing length at each step.
- finite number of steps.

Returns the geodesic path as a polygonal line on the triangulated surface and the triangle sequence crossed by this path.

30.2209.2.6 double length_polygonal_path (const vector< Vector3D > & *path*)

30.2209.2.7 bool next_pivot (std::list< int > & *list_pivots,* std::list< int >::iterator & *iter_pivot,* int *prec_pivot*)

the treated pivot belongs to the boundary, consider the next one in the list.

30.2209.2.8 bool pivot_in_new_list (std::list< int > & *list_pivots,* std::vector< int >::const_iterator & *tried_begin,* std::vector< int >::const_iterator & *tried_end,* std::list< int >::iterator & *iter_pivot*)

30.2209.2.9 bool pivot_in_new_list (std::list< int > & *list_pivots,* const std::list< int > & *list_pivots_prec,* int *nb_steps,* const vector< double > & *lengths,* std::list< int >::iterator & *iter_pivot,* int *pivot*)

decide if there are pivot vertices in the new sequence set the pivot vertex where the sequence is to update in iter↩ _pivot. compare the pivot lists before and after updating : if equal : incrementation of the pivot. if not : first pivot in the new list.

30.2209.2.10 vector<Vector3D> point3D_from_indice (PrTriangulation_OP & *t,* const vector< int > & *ind_path*)

3D points from their indices in the triangulation

30.2209.2.11 double sqr (double *x*)

30.2209.2.12 vector<int> tr_crossed_by_path_vertices (PrTriangulation_OP & *t,* vector< int > & *vert_path*)

triangle sequence crossed by a path where the path is given by a list of vert. indices

30.2209.2.13 std::list<int> tr_sequence_around_vertex (PrTriangulation_OP & *t,* int *vertex*)

triangles containing a vertex, ordered clockwise.

30.2209.2.14 std::list<int> tr_sequence_around_vertex (PrTriangulation_OP & *t,* int *vertex,* int *first_tr*)

triangles containing a vertex, ordered clockwise, starting from first_tr.

30.2209.2.15 bool update_triangle_sequence_around_pivot (PrTriangulation_OP & *t,* vector< int > & *tr_seq,* int *pivot*)

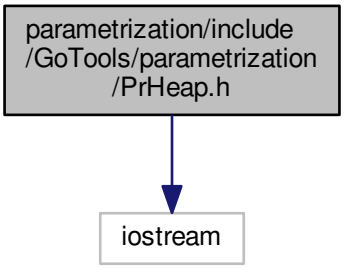
a triangle sequence is modified/updated around a given pivot vertex. returns

- 0 if it is not possible to update (if pivot belongs to the boundary or pivot does not belong to the sequence)
- 1 otherwise

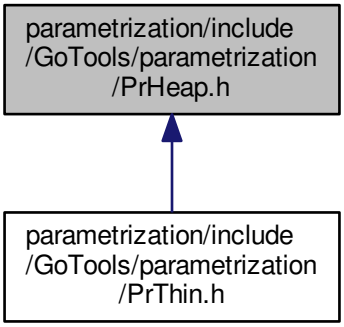
30.2210 parametrization/include/GoTools/parametrization/PrHeap.h File Reference

```
#include <iostream>
```

Include dependency graph for PrHeap.h:



This graph shows which files directly or indirectly include this file:



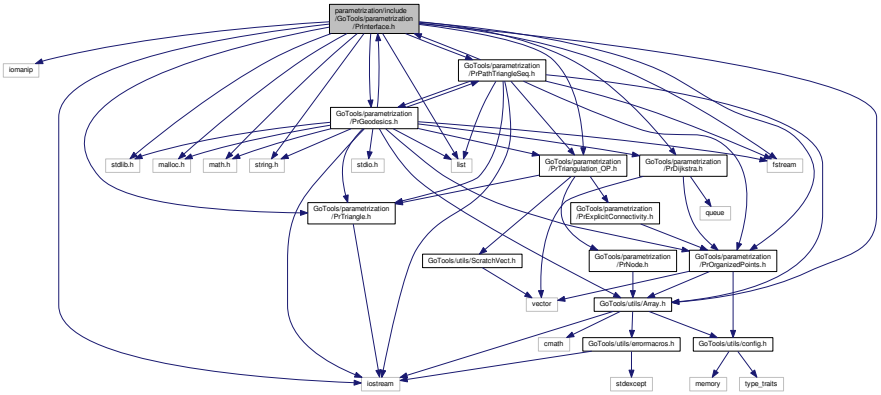
Classes

- class PrHeap

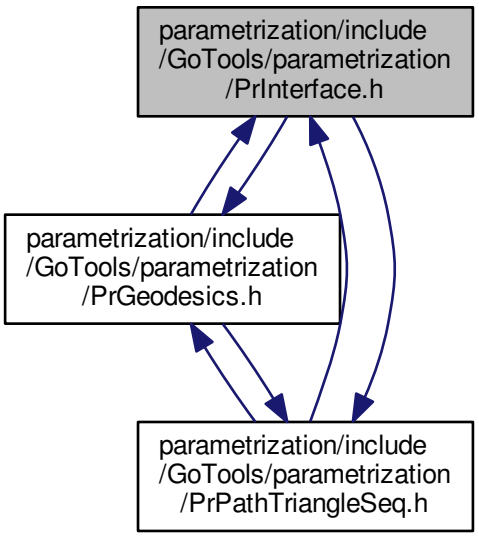
30.2211 parametrization/include/GoTools/parametrization/PrInterface.h File Reference

```
#include <iomanip>
#include <stdlib.h>
#include <malloc.h>
#include <math.h>
#include <string.h>
#include <fstream>
#include <iostream>
#include <list>
#include "GoTools/parametrization/PrPathTriangleSeq.h"
#include "GoTools/parametrization/PrGeodesics.h"
#include "GoTools/parametrization/PrOrganizedPoints.h"
#include "GoTools/parametrization/PrTriangulation_OP.h"
#include "GoTools/parametrization/PrTriangle.h"
#include "GoTools/parametrization/PrDijkstra.h"
#include "GoTools/utils/Array.h"
```

Include dependency graph for PrInterface.h:



This graph shows which files directly or indirectly include this file:



Functions

- void print (vector< int > &v)
- void print (vector< double > &v)
- void print (vector< Vector3D > &v)
- void print (vector< Vector2D > &v)
- void print (vector< PrTriangle > &t)
- void printGeomviewTriangulation (PrTriangulation_OP &t)

  Writing file for the triangulation visualisation with geomview.
- void printGeomviewTriangulation (std::ofstream &os, PrTriangulation_OP &t)

- void printGeomviewTriangleSequence (PrTriangulation_OP &t, vector< int > tr_seq)

  Writing file for the triangle sequence visualisation with geomview.
- void printGeomviewTriangleSequence (std::ofstream &os, PrTriangulation_OP &t, vector< int > tr_seq)
- void printGeomviewPath (vector< Vector3D > &path)

  Writing file for the shortest path visualisation with geomview.
- void printGeomviewPath (std::ofstream &os, vector< Vector3D > &path)
- void print_edges_lengths (vector< int > tr_seq, PrTriangulation_OP &t)
- void print_lengths (const vector< double > &lengths)

30.2211.1 Function Documentation

30.2211.1.1 void print (vector< int > & *v*)

30.2211.1.2 void print (vector< **double** > & *v*)

30.2211.1.3 void print (vector< Vector3D > & *v*)

30.2211.1.4 void print (vector< Vector2D > & *v*)

30.2211.1.5 void print (vector< **PrTriangle** > & *t*)

30.2211.1.6 void print_edges_lengths (vector< int > *tr_seq,* **PrTriangulation_OP** & *t*)

30.2211.1.7 void print_lengths (**const** vector< **double** > & *lengths*)

30.2211.1.8 void printGeomviewPath (vector< Vector3D > & *path*)

Writing file for the shortest path visualisation with geomview.

30.2211.1.9 void printGeomviewPath (std::ofstream & *os,* vector< Vector3D > & *path*)

Writing file for the shortest path visualisation with geomview. Problem in giving the name function as parameter.

30.2211.1.10 void printGeomviewTriangleSequence (**PrTriangulation_OP** & *t,* vector< int > *tr_seq*)

Writing file for the triangle sequence visualisation with geomview.

30.2211.1.11 void printGeomviewTriangleSequence (std::ofstream & *os,* **PrTriangulation_OP** & *t,* vector< int > *tr_seq*)

Writing file for the triangle sequence visualisation with geomview. Problem in giving the name function as parameter.

30.2211.1.12 void printGeomviewTriangulation (**PrTriangulation_OP** & *t*)

Writing file for the triangulation visualisation with geomview.

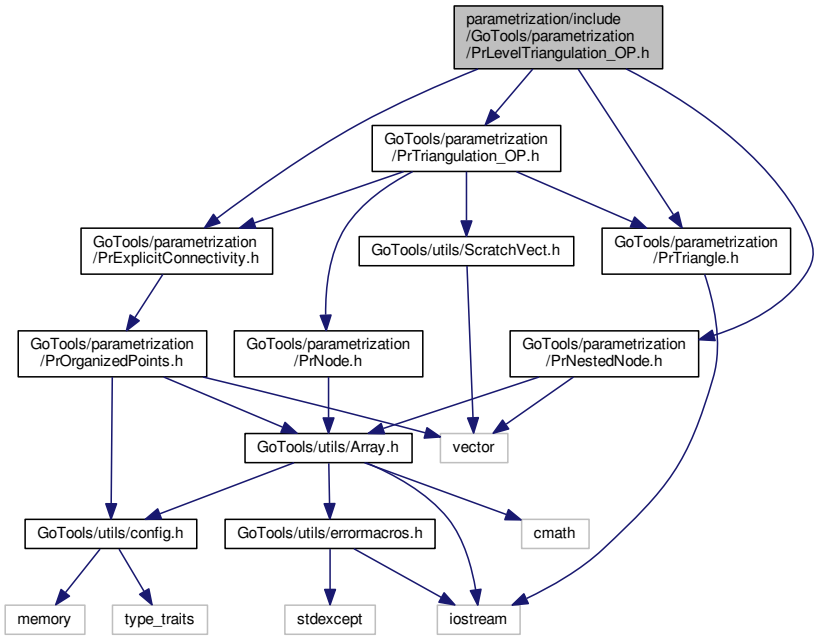
30.2211.1.13 void printGeomviewTriangulation (std::ofstream & *os,* PrTriangulation_OP & *t*)

Writing file for the triangulation visualisation with geomview. Problem in giving the name function as parameter.

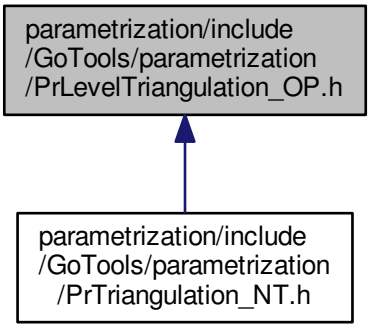
30.2212 parametrization/include/GoTools/parametrization/PrLevelTriangulation_OP.h File Reference

```
#include "GoTools/parametrization/PrExplicitConnectivity.h"
#include "GoTools/parametrization/PrTriangulation_OP.h"
#include "GoTools/parametrization/PrNestedNode.h"
#include "GoTools/parametrization/PrTriangle.h"
```

Include dependency graph for PrLevelTriangulation_OP.h:



This graph shows which files directly or indirectly include this file:



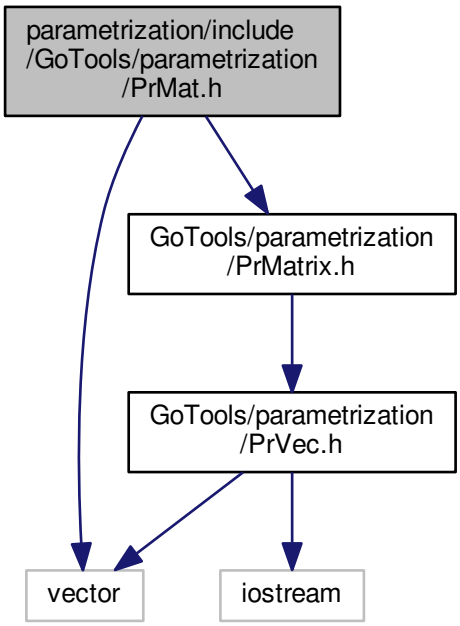
Classes

- class PrLevelTriangulation_OP

30.2213 parametrization/include/GoTools/parametrization/PrMat.h File Reference

```
#include <vector>
#include "GoTools/parametrization/PrMatrix.h"
```

Include dependency graph for PrMat.h:



Classes

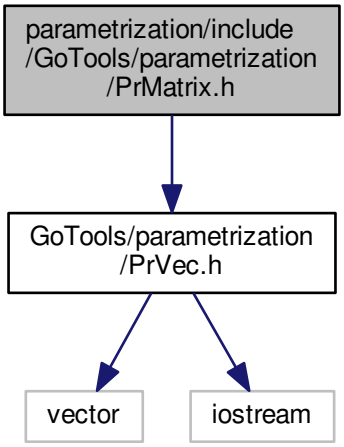
- class PrMat

  This class implements a matrix.

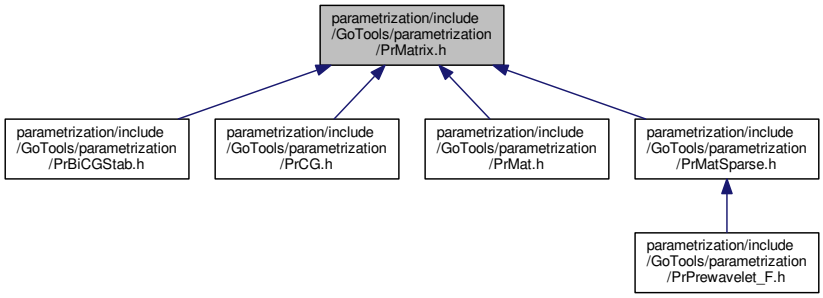
30.2214 parametrization/include/GoTools/parametrization/PrMatrix.h File Reference

```
#include "GoTools/parametrization/PrVec.h"
```

Include dependency graph for PrMatrix.h:



This graph shows which files directly or indirectly include this file:



Classes

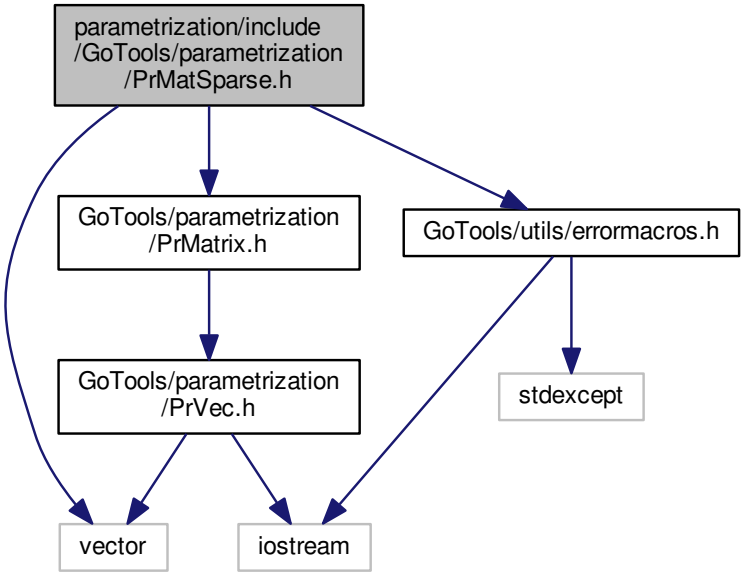
- class PrMatrix

  This class implements a matrix.

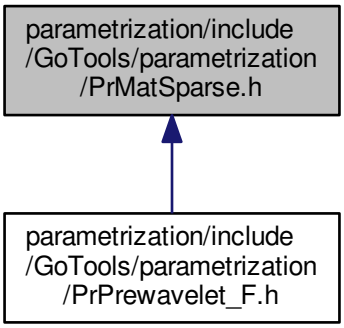
30.2215 parametrization/include/GoTools/parametrization/PrMatSparse.h File Reference

```
#include "GoTools/parametrization/PrMatrix.h"
#include "GoTools/utils/errormacros.h"
#include <vector>
```

Include dependency graph for PrMatSparse.h:



This graph shows which files directly or indirectly include this file:



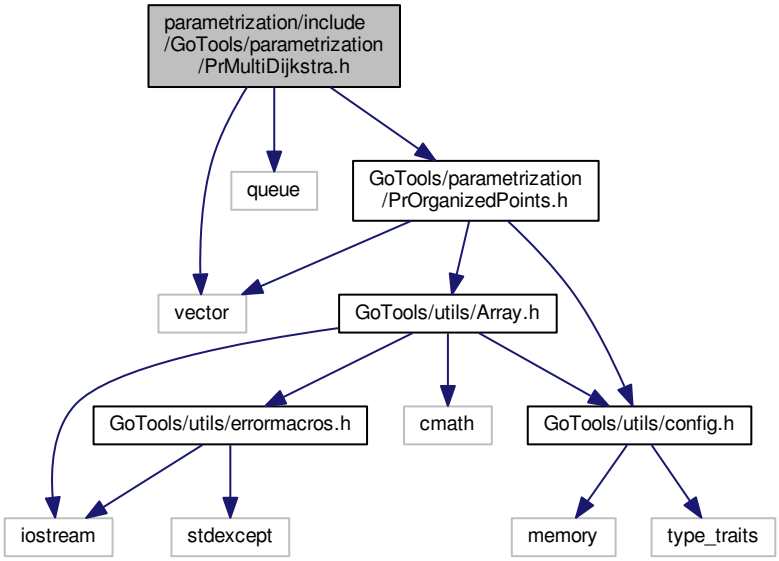
Classes

- class PrMatSparse

30.2216 parametrization/include/GoTools/parametrization/PrMultiDijkstra.h File Reference

```
#include <vector>
#include <queue>
#include "GoTools/parametrization/PrOrganizedPoints.h"
```

Include dependency graph for PrMultiDijkstra.h:



Classes

- class HeapNode2
- class MultiDijkstra

Macros

- #define GraphType PrOrganizedPoints
- #define Point Vector3D

Typedefs

- typedef std::priority_queue< HeapNode2, vector< HeapNode2 >, std::greater< HeapNode2 > > HeapType2

30.2216.1 Macro Definition Documentation

30.2216.1.1 #define GraphType PrOrganizedPoints

Definition at line 47 of file PrMultiDijkstra.h.

30.2216.1.2 #define Point Vector3D

Definition at line 50 of file PrMultiDijkstra.h.

30.2216.2 Typedef Documentation

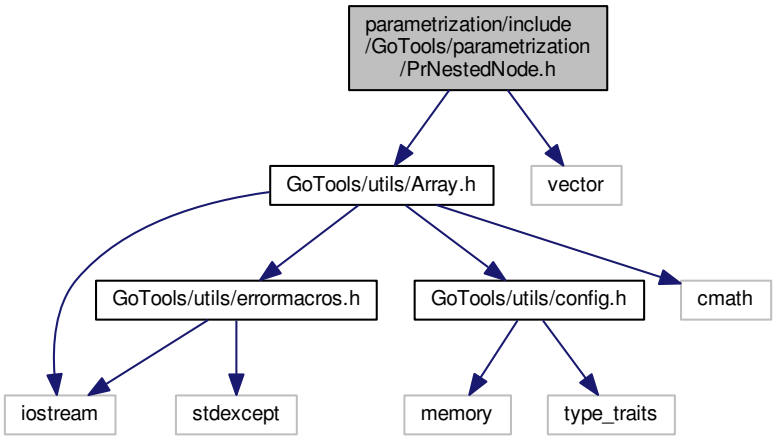
30.2216.2.1 typedef std::priority_queue< HeapNode2, vector<HeapNode2>, std::greater<HeapNode2> > HeapType2

Definition at line 70 of file PrMultiDijkstra.h.

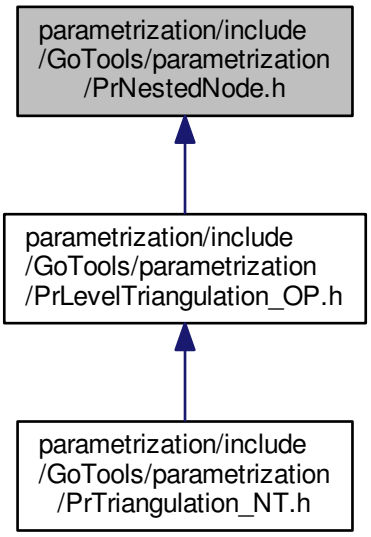
30.2217 parametrization/include/GoTools/parametrization/PrNestedNode.h File Reference

```
#include "GoTools/utils/Array.h"
#include <vector>
```

Include dependency graph for PrNestedNode.h:



This graph shows which files directly or indirectly include this file:



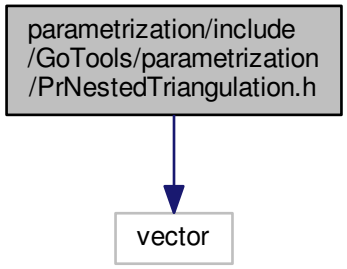
Classes

- class PrNestedNode

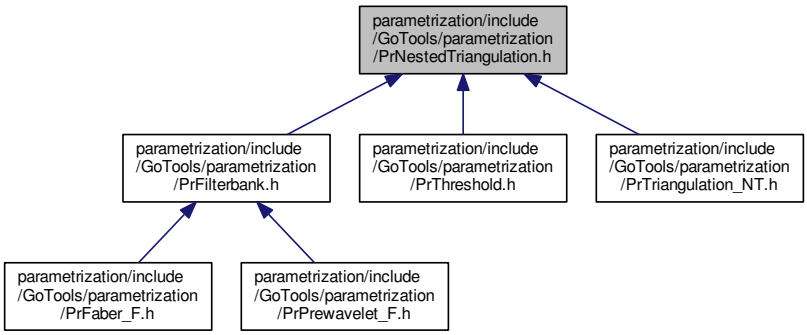
30.2218 parametrization/include/GoTools/parametrization/PrNestedTriangulation.h File Reference

```
#include <vector>
```

Include dependency graph for PrNestedTriangulation.h:



This graph shows which files directly or indirectly include this file:



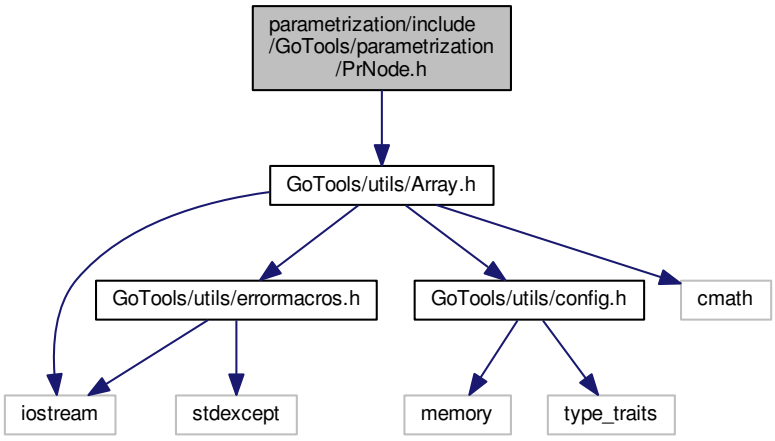
Classes

- class PrNestedTriangulation

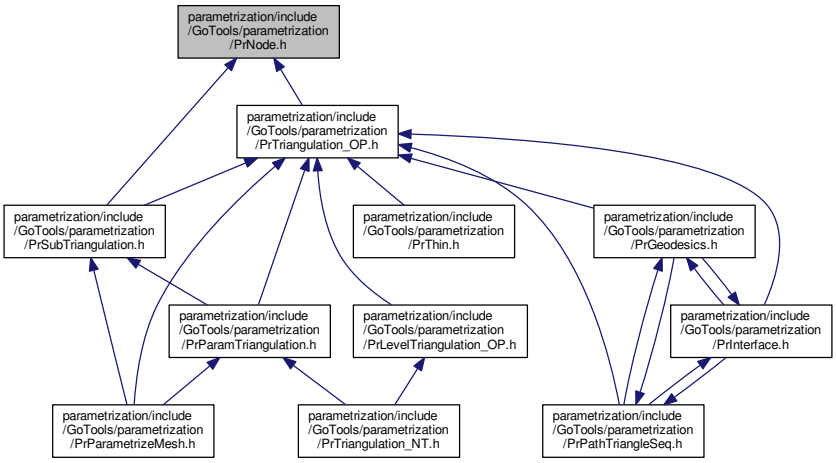
30.2219 parametrization/include/GoTools/parametrization/PrNode.h File Reference

```
#include "GoTools/utils/Array.h"
```

Include dependency graph for PrNode.h:



This graph shows which files directly or indirectly include this file:



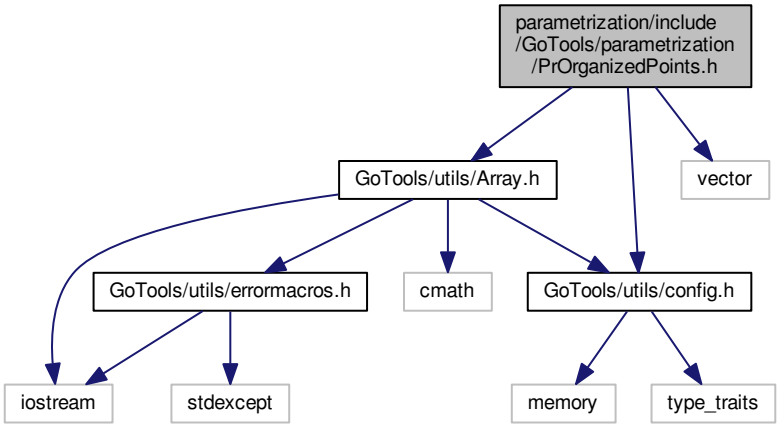
Classes

- class PrNode

30.2220 parametrization/include/GoTools/parametrization/PrOrganizedPoints.h File Reference

```
#include "GoTools/utils/Array.h"
#include <vector>
#include "GoTools/utils/config.h"
```

Include dependency graph for PrOrganizedPoints.h:



This graph shows which files directly or indirectly include this file:

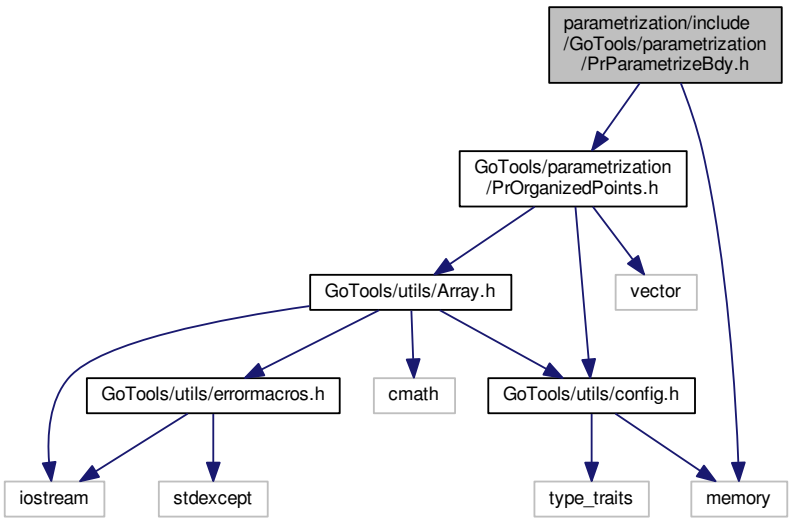
Classes

- class PrOrganizedPoints

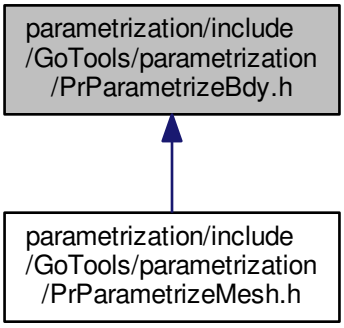
30.2221 parametrization/include/GoTools/parametrization/PrParametrizeBdy.h File Reference

```
#include "GoTools/parametrization/PrOrganizedPoints.h"
#include <memory>
```

Include dependency graph for PrParametrizeBdy.h:



This graph shows which files directly or indirectly include this file:



Classes

- class PrParametrizeBdy

Enumerations

- enum PrBdyParamKind { PrCHORDLENGTHBDY = 1, PrCENTRIPETAL = 2, PrUNIFBDY = 3 }

30.2221.1 Enumeration Type Documentation

30.2221.1.1 enum PrBdyParamKind

Enumerator

PrCHORDLENGTHBDY

PrCENTRIPETAL

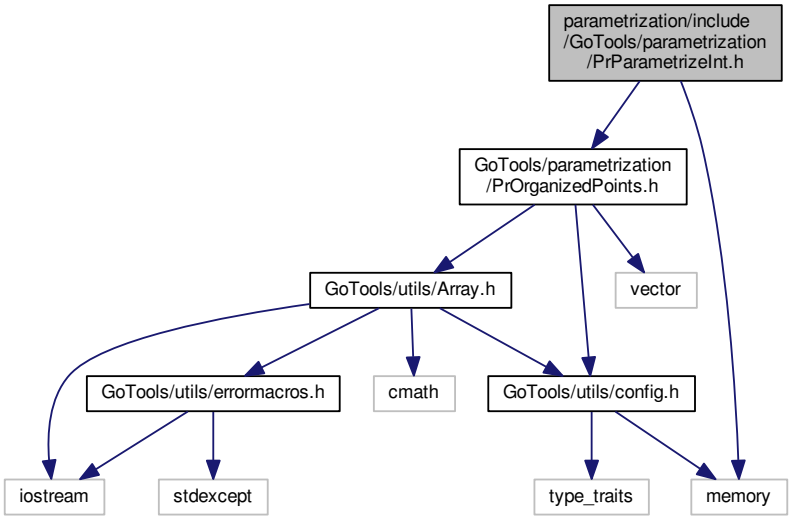
PrUNIFBDY

Definition at line 49 of file PrParametrizeBdy.h.

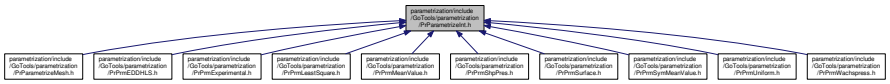
30.2222 parametrization/include/GoTools/parametrization/PrParametrizeInt.h File Reference

```
#include "GoTools/parametrization/PrOrganizedPoints.h"
#include <memory>
```

Include dependency graph for PrParametrizeInt.h:



This graph shows which files directly or indirectly include this file:



Classes

- class PrParametrizeInt

Enumerations

- enum PrParamStartVector { PrBARYCENTRE = 1, PrFROMUV = 2 }

30.2222.1 Enumeration Type Documentation

30.2222.1.1 enum PrParamStartVector

Enumerator

PrBARYCENTRE

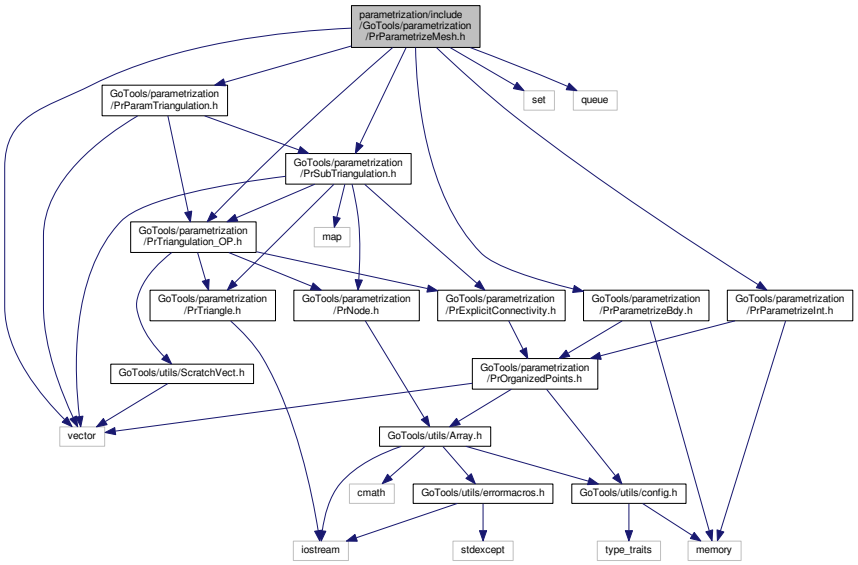
PrFROMUV

Definition at line 48 of file PrParametrizeInt.h.

30.2223 parametrization/include/GoTools/parametrization/PrParametrizeMesh.h File Reference

```
#include "GoTools/parametrization/PrTriangulation_OP.h"
#include "GoTools/parametrization/PrSubTriangulation.h"
#include "GoTools/parametrization/PrParamTriangulation.h"
#include "GoTools/parametrization/PrParametrizeInt.h"
#include "GoTools/parametrization/PrParametrizeBdy.h"
#include <vector>
#include <set>
#include <queue>
```

Include dependency graph for PrParametrizeMesh.h:



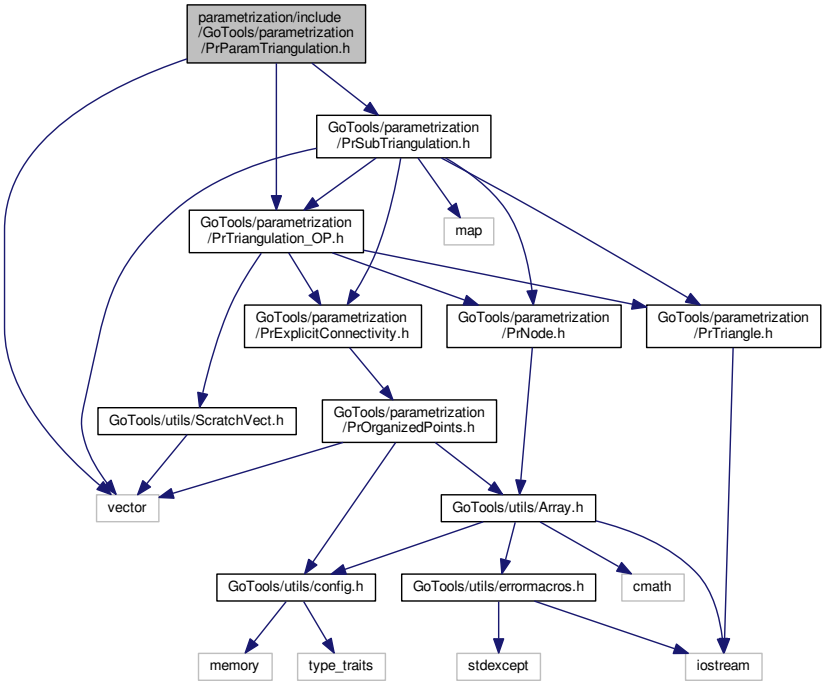
Classes

- class PrParametrizeMesh

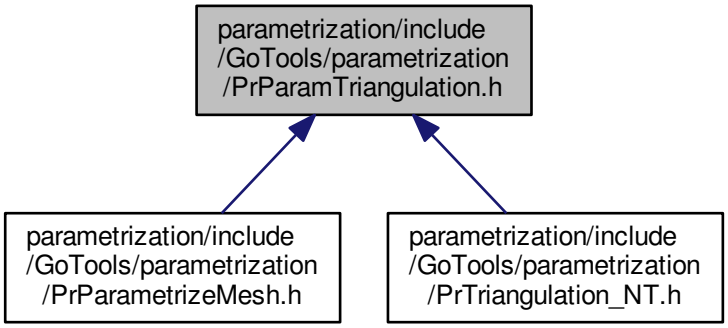
30.2224 parametrization/include/GoTools/parametrization/PrParamTriangulation.h File Reference

```
#include "GoTools/parametrization/PrTriangulation_OP.h"
#include "GoTools/parametrization/PrSubTriangulation.h"
#include <vector>
```

Include dependency graph for PrParamTriangulation.h:



This graph shows which files directly or indirectly include this file:



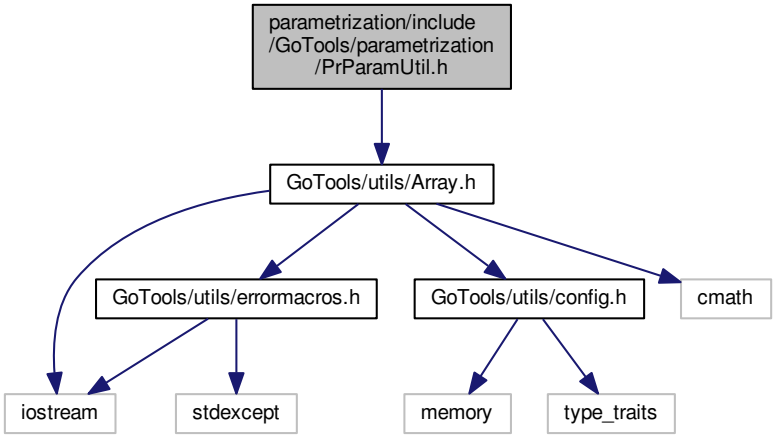
Classes

- class PrParamTriangulation

30.2225 parametrization/include/GoTools/parametrization/PrParamUtil.h File Reference

```
#include "GoTools/utils/Array.h"
```

Include dependency graph for PrParamUtil.h:



Functions

- void baryCoords (double x, double y, double x0, double y0, double x1, double y1, double x2, double y2, double &tau0, double &tau1, double &tau2)
- void baryCoords0 (double &u0, double &v0, double &u1, double &v1, double &u2, double &v2, double &tau0, double &tau1, double &tau2)
- double det (const double &u1, const double &v1, const double &u2, const double &v2)
- double area (const double &x0, const double &y0, const double &x1, const double &y1, const double &x2, const double &y2)
- double area (const Vector3D &a, const Vector3D &b, const Vector3D &c)

  Find the positive area of a 3D triangle.
- void polarCoords (Vector2D v, double &r, double &theta)
- void polarCoords (double u, double v, double &r, double &theta)
- double tanThetaOverTwo (const Vector3D &a, const Vector3D &b, const Vector3D &c)
- double cotangent (const Vector3D &a, const Vector3D &b, const Vector3D &c)

30.2225.1 Function Documentation

30.2225.1.1 double area (const double & *x0,* const double & *y0,* const double & *x1,* const double & *y1,* const double & *x2,* const double & *y2*)

Find the signed area of triangle [(x0,y0),(x1,y1),(x2,y2)], where (x0,y0),(x1,y1),(x2,y2) are assumed to be ordered anticlockwise.

30.2225.1.2 double area (const Vector3D & *a,* const Vector3D & *b,* const Vector3D & *c*)

Find the positive area of a 3D triangle.

30.2225.1.3 void baryCoords (double *x,* double *y,* double *x0,* double *y0,* double *x1,* double *y1,* double *x2,* double *y2,* double & *tau0,* double & *tau1,* double & *tau2*)

Find the three barycentric coordinates of the point (x,y) with respect to the triangle with vertices (x0,y0), (x1,y1), (x2,y2). The three vertices should not be collinear!

30.2225.1.4 void baryCoords0 (double & *u0,* double & *v0,* double & *u1,* double & *v1,* double & *u2,* double & *v2,* double & *tau0,* double & *tau1,* double & *tau2*)

Find the barycentric coordinates of the origin (0,0) with respect to the triangle formed by three vectors (u0,v0),(u0,v1),(u0,v2). This is bit more efficient than calling baryCoords.

30.2225.1.5 double cotangent (const Vector3D & *a,* const Vector3D & *b,* const Vector3D & *c*)

30.2225.1.6 double det (const double & *u1,* const double & *v1,* const double & *u2,* const double & *v2*)

30.2225.1.7 void polarCoords (Vector2D *v,* double & *r,* double & *theta*)

Represent a vector v in polar coordinates r(cos(theta),sin(theta)) where 0 <= r < 2 pi.

30.2225.1.8 void polarCoords (double *u,* double *v,* double & *r,* double & *theta*)

Represent a vector (u,v) in polar coordinates r(cos(theta),sin(theta)) where 0 <= r < 2 pi.

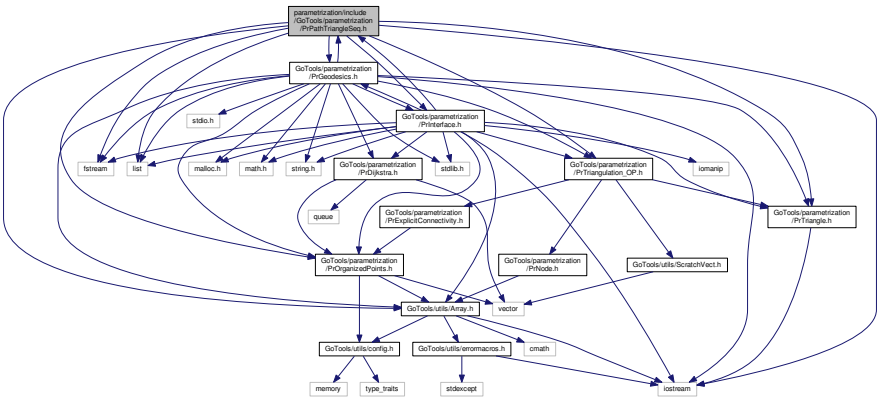
30.2225.1.9 double tanThetaOverTwo (const Vector3D & *a,* const Vector3D & *b,* const Vector3D & *c*)

Return tangent of half the angle between vectors b-a and c-a without using trig functions. Use fact that tan(alpha/2) = (1-cos(alpha)) / sin(alpha). and use scalar and dot products to get cos(alpha) and sin(alpha).

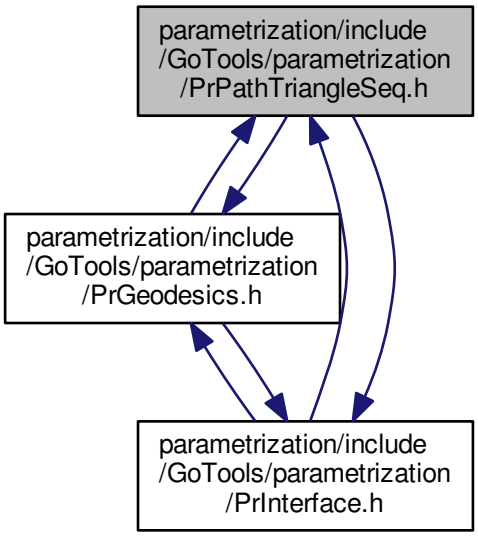
30.2226 parametrization/include/GoTools/parametrization/PrPathTriangleSeq.h File Reference

```
#include <fstream>
#include <iostream>
#include <list>
#include "GoTools/parametrization/PrOrganizedPoints.h"
#include "GoTools/parametrization/PrTriangulation_OP.h"
#include "GoTools/parametrization/PrGeodesics.h"
#include "GoTools/parametrization/PrInterface.h"
#include "GoTools/parametrization/PrTriangle.h"
#include "GoTools/utils/Array.h"
```

Include dependency graph for PrPathTriangleSeq.h:



This graph shows which files directly or indirectly include this file:



Classes

- class EdgeType
- class UnfNodeType
- class PathType

Functions

- void printNode (vector< UnfNodeType > &v)

- vector< Vector3D > shortest_path_triangle_sequence (const PrTriangulation_OP &t, int sce_vertex, int dest_vertex, const vector< int > &tr_seq3d, list< int > &list_pivots, double &length)
- void shortest_path_triangle_sequence (const PrTriangulation_OP &t, const int &sce_vertex, const int &dest_vertex, vector< int > &tr_seq3d, list< int > &list_pivots, std::vector< EdgeType > &edge_seq3d, std::vector< double > &ratio_on_edge, double &length)
- void path_3Dpts_from_ratio_on_edge (const PrTriangulation_OP &t, std::vector< Go::Vector3D > &sh_path, const std::vector< double > &ratio_on_edge, const std::vector< EdgeType > &edge_seq3d)
- Go::Vector3D pt3D_from_ratio_on_edge (double r, Go::Vector3D A, Go::Vector3D B)

  Computes a 3D point from its position (ratio) on an edge.
- void path_2Dpts_from_ratio_on_edge (const vector< UnfNodeType > &nodes_unf, vector< Vector2D > &path, const vector< double > &ratio_on_edge, const vector< EdgeType > &edge_seq2d)
- Vector2D pt2D_from_ratio_on_edge (double r, Vector2D a, Vector2D b)

  Computes a 2D point from its position (ratio) on an edge.
- list< int > pivots3D_from_pivots_in_unf_seq (const list< int > &list_pivots_unf, const vector< UnfNodeType > &nodes_unf)
- list< double > deviation_from_pivots (const list< int > &list_pivots_unf, const vector< UnfNodeType > &nodes_unf)
- double abs_val (double a)

  absolute value
- vector< double > shortest_path_triangle_sequence_2D (const PrTriangulation_OP &t, const int sce_vertex, const int dest_vertex, const int sce_vertexUnf, int dest_vertexUnf, const std::vector< int > &tr_seq3d, std::vector< PrTriangle > &tr_seq_unf, std::list< int > &list_pivots_unf, std::vector< UnfNodeType > nodes_unf, double &length)
- void print_list_int (std::list< int > &list_pivots_unf)
- void print_deviation (std::list< double > &list_deviation)
- double length_polygonal_path (const list< int > &list_pivots_unf, vector< UnfNodeType > &nodes_unf)
- std::vector< double > path_ratio_on_edge_from_pivots (std::list< int > &list_pivots_unf, std::vector< EdgeType > &edge_seq_unf, const std::vector< UnfNodeType > &nodes_unf)
- double segment_intersection (Go::Vector2D a, Go::Vector2D b, Go::Vector2D c, Go::Vector2D d)
- int line_intersection (Go::Vector2D a, Go::Vector2D b, Go::Vector2D c, Go::Vector2D d, Go::Vector2D &i)
- void path_to_edge (const int sce_vertex_unf, int i, std::vector< PathType > &p, const std::vector< UnfNodeType > &nodes_unf, const std::vector< PrTriangle > &tr_seq_unf, std::vector< EdgeType > &edge_seq_unf)
- std::vector< EdgeType > edge_sequence (const std::vector< int > &tr_seq, const PrTriangulation_OP &t)
- std::vector< EdgeType > edge_sequence (std::vector< PrTriangle > tr_seq)
- EdgeType common_edge (PrTriangle t1, PrTriangle t2)

  common edge between two triangles, with the nodes given in the order of t1
- void unfolding_triangle_sequence (const PrTriangulation_OP &t, const vector< int > &tr_seq3d, vector< PrTriangle > &tr_seq_unf, const vector< EdgeType > &edge_seq3d, vector< EdgeType > &edge_seq_unf, vector< UnfNodeType > &nodes_unf)
- void unfolding_first_triangle (const PrTriangulation_OP &t, const vector< int > &tr_seq, vector< PrTriangle > &tr_seq_unf, vector< UnfNodeType > &nodes_unf)
- void unfolding_vertex (const PrTriangulation_OP &t, const vector< int > &tr_seq3d, vector< PrTriangle > &tr_seq_unf, const int vertex, int &vertex_unf)
- void local_frame (Go::Vector3D a, Go::Vector3D b, Go::Vector3D c, Go::Vector3D &U, Go::Vector3D &V, Go::Vector3D &W)

  local frame of triangle ABC
- Go::Vector3D vector_W (Go::Vector3D a, Go::Vector3D b, Go::Vector3D c)

  axis and normal vector in the current triangle plane for the local frame
- Go::Vector3D vector_U (const Go::Vector3D W)

  first axis/vector in the current triangle plane for the local frame
- Go::Vector3D vector_V (const Go::Vector3D W, const Go::Vector3D U)

  second axis/vector in the current triangle plane for the local frame
- Go::Vector3D local_coordinates (const Go::Vector3D a, const Go::Vector3D &U, const Go::Vector3D &V, const Go::Vector3D &W)

local coordinates of a vector A in an axis frame given by (U, V, W)

- double angle (const Go::Vector2D &a, const Go::Vector2D &b, const Go::Vector2D &c, const Go::Vector2D &d)

  angle between two vectors AB and CD in the plane
- void rotation2D (const Go::Vector2D a, const double theta, const Go::Vector2D c, Go::Vector2D &vect)
- void axial_symmetry (const Go::Vector2D c, const Go::Vector2D a, const Go::Vector2D b, Go::Vector2D &v)
- int third_vertex (PrTriangle Tr, EdgeType e)

  third vertex pf triangle t not belonging to edge e
- int same_side (const Go::Vector2D pt1, const Go::Vector2D pt2, const Go::Vector2D ptA, const Go::Vector2D ptB)

  check if pt1 and pt2 are both on the same side of [ptA ptB]
- double vect_prod2D (Go::Vector2D a, Go::Vector2D b, Go::Vector2D c, Go::Vector2D d)
- void printUnfoldedSequence (std::ofstream &os, std::vector< UnfNodeType > &nodes_unf, std::vector< PrTriangle > &tr_seq_unf)
- void printUnfoldedPath (std::ofstream &os, std::vector< UnfNodeType > &nodes_unf, std::list< int > &list_pivots_unf)
- void printUnfoldedPath (std::ofstream &os, std::vector< Go::Vector2D > path)
- void printUnfoldedObjects (std::ofstream &os, std::vector< UnfNodeType > &nodes_unf, std::vector< PrTriangle > &tr_seq_unf, std::list< int > &list_pivots_unf)
- void print_edges_lengths (std::vector< PrTriangle > tr, std::vector< UnfNodeType > nodes_unf)

  print the lengths of the edges of the triangles in the unfolded sequence
- void print_triangle_sequence (std::vector< PrTriangle > tr, std::vector< UnfNodeType > nodes_unf)
- void print_tr_vertices (std::vector< int > &tr, PrTriangulation_OP &t)

30.2226.1 Function Documentation

30.2226.1.1 double abs_val (double *a*)

absolute value

30.2226.1.2 double angle (const Go::Vector2D & *a*, const Go::Vector2D & *b*, const Go::Vector2D & *c*, const Go::Vector2D & *d*)

angle between two vectors AB and CD in the plane

30.2226.1.3 void axial_symmetry (const Go::Vector2D *c*, const Go::Vector2D *a*, const Go::Vector2D *b*, Go::Vector2D & *v*)

30.2226.1.4 EdgeType common_edge (PrTriangle *t1*, PrTriangle *t2*)

common edge between two triangles, with the nodes given in the order of t1

30.2226.1.5 list<double> deviation_from_pivots (const list< int > & *list_pivots_unf*, const vector< UnfNodeType > & *nodes_unf*)

At each interior pivot, the path is deviated from the straight line. This function computes the deviation angles.

30.2226.1.6 std::vector<EdgeType> edge_sequence (const std::vector< int > & *tr_seq,* const PrTriangulation_OP & *t*)

given a triangle sequence, computes an edge sequence consisting of the common edges to two successiv triangles in the sequence

30.2226.1.7 std::vector<EdgeType> edge_sequence (std::vector< PrTriangle > *tr_seq*)

given a triangle sequence, computes an edge sequence consisting of the common edges to two successiv triangles in the sequence

30.2226.1.8 double length_polygonal_path (const list< int > & *list_pivots_unf,* vector< UnfNodeType > & *nodes_unf*)

30.2226.1.9 int line_intersection (Go::Vector2D *a,* Go::Vector2D *b,* Go::Vector2D *c,* Go::Vector2D *d,* Go::Vector2D & *i*)

computes i, the intersection between (ab) and (cd) returns 1 if there is a unique solution, 2 if the lines are the same, 0 if they are parallel

30.2226.1.10 Go::Vector3D local_coordinates (const Go::Vector3D *a,* const Go::Vector3D & *U,* const Go::Vector3D & *V,* const Go::Vector3D & *W*)

local coordinates of a vector A in an axis frame given by (U, V, W)

30.2226.1.11 void local_frame (Go::Vector3D *a,* Go::Vector3D *b,* Go::Vector3D *c,* Go::Vector3D & *U,* Go::Vector3D & *V,* Go::Vector3D & *W*)

local frame of triangle ABC

30.2226.1.12 void path_2Dpts_from_ratio_on_edge (const vector< UnfNodeType > & *nodes_unf,* vector< Vector2D > & *path,* const vector< double > & *ratio_on_edge,* const vector< EdgeType > & *edge_seq2d*)

Computes the 2D points of the path from their position (ratio) on the edges of the sequence

30.2226.1.13 void path_3Dpts_from_ratio_on_edge (const PrTriangulation_OP & *t,* std::vector< Go::Vector3D > & *sh_path,* const std::vector< double > & *ratio_on_edge,* const std::vector< EdgeType > & *edge_seq3d*)

Computes the 3D points of the path from their position (ratio) on the edges of the sequence.

30.2226.1.14 std::vector<double> path_ratio_on_edge_from_pivots (std::list< int > & *list_pivots_unf,* std::vector< EdgeType > & *edge_seq_unf,* const std::vector< UnfNodeType > & *nodes_unf*)

computes the intersection of the path, given by the pivots, with the edge sequence, returns the ratio/position on each edge

30.2226.1.15 void path_to_edge (const int *sce_vertex_unf,* int *i,* std::vector< **PathType** > & *p,* const std::vector< **UnfNodeType** > & *nodes_unf,* const std::vector< **PrTriangle** > & *tr_seq_unf,* std::vector< **EdgeType** > & *edge_seq_unf*)

Computes the path from a source point to an edge of the 2d sequence:. This path is given by:.

- a l_path_, polygonal chain of vertices to the left vertex of the edge.
- a r_path_, polygonal chain of vertices to the right vertex of the edge.
- funnel_, common part of the path.

30.2226.1.16 list<int> pivots3D_from_pivots_in_unf_seq (const list< int > & *list_pivots_unf,* const vector< **UnfNodeType** > & *nodes_unf*)

computes the 3d pivot list corresponding to the pivot in the unfolded sequence. The pivots are the vertices of the shortest path. The pivots in the unfolded sequence contain all the vertices of the path (source and dest. too). The 3d pivots do not contain the source and dest. vertices.

30.2226.1.17 void print_deviation (std::list< **double** > & *list_deviation*)

30.2226.1.18 void print_edges_lengths (std::vector< **PrTriangle** > *tr,* std::vector< **UnfNodeType** > *nodes_unf*)

print the lengths of the edges of the triangles in the unfolded sequence

30.2226.1.19 void print_list_int (std::list< int > & *list_pivots_unf*)

30.2226.1.20 void print_tr_vertices (std::vector< int > & *tr,* **PrTriangulation_OP** & *t*)

30.2226.1.21 void print_triangle_sequence (std::vector< **PrTriangle** > *tr,* std::vector< **UnfNodeType** > *nodes_unf*)

30.2226.1.22 void printNode (vector< **UnfNodeType** > & *v*)

30.2226.1.23 void printUnfoldedObjects (std::ofstream & *os,* std::vector< **UnfNodeType** > & *nodes_unf,* std::vector< **PrTriangle** > & *tr_seq_unf,* std::list< int > & *list_pivots_unf*)

30.2226.1.24 void printUnfoldedPath (std::ofstream & *os,* std::vector< **UnfNodeType** > & *nodes_unf,* std::list< int > & *list_pivots_unf*)

30.2226.1.25 void printUnfoldedPath (std::ofstream & *os,* std::vector< **Go::Vector2D** > *path*)

30.2226.1.26 void printUnfoldedSequence (std::ofstream & *os,* std::vector< **UnfNodeType** > & *nodes_unf,* std::vector< **PrTriangle** > & *tr_seq_unf*)

30.2226.1.27 Vector2D pt2D_from_ratio_on_edge (**double** *r,* Vector2D *a,* Vector2D *b*)

Computes a 2D point from its position (ratio) on an edge.

30.2226.1.28 **Go::Vector3D pt3D_from_ratio_on_edge (double *r,* Go::Vector3D *A,* Go::Vector3D *B*)**

Computes a 3D point from its position (ratio) on an edge.

30.2226.1.29 **void rotation2D (const Go::Vector2D *a,* const double *theta,* const Go::Vector2D *c,* Go::Vector2D & *vect*)**

30.2226.1.30 **int same_side (const Go::Vector2D *pt1,* const Go::Vector2D *pt2,* const Go::Vector2D *ptA,* const Go::Vector2D *ptB*)**

check if pt1 and pt2 are both on the same side of [ptA ptB]

30.2226.1.31 **double segment_intersection (Go::Vector2D *a,* Go::Vector2D *b,* Go::Vector2D *c,* Go::Vector2D *d*)**

intersection between [ab] and [cd]. returns the position of the intersection on the oriented segment [cd] given by a ratio

30.2226.1.32 **vector<Vector3D> shortest_path_triangle_sequence (const PrTriangulation_OP & *t,* int *sce_vertex,* int *dest_vertex,* const vector< int > & *tr_seq3d,* list< int > & *list_pivots,* double & *length*)**

input: triangulation and triangle sequence. output:

- shortest path in that sequence = polygonal line given by its 3D vertices.
- list of pivot vertices, ie vertices of the triangulation belonging to this shortest path.
- length of this shortest path.

30.2226.1.33 **void shortest_path_triangle_sequence (const PrTriangulation_OP & *t,* const int & *sce_vertex,* const int & *dest_vertex,* vector< int > & *tr_seq3d,* list< int > & *list_pivots,* std::vector< EdgeType > & *edge_seq3d,* std::vector< double > & *ratio_on_edge,* double & *length*)**

input: triangulation and triangle sequence. output:

- shortest path in that sequence = polygonal line given by its 3D vertices.
- list of pivot vertices, ie vertices of the triangulation. belonging to this shortest path.
- length of this shortest path.

30.2226.1.34 **vector<double> shortest_path_triangle_sequence_2D (const PrTriangulation_OP & *t,* const int *sce_vertex,* const int *dest_vertex,* const int *sce_vertexUnf,* int *dest_vertexUnf,* const std::vector< int > & *tr_seq3d,* std::vector< PrTriangle > & *tr_seq_unf,* std::list< int > & *list_pivots_unf,* std::vector< UnfNodeType > *nodes_unf,* double & *length*)**

computes the shortes path in an ordered 2d seuqence of triangles, corresponding to a 3d seuqence that was unfolded

30.2226.1.35 int third_vertex (PrTriangle *Tr,* EdgeType *e*)

third vertex pf triangle t not belonging to edge e

30.2226.1.36 void unfolding_first_triangle (const PrTriangulation_OP & *t,* const vector< int > & *tr_seq,* vector< PrTriangle > & *tr_seq_unf,* vector< UnfNodeType > & *nodes_unf*)

first triangle unfolded with 1st vertex = (0,0), 2nd on the x-axis, 3rd in the y>0 half plane

30.2226.1.37 void unfolding_triangle_sequence (const PrTriangulation_OP & *t,* const vector< int > & *tr_seq3d,* vector< PrTriangle > & *tr_seq_unf,* const vector< EdgeType > & *edge_seq3d,* vector< EdgeType > & *edge_seq_unf,* vector< UnfNodeType > & *nodes_unf*)

unfolding of a sequence of triangle 3D from a triangulation. returns a set of unfolded nodes, a sequence of unfolded triangles and a sequence of unfolded edges

30.2226.1.38 void unfolding_vertex (const PrTriangulation_OP & *t,* const vector< int > & *tr_seq3d,* vector< PrTriangle > & *tr_seq_unf,* const int *vertex,* int & *vertex_unf*)

associates the unfolded node to a vertex of the sequence (for example for the source and destination vertices)

30.2226.1.39 double vect_prod2D (Go::Vector2D *a,* Go::Vector2D *b,* Go::Vector2D *c,* Go::Vector2D *d*)

30.2226.1.40 Go::Vector3D vector_U (const Go::Vector3D *W*)

first axis/vector in the current triangle plane for the local frame

30.2226.1.41 Go::Vector3D vector_V (const Go::Vector3D *W,* const Go::Vector3D *U*)

second axis/vector in the current triangle plane for the local frame

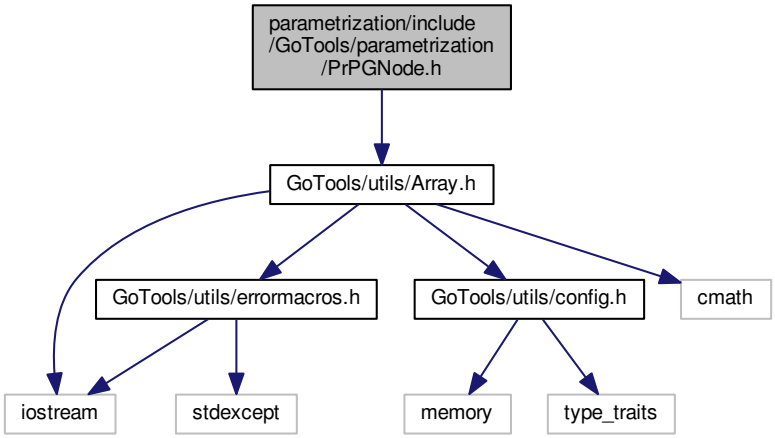
30.2226.1.42 Go::Vector3D vector_W (Go::Vector3D *a,* Go::Vector3D *b,* Go::Vector3D *c*)

axis and normal vector in the current triangle plane for the local frame

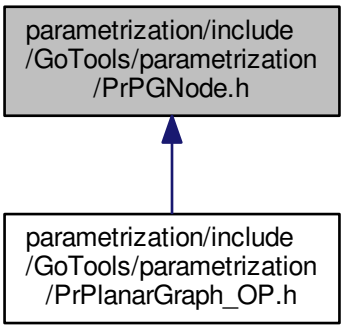
30.2227 parametrization/include/GoTools/parametrization/PrPGNode.h File Reference

```
#include "GoTools/utils/Array.h"
```

Include dependency graph for PrPGNode.h:



This graph shows which files directly or indirectly include this file:



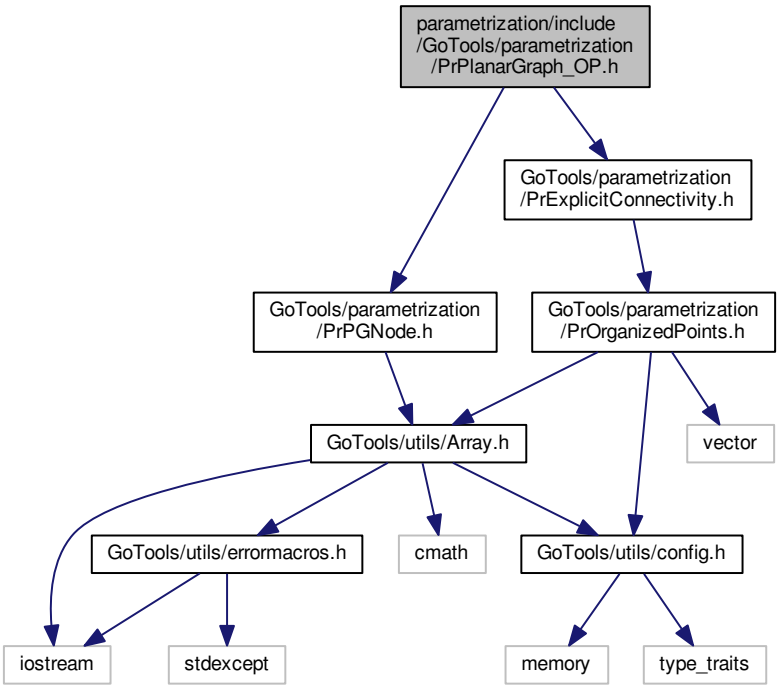
Classes

- class PrPGNode

30.2228 parametrization/include/GoTools/parametrization/PrPlanarGraph_OP.h File Reference

```
#include "GoTools/parametrization/PrExplicitConnectivity.h"
#include "GoTools/parametrization/PrPGNode.h"
```

Include dependency graph for PrPlanarGraph_OP.h:



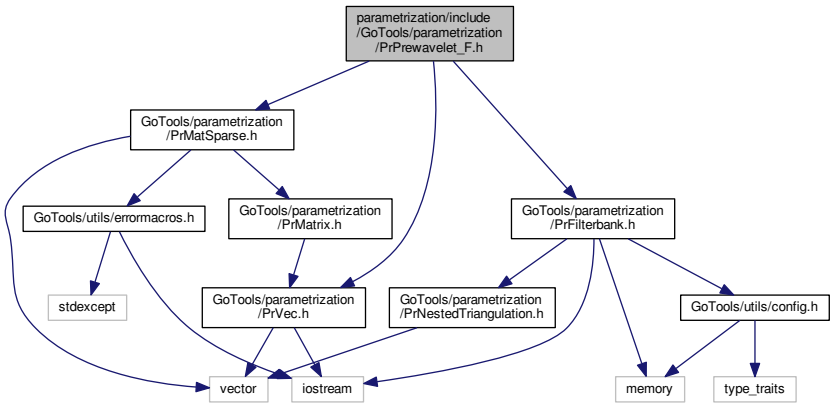
Classes

- class PrPlanarGraph_OP

30.2229 parametrization/include/GoTools/parametrization/PrPrewavelet_F.h File Reference

```
#include "GoTools/parametrization/PrFilterbank.h"
#include "GoTools/parametrization/PrMatSparse.h"
#include "GoTools/parametrization/PrVec.h"
```

Include dependency graph for PrPrewavelet_F.h:



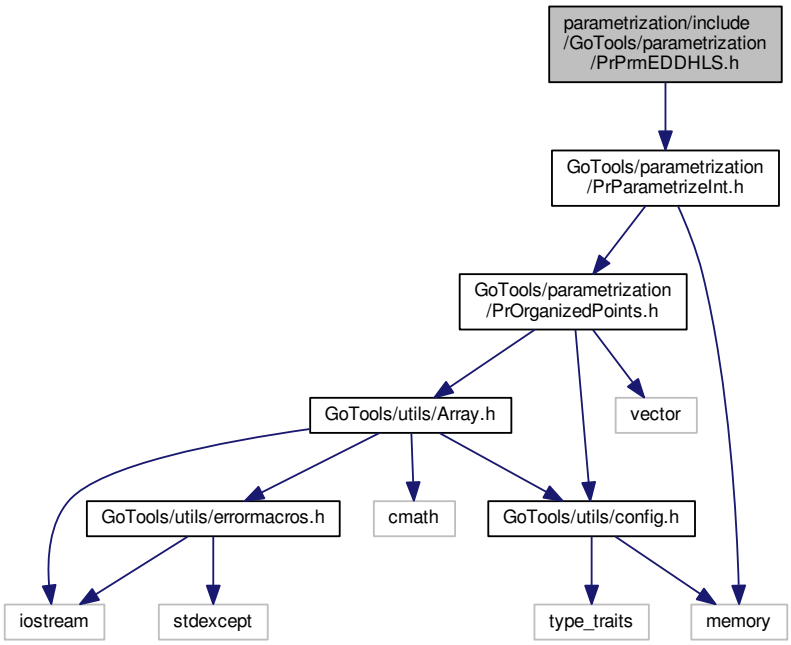
Classes

- class PrPrewavelet_F

30.2230 parametrization/include/GoTools/parametrization/PrPrmEDDHLS.h File Reference

```
#include "GoTools/parametrization/PrParametrizeInt.h"
```

Include dependency graph for PrPrmEDDHLS.h:



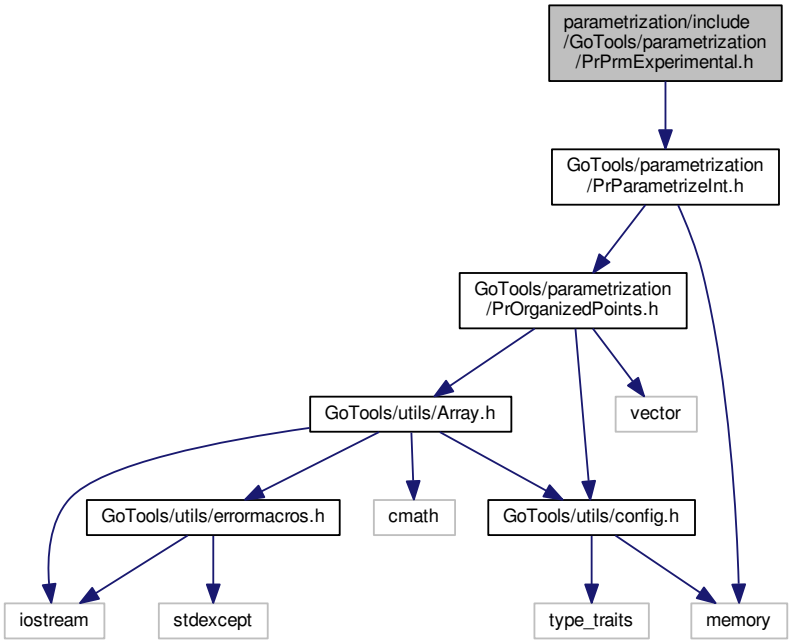
Classes

- class PrPrmEDDHLS

30.2231 parametrization/include/GoTools/parametrization/PrPrmExperimental.h File Reference

```
#include "GoTools/parametrization/PrParametrizeInt.h"
```

Include dependency graph for PrPrmExperimental.h:



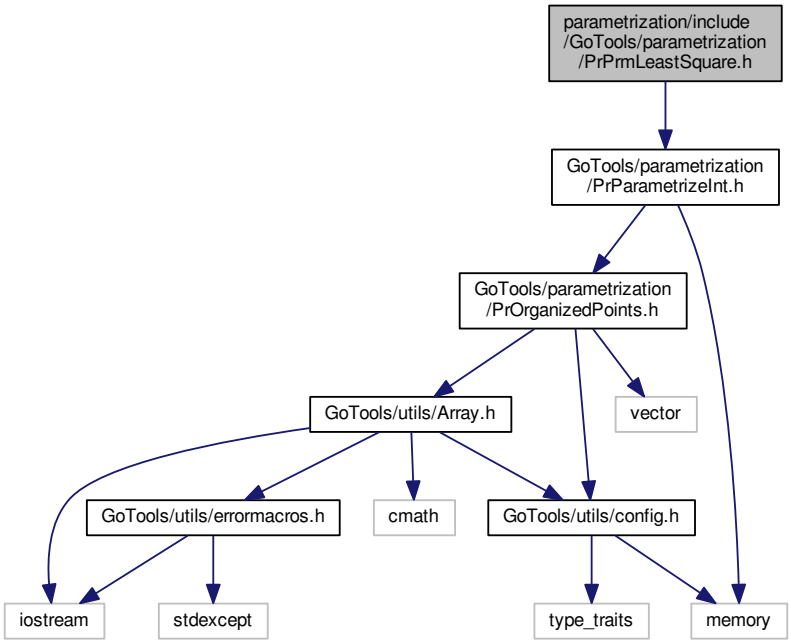
Classes

- class PrPrmExperimental

30.2232 parametrization/include/GoTools/parametrization/PrPrmLeastSquare.h File Reference

```
#include "GoTools/parametrization/PrParametrizeInt.h"
```

Include dependency graph for PrPrmLeastSquare.h:



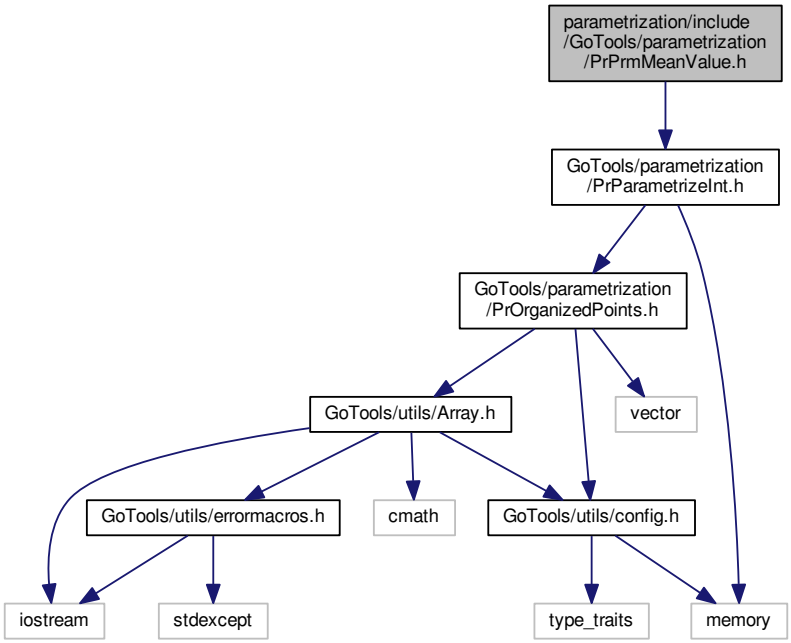
Classes

- class PrPrmLeastSquare

30.2233 parametrization/include/GoTools/parametrization/PrPrmMeanValue.h File Reference

```
#include "GoTools/parametrization/PrParametrizeInt.h"
```

Include dependency graph for PrPrmMeanValue.h:



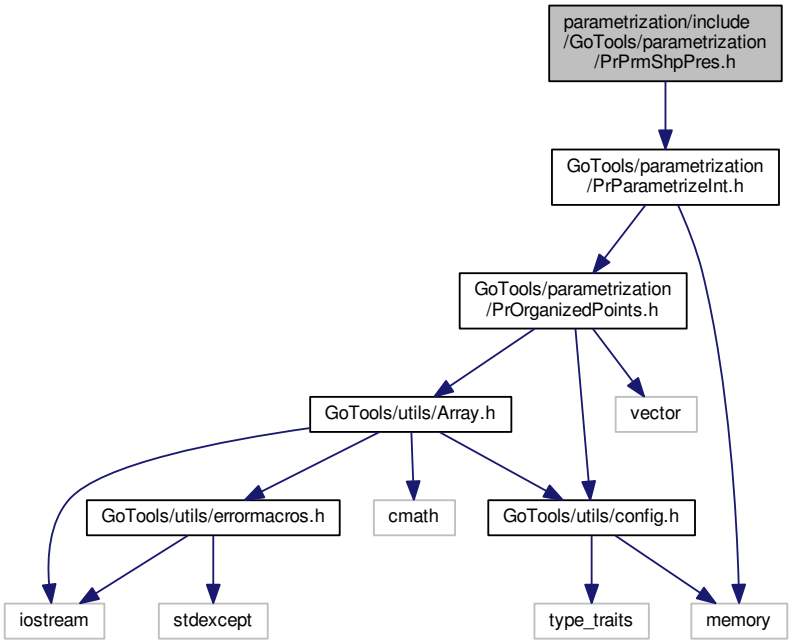
Classes

- class PrPrmMeanValue

30.2234 parametrization/include/GoTools/parametrization/PrPrmShpPres.h File Reference

```
#include "GoTools/parametrization/PrParametrizeInt.h"
```

Include dependency graph for PrPrmShpPres.h:



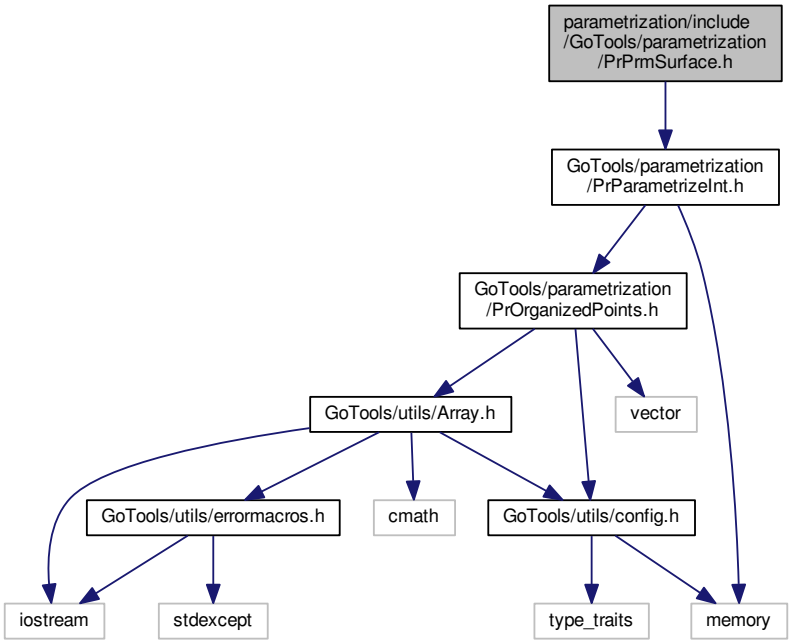
Classes

- class PrPrmShpPres

30.2235 parametrization/include/GoTools/parametrization/PrPrmSurface.h File Reference

```
#include "GoTools/parametrization/PrParametrizeInt.h"
```

Include dependency graph for PrPrmSurface.h:



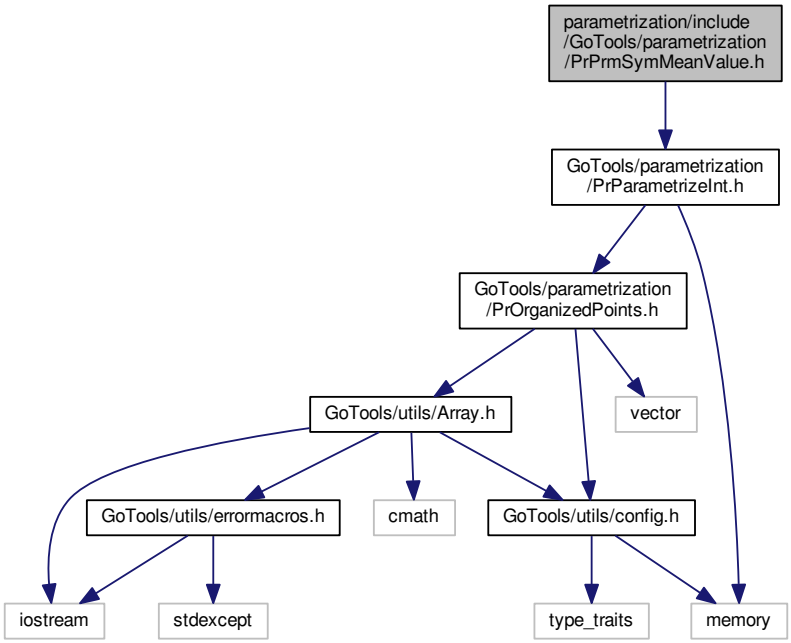
Classes

- class PrPrmSurface

30.2236 parametrization/include/GoTools/parametrization/PrPrmSymMeanValue.h File Reference

```
#include "GoTools/parametrization/PrParametrizeInt.h"
```

Include dependency graph for PrPrmSymMeanValue.h:



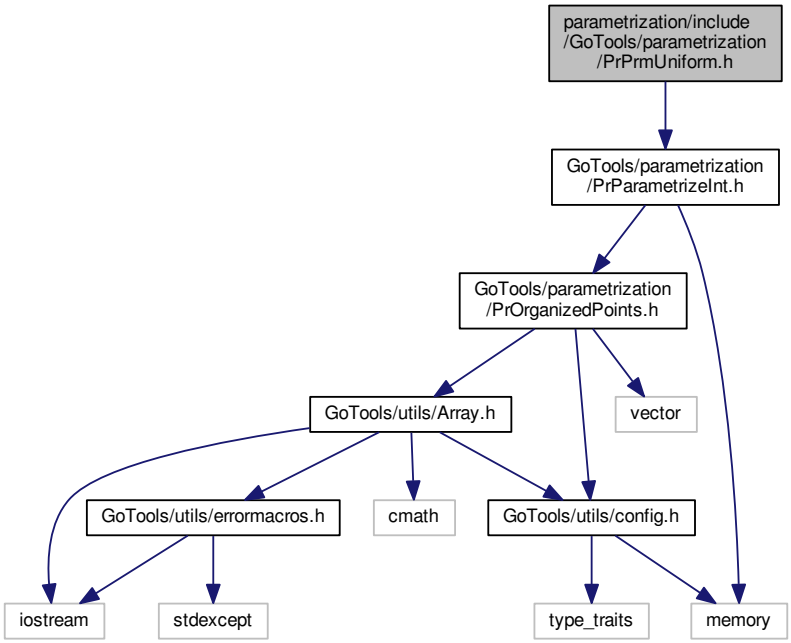
Classes

- class PrPrmSymMeanValue

30.2237 parametrization/include/GoTools/parametrization/PrPrmUniform.h File Reference

```
#include "GoTools/parametrization/PrParametrizeInt.h"
```

Include dependency graph for PrPrmUniform.h:



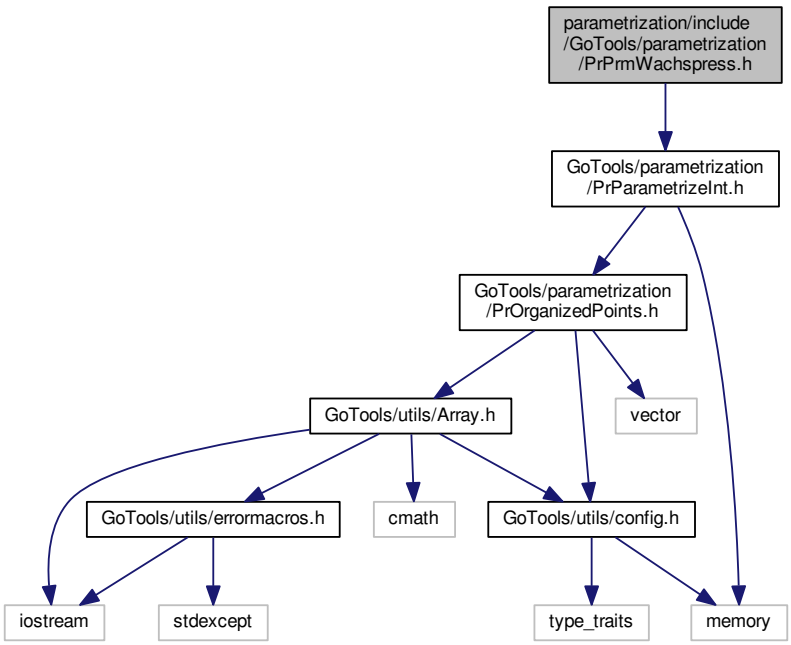
Classes

- class PrPrmUniform

30.2238 parametrization/include/GoTools/parametrization/PrPrmWachspress.h File Reference

```
#include "GoTools/parametrization/PrParametrizeInt.h"
```

Include dependency graph for PrPrmWachspress.h:



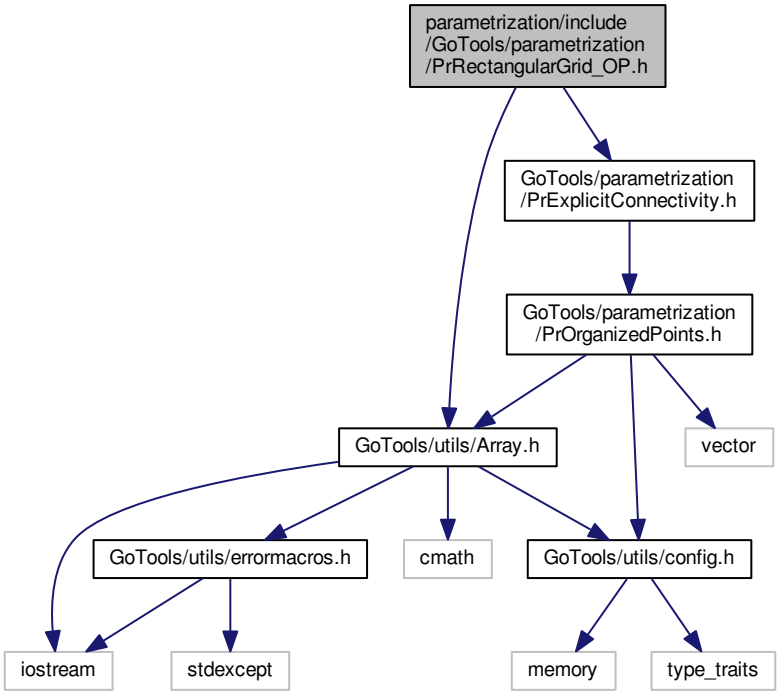
Classes

- class PrPrmWachspress

30.2239 parametrization/include/GoTools/parametrization/PrRectangularGrid_OP.h File Reference

```
#include "GoTools/parametrization/PrExplicitConnectivity.h"
#include "GoTools/utils/Array.h"
```

Include dependency graph for PrRectangularGrid_OP.h:



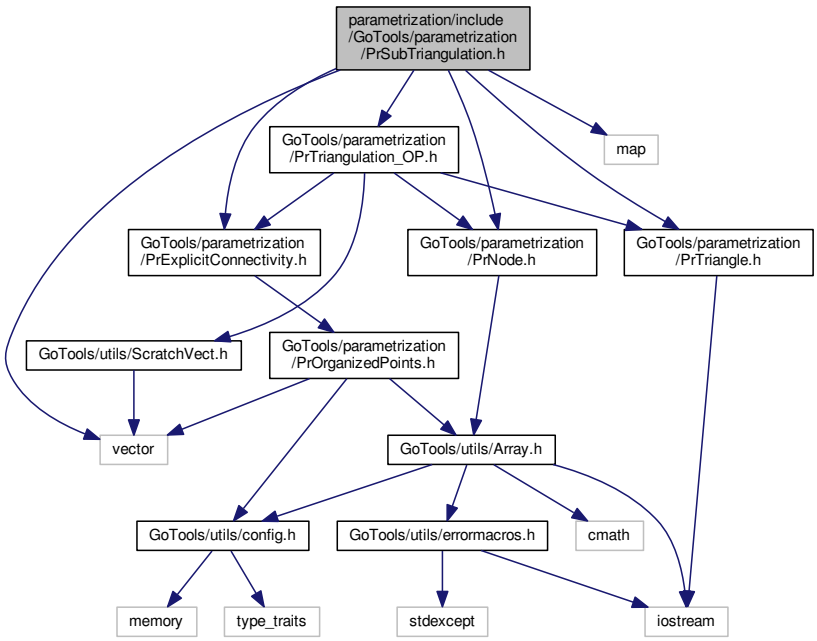
Classes

- class PrRectangularGrid_OP

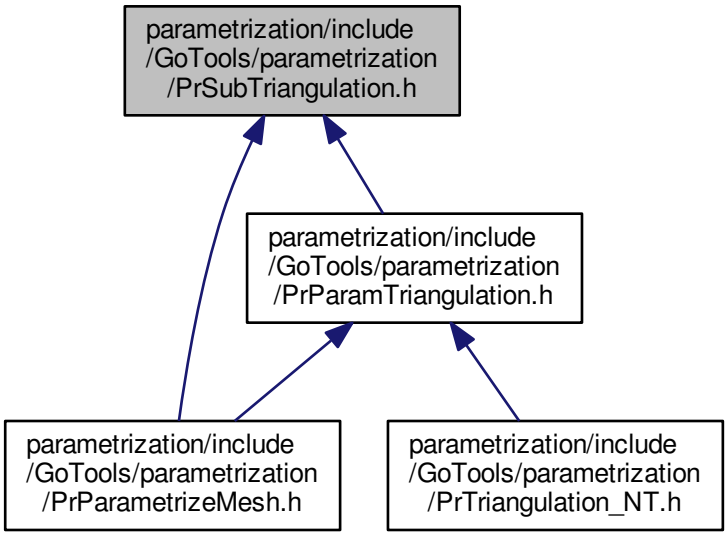
30.2240 parametrization/include/GoTools/parametrization/PrSubTriangulation.h File Reference

```
#include "GoTools/parametrization/PrExplicitConnectivity.h"
#include "GoTools/parametrization/PrNode.h"
#include "GoTools/parametrization/PrTriangle.h"
#include "GoTools/parametrization/PrTriangulation_OP.h"
#include <vector>
#include <map>
```

Include dependency graph for PrSubTriangulation.h:



This graph shows which files directly or indirectly include this file:



Classes

- class PrSubTriangulation

30.2241 parametrization/include/GoTools/parametrization/PrTexture.h File Reference

Functions

- void printTexture (std::ostream &os, PrOrganizedPoints &triang)

  Method of texture mapping in the class PrOrganizedPoints.

30.2241.1 Function Documentation

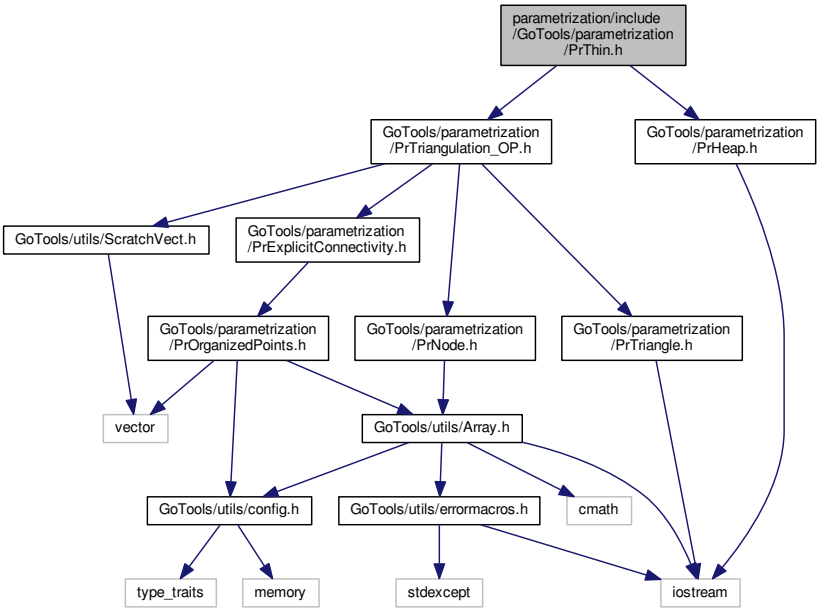
30.2241.1.1 void printTexture (std::ostream & *os*, PrOrganizedPoints & *triang*)

Method of texture mapping in the class PrOrganizedPoints.

30.2242 parametrization/include/GoTools/parametrization/PrThin.h File Reference

```
#include "GoTools/parametrization/PrTriangulation_OP.h"
#include "GoTools/parametrization/PrHeap.h"
```

Include dependency graph for PrThin.h:



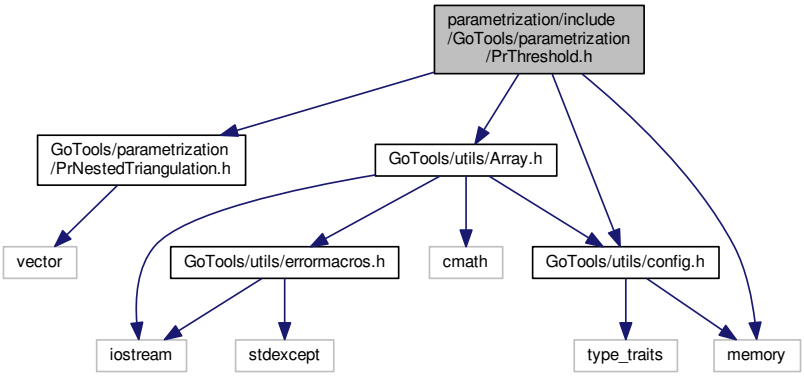
Classes

- class PrThin

30.2243 parametrization/include/GoTools/parametrization/PrThreshold.h File Reference

```
#include "GoTools/parametrization/PrNestedTriangulation.h"
#include "GoTools/utils/Array.h"
#include "GoTools/utils/config.h"
#include <memory>
```

Include dependency graph for PrThreshold.h:



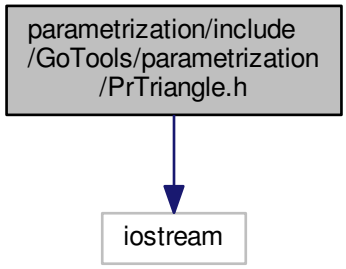
Classes

- class PrThreshold

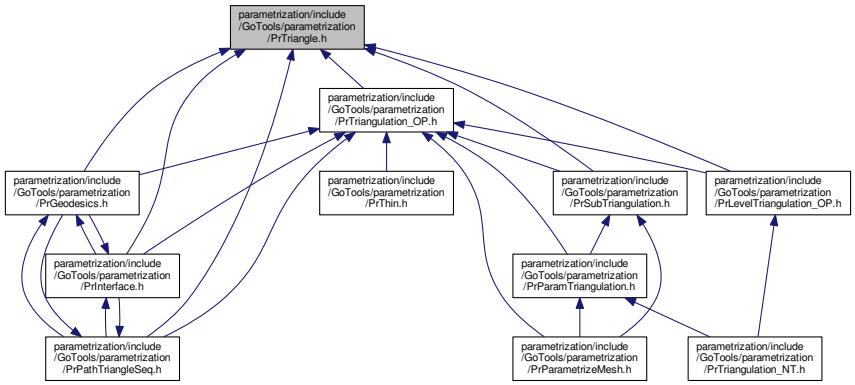
30.2244 parametrization/include/GoTools/parametrization/PrTriangle.h File Reference

```
#include <iostream>
```

Include dependency graph for PrTriangle.h:



This graph shows which files directly or indirectly include this file:



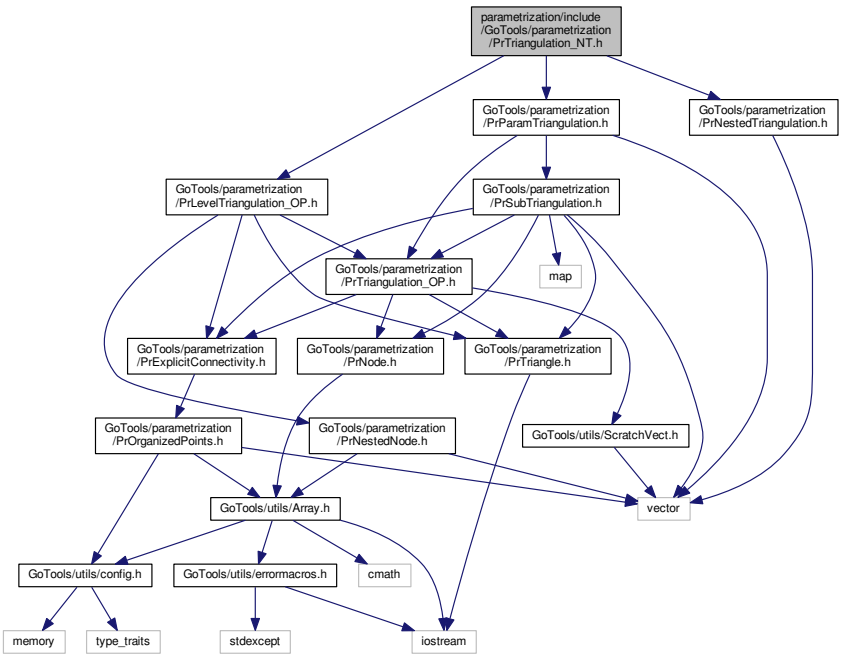
Classes

- class PrTriangle

30.2245 parametrization/include/GoTools/parametrization/PrTriangulation_NT.h File Reference

```
#include "GoTools/parametrization/PrNestedTriangulation.h"
#include "GoTools/parametrization/PrLevelTriangulation_OP.h"
#include "GoTools/parametrization/PrParamTriangulation.h"
```

Include dependency graph for PrTriangulation_NT.h:



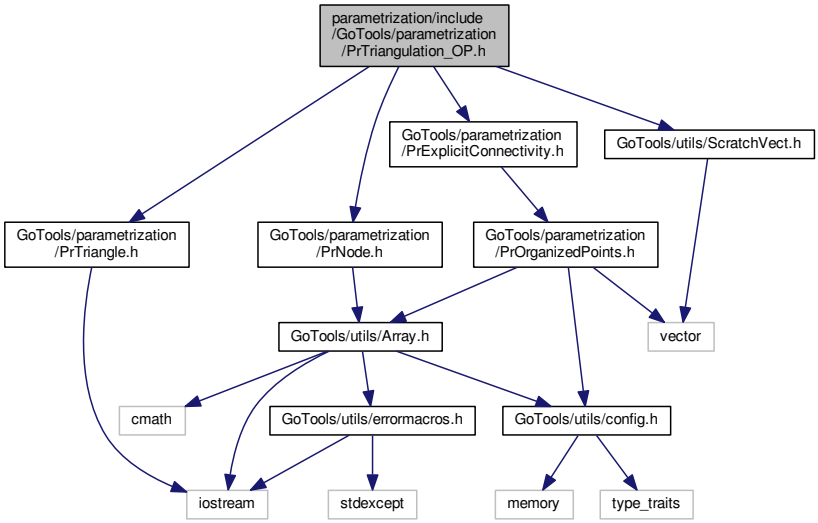
Classes

- class PrTriangulation_NT

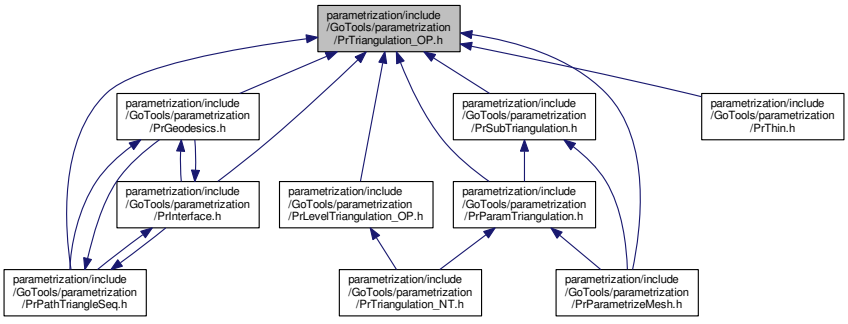
30.2246 parametrization/include/GoTools/parametrization/PrTriangulation_OP.h File Reference

```
#include "GoTools/parametrization/PrExplicitConnectivity.h"
#include "GoTools/parametrization/PrNode.h"
#include "GoTools/parametrization/PrTriangle.h"
#include "GoTools/utils/ScratchVect.h"
```

Include dependency graph for PrTriangulation_OP.h:



This graph shows which files directly or indirectly include this file:



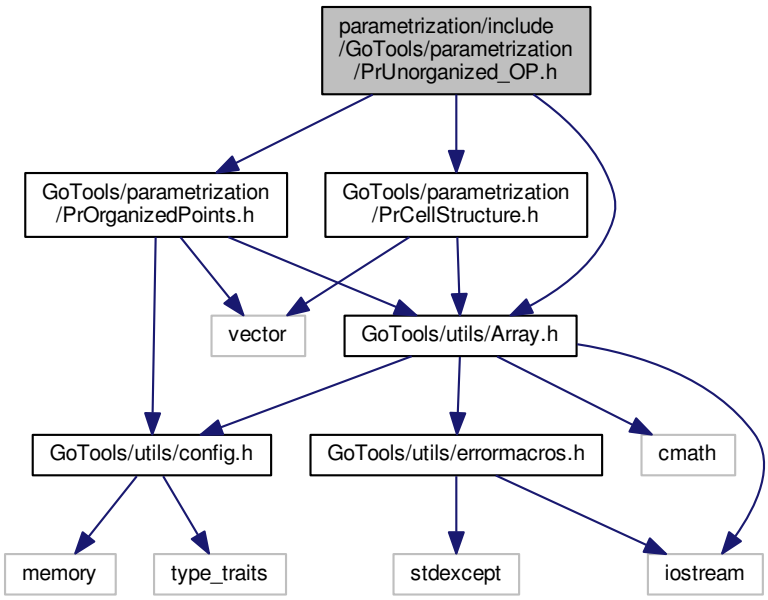
Classes

- class PrTriangulation_OP

30.2247 parametrization/include/GoTools/parametrization/PrUnorganized_OP.h File Reference

```
#include "GoTools/parametrization/PrOrganizedPoints.h"
#include "GoTools/parametrization/PrCellStructure.h"
#include "GoTools/utils/Array.h"
```

Include dependency graph for PrUnorganized_OP.h:



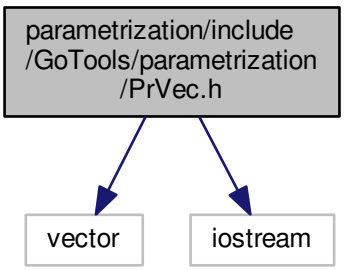
Classes

- class PrUnorganized_OP

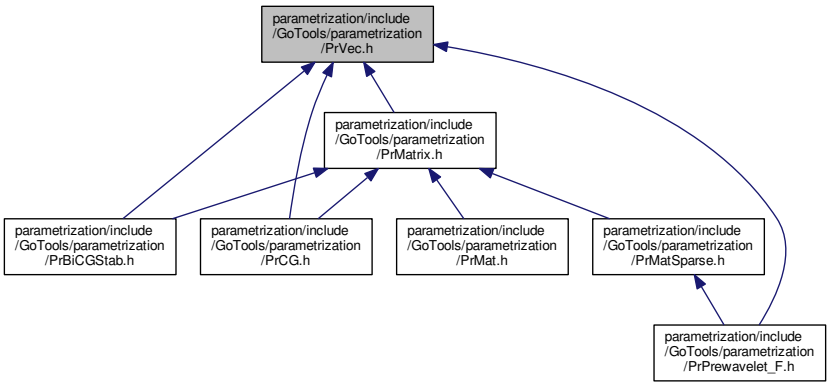
30.2248 parametrization/include/GoTools/parametrization/PrVec.h File Reference

```
#include <vector>
#include <iostream>
```

Include dependency graph for PrVec.h:



This graph shows which files directly or indirectly include this file:



Classes

- class PrVec

30.2249 parametrization/include/GoTools/parametrization/PrWaveletUtil.h File Reference

Functions

- double theta (int j, int k, int i, int deg, bool isBoundary)

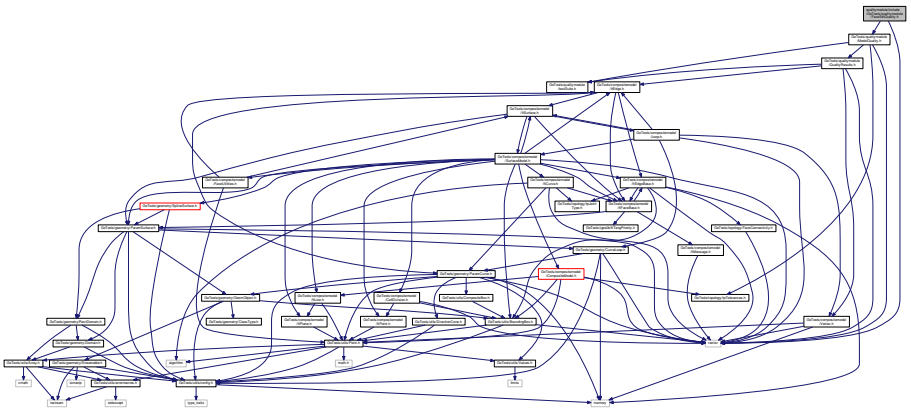
30.2249.1 Function Documentation

30.2249.1.1 double theta (int *j*, int *k*, int *i*, int *deg*, bool *isBoundary*)

30.2250 qualitymodule/include/GoTools/qualitymodule/FaceSetQuality.h File Reference

```
#include "GoTools/qualitymodule/ModelQuality.h"
#include <vector>
```

Include dependency graph for FaceSetQuality.h:



Classes

- class Go::FaceSetQuality

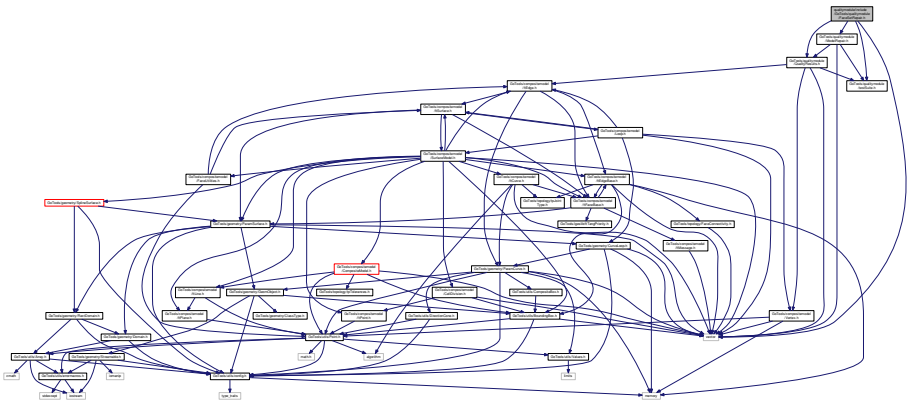
Namespaces

- Go

30.2251 qualitymodule/include/GoTools/qualitymodule/FaceSetRepair.h File Reference

```
#include "GoTools/qualitymodule/ModelRepair.h"
#include "GoTools/qualitymodule/QualityResults.h"
#include "GoTools/qualitymodule/testSuite.h"
#include <vector>
```

Include dependency graph for FaceSetRepair.h:



Classes

- class Go::FaceSetRepair

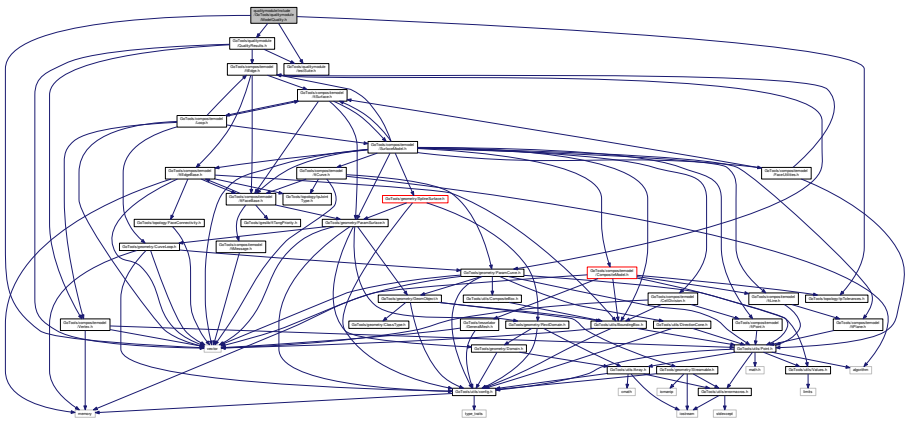
Namespaces

- Go

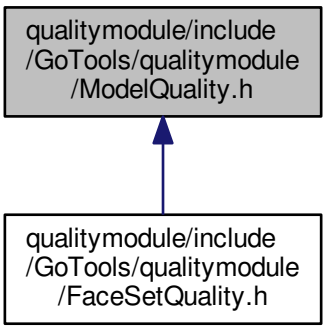
30.2252 qualitymodule/include/GoTools/qualitymodule/ModelQuality.h File Reference

```
#include "GoTools/topology/tpTolerances.h"
#include "GoTools/qualitymodule/QualityResults.h"
#include "GoTools/qualitymodule/testSuite.h"
#include <vector>
```

Include dependency graph for ModelQuality.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ModelQuality

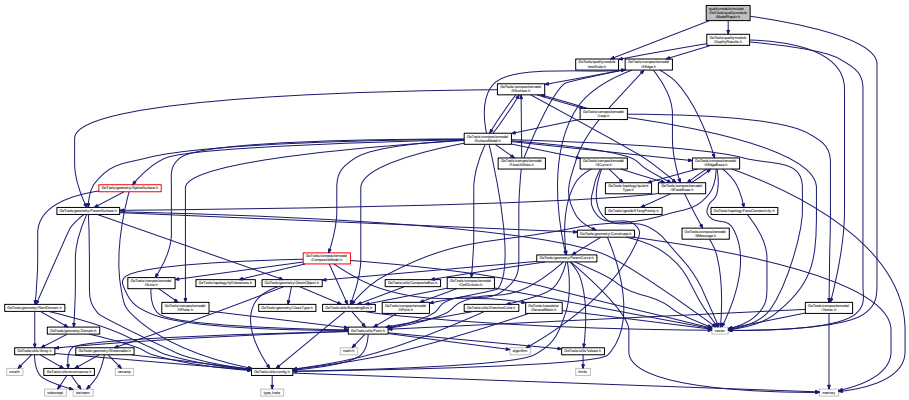
Namespaces

- Go

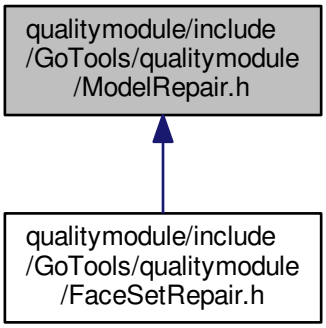
30.2253 qualitymodule/include/GoTools/qualitymodule/ModelRepair.h File Reference

```
#include "GoTools/qualitymodule/QualityResults.h"
#include "GoTools/qualitymodule/testSuite.h"
#include <vector>
```

Include dependency graph for ModelRepair.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ModelRepair

Namespaces

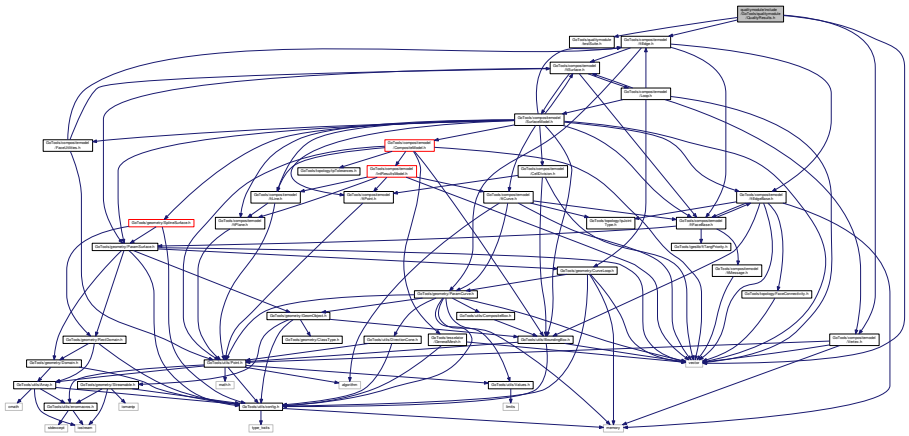
- Go

30.2254 qualitymodule/include/GoTools/qualitymodule/qualitymodule-doxymain.h File Reference

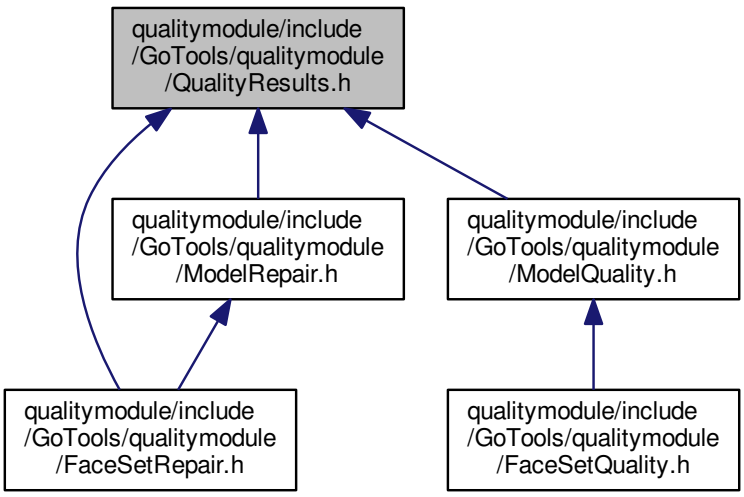
30.2255 qualitymodule/include/GoTools/qualitymodule/QualityResults.h File Reference

```
#include "GoTools/qualitymodule/testSuite.h"
#include "GoTools/compositemodel/ftEdge.h"
#include "GoTools/compositemodel/Vertex.h"
#include <vector>
```

Include dependency graph for QualityResults.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::QualityResults

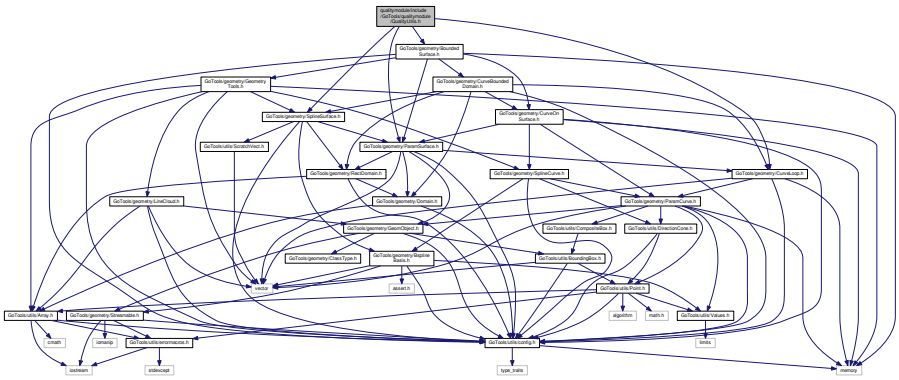
Namespaces

- Go

30.2256 qualitymodule/include/GoTools/qualitymodule/QualityUtils.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/BoundedSurface.h"
#include "GoTools/geometry/CurveLoop.h"
```

Include dependency graph for QualityUtils.h:



Namespaces

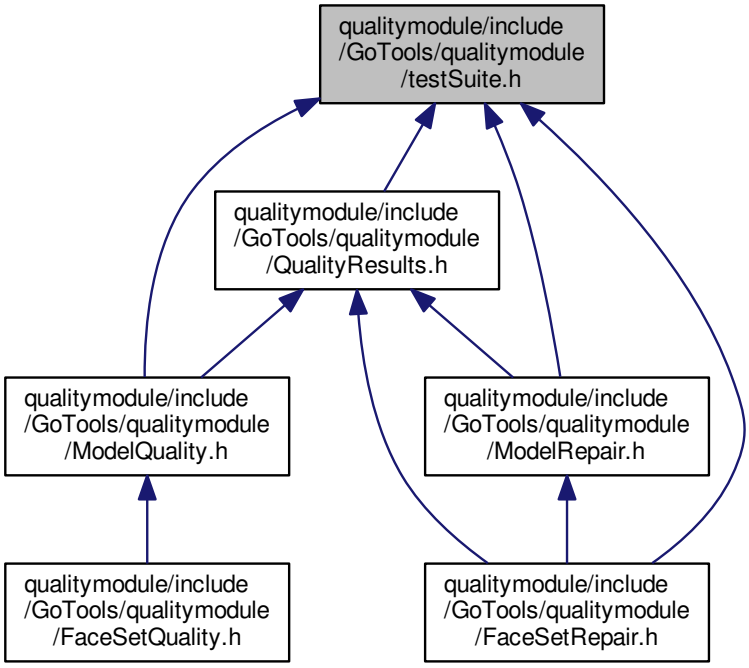
- Go
- Go::qualityUtils

Functions

- bool Go::qualityUtils::isSliverFace (shared_ptr< ParamSurface >, double thickness, double factor=2.0)
- bool Go::qualityUtils::isSliverFace (const SplineSurface &sf, double thickness, double factor=2.0)
- bool Go::qualityUtils::isSliverFace (const BoundedSurface &sf, double thickness, double factor=2.0)
- bool Go::qualityUtils::isSliverFace2 (const BoundedSurface &sf, double thickness, double factor=2.0)
- bool Go::qualityUtils::hasIndistinctKnots (shared_ptr< ParamSurface > surf, double tol, std::vector< shared_ptr< ParamCurve > > &trim_cv_knots)
- double Go::qualityUtils::estimateArea (shared_ptr< ParamSurface > surf)
- double Go::qualityUtils::estimateLoopArea (shared_ptr< CurveLoop > loop)

30.2257 qualitymodule/include/GoTools/qualitymodule/testSuite.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- Go

Macros

- #define TEST_SUITE_SIZE 36

Enumerations

- enum Go::testSuite {
  Go::IDENTICAL_VERTICES = 0, Go::IDENTICAL_EDGES = 1, Go::EMBEDDED_EDGES = 2, Go::IDEN↩
  TICAL_FACES = 3,
  Go::EMBEDDED_FACES = 4, Go::MINI_CURVE = 5, Go::MINI_SURFACE = 6, Go::MINI_EDGE = 7,
  Go::MINI_FACE = 8, Go::SLIVER_FACE = 9, Go::NARROW_REGION = 10, Go::DEGEN_SRF_BD = 11,
  Go::DEGEN_SRF_CORNER = 12, Go::VANISHING_TANGENT = 13, Go::VANISHING_NORMAL = 14,

Go::EDGE_VERTEX_DISTANCE = 15,
Go::FACE_VERTEX_DISTANCE = 16, Go::FACE_EDGE_DISTANCE = 17, Go::EDGE_POSITION_DISC↩
ONT = 18, Go::EDGE_TANGENTIAL_DISCONT = 19,
Go::FACE_POSITION_DISCONT = 20, Go::FACE_TANGENTIAL_DISCONT = 21, Go::LOOP_CONSIST↩
ENCY = 22, Go::LOOP_ORIENTATION = 23,
Go::FACE_ORIENTATION = 24, Go::CV_G1DISCONT = 25, Go::CV_C1DISCONT = 26, Go::SF_G1DIS↩
CONT = 27,
Go::SF_C1DISCONT = 28, Go::CV_CURVATURE_RADIUS = 29, Go::SF_CURVATURE_RADIUS = 30,
Go::EDGE_ACUTE_ANGLE = 31,
Go::FACE_ACUTE_ANGLE = 32, Go::LOOP_INTERSECTION = 33, Go::LOOP_SELF_INTERSECTION =
34, Go::INDISTINCT_KNOTS = 35 }

30.2257.1 Macro Definition Documentation

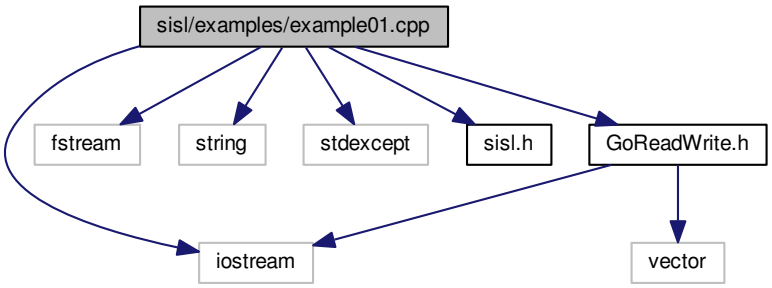
30.2257.1.1 #define TEST_SUITE_SIZE 36

Definition at line 90 of file testSuite.h.

30.2258 sisl/examples/example01.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example01.cpp:



Functions

- int main (int avnum, char **vararg)

30.2258.1 Function Documentation

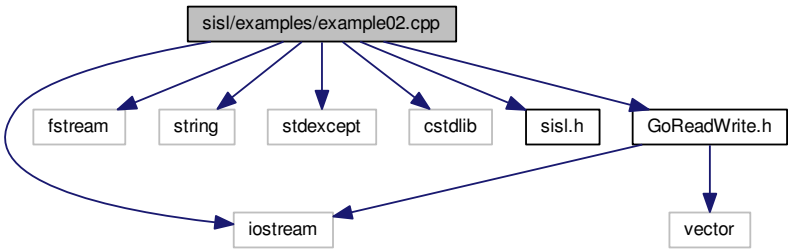
30.2258.1.1 int main (int *avnum*, char ** *vararg*)

Definition at line 81 of file example01.cpp.

30.2259 sisl/examples/example02.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include <cstdlib>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example02.cpp:



Functions

- int main (int avnum, char **vararg)

30.2259.1 Function Documentation

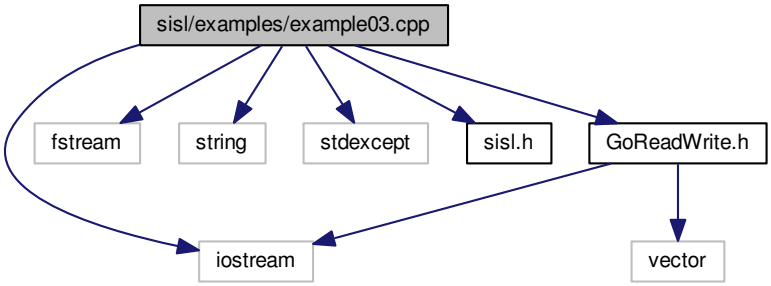
30.2259.1.1 int main (int *avnum*, char ** *vararg*)

Definition at line 79 of file example02.cpp.

30.2260 sisl/examples/example03.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example03.cpp:



Functions

- int main (int avnum, char **vararg)

30.2260.1 Function Documentation

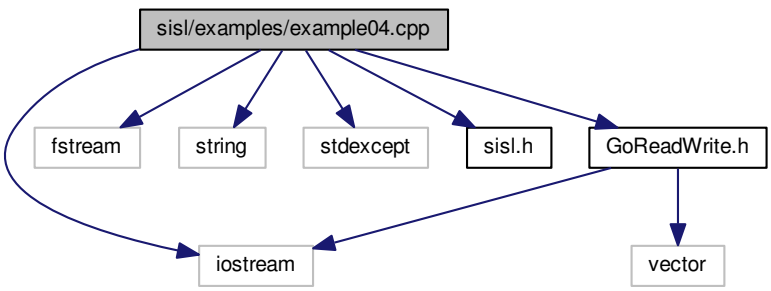
30.2260.1.1 int main (int *avnum*, char ** *vararg*)

Definition at line 66 of file example03.cpp.

30.2261 sisl/examples/example04.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example04.cpp:



Functions

- int main (int avnum, char **vararg)

30.2261.1 Function Documentation

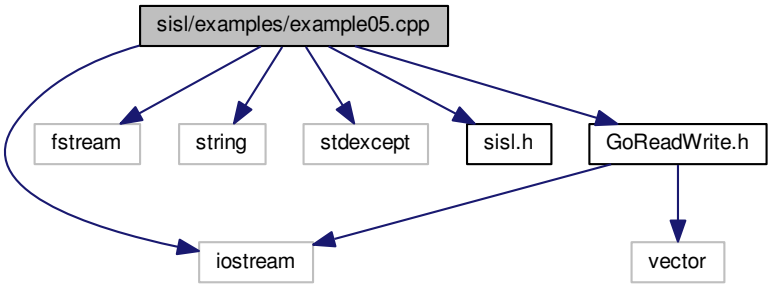
30.2261.1.1 int main (int *avnum,* char ** *vararg*)

Definition at line 66 of file example04.cpp.

30.2262 sisl/examples/example05.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example05.cpp:



Functions

- int main (int avnum, char **vararg)

30.2262.1 Function Documentation

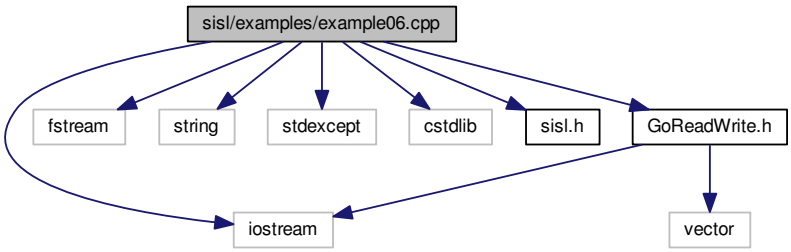
30.2262.1.1 int main (int *avnum,* char ** *vararg*)

Definition at line 80 of file example05.cpp.

30.2263 sisl/examples/example06.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include <cstdlib>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example06.cpp:



Functions

- int main (int avnum, char **vararg)

30.2263.1 Function Documentation

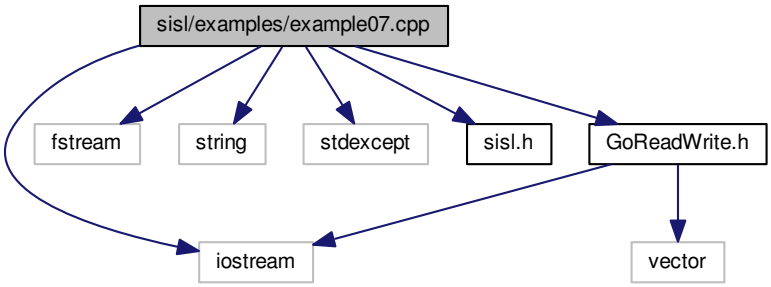
30.2263.1.1 int main (int *avnum*, char ** *vararg*)

Definition at line 91 of file example06.cpp.

30.2264 sisl/examples/example07.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example07.cpp:



Functions

- int main (int avnum, char **vararg)

30.2264.1 Function Documentation

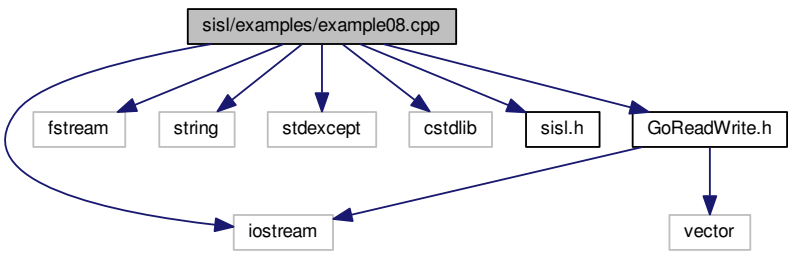
30.2264.1.1 int main (int *avnum,* char ** *vararg*)

Definition at line 61 of file example07.cpp.

30.2265 sisl/examples/example08.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include <cstdlib>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example08.cpp:



Functions

- int main (int avnum, char **vararg)

30.2265.1 Function Documentation

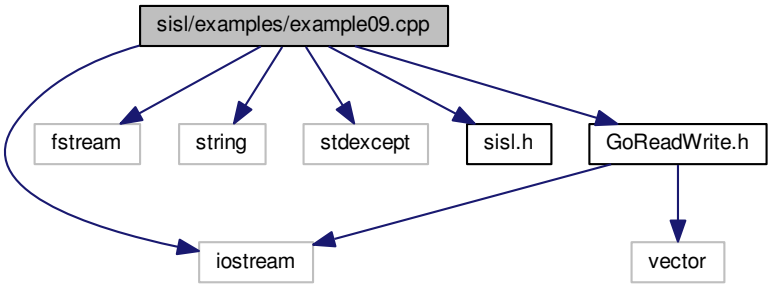
30.2265.1.1 int main (int *avnum,* char ** *vararg*)

Definition at line 90 of file example08.cpp.

30.2266 sisl/examples/example09.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example09.cpp:



Functions

- int main (int avnum, char **vararg)

30.2266.1 Function Documentation

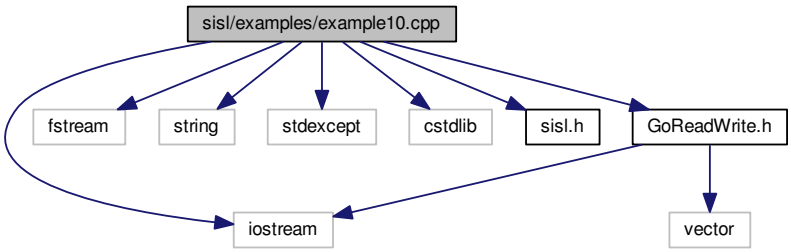
30.2266.1.1 int main (int *avnum,* char ** *vararg*)

Definition at line 92 of file example09.cpp.

30.2267 sisl/examples/example10.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include <cstdlib>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example10.cpp:



Functions

- int main (int avnum, char **vararg)

30.2267.1 Function Documentation

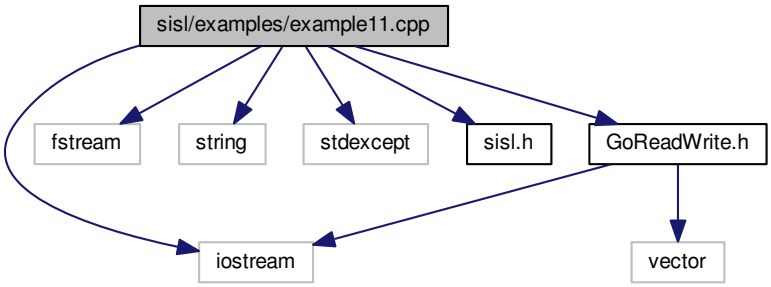
30.2267.1.1 int main (int *avnum*, char ** *vararg*)

Definition at line 88 of file example10.cpp.

30.2268 sisl/examples/example11.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example11.cpp:



Functions

- int main (int avnum, char **vararg)

30.2268.1 Function Documentation

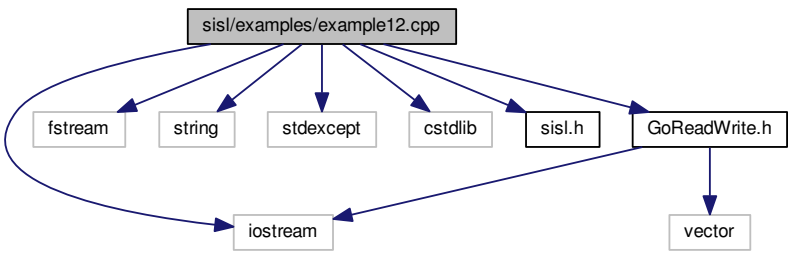
30.2268.1.1 int main (int *avnum,* char ** *vararg*)

Definition at line 68 of file example11.cpp.

30.2269 sisl/examples/example12.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include <cstdlib>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example12.cpp:



Functions

- int main (int avnum, char **vararg)

30.2269.1 Function Documentation

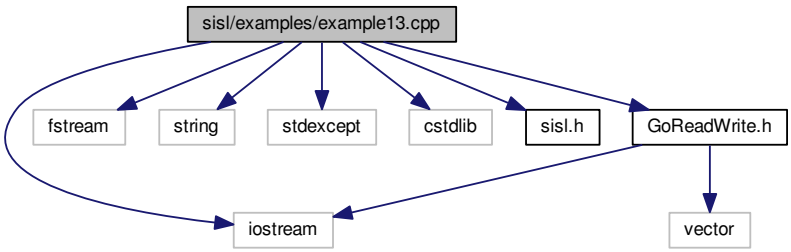
30.2269.1.1 int main (int *avnum,* char ** *vararg*)

Definition at line 68 of file example12.cpp.

30.2270 sisl/examples/example13.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include <cstdlib>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example13.cpp:



Functions

- int main (int avnum, char **vararg)

30.2270.1 Function Documentation

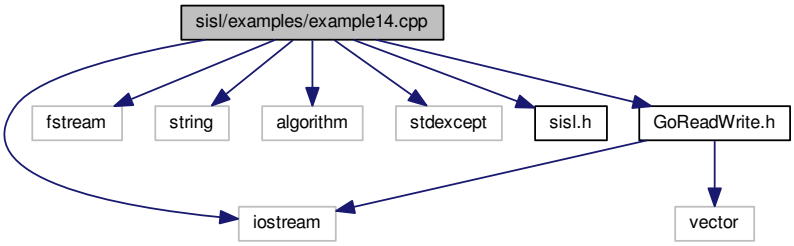
30.2270.1.1 int main (int *avnum,* char ** *vararg*)

Definition at line 70 of file example13.cpp.

30.2271 sisl/examples/example14.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <algorithm>
#include <stdexcept>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example14.cpp:



Functions

- int main (int avnum, char **vararg)

30.2271.1 Function Documentation

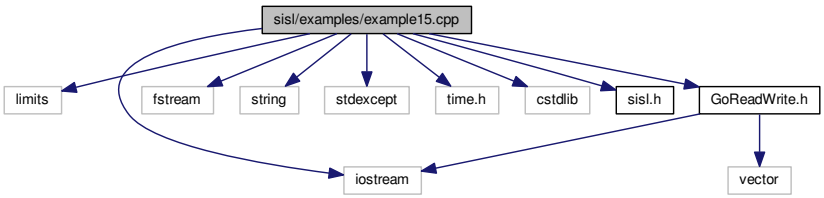
30.2271.1.1 int main (int *avnum,* char ** *vararg*)

Definition at line 85 of file example14.cpp.

30.2272 sisl/examples/example15.cpp File Reference

```
#include <limits>
#include <iostream>
#include <fstream>
#include <string>
#include <stdexcept>
#include <time.h>
#include <cstdlib>
#include "sisl.h"
#include "GoReadWrite.h"
```

Include dependency graph for example15.cpp:



Functions

- int main (int varnum, char **vararg)

30.2272.1 Function Documentation

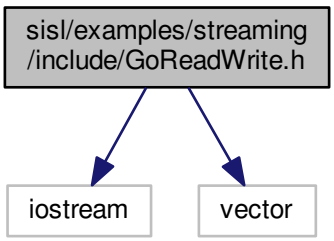
30.2272.1.1 int main (int *varnum,* char ** *vararg*)

Definition at line 106 of file example15.cpp.

30.2273 sisl/examples/streaming/include/GoReadWrite.h File Reference

```
#include <iostream>
#include <vector>
```

Include dependency graph for GoReadWrite.h:



This graph shows which files directly or indirectly include this file:

Functions

- SISLCurve * readGoCurve (std::istream &go_stream)
- SISLSurf * readGoSurface (std::istream &go_stream)
- void writeGoCurve (SISLCurve *curve, std::ostream &go_stream)
- void writeGoSurface (SISLSurf *surf, std::ostream &go_stream)
- void writeGoPoints (int num_points, double *coords, std::ostream &go_stream)
- void readGoPoints (std::vector< double > &coords, std::istream &go_stream)

30.2273.1 Function Documentation

30.2273.1.1 SISLCurve* readGoCurve (std::istream & *go_stream*)

30.2273.1.2 void readGoPoints (std::vector< double > & *coords,* std::istream & *go_stream*)

Definition at line 248 of file GoReadWrite.cpp.

30.2273.1.3 SISLSurf* readGoSurface (std::istream & *go_stream*)

30.2273.1.4 void writeGoCurve (SISLCurve * *curve,* std::ostream & *go_stream*)

Definition at line 161 of file GoReadWrite.cpp.

30.2273.1.5 void writeGoPoints (int *num_points,* double * *coords,* std::ostream & *go_stream*)

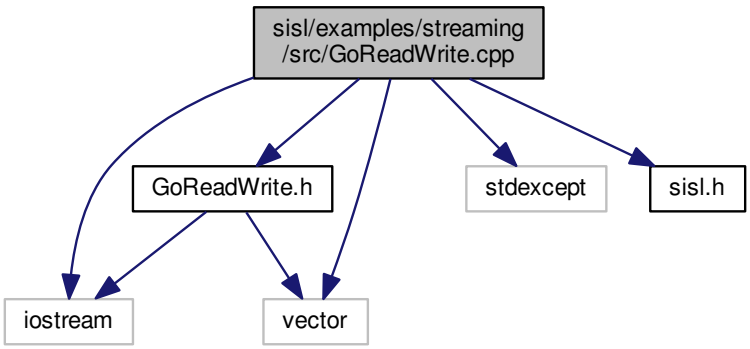
Definition at line 222 of file GoReadWrite.cpp.

30.2273.1.6 void writeGoSurface (SISLSurf * *surf,* std::ostream & *go_stream*)

30.2274 sisl/examples/streaming/src/GoReadWrite.cpp File Reference

```
#include "GoReadWrite.h"
#include <vector>
#include <iostream>
#include <stdexcept>
#include "sisl.h"
```

Include dependency graph for GoReadWrite.cpp:



Functions

- SISLSurf * readGoSurface (istream &go_stream)
- void writeGoSurface (SISLSurf *surf, ostream &go_stream)
- void writeGoCurve (SISLCurve *curve, std::ostream &go_stream)
- SISLCurve * readGoCurve (istream &go_stream)
- void writeGoPoints (int num_points, double *coords, std::ostream &go_stream)
- void readGoPoints (std::vector< double > &coords, std::istream &go_stream)

30.2274.1 Function Documentation

30.2274.1.1 SISLCurve* readGoCurve (istream & *go_stream*)

Definition at line 191 of file GoReadWrite.cpp.

30.2274.1.2 void readGoPoints (std::vector< double > & *coords,* std::istream & *go_stream*)

Definition at line 248 of file GoReadWrite.cpp.

30.2274.1.3 SISLSurf* readGoSurface (istream & *go_stream*)

Definition at line 89 of file GoReadWrite.cpp.

30.2274.1.4 void writeGoCurve (SISLCurve * *curve,* std::ostream & *go_stream*)

Definition at line 161 of file GoReadWrite.cpp.

30.2274.1.5 void writeGoPoints (int *num_points,* double * *coords,* std::ostream & *go_stream*)

Definition at line 222 of file GoReadWrite.cpp.

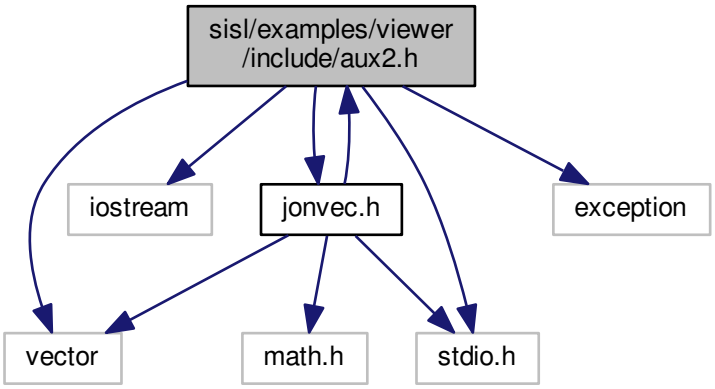
30.2274.1.6 void writeGoSurface (SISLSurf * *surf,* ostream & *go_stream*)

Definition at line 130 of file GoReadWrite.cpp.

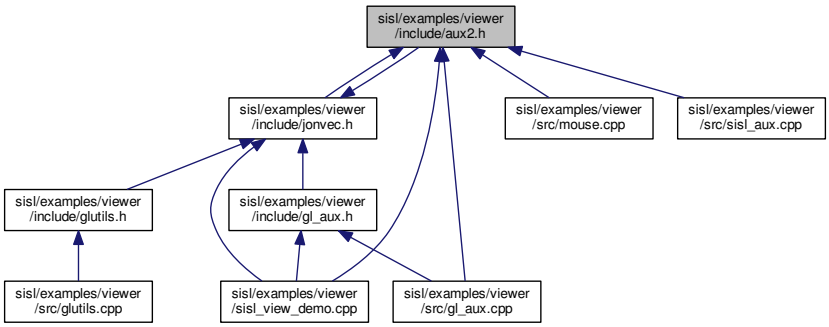
30.2275 sisl/examples/viewer/include/aux2.h File Reference

```
#include <vector>
#include <iostream>
#include <stdio.h>
#include "jonvec.h"
#include <exception>
```

Include dependency graph for aux2.h:



This graph shows which files directly or indirectly include this file:



Macros

- #define CRIT_ERR(stmnt)
- #define ASSERT2(a, b) if (!(a)) CRIT_ERR(b)
- #define _ERRORMACROS_H
- #define REPORT cout << "\nIn file " << __FILE__ << ", line " << __LINE__ << endl
- #define MESSAGE(x) cout << "\nIn file " << __FILE__ << ", line " << __LINE__ << ": " << x << endl
- #define THROW(x) MESSAGE(x), throw std::exception()

Usage: THROW("Error message string.");.

- #define ASSERT(cond) if (!(cond)) THROW("Assertation \'" #cond "\' failed.")
- #define ASSERT3(cond, x) if (!(cond)) THROW(x)
- #define ERROR_IF(cond, x) if (cond) THROW(x)
- #define DEQUALX(a, b, tol) (fabs((a)-(b))<=(tol) * std::max(std::max(fabs(a), fabs(b)), 1.0))
- #define DEQUAL(a, b) (fabs((a)-(b))<=1e-12 * std::max(std::max(fabs(a), fabs(b)), 1.0))
- #define NDEQUAL(a, b) (!DEQUAL(a, b))
- #define DNEQUAL(a, b) (NDEQUAL(a, b))
- #define DLESS(a, b) (((a)<(b)) && (NDEQUAL((a), (b))))
- #define DGREATER(a, b) (((a)>(b)) && (NDEQUAL((a), (b))))
- #define DLESSEQ(a, b) (((a)<(b)) || (DEQUAL((a), (b))))
- #define DGREATEREQ(a, b) (((a)>(b)) || (DEQUAL((a), (b))))
- #define DEQUAL2(a, b) (fabs((a)-(b))<=1e-8 * std::max(std::max(fabs(a), fabs(b)), 1.0))
- #define DEQUAL3(a, b) (fabs((a)-(b))<=1e-6 * std::max(std::max(fabs(a), fabs(b)), 1.0))
- #define NDEQUAL2(a, b) (!DEQUAL2(a, b))
- #define DNEQUAL2(a, b) (NDEQUAL2(a, b))
- #define DLESSEQ2(a, b) (((a)<(b)) || (DEQUAL2((a), (b))))
- #define DGREATEREQ2(a, b) (((a)>(b)) || (DEQUAL2((a), (b))))
- #define DEQUAL4(a, b) (fabs((a)-(b))<=1e-14 * std::max(std::max(fabs(a), fabs(b)), 1.0))
- #define SQR(a) ((a)*(a))
- #define PI 3.1415926535
- #define MIN(a, b) ((a)<(b)? (a):(b))
- #define MAX(a, b) ((a)>(b)? (a):(b))
- #define AUX2_H_INCLUDED

Functions

- int eps_equal (const double &a, const double &b)
- int eps_less (const double &a, const double &b)
- int eps_greater (const double &a, const double &b)
- int eps_less_eq (const double &a, const double &b)
- int eps_greater_eq (const double &a, const double &b)
- void tic (void)
- void toc (void)

30.2275.1 Macro Definition Documentation

30.2275.1.1 #define _ERRORMACROS_H

Definition at line 68 of file aux2.h.

30.2275.1.2 #define ASSERT(*cond*) if (!(cond)) THROW("Assertation \'" #cond "\' failed.")

Usage: ASSERT(condition) Usage: ASSERT2(condition, "Error message string.") Usage: ERROR_IF(condition, "Error message string.");

Definition at line 99 of file aux2.h.

30.2275.1.3 #define ASSERT2(*a,* **b**) if (!(a)) CRIT_ERR(b)

Definition at line 65 of file aux2.h.

30.2275.1.4 #define ASSERT3(*cond, x*) if (!(cond)) THROW(x)

Definition at line 101 of file aux2.h.

30.2275.1.5 #define AUX2_H_INCLUDED

Definition at line 185 of file aux2.h.

30.2275.1.6 #define CRIT_ERR(*stmnt*)

Value:

```
printf("\nIn file %s, line %d:\n  ", __FILE__, __LINE__), \
    (stmnt), exit(0)
```

Definition at line 60 of file aux2.h.

30.2275.1.7 #define DEQUAL(*a,* **b**) (fabs((a)-(b))<=1e-12 ∗ std::max(std::max(fabs(a), fabs(b)), 1.0))

Definition at line 124 of file aux2.h.

30.2275.1.8 #define DEQUAL2(*a,* **b**) (fabs((a)-(b))<=1e-8 ∗ std::max(std::max(fabs(a), fabs(b)), 1.0))

Definition at line 138 of file aux2.h.

30.2275.1.9 #define DEQUAL3(*a,* **b**) (fabs((a)-(b))<=1e-6 ∗ std::max(std::max(fabs(a), fabs(b)), 1.0))

Definition at line 140 of file aux2.h.

30.2275.1.10 #define DEQUAL4(*a,* **b**) (fabs((a)-(b))<=1e-14 ∗ std::max(std::max(fabs(a), fabs(b)), 1.0))

Definition at line 147 of file aux2.h.

30.2275.1.11 #define DEQUALX(*a,* **b, tol**) (fabs((a)-(b))<=(tol) ∗ std::max(std::max(fabs(a), fabs(b)), 1.0))

Definition at line 122 of file aux2.h.

30.2275.1.12 #define DGREATER(a, b) (((a)>(b)) && (NDEQUAL((a), (b))))

Definition at line 128 of file aux2.h.

30.2275.1.13 #define DGREATEREQ(a, b) (((a)>(b)) || (DEQUAL((a), (b))))

Definition at line 130 of file aux2.h.

30.2275.1.14 #define DGREATEREQ2(a, b) (((a)>(b)) || (DEQUAL2((a), (b))))

Definition at line 144 of file aux2.h.

30.2275.1.15 #define DLESS(a, b) (((a)<(b)) && (NDEQUAL((a), (b))))

Definition at line 127 of file aux2.h.

30.2275.1.16 #define DLESSEQ(a, b) (((a)<(b)) || (DEQUAL((a), (b))))

Definition at line 129 of file aux2.h.

30.2275.1.17 #define DLESSEQ2(a, b) (((a)<(b)) || (DEQUAL2((a), (b))))

Definition at line 143 of file aux2.h.

30.2275.1.18 #define DNEQUAL(a, b) (NDEQUAL(a, b))

Definition at line 126 of file aux2.h.

30.2275.1.19 #define DNEQUAL2(a, b) (NDEQUAL2(a, b))

Definition at line 142 of file aux2.h.

30.2275.1.20 #define ERROR_IF(cond, x) if (cond) THROW(x)

Definition at line 102 of file aux2.h.

30.2275.1.21 #define MAX(a, b) ((a)>(b)? (a):(b))

Definition at line 163 of file aux2.h.

30.2275.1.22 #define MESSAGE(*x*) cout << "\nIn file " << __FILE__ << ", line " << __LINE__ << ": " << x << endl

Definition at line 80 of file aux2.h.

30.2275.1.23 #define MIN(*a,* b) ((a)<(b)? (a):(b))

Definition at line 160 of file aux2.h.

30.2275.1.24 #define NDEQUAL(*a,* b) (!DEQUAL(a, b))

Definition at line 125 of file aux2.h.

30.2275.1.25 #define NDEQUAL2(*a,* b) (!DEQUAL2(a, b))

Definition at line 141 of file aux2.h.

30.2275.1.26 #define PI 3.1415926535

Definition at line 156 of file aux2.h.

30.2275.1.27 #define REPORT cout << "\nIn file " << __FILE__ << ", line " << __LINE__ << endl

Usage: REPORT; Usage: MESSAGE("Message string.");

Definition at line 79 of file aux2.h.

30.2275.1.28 #define SQR(*a*) ((a)*(a))

Definition at line 153 of file aux2.h.

30.2275.1.29 #define THROW(*x*) MESSAGE(x), throw std::exception()

Usage: THROW("Error message string.");.

Definition at line 84 of file aux2.h.

30.2275.2 Function Documentation

30.2275.2.1 int eps_equal (const double & *a*, const double & *b*)

30.2275.2.2 int eps_greater (const double & *a*, const double & *b*)

30.2275.2.3 int eps_greater_eq (const double & *a*, const double & *b*)

30.2275.2.4 int eps_less (const double & *a*, const double & *b*)

30.2275.2.5 int eps_less_eq (const double & *a*, const double & *b*)

30.2275.2.6 void tic (void)

Definition at line 100 of file aux2.cpp.

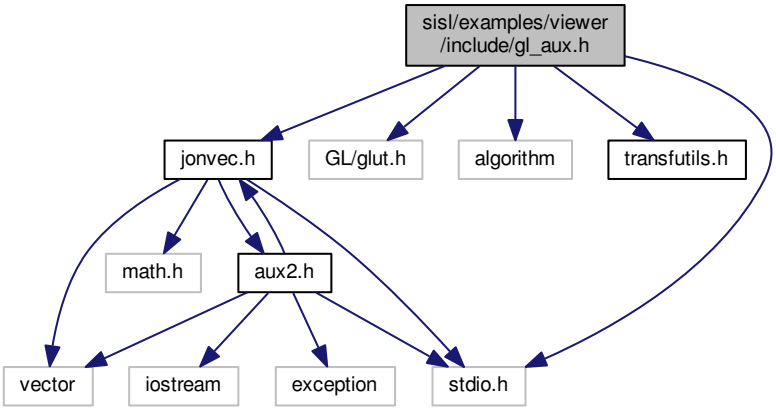
30.2275.2.7 void toc (void)

Definition at line 106 of file aux2.cpp.

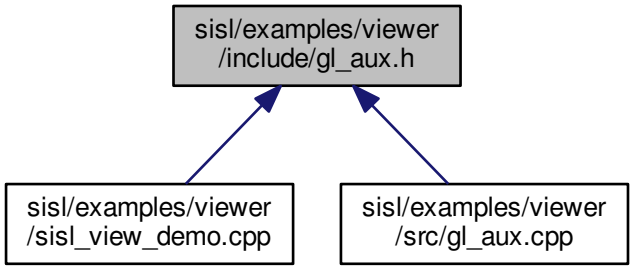
30.2276 sisl/examples/viewer/include/gl_aux.h File Reference

```
#include <stdio.h>
#include <GL/glut.h>
#include <algorithm>
#include "transfutils.h"
#include "jonvec.h"
```

Include dependency graph for gl_aux.h:



This graph shows which files directly or indirectly include this file:



Classes

- class material_appearance

Functions

- void draw_cylinder (double x0, double y0, double z0, double x1, double y1, double z1, double radius, double radius2, int n)
- void draw_gl_axes_old (int n=10, double r=0.7, double radius=0.01, double rim=0.04, double l=0.1)
- void draw_grid (const int n1, const int n2, const int n3)
- void draw_grid_planes (const int n1, const int n2, const int n3)
- void gl_init (int argc, char ∗argv[ ], const int xs, const int ys, const int x0, const int y0, const int doubleBuffer, const int two_sided, const int lighting, const int normalize, const int smooth, const double xtrans, const double ytrans, const double ztrans, const double xscale, const double yscale, const double zscale, int &tx, int &ty, const int texture_mode, const char ∗const texfile=NULL)
- void print_gl_matrix (const int m)
- void reshape_window (int width, int height)
- void write_gl_matrices (FILE ∗f)
- void read_gl_matrices (FILE ∗f)

Variables

- const int predefined_colours
- const double predef_col_table [ ]
- const double col_setting_back_old [ ]
- const double col_setting_back [ ]

30.2276.1 Function Documentation

30.2276.1.1 void draw_cylinder (double *x0,* double *y0,* double *z0,* double *x1,* double *y1,* double *z1,* double *radius,* double *radius2,* int *n*)

Definition at line 91 of file gl_aux.cpp.

30.2276.1.2 void draw_gl_axes_old (int *n* = 10, double *r* = 0.7, double *radius* = 0.01, double *rim* = 0.04, double *l* = 0.1)

Definition at line 174 of file gl_aux.cpp.

30.2276.1.3 void draw_grid (const int *n1*, const int *n2*, const int *n3*)

Definition at line 223 of file gl_aux.cpp.

30.2276.1.4 void draw_grid_planes (const int *n1*, const int *n2*, const int *n3*)

Definition at line 273 of file gl_aux.cpp.

30.2276.1.5 void gl_init (int *argc*, char * *argv[]*, const int *xs*, const int *ys*, const int *x0*, const int *y0*, const int *doubleBuffer*, const int *two_sided*, const int *lighting*, const int *normalize*, const int *smooth*, const double *xtrans*, const double *ytrans*, const double *ztrans*, const double *xscale*, const double *yscale*, const double *zscale*, int & *tx*, int & *ty*, const int *texture_mode*, const char *const *texfile* = NULL)

Definition at line 329 of file gl_aux.cpp.

30.2276.1.6 void print_gl_matrix (const int *m*)

Definition at line 659 of file gl_aux.cpp.

30.2276.1.7 void read_gl_matrices (FILE * *f*)

Definition at line 781 of file gl_aux.cpp.

30.2276.1.8 void reshape_window (int *width*, int *height*)

Definition at line 741 of file gl_aux.cpp.

30.2276.1.9 void write_gl_matrices (FILE * *f*)

Definition at line 761 of file gl_aux.cpp.

30.2276.2 Variable Documentation

30.2276.2.1 const double col_setting_back[ ]

30.2276.2.2 const double col_setting_back_old[ ]

30.2276.2.3 const double predef_col_table[ ]

Definition at line 56 of file gl_aux.cpp.

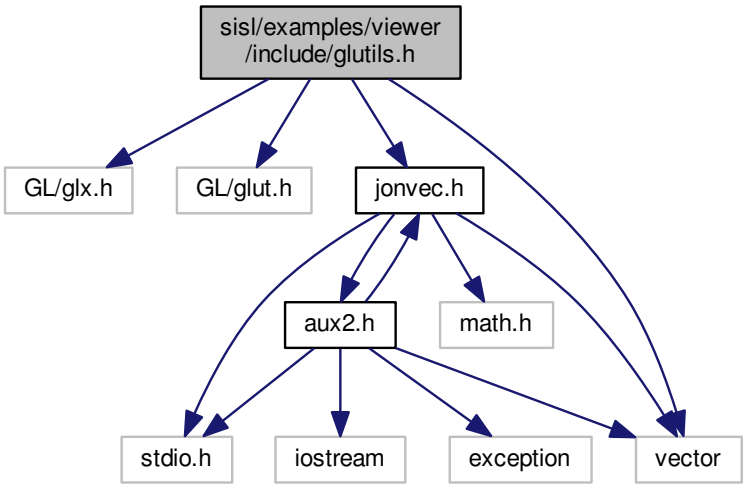
30.2276.2.4 const int predefined_colours

Definition at line 54 of file gl_aux.cpp.

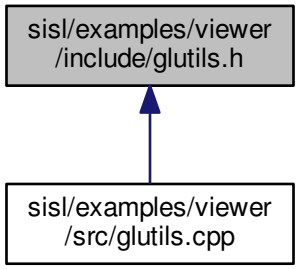
30.2277 sisl/examples/viewer/include/glutils.h File Reference

```
#include <GL/glx.h>
#include "GL/glut.h"
#include <vector>
#include "jonvec.h"
```

Include dependency graph for glutils.h:



This graph shows which files directly or indirectly include this file:



Macros

- #define ASSERT_GL assert_gl_m(__LINE__, __FILE__)
- #define ASSERT_GL_DONT_EXIT assert_gl_m(__LINE__, __FILE__, false)
- #define assert_gl assert_gl_m(__LINE__, __FILE__); assert_gl_dummy_and_empty
- #define GLUTILS_H_INCLUDED

Functions

- void assert_gl_m (int line, char *file, const bool do_exit=true)
- void assert_gl_dummy_and_empty (void)
- void list_FBConfigs (GLXFBConfig *config, int nelements)
- void draw_sphere (const vector3t< float > &pos, const float r, const int n, const int slot, const vector3t< float > &col, const bool wiremode)

30.2277.1 Macro Definition Documentation

30.2277.1.1 #define ASSERT_GL assert_gl_m(__LINE__, __FILE__)

Definition at line 70 of file glutils.h.

30.2277.1.2 #define assert_gl assert_gl_m(__LINE__, __FILE__); assert_gl_dummy_and_empty

Definition at line 76 of file glutils.h.

30.2277.1.3 #define ASSERT_GL_DONT_EXIT assert_gl_m(__LINE__, __FILE__, false)

Definition at line 71 of file glutils.h.

30.2277.1.4 #define GLUTILS_H_INCLUDED

Definition at line 92 of file glutils.h.

30.2277.2 Function Documentation

30.2277.2.1 void assert_gl_dummy_and_empty (void)

Definition at line 166 of file glutils.cpp.

30.2277.2.2 void assert_gl_m (int *line*, char * *file*, const bool *do_exit* = true)

Definition at line 60 of file glutils.cpp.

30.2277.2.3 void draw_sphere (const vector3t< float > & *pos,* const float *r,* const int *n,* const int *slot,* const vector3t< float > & *col,* const bool *wiremode*)

Definition at line 327 of file glutils.cpp.

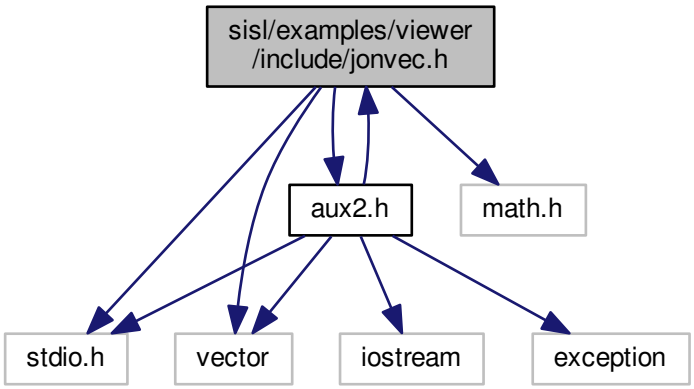
30.2277.2.4 void list_FBConfigs (GLXFBConfig * *config,* int *nelements*)

Definition at line 186 of file glutils.cpp.

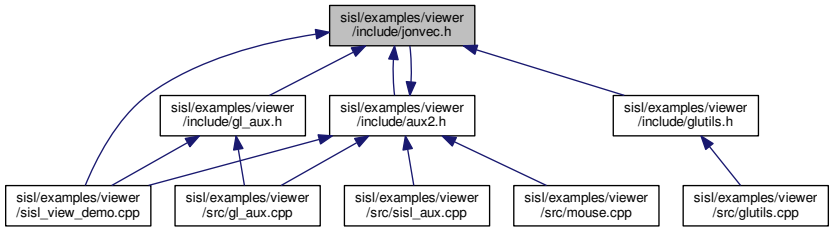
30.2278 sisl/examples/viewer/include/jonvec.h File Reference

```
#include <stdio.h>
#include <math.h>
#include <vector>
#include "aux2.h"
```

Include dependency graph for jonvec.h:



This graph shows which files directly or indirectly include this file:

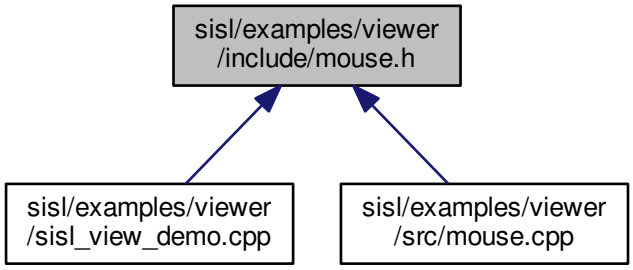


Classes

- class vector3t< T >

30.2279 sisl/examples/viewer/include/mouse.h File Reference

This graph shows which files directly or indirectly include this file:



Macros

- #define MOUSE_H_INCLUDED

Functions

- int transversal_rotation (int x, int y, int last_xx, int last_yy)
- void MouseRotate (int x, int y)
- void MouseZoom (int x, int y)
- void MouseTranslate (int x, int y)
- void Mouse (int butt, int state, int x, int y)

Variables

- GLboolean allow_zrot
- int last_x
- int last_y
- int last_x0
- int last_y0
- bool mouse_movement

30.2279.1 Macro Definition Documentation

30.2279.1.1 #define MOUSE_H_INCLUDED

Definition at line 62 of file mouse.h.

30.2279.2 Function Documentation

30.2279.2.1 void Mouse (int *butt,* int *state,* int *x,* int *y*)

Definition at line 222 of file mouse.cpp.

30.2279.2.2 void MouseRotate (int *x,* int *y*)

Definition at line 151 of file mouse.cpp.

30.2279.2.3 void MouseTranslate (int *x,* int *y*)

Definition at line 209 of file mouse.cpp.

30.2279.2.4 void MouseZoom (int *x,* int *y*)

Definition at line 196 of file mouse.cpp.

30.2279.2.5 int transversal_rotation (int *x,* int *y,* int *last_xx,* int *last_yy*)

Definition at line 115 of file mouse.cpp.

30.2279.3 Variable Documentation

30.2279.3.1 GLboolean allow_zrot

Definition at line 69 of file mouse.cpp.

30.2279.3.2 int last_x

Definition at line 70 of file mouse.cpp.

30.2279.3.3 int last_x0

Definition at line 70 of file mouse.cpp.

30.2279.3.4 int last_y

Definition at line 70 of file mouse.cpp.

30.2279.3.5 int last_y0

Definition at line 70 of file mouse.cpp.

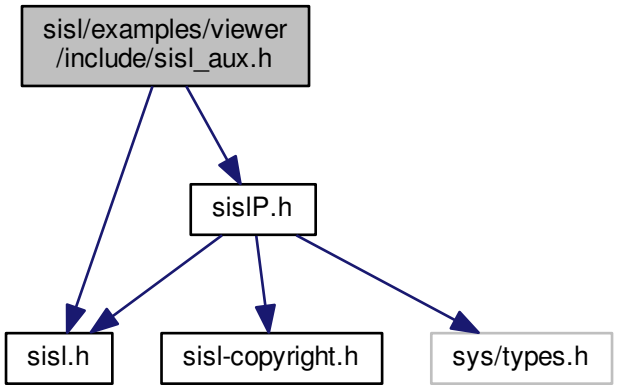
30.2279.3.6 bool mouse_movement

Definition at line 71 of file mouse.cpp.

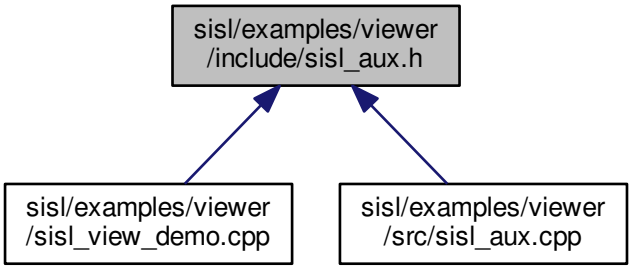
30.2280 sisl/examples/viewer/include/sisl_aux.h File Reference

```
#include "sisl.h"
#include "sislP.h"
```

Include dependency graph for sisl_aux.h:



This graph shows which files directly or indirectly include this file:



Macros

- #define SISL_AUX_H_INCLUDED

Functions

- void lower_degree_to_linear (SISLSurf **srf, double e)
- void lower_degree_and_subdivide (SISLSurf **srf, int new_knots_per_interval, int max_number_of_knots)
- void compute_surface_normals (SISLSurf *srf, double **ngrid)

30.2280.1 Macro Definition Documentation

30.2280.1.1 #define SISL_AUX_H_INCLUDED

Definition at line 59 of file sisl_aux.h.

30.2280.2 Function Documentation

30.2280.2.1 void compute_surface_normals (SISLSurf * *srf,* double ** *ngrid*)

Definition at line 231 of file sisl_aux.cpp.

30.2280.2.2 void lower_degree_and_subdivide (SISLSurf ** *srf,* int *new_knots_per_interval,* int *max_number_of_knots*)

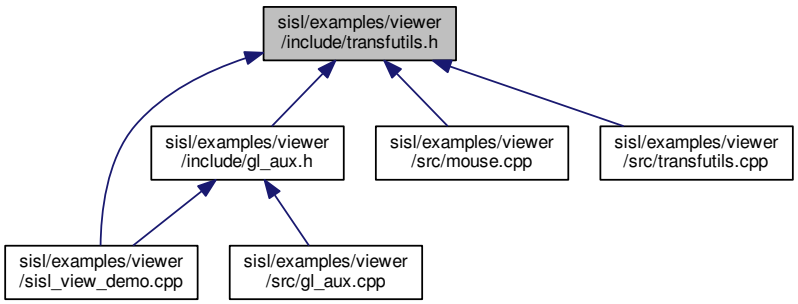
Definition at line 81 of file sisl_aux.cpp.

30.2280.2.3 void lower_degree_to_linear (SISLSurf ** *srf,* double *e*)

Definition at line 62 of file sisl_aux.cpp.

30.2281 sisl/examples/viewer/include/transfutils.h File Reference

This graph shows which files directly or indirectly include this file:



Macros

- #define TRANSFUTILS_H_INCLUDED

Functions

- void rotate (double y_ang, double x_ang, double z_ang)
- void translate (double x, double y, double z)
- void scale (double x, double y, double z)

Variables

- double xtrans
- double ytrans
- double ztrans
- double xrot_eps
- double yrot_eps
- double zrot_eps
- double xscale
- double yscale
- double zscale
- double xrot
- double yrot
- double zrot

30.2281.1 Macro Definition Documentation

30.2281.1.1 #define TRANSFUTILS_H_INCLUDED

Definition at line 63 of file transfutils.h.

30.2281.2 Function Documentation

30.2281.2.1 void rotate (double *y_ang*, double *x_ang*, double *z_ang*)

Definition at line 68 of file transfutils.cpp.

30.2281.2.2 void scale (double *x*, double *y*, double *z*)

Definition at line 127 of file transfutils.cpp.

30.2281.2.3 void translate (double *x*, double *y*, double *z*)

Definition at line 108 of file transfutils.cpp.

30.2281.3 Variable Documentation

30.2281.3.1 double xrot

Definition at line 61 of file transfutils.cpp.

30.2281.3.2 double xrot_eps

Definition at line 59 of file transfutils.cpp.

30.2281.3.3 double xscale [property],[bound],[constrained]

Definition at line 92 of file all_8.js.

30.2281.3.4 double xtrans [property],[bound],[constrained]

Definition at line 92 of file all_8.js.

30.2281.3.5 double yrot

Definition at line 61 of file transfutils.cpp.

30.2281.3.6 double yrot_eps

Definition at line 59 of file transfutils.cpp.

30.2281.3.7 double yscale [property],[bound],[constrained]

Definition at line 92 of file all_8.js.

30.2281.3.8 double ytrans [property],[bound],[constrained]

Definition at line 92 of file all_8.js.

30.2281.3.9 double zrot

Definition at line 61 of file transfutils.cpp.

30.2281.3.10 double zrot_eps

Definition at line 59 of file transfutils.cpp.

30.2281.3.11 double zscale [property],[bound],[constrained]

Definition at line 92 of file all_8.js.

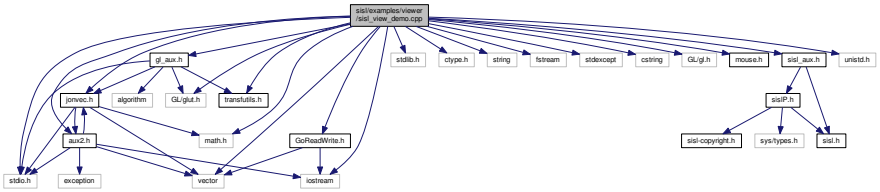
30.2281.3.12 double ztrans [property],[bound],[constrained]

Definition at line 92 of file all_8.js.

30.2282 sisl/examples/viewer/sisl_view_demo.cpp File Reference

```
#include <stdio.h>
#include <math.h>
#include <stdlib.h>
#include <ctype.h>
#include <string>
#include <iostream>
#include <fstream>
#include <stdexcept>
#include <vector>
#include <cstring>
#include <GL/gl.h>
#include <GL/glut.h>
#include "gl_aux.h"
#include "transfutils.h"
#include "mouse.h"
#include "sisl_aux.h"
#include "GoReadWrite.h"
#include "aux2.h"
#include "jonvec.h"
#include <unistd.h>
```

Include dependency graph for sisl_view_demo.cpp:



Macros

- #define MAX_SURFACES 100
- #define MAX_CURVES 2000
- #define MAX_LINES 100
- #define CURVE_EVALUATIONS 500
- #define ESC_STRING "<ESC>"
- #define TAB_STRING "<TAB>"
- #define CTRL_STRING "<CTRL>"

Functions

- void draw_all_curves (void)
- int main (int argc, char ∗argv[ ])

Variables

- char init_key_string [1000]
- double axis_thickness =0.3
- double axis_length =0.7
- double marker_size =1.0
- int draw_edges =0
- float wire_col =0.0
- float background_col =0.0
- int draw_axes =1
- int frames_without_movement =0
- SISLSurf ∗ surface [MAX_SURFACES]
- int surfaces =0
- int selected_surface =-1
- int surface_highlights =0
- int curve_highlights =0
- int selected_curve =-1
- double ∗ normal [MAX_SURFACES]
- int surf_enabled [MAX_SURFACES]
- int curve_enabled [MAX_CURVES]
- char ∗ surface_name [MAX_SURFACES]
- char ∗ curve_name [MAX_CURVES]
- SISLCurve ∗ curve [MAX_CURVES]
- int curves =0
- double ∗ discr_curve [MAX_CURVES]
- vector< vector3t< float > > pcloud
- const int predef_colours =6
- const double col_setting [3 ∗predef_colours]
- const double col_x_setting_back [3 ∗predef_colours]

30.2282.1 Macro Definition Documentation

30.2282.1.1 #define CTRL_STRING "<CTRL>"

30.2282.1.2 #define CURVE_EVALUATIONS 500

30.2282.1.3 #define ESC_STRING "<ESC>"

30.2282.1.4 #define MAX_CURVES 2000

Definition at line 85 of file sisl_view_demo.cpp.

30.2282.1.5 #define MAX_LINES 100

Definition at line 86 of file sisl_view_demo.cpp.

30.2282.1.6 #define MAX_SURFACES 100

Definition at line 84 of file sisl_view_demo.cpp.

30.2282.1.7 #define TAB_STRING "<TAB>"

30.2282.2 Function Documentation

30.2282.2.1 void draw_all_curves (void)

Definition at line 372 of file sisl_view_demo.cpp.

30.2282.2.2 int main (int *argc,* char * *argv[ ]*)

Definition at line 1287 of file sisl_view_demo.cpp.

30.2282.3 Variable Documentation

30.2282.3.1 double axis_length =0.7

Definition at line 78 of file sisl_view_demo.cpp.

30.2282.3.2 double axis_thickness =0.3

Definition at line 78 of file sisl_view_demo.cpp.

30.2282.3.3 float background_col =0.0

Definition at line 80 of file sisl_view_demo.cpp.

30.2282.3.4 const double col_setting[3 *predef_colours]

Initial value:

```
={1.0, 0.0, 0.0,
  0.0, 1.0, 0.0,
  0.0, 0.0, 1.0,
  1.0, 1.0, 0.0,
  0.0, 1.0, 1.0,
  1.0, 0.0, 1.0}
```

Definition at line 108 of file sisl_view_demo.cpp.

30.2282.3.5 const double col_x_setting_back[3 ∗predef_colours]

Initial value:

```
={0.6, 0.2, 0.0,
  0.0, 0.6, 0.2,
  0.2, 0.0, 0.6,
  0.6, 0.6, 0.2,
  0.2, 0.6, 0.6,
  0.6, 0.2, 0.6}
```

Definition at line 115 of file sisl_view_demo.cpp.

30.2282.3.6 SISLCurve∗ curve[MAX_CURVES]

Definition at line 96 of file sisl_view_demo.cpp.

30.2282.3.7 int curve_enabled[MAX_CURVES]

Definition at line 93 of file sisl_view_demo.cpp.

30.2282.3.8 int curve_highlights =0

Definition at line 89 of file sisl_view_demo.cpp.

30.2282.3.9 char∗ curve_name[MAX_CURVES]

Definition at line 95 of file sisl_view_demo.cpp.

30.2282.3.10 int curves =0

Definition at line 97 of file sisl_view_demo.cpp.

30.2282.3.11 double∗ discr_curve[MAX_CURVES]

Definition at line 98 of file sisl_view_demo.cpp.

30.2282.3.12 int draw_axes =1

Definition at line 81 of file sisl_view_demo.cpp.

30.2282.3.13 int draw_edges =0

Definition at line 79 of file sisl_view_demo.cpp.

30.2282.3.14 int frames_without_movement =0

Definition at line 82 of file sisl_view_demo.cpp.

30.2282.3.15 char init_key_string[1000]

Definition at line 77 of file sisl_view_demo.cpp.

30.2282.3.16 double marker_size =1.0

Definition at line 78 of file sisl_view_demo.cpp.

30.2282.3.17 double* normal[MAX_SURFACES]

Definition at line 91 of file sisl_view_demo.cpp.

30.2282.3.18 vector< vector3t<float> > pcloud

Definition at line 99 of file sisl_view_demo.cpp.

30.2282.3.19 const int predef_colours =6

Definition at line 106 of file sisl_view_demo.cpp.

30.2282.3.20 int selected_curve =-1

Definition at line 90 of file sisl_view_demo.cpp.

30.2282.3.21 int selected_surface =-1

Definition at line 89 of file sisl_view_demo.cpp.

30.2282.3.22 int surf_enabled[MAX_SURFACES]

Definition at line 92 of file sisl_view_demo.cpp.

30.2282.3.23 SISLSurf* surface[MAX_SURFACES]

Definition at line 88 of file sisl_view_demo.cpp.

30.2282.3.24 int surface_highlights =0

Definition at line 89 of file sisl_view_demo.cpp.

30.2282.3.25 char* surface_name[MAX_SURFACES]

Definition at line 94 of file sisl_view_demo.cpp.

30.2282.3.26 int surfaces =0

Definition at line 89 of file sisl_view_demo.cpp.

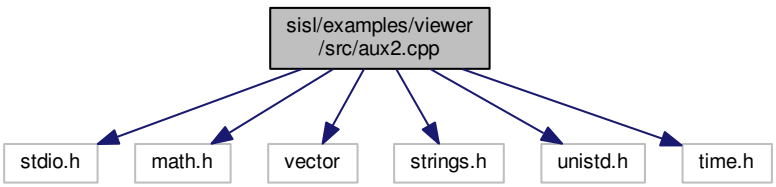
30.2282.3.27 float wire_col =0.0

Definition at line 80 of file sisl_view_demo.cpp.

30.2283 sisl/examples/viewer/src/aux2.cpp File Reference

```
#include <stdio.h>
#include <math.h>
#include <vector>
#include <strings.h>
#include <unistd.h>
#include <time.h>
```

Include dependency graph for aux2.cpp:



Functions

- void tic (void)
- void toc (void)

Variables

- double jon_timer

30.2283.1 Function Documentation

30.2283.1.1 void tic (void)

Definition at line 100 of file aux2.cpp.

30.2283.1.2 void toc (void)

Definition at line 106 of file aux2.cpp.

30.2283.2 Variable Documentation

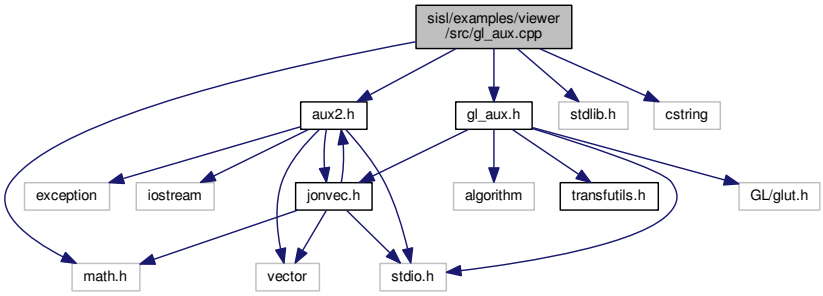
30.2283.2.1 double jon_timer

Definition at line 70 of file aux2.cpp.

30.2284 sisl/examples/viewer/src/gl_aux.cpp File Reference

```
#include <math.h>
#include <stdlib.h>
#include <cstring>
#include "aux2.h"
#include "gl_aux.h"
```

Include dependency graph for gl_aux.cpp:



Macros

- #define PI 3.1415926536

Functions

- void draw_cylinder (double x0, double y0, double z0, double x1, double y1, double z1, double radius, double radius2, int n)

  Draw a cylinder, or possibly a cone.
- void draw_gl_axes_old (int n, double r, double radius, double rim, double l)
- void draw_grid (const int n1, const int n2, const int n3)
- void draw_grid_planes (const int n1, const int n2, const int n3)
- void gl_init (int argc, char ∗argv[ ], const int xs, const int ys, const int x0, const int y0, const int doubleBuffer, const int two_sided, const int lighting, const int normalize, const int smooth, const double xtrans, const double ytrans, const double ztrans, const double xscale, const double yscale, const double zscale, int &tx, int &ty, const int texture_mode, const char ∗const texfile)
- void transpose_matrix (double ∗const d)
- void print_gl_matrix (const int m)
- void reshape_window (int width, int height)
- void write_gl_matrices (FILE ∗f)
- void read_gl_matrices (FILE ∗f)

Variables

- const int predefined_colours =24
- const double predef_col_table [3 ∗predefined_colours]

30.2284.1 Macro Definition Documentation

30.2284.1.1 #define PI 3.1415926536

Definition at line 50 of file gl_aux.cpp.

30.2284.2 Function Documentation

30.2284.2.1 void draw_cylinder (double *x0,* double *y0,* double *z0,* double *x1,* double *y1,* double *z1,* double *radius,* double *radius2,* int *n*)

Draw a cylinder, or possibly a cone.

Definition at line 91 of file gl_aux.cpp.

30.2284.2.2 void draw_gl_axes_old (int *n,* double *r,* double *radius,* double *rim,* double *l*)

Definition at line 174 of file gl_aux.cpp.

30.2284.2.3 void draw_grid (const int *n1,* const int *n2,* const int *n3*)

Definition at line 223 of file gl_aux.cpp.

30.2284.2.4 void draw_grid_planes (const int *n1,* const int *n2,* const int *n3*)

Definition at line 273 of file gl_aux.cpp.

30.2284.2.5 void gl_init (int *argc,* char * *argv[ ],* const int *xs,* const int *ys,* const int *x0,* const int *y0,* const int *doubleBuffer,* const int *two_sided,* const int *lighting,* const int *normalize,* const int *smooth,* const double *xtrans,* const double *ytrans,* const double *ztrans,* const double *xscale,* const double *yscale,* const double *zscale,* int & *tx,* int & *ty,* const int *texture_mode,* const char *const *texfile*)

Definition at line 329 of file gl_aux.cpp.

30.2284.2.6 void print_gl_matrix (const int *m*)

Definition at line 659 of file gl_aux.cpp.

30.2284.2.7 void read_gl_matrices (FILE * *f*)

Definition at line 781 of file gl_aux.cpp.

30.2284.2.8 void reshape_window (int *width,* int *height*)

Definition at line 741 of file gl_aux.cpp.

30.2284.2.9 void transpose_matrix (double *const *d*)

Definition at line 641 of file gl_aux.cpp.

30.2284.2.10 void write_gl_matrices (FILE * *f*)

Definition at line 761 of file gl_aux.cpp.

30.2284.3 Variable Documentation

30.2284.3.1 const double predef_col_table[3 *predefined_colours]

Initial value:

```
={1.0, 0.0, 0.0,
  0.0, 1.0, 0.0,
  0.0, 0.0, 1.0,
  1.0, 1.0, 0.0,
  0.0, 1.0, 1.0,
  1.0, 0.0, 1.0,
  0.7, 0.0, 0.0,
  0.0, 0.7, 0.0,
  0.0, 0.0, 0.7,
  0.7, 0.7, 0.0,
  0.0, 0.7, 0.7,
  0.7, 0.0, 0.7,
  0.3, 0.8, 0.8,
  0.8, 0.3, 0.8,
  0.8, 0.8, 0.3,
  0.3, 0.3, 0.8,
  0.8, 0.3, 0.3,
  0.3, 0.8, 0.3,
  0.5, 0.8, 0.8,
  0.8, 0.5, 0.8,
  0.8, 0.8, 0.5,
  0.5, 0.5, 0.8,
  0.8, 0.5, 0.5,
  0.5, 0.8, 0.5}
```

Definition at line 56 of file gl_aux.cpp.

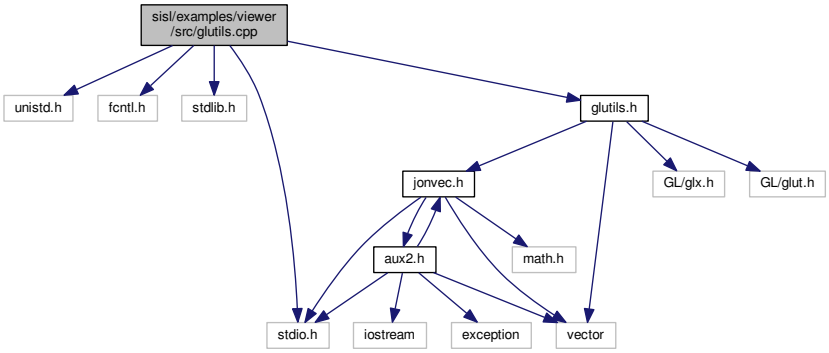
30.2284.3.2 const int predefined_colours =24

Definition at line 54 of file gl_aux.cpp.

30.2285 sisl/examples/viewer/src/glutils.cpp File Reference

```
#include <unistd.h>
#include <fcntl.h>
#include <stdlib.h>
#include <stdio.h>
#include "glutils.h"
```

Include dependency graph for glutils.cpp:



Macros

- #define M_PI 3.1415926535897932384

Functions

- void assert_gl_m (int line, char ∗file, const bool do_exit)
- void assert_gl_dummy_and_empty (void)
- void list_FBConfigs (GLXFBConfig ∗config, int nelements)
- void draw_sphere (const vector3t< float > &pos, const float r, const int n, const int slot, const vector3t< float > &col, const bool wiremode)

30.2285.1 Macro Definition Documentation

30.2285.1.1 #define M_PI 3.1415926535897932384

Definition at line 53 of file glutils.cpp.

30.2285.2 Function Documentation

30.2285.2.1 void assert_gl_dummy_and_empty (void)

Definition at line 166 of file glutils.cpp.

30.2285.2.2 void assert_gl_m (int *line*, char * *file*, const bool *do_exit*)

Definition at line 60 of file glutils.cpp.

30.2285.2.3 void draw_sphere (const vector3t< float > & *pos*, const float *r*, const int *n*, const int *slot*, const vector3t< float > & *col*, const bool *wiremode*)

Definition at line 327 of file glutils.cpp.

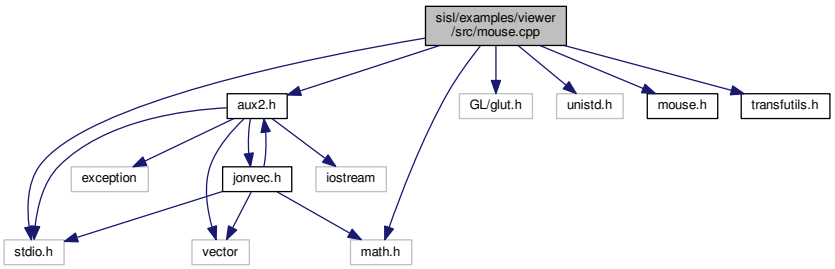
30.2285.2.4 void list_FBConfigs (GLXFBConfig * *config*, int *nelements*)

Definition at line 186 of file glutils.cpp.

30.2286 sisl/examples/viewer/src/mouse.cpp File Reference

```
#include <stdio.h>
#include <GL/glut.h>
#include <math.h>
#include <unistd.h>
#include "mouse.h"
#include "transfutils.h"
#include "aux2.h"
```

Include dependency graph for mouse.cpp:



Macros

- #define GLUT_DISABLE_ATEXIT_HACK
- #define PI 3.1415926536

Functions

- void draw_cursor (int x, int y)
- int transversal_rotation (int x, int y, int last_xx, int last_yy)
- void MouseRotate (int x, int y)
- void MouseZoom (int x, int y)
- void MouseTranslate (int x, int y)
- void Mouse (int butt, int state, int x, int y)

Variables

- GLboolean allow_zrot =GL_TRUE
- int last_x =0
- int last_y =0
- int last_x0 =0
- int last_y0 =0
- bool mouse_movement =false
- float curx =0.0
- float cury =0.0
- float curz =0.0

30.2286.1 Macro Definition Documentation

30.2286.1.1 #define GLUT_DISABLE_ATEXIT_HACK

Definition at line 41 of file mouse.cpp.

30.2286.1.2 #define PI 3.1415926536

Definition at line 49 of file mouse.cpp.

30.2286.2 Function Documentation

30.2286.2.1 void draw_cursor (int *x,* int *y*)

Definition at line 86 of file mouse.cpp.

30.2286.2.2 void Mouse (int *butt,* int *state,* int *x,* int *y*)

Definition at line 222 of file mouse.cpp.

30.2286.2.3 void MouseRotate (int *x,* int *y*)

Definition at line 151 of file mouse.cpp.

30.2286.2.4 void MouseTranslate (int *x,* int *y*)

Definition at line 209 of file mouse.cpp.

30.2286.2.5 void MouseZoom (int *x,* int *y*)

Definition at line 196 of file mouse.cpp.

30.2286.2.6 int transversal_rotation (int *x,* int *y,* int *last_xx,* int *last_yy*)

Definition at line 115 of file mouse.cpp.

30.2286.3 Variable Documentation

30.2286.3.1 GLboolean allow_zrot =GL_TRUE

Definition at line 69 of file mouse.cpp.

30.2286.3.2 float curx =0.0

Definition at line 84 of file mouse.cpp.

30.2286.3.3 float cury =0.0

Definition at line 84 of file mouse.cpp.

30.2286.3.4 float curz =0.0

Definition at line 84 of file mouse.cpp.

30.2286.3.5 int last_x =0

Definition at line 70 of file mouse.cpp.

30.2286.3.6 int last_x0 =0

Definition at line 70 of file mouse.cpp.

30.2286.3.7 int last_y =0

Definition at line 70 of file mouse.cpp.

30.2286.3.8 int last_y0 =0

Definition at line 70 of file mouse.cpp.

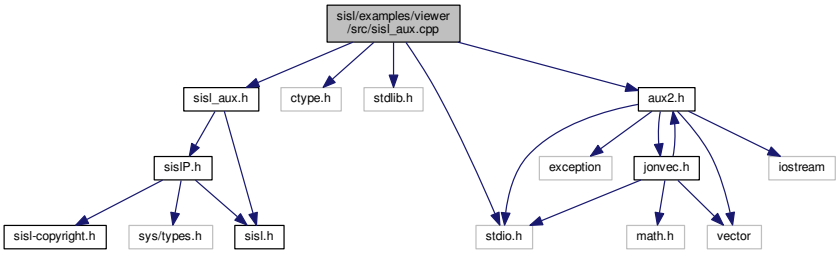
30.2286.3.9 bool mouse_movement =false

Definition at line 71 of file mouse.cpp.

30.2287 sisl/examples/viewer/src/sisl_aux.cpp File Reference

```
#include <stdio.h>
#include <ctype.h>
#include <stdlib.h>
#include "sisl_aux.h"
#include "aux2.h"
```

Include dependency graph for sisl_aux.cpp:



Macros

- #define DBGqqq

Functions

- void lower_degree_to_linear (SISLSurf **srf, double e)
- void lower_degree_and_subdivide (SISLSurf **srf, int new_knots_per_interval, int max_number_of_knots)
- void compute_surface_normals (SISLSurf *srf, double **ngrid)

30.2287.1 Macro Definition Documentation

30.2287.1.1 #define DBGqqq

Definition at line 40 of file sisl_aux.cpp.

30.2287.2 Function Documentation

30.2287.2.1 void compute_surface_normals (SISLSurf * *srf,* double ** *ngrid*)

Definition at line 231 of file sisl_aux.cpp.

30.2287.2.2 void lower_degree_and_subdivide (SISLSurf ** *srf,* int *new_knots_per_interval,* int *max_number_of_knots*)

Definition at line 81 of file sisl_aux.cpp.

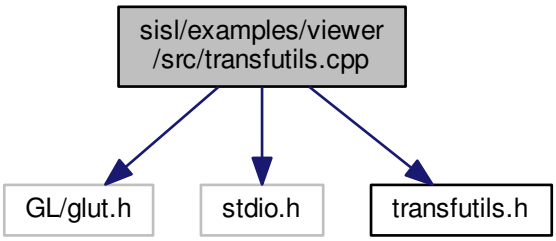
30.2287.2.3 void lower_degree_to_linear (SISLSurf ** *srf,* double *e*)

Definition at line 62 of file sisl_aux.cpp.

30.2288 sisl/examples/viewer/src/transfutils.cpp File Reference

```
#include <GL/glut.h>
#include <stdio.h>
#include "transfutils.h"
```

Include dependency graph for transfutils.cpp:



Functions

- void rotate (double y_ang, double x_ang, double z_ang)
- void translate (double x, double y, double z)
- void scale (double x, double y, double z)

Variables

- double xtrans =0.0
- double ytrans =0.0
- double ztrans =-6
- double xrot_eps =5.0
- double yrot_eps =5.0
- double zrot_eps =5.0
- double xscale =1.0
- double yscale =1.0
- double zscale =1.0
- double xrot
- double yrot
- double zrot

30.2288.1 Function Documentation

30.2288.1.1 void rotate (double *y_ang*, double *x_ang*, double *z_ang*)

Definition at line 68 of file transfutils.cpp.

30.2288.1.2 void scale (double *x*, double *y*, double *z*)

Definition at line 127 of file transfutils.cpp.

30.2288.1.3 void translate (double *x*, double *y*, double *z*)

Definition at line 108 of file transfutils.cpp.

30.2288.2 Variable Documentation

30.2288.2.1 double xrot

Definition at line 61 of file transfutils.cpp.

30.2288.2.2 double xrot_eps =5.0

Definition at line 59 of file transfutils.cpp.

30.2288.2.3 double xscale =1.0 [property],[bound],[constrained]

Definition at line 60 of file transfutils.cpp.

30.2288.2.4 double xtrans =0.0 [property],[bound],[constrained]

Definition at line 58 of file transfutils.cpp.

30.2288.2.5 double yrot

Definition at line 61 of file transfutils.cpp.

30.2288.2.6 double yrot_eps =5.0

Definition at line 59 of file transfutils.cpp.

30.2288.2.7 double yscale =1.0 [property],[bound],[constrained]

Definition at line 60 of file transfutils.cpp.

30.2288.2.8 double ytrans =0.0 [property],[bound],[constrained]

Definition at line 58 of file transfutils.cpp.

30.2288.2.9 double zrot

Definition at line 61 of file transfutils.cpp.

30.2288.2.10 double zrot_eps =5.0

Definition at line 59 of file transfutils.cpp.

30.2288.2.11 double zscale =1.0 [property],[bound],[constrained]

Definition at line 60 of file transfutils.cpp.

30.2288.2.12 double ztrans =-6 [property],[bound],[constrained]

Definition at line 58 of file transfutils.cpp.

30.2289 sisl/include/sisl-copyright.h File Reference

30.2290 sisl/include/sisl.h File Reference

This graph shows which files directly or indirectly include this file:

Classes

- struct SISLdir
- struct SISLbox
- struct SISLCurve
- struct SISLSurf
- struct SISLIntcurve

Macros

- #define GO_API
- #define SISL_CRV_PERIODIC -1
- #define SISL_CRV_OPEN 1
- #define SISL_CRV_CLOSED 0
- #define SISL_SURF_PERIODIC -1
- #define SISL_SURF_OPEN 1
- #define SISL_SURF_CLOSED 0

Typedefs

- typedef struct SISLdir SISLdir
- typedef struct SISLbox SISLbox
- typedef struct SISLCurve SISLCurve
- typedef struct SISLSurf SISLSurf
- typedef struct SISLIntcurve SISLIntcurve

Enumerations

- enum { SI_RIGHT =1, SI_LEFT =2 }
- enum {
  SI_UNDEF, SI_IN, SI_OUT, SI_ON,
  SI_AT }

Functions

- SISLbox * newbox ()
- SISLCurve * newCurve ()
- SISLCurve * copyCurve ()
- SISLdir * newdir ()
- SISLIntcurve * newIntcurve ()
- SISLSurf * newSurf ()
- SISLSurf * copySurface ()
- void freeCurve ()
- void freeIntcrvlist ()
- void freeIntcurve ()
- void freeSurf ()
- void s1001 ()
- void s1011 ()
- void s1012 ()
- void s1013 ()
- void s1014 ()
- void s1015 ()
- void s1016 ()
- void s1017 ()
- void s1018 ()
- void s1021 ()
- void s1022 ()
- void s1023 ()
- void s1024 ()
- void s1025 ()
- void s1221 ()
- void s1225 ()
- void s1226 ()
- void s1227 ()
- void s1233 ()
- void s1237 ()
- void s1238 ()
- void s1240 ()
- void s1241 ()
- void s1243 ()
- void s1302 ()
- void s1303 ()
- void s1310 ()
- void s1314 ()
- void s1315 ()
- void s1316 ()
- void s1317 ()
- void s1318 ()
- void s1319 ()
- void s1327 ()
- void s1328 ()
- void s1332 ()
- void s1356 ()
- void s1357 ()
- void s1360 ()
- void s1363 ()
- void s1364 ()
- void s1365 ()

- void s1369 ()
- void s1371 ()
- void s1372 ()
- void s1373 ()
- void s1374 ()
- void s1375 ()
- void s1379 ()
- void s1380 ()
- void s1383 ()
- void s1386 ()
- void s1387 ()
- void s1388 ()
- void s1389 ()
- void s1390 ()
- void s1391 ()
- void s1401 ()
- void s1421 ()
- void s1422 ()
- void s1424 ()
- void s1425 ()
- void s1439 ()
- void s1440 ()
- void s1450 ()
- void s1451 ()
- void s1501 ()
- void s1502 ()
- void s1503 ()
- void s1506 ()
- void s1508 ()
- void s1510 ()
- void s1511 ()
- void s1514 ()
- void s1515 ()
- void s1522 ()
- void s1529 ()
- void s1530 ()
- void s1534 ()
- void s1535 ()
- void s1536 ()
- void s1537 ()
- void s1538 ()
- void s1539 ()
- void s1542 ()
- void s1600 ()
- void s1601 ()
- void s1602 ()
- void s1603 ()
- void s1606 ()
- void s1607 ()
- void s1608 ()
- void s1609 ()
- void s1611 ()
- void s1613 ()
- void s1620 ()
- void s1630 ()

- void s1706 ()
- void s1710 ()
- void s1711 ()
- void s1712 ()
- void s1713 ()
- void s1714 ()
- void s1715 ()
- void s1716 ()
- void s1720 ()
- void s1730 ()
- void s1731 ()
- void s1732 ()
- void s1733 ()
- void s1750 ()
- void s1774 ()
- void s1775 ()
- void s1850 ()
- void s1851 ()
- void s1852 ()
- void s1853 ()
- void s1854 ()
- void s1855 ()
- void s1856 ()
- void s1857 ()
- void s1858 ()
- void s1859 ()
- void s1860 ()
- void s1870 ()
- void s1871 ()
- void s1920 ()
- void s1921 ()
- void s1940 ()
- void s1953 ()
- void s1954 ()
- void s1955 ()
- void s1957 ()
- void s1958 ()
- void s1961 ()
- void s1962 ()
- void s1963 ()
- void s1965 ()
- void s1966 ()
- void s1967 ()
- void s1968 ()
- void s1986 ()
- void s1987 ()
- void s1988 ()
- void s1989 ()
- void s2500 ()
- void s2502 ()
- void s2504 ()
- void s2506 ()
- void s2508 ()
- void s2510 ()
- void s2532 ()

- void s2536 ()
- void s2540 ()
- void s2542 ()
- void s2544 ()
- void s2545 ()
- void s2550 ()
- void s2553 ()
- void s2556 ()
- void s2559 ()
- void s2562 ()
- void s6drawseq ()
- void make_cv_cyclic ()

30.2290.1 Macro Definition Documentation

30.2290.1.1 #define GO_API

Definition at line 75 of file sisl.h.

30.2290.1.2 #define SISL_CRV_CLOSED 0

Definition at line 263 of file sisl.h.

30.2290.1.3 #define SISL_CRV_OPEN 1

Definition at line 262 of file sisl.h.

30.2290.1.4 #define SISL_CRV_PERIODIC -1

Definition at line 261 of file sisl.h.

30.2290.1.5 #define SISL_SURF_CLOSED 0

Definition at line 267 of file sisl.h.

30.2290.1.6 #define SISL_SURF_OPEN 1

Definition at line 266 of file sisl.h.

30.2290.1.7 #define SISL_SURF_PERIODIC -1

Definition at line 265 of file sisl.h.

30.2290.2 Typedef Documentation

30.2290.2.1 typedef struct SISLbox SISLbox

30.2290.2.2 typedef struct SISLCurve SISLCurve

30.2290.2.3 typedef struct SISLdir SISLdir

30.2290.2.4 typedef struct SISLIntcurve SISLIntcurve

30.2290.2.5 typedef struct SISLSurf SISLSurf

30.2290.3 Enumeration Type Documentation

30.2290.3.1 anonymous enum

Enumerator

SI_RIGHT

SI_LEFT

Definition at line 252 of file sisl.h.

30.2290.3.2 anonymous enum

Enumerator

SI_UNDEF

SI_IN

SI_OUT

SI_ON

SI_AT

Definition at line 256 of file sisl.h.

30.2290.4 Function Documentation

30.2290.4.1 SISLCurve* copyCurve ( )

30.2290.4.2 SISLSurf* copySurface ( )

30.2290.4.3 void freeCurve ( )

30.2290.4.4 void freeIntcrvlist ( )

30.2290.4.5 void freeIntcurve ( )

30.2290.4.6 void freeSurf ( )

30.2290.4.7 void make_cv_cyclic ( )

30.2290.4.8 SISLbox* newbox ( )

30.2290.4.9 SISLCurve* newCurve ( )

30.2290.4.10 SISLdir* newdir ( )

30.2290.4.11 SISLIntcurve* newIntcurve ( )

30.2290.4.12 SISLSurf* newSurf ( )

30.2290.4.13 void s1001 ( )

30.2290.4.14 void s1011 ( )

30.2290.4.15 void s1012 ( )

30.2290.4.16 void s1013 ( )

30.2290.4.17 void s1014 ( )

30.2290.4.18 void s1015 ( )

30.2290.4.19 void s1016 ( )

30.2290.4.20 void s1017 ( )

30.2290.4.21 void s1018 ( )

30.2290.4.22 void s1021 ( )

30.2290.4.23 void s1022 ( )

30.2290.4.24 void s1023 ( )

30.2290.4.25 void s1024 ( )

30.2290.4.26 void s1025 ( )

30.2290.4.27 void s1221 ( )

30.2290.4.28 void s1225 ( )

30.2290.4.29 void s1226 ( )

30.2290.4.30 void s1227 ( )

30.2290.4.31 void s1233 ( )

30.2290.4.32 void s1237 ( )

30.2290.4.33 void s1238 ( )

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30.2290.4.35 void s1241 ( )

30.2290.4.36 void s1243 ( )

30.2290.4.37 void s1302 ( )

30.2290.4.38 void s1303 ( )

30.2290.4.39 void s1310 ( )

30.2290.4.40 void s1314 ( )

30.2290.4.41 void s1315 ( )

30.2290.4.42 void s1316 ( )

30.2290.4.43 void s1317 ( )

30.2290.4.44 void s1318 ( )

30.2290.4.45 void s1319 ( )

30.2290.4.46 void s1327 ( )

30.2290.4.47 void s1328 ( )

30.2290.4.48 void s1332 ( )

30.2290.4.49 void s1356 ( )

30.2290.4.50 void s1357 ( )

30.2290.4.51 void s1360 ( )

30.2290.4.52 void s1363 ( )

30.2290.4.53 void s1364 ( )

30.2290.4.54 void s1365 ( )

30.2290.4.55 void s1369 ( )

30.2290.4.56 void s1371 ( )

30.2290.4.57 void s1372 ( )

30.2290.4.58 void s1373 ( )

30.2290.4.59 void s1374 ( )

30.2290.4.60 void s1375 ( )

30.2290.4.61 void s1379 ( )

30.2290.4.62 void s1380 ( )

30.2290.4.63 void s1383 ( )

30.2290.4.64 void s1386 ( )

30.2290.4.65 void s1387 ( )

30.2290.4.66 void s1388 ( )

30.2290.4.67 void s1389 ( )

30.2290.4.68 void s1390 ( )

30.2290.4.69 void s1391 ( )

30.2290.4.70 void s1401 ( )

30.2290.4.71 void s1421 ( )

30.2290.4.72 void s1422 ( )

30.2290.4.73 void s1424 ( )

30.2290.4.74 void s1425 ( )

30.2290.4.75 void s1439 ( )

30.2290.4.76 void s1440 ( )

30.2290.4.77 void s1450 ( )

30.2290.4.78 void s1451 ( )

30.2290.4.79 void s1501 ( )

30.2290.4.80 void s1502 ( )

30.2290.4.81 void s1503 ( )

30.2290.4.82 void s1506 ( )

30.2290.4.83 void s1508 ( )

30.2290.4.84 void s1510 ( )

30.2290.4.85 void s1511 ( )

30.2290.4.86 void s1514 ( )

30.2290.4.87 void s1515 ( )

30.2290.4.88 void s1522 ( )

30.2290.4.89 void s1529 ( )

30.2290.4.90 void s1530 ( )

30.2290.4.91 void s1534 ( )

30.2290.4.92 void s1535 ( )

30.2290.4.93 void s1536 ( )

30.2290.4.94 void s1537 ( )

30.2290.4.95 void s1538 ( )

30.2290.4.96 void s1539 ( )

30.2290.4.97 void s1542 ( )

30.2290.4.98 void s1600 ( )

30.2290.4.99 void s1601 ( )

30.2290.4.100 void s1602 ( )

30.2290.4.101 void s1603 ( )

30.2290.4.102 void s1606 ( )

30.2290.4.103 void s1607 ( )

30.2290.4.104 void s1608 ( )

30.2290.4.105 void s1609 ( )

30.2290.4.106 void s1611 ( )

30.2290.4.107 void s1613 ( )

30.2290.4.108 void s1620 ( )

30.2290.4.109 void s1630 ( )

30.2290.4.110 void s1706 ( )

30.2290.4.111 void s1710 ( )

30.2290.4.112 void s1711 ( )

30.2290.4.113 void s1712 ( )

30.2290.4.114 void s1713 ( )

30.2290.4.115 void s1714 ( )

30.2290.4.116 void s1715 ( )

30.2290.4.117 void s1716 ( )

30.2290.4.118 void s1720 ( )

30.2290.4.119 void s1730 ( )

30.2290.4.120 void s1731 ( )

30.2290.4.121 void s1732 ( )

30.2290.4.122 void s1733 ( )

30.2290.4.123 void s1750 ( )

30.2290.4.124 void s1774 ( )

30.2290.4.125 void s1775 ( )

30.2290.4.126 void s1850 ( )

30.2290.4.127 void s1851 ( )

30.2290.4.128 void s1852 ( )

30.2290.4.129 void s1853 ( )

30.2290.4.130 void s1854 ( )

30.2290.4.131 void s1855 ( )

30.2290.4.132 void s1856 ( )

30.2290.4.133 void s1857 ( )

30.2290.4.134 void s1858 ( )

30.2290.4.135 void s1859 ( )

30.2290.4.136 void s1860 ( )

30.2290.4.137 void s1870 ( )

30.2290.4.138 void s1871 ( )

30.2290.4.139 void s1920 ( )

30.2290.4.140 void s1921 ( )

30.2290.4.141 void s1940 ( )

30.2290.4.142 void s1953 ( )

30.2290.4.143 void s1954 ( )

30.2290.4.144 void s1955 ( )

30.2290.4.145 void s1957 ( )

30.2290.4.146 void s1958 ( )

30.2290.4.147 void s1961 ( )

30.2290.4.148 void s1962 ( )

30.2290.4.149 void s1963 ( )

30.2290.4.150 void s1965 ( )

30.2290.4.151 void s1966 ( )

30.2290.4.152 void s1967 ( )

30.2290.4.153 void s1968 ( )

30.2290.4.154 void s1986 ( )

30.2290.4.155 void s1987 ( )

30.2290.4.156 void s1988 ( )

30.2290.4.157 void s1989 ( )

30.2290.4.158 void s2500 ( )

30.2290.4.159 void s2502 ( )

30.2290.4.160 void s2504 ( )

30.2290.4.161 void s2506 ( )

30.2290.4.162 void s2508 ( )

30.2290.4.163 void s2510 ( )

30.2290.4.164 void s2532 ( )

30.2290.4.165 void s2536 ( )

30.2290.4.166 void s2540 ( )

30.2290.4.167 void s2542 ( )

30.2290.4.168 void s2544 ( )

30.2290.4.169 void s2545 ( )

30.2290.4.170 void s2550 ( )

30.2290.4.171 void s2553 ( )

30.2290.4.172 void s2556 ( )

30.2290.4.173 void s2559 ( )

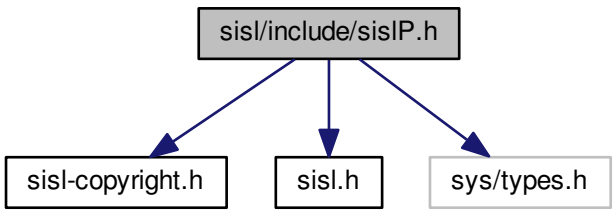
30.2290.4.174 void s2562 ( )

30.2290.4.175 void s6drawseq ( )

30.2291 sisl/include/sislP.h File Reference

```
#include "sisl-copyright.h"
#include "sisl.h"
#include <sys/types.h>
```

Include dependency graph for sislP.h:



Classes

- struct SISLPoint
- struct SISLObject
- struct SISLIntsurf
- struct SISLTrimpar
- struct SISLIntpt
- struct SISLTrack
- struct SISLIntlist
- struct SISLPtedge
- struct SISLEdge
- struct SISLIntdat
- struct rank_info

Macros

- #define CONST
- #define VOIDP (char *)
- #define CONSTVOIDP (char *)
- #define SISLPOINT 0
- #define SISLCURVE 1
- #define SISLSURFACE 2
- #define AEPSGE (double)1.e-6
- #define AEPSCO (double)0.0
- #define REL_COMP_RES (double)0.000000000000001
- #define REL_PAR_RES (double)0.000000000001
- #define ANGULAR_TOLERANCE (double)0.01 /* IN RADIANS */
- #define MAXIMAL_RADIUS_OF_CURVATURE (double)10000.0
- #define SISL_NULL 0
- #define DZERO (double)0.0

Typedefs

- typedef struct SISLPoint SISLPoint
- typedef struct SISLObject SISLObject
- typedef struct SISLIntsurf SISLIntsurf
- typedef struct SISLTrimpar SISLTrimpar
- typedef struct SISLIntpt SISLIntpt
- typedef struct SISLTrack SISLTrack
- typedef struct SISLIntlist SISLIntlist
- typedef struct SISLPtedge SISLPtedge
- typedef struct SISLEdge SISLEdge
- typedef struct SISLIntdat SISLIntdat
- typedef struct rank_info rank_info

Enumerations

- enum { SI_ORD = 1, SI_SING, SI_TRIM, SI_TOUCH }

Functions

- SISLIntpt * copyIntpt ()
- SISLEdge * newEdge ()
- SISLIntdat * newIntdat ()
- SISLIntlist * newIntlist ()
- SISLIntpt * newIntpt ()
- SISLObject * newObject ()
- SISLPoint * newPoint ()
- SISLPtedge * newPtedge ()
- SISLIntsurf * newIntsurf ()
- SISLTrack * newTrack ()
- SISLTrimpar * newTrimpar ()
- SISLIntpt * hp_newIntpt ()
- SISLIntpt * hp_copyIntpt ()
- void freeEdge ()
- void freeIntdat ()
- void freeIntlist ()
- void freeIntpt ()
- void freeObject ()
- void freePoint ()
- void freePtedge ()
- void freeIntsurf ()
- void freeTrimpar ()
- void freeTrack ()
- void make3D ()
- void s1119 ()
- void s1161 ()
- void s1162 ()
- void s1172 ()
- void s1173 ()
- void s1174 ()
- void s1190 ()
- void s1192 ()
- void s1219 ()
- void s1220 ()
- void s1222 ()
- void s1223 ()
- void s1224 ()
- void s1231 ()
- void s1232 ()
- void s1235 ()
- void s1236 ()
- void s1239 ()
- void s1244 ()
- void s1245 ()
- void s1251 ()
- void s1252 ()
- void s1301 ()
- void s1304 ()
- void s1305 ()
- void s1306 ()
- void s1307 ()
- void s1308 ()
- double s1309 ()

- double s1311 ()
- void s1312 ()
- void s1313 ()
- void s1320 ()
- void s1321 ()
- void s1322 ()
- void s1323 ()
- void s1324 ()
- double s1325 ()
- void s1329 ()
- void s1330 ()
- void s1331 ()
- void s1333 ()
- void s1333_count ()
- void s1333_cyclic ()
- void s1334 ()
- void s1340 ()
- void s1341 ()
- void s1342 ()
- void s1343 ()
- void s1345 ()
- void s1346 ()
- void s1347 ()
- void s1348 ()
- void s1349 ()
- void s1350 ()
- void s1351 ()
- void s1352 ()
- void s1353 ()
- void s1354 ()
- void s1355 ()
- void s1358 ()
- void s1359 ()
- void s1361 ()
- void s1362 ()
- void s1366 ()
- void s1367 ()
- void s1370 ()
- void s1376 ()
- void s1377 ()
- void s1378 ()
- void s1381 ()
- void s1382 ()
- void s1384 ()
- void s1385 ()
- void s1393 ()
- void s1399 ()
- void s1435 ()
- void s1436 ()
- void s1437 ()
- void s1438 ()
- void s1452 ()
- void s1500 ()
- void s1504 ()
- void s1505 ()

- void s1507 ()
- void s1512 ()
- void s1513 ()
- void s1516 ()
- void s1517 ()
- void s1520 ()
- SISLCurve * s1521 ()
- void s1528 ()
- void s1531 ()
- void s1540 ()
- void s1541 ()
- void s1604 ()
- void s1605 ()
- void s1612 ()
- void s1613bez ()
- void s1614 ()
- void s1615 ()
- void s1616 ()
- void s1617 ()
- void s1618 ()
- void s1619 ()
- void s1700 ()
- void s1701 ()
- void s1705 ()
- void s1707 ()
- void s1708 ()
- void s1741 ()
- void s1753 ()
- void s1754 ()
- void s1755 ()
- void s1770 ()
- void s1770_2D ()
- void s1771 ()
- void s1772 ()
- void s1773 ()
- void s1780 ()
- void s1785 ()
- void s1786 ()
- void s1787 ()
- void s1788 ()
- void s1789 ()
- void s1790 ()
- int s1791 ()
- double s1792 ()
- void s1795 ()
- void s1796 ()
- void s1797 ()
- void s1830 ()
- void s1834 ()
- void s1839 ()
- void s1840 ()
- void s1880 ()
- void s1890 ()
- void s1891 ()
- void s1893 ()

- void s1894 ()
- void s1896 ()
- void s1897 ()
- void s1900 ()
- void s1901 ()
- void s1902 ()
- void s1903 ()
- void s1904 ()
- void s1905 ()
- void s1906 ()
- void s1907 ()
- void s1908 ()
- void s1909 ()
- void s1910 ()
- void s1911 ()
- void s1912 ()
- void s1916 ()
- void s1917 ()
- void s1918 ()
- void s1919 ()
- void s1924 ()
- void s1925 ()
- void s1926 ()
- void s1927 ()
- void s1931 ()
- void s1931unit ()
- void s1932 ()
- void s1933 ()
- void s1934 ()
- void s1935 ()
- void s1936 ()
- void s1937 ()
- void s1938 ()
- void s1940 ()
- void s1941 ()
- void s1942 ()
- void s1943 ()
- void s1944 ()
- void s1945 ()
- void s1946 ()
- void s1947 ()
- void s1948 ()
- void s1949 ()
- void s1950 ()
- void s1951 ()
- void s1956 ()
- void s1959 ()
- void s1960 ()
- void s1990 ()
- void s1991 ()
- void s1992 ()
- void s1992cu ()
- void s1992su ()
- void s1993 ()
- void s1994 ()

- void s2501 ()
- void s2503 ()
- void s2505 ()
- void s2507 ()
- void s2509 ()
- void s2511 ()
- void s2512 ()
- void s2513 ()
- void s2514 ()
- void s2515 ()
- void s2516 ()
- void s2533 ()
- void s2534 ()
- void s2535 ()
- void s2541 ()
- void s2543 ()
- void s2551 ()
- void s2554 ()
- void s2555 ()
- void s2557 ()
- void s2558 ()
- void s2560 ()
- void s2561 ()
- void s6addcurve ()
- double s6affdist ()
- double s6ang ()
- double s6angle ()
- void s6chpar ()
- void s6crss ()
- void s6crvcheck ()
- void s6curvature ()
- void s6curvrad ()
- void s6deCasteljau ()
- void s6decomp ()
- void s6degnorm ()
- void s6dertopt ()
- void s6diff ()
- double s6dist ()
- double s6dline ()
- double s6dplane ()
- int s6equal ()
- void s6err ()
- int s6existbox ()
- void s6findfac ()
- void s6fndintvl ()
- void s6herm ()
- void s6hermite_bezier ()
- void s6idcon ()
- void s6idcpt ()
- void s6idedg ()
- void s6identify ()
- void s6idget ()
- void s6idint ()
- void s6idklist ()
- void s6idkpt ()

- void s6idlis ()
- void s6idnpt ()
- void s6idput ()
- void s6inv4 ()
- void s6invert ()
- int s6knotmult ()
- double s6length ()
- void s6line ()
- double s6lprj ()
- void s6lufacp ()
- void s6lusolp ()
- void s6metric ()
- void s6move ()
- void s6mulvec ()
- void s6mvec ()
- void s6newbox ()
- double s6norm ()
- void s6ratder ()
- void s6rotax ()
- double s6scpr ()
- void s6rotmat ()
- double s6schoen ()
- void s6sortpar ()
- void s6sratder ()
- void s6strider ()
- void s6takeunion ()
- void s6twonorm ()
- double s9adsimp ()
- double s9adstep ()
- void s9boundimp ()
- void s9boundit ()
- void s9clipimp ()
- void s9clipit ()
- void s9conmarch ()
- void s9iterate ()
- void s9iterimp ()
- void s9simple_knot ()
- void s9surmarch ()
- void sh1260 ()
- void sh1261 ()
- void sh1262 ()
- void sh1263 ()
- void sh1365 ()
- void sh1369 ()
- void sh1371 ()
- void sh1372 ()
- void sh1373 ()
- void sh1374 ()
- void sh1375 ()
- void sh1460 ()
- void sh1461 ()
- void sh1462 ()
- void sh1463 ()
- void sh1464 ()
- void sh1465 ()

- void sh1466 ()
- void sh1467 ()
- void sh1502 ()
- void sh1503 ()
- void sh1510 ()
- void sh1511 ()
- void sh1761 ()
- void sh1762 ()
- void sh1779 ()
- void sh1779_at ()
- void sh1780 ()
- void sh1780_at ()
- void sh1781 ()
- void sh1781_at ()
- void sh1782 ()
- void sh1783 ()
- void sh1784 ()
- void sh1786 ()
- void sh1787 ()
- void sh1790 ()
- void sh1830 ()
- void sh1831 ()
- void sh1834 ()
- void sh1839 ()
- void sh1850 ()
- void sh1851 ()
- void sh1852 ()
- void sh1853 ()
- void sh1854 ()
- void sh1855 ()
- void sh1856 ()
- void sh1857 ()
- void sh1858 ()
- void sh1859 ()
- void sh1860 ()
- void sh1870 ()
- void sh1871 ()
- void sh1922 ()
- void sh1923 ()
- void sh1924 ()
- void sh1925 ()
- void sh1926 ()
- void sh1927 ()
- void sh1928 ()
- void sh1929 ()
- void sh1930 ()
- void sh1992 ()
- void sh1992cu ()
- void sh1992su ()
- void sh1993 ()
- void sh1994 ()
- void sh6closevert ()
- void sh6cvvert ()
- void sh6comedg ()
- void sh6connect ()

- int sh6count ()
- void sh6degen ()
- void sh6disconnect ()
- void sh6edgpoint ()
- void sh6edgred ()
- void sh6evalint ()
- void sh6findsplit ()
- void sh6floop ()
- void sh6getgeom ()
- void sh6getlist ()
- SISLIntpt * sh6getmain ()
- SISLIntpt * sh6getnext ()
- void sh6getnhbrs ()
- void sh6getother ()
- int sh6getprev ()
- void sh6gettop ()
- void sh6gettophlp ()
- void sh6idalledg ()
- void sh6idcon ()
- void sh6idfcross ()
- void sh6idget ()
- void sh6idkpt ()
- void sh6idlis ()
- void sh6idnpt ()
- void sh6idnewunite ()
- void sh6idput ()
- void sh6idrmcross ()
- void sh6idsplit ()
- void sh6idunite ()
- void sh6insert ()
- void sh6insertpt ()
- int sh6isconnect ()
- int sh6ishelp ()
- void sh6isinside ()
- int sh6ismain ()
- int sh6nmbhelp ()
- int sh6nmbmain ()
- void sh6ptobj ()
- void sh6putsing ()
- void sh6puttouch ()
- void sh6red ()
- void sh6remcon ()
- void sh6removept ()
- void sh6sepcrv ()
- void sh6setcnsdir ()
- void sh6setdir ()
- void sh6settop ()
- void sh6splitgeom ()
- void sh6tohelp ()
- void sh6tomain ()
- void sh6trimlist ()
- void crv_arc_tang ()
- void crv_crv_tang ()
- void crv_lin_tang ()
- void ev_cv_off ()

- void eval_2_crv ()
- void eval_crv_arc ()
- void hp_s1880 ()
- void int_join_per ()
- void make_cv_kreg ()
- void make_sf_kreg ()
- void make_tracks ()
- void newknots ()
- void pick_crv_sf ()
- void po_crv_tang ()
- void refine_all ()
- void sh_1d_div ()
- void sh_div_crv ()
- void sh_div_surf ()
- void sh_set_at ()
- void shape ()
- void shcheckput ()
- int shchecktype ()
- void shcsfsing ()
- void shevalc ()
- void shmkhlppts ()
- void shsing ()
- void spli_silh ()
- void test_cyclic_knots ()

30.2291.1 Macro Definition Documentation

30.2291.1.1 #define AEPSCO (double)0.0

Definition at line 380 of file sislP.h.

30.2291.1.2 #define AEPSGE (double)1.e-6

Definition at line 379 of file sislP.h.

30.2291.1.3 #define ANGULAR_TOLERANCE (double)0.01 /* IN RADIANS */

Definition at line 384 of file sislP.h.

30.2291.1.4 #define CONST

Definition at line 114 of file sislP.h.

30.2291.1.5 #define CONSTVOIDP (char *)

Definition at line 117 of file sislP.h.

30.2291.1.6 #define DZERO (double)0.0

Definition at line 399 of file sislP.h.

30.2291.1.7 #define MAXIMAL_RADIUS_OF_CURVATURE (double)10000.0

Definition at line 385 of file sislP.h.

30.2291.1.8 #define REL_COMP_RES (double)0.000000000000001

Definition at line 382 of file sislP.h.

30.2291.1.9 #define REL_PAR_RES (double)0.000000000001

Definition at line 383 of file sislP.h.

30.2291.1.10 #define SISL_NULL 0

Definition at line 393 of file sislP.h.

30.2291.1.11 #define SISLCURVE 1

Definition at line 375 of file sislP.h.

30.2291.1.12 #define SISLPOINT 0

Definition at line 374 of file sislP.h.

30.2291.1.13 #define SISLSURFACE 2

Definition at line 376 of file sislP.h.

30.2291.1.14 #define VOIDP (char *)

Definition at line 116 of file sislP.h.

30.2291.2 Typedef Documentation

30.2291.2.1 typedef struct rank_info rank_info

30.2291.2.2 typedef struct SISLEdge SISLEdge

30.2291.2.3 typedef struct SISLIntdat SISLIntdat

30.2291.2.4 typedef struct SISLIntlist SISLIntlist

30.2291.2.5 typedef struct SISLIntpt SISLIntpt

30.2291.2.6 typedef struct SISLIntsurf SISLIntsurf

30.2291.2.7 typedef struct SISLObject SISLObject

30.2291.2.8 typedef struct SISLPoint SISLPoint

30.2291.2.9 typedef struct SISLPtedge SISLPtedge

30.2291.2.10 typedef struct SISLTrack SISLTrack

30.2291.2.11 typedef struct SISLTrimpar SISLTrimpar

30.2291.3 Enumeration Type Documentation

30.2291.3.1 anonymous enum

Enumerator

SI_ORD

SI_SING

SI_TRIM

SI_TOUCH

Definition at line 356 of file sisIP.h.

30.2291.4 Function Documentation

30.2291.4.1 **SISLIntpt*** copyIntpt ( )

30.2291.4.2 void crv_arc_tang ( )

30.2291.4.3 void crv_crv_tang ( )

30.2291.4.4 void crv_lin_tang ( )

30.2291.4.5 void ev_cv_off ( )

30.2291.4.6 void eval_2_crv ( )

30.2291.4.7 void eval_crv_arc ( )

30.2291.4.8 void freeEdge ( )

30.2291.4.9 void freeIntdat ( )

30.2291.4.10 void freeIntlist ( )

30.2291.4.11 void freeIntpt ( )

30.2291.4.12 void freeIntsurf ( )

30.2291.4.13 void freeObject ( )

30.2291.4.14 void freePoint ( )

30.2291.4.15 void freePtedge ( )

30.2291.4.16 void freeTrack ( )

30.2291.4.17 void freeTrimpar ( )

30.2291.4.18 **SISLIntpt*** hp_copyIntpt ( )

30.2291.4.19 **SISLIntpt*** hp_newIntpt ( )

30.2291.4.20 void hp_s1880 ( )

30.2291.4.21 void int_join_per ( )

30.2291.4.22 void make3D ( )

30.2291.4.23 void make_cv_kreg ( )

30.2291.4.24 void make_sf_kreg ( )

30.2291.4.25 void make_tracks ( )

30.2291.4.26 **SISLEdge*** newEdge ( )

30.2291.4.27 **SISLIntdat*** newIntdat ( )

Definition at line 681 of file construct.c.

30.2291.4.28 **SISLIntlist*** newIntlist ( )

30.2291.4.29 **SISLIntpt*** newIntpt ( )

30.2291.4.30 **SISLIntsurf*** newIntsurf ( )

30.2291.4.31 void newknots ( )

30.2291.4.32 **SISLObject*** newObject ( )

30.2291.4.33 **SISLPoint*** newPoint ( )

30.2291.4.34 **SISLPtedge*** newPtedge ( )

30.2291.4.35 **SISLTrack*** newTrack ( )

30.2291.4.36 **SISLTrimpar*** newTrimpar ( )

30.2291.4.37 void pick_crv_sf ( )

30.2291.4.38 void po_crv_tang ( )

30.2291.4.39 void refine_all ( )

30.2291.4.40 void s1119 ( )

30.2291.4.41 void s1161 ( )

30.2291.4.42 void s1162 ( )

30.2291.4.43 void s1172 ( )

30.2291.4.44 void s1173 ( )

30.2291.4.45 void s1174 ( )

30.2291.4.46 void s1190 ( )

30.2291.4.47 void s1192 ( )

30.2291.4.48 void s1219 ( )

30.2291.4.49 void s1220 ( )

30.2291.4.50 void s1222 ( )

30.2291.4.51 void s1223 ( )

30.2291.4.52 void s1224 ( )

30.2291.4.53 void s1231 ( )

30.2291.4.54 void s1232 ( )

30.2291.4.55 void s1235 ( )

30.2291.4.56 void s1236 ( )

30.2291.4.57 void s1239 ( )

30.2291.4.58 void s1244 ( )

30.2291.4.59 void s1245 ( )

30.2291.4.60 void s1251 ( )

30.2291.4.61 void s1252 ( )

30.2291.4.62 void s1301 ( )

30.2291.4.63 void s1304 ( )

30.2291.4.64 void s1305 ( )

30.2291.4.65 void s1306 ( )

30.2291.4.66 void s1307 ( )

30.2291.4.67 void s1308 ( )

30.2291.4.68 double s1309 ( )

30.2291.4.69 double s1311 ( )

30.2291.4.70 void s1312 ( )

30.2291.4.71 void s1313 ( )

30.2291.4.72 void s1320 ( )

30.2291.4.73 void s1321 ( )

30.2291.4.74 void s1322 ( )

30.2291.4.75 void s1323 ( )

30.2291.4.76 void s1324 ( )

30.2291.4.77 double s1325 ( )

30.2291.4.78 void s1329 ( )

30.2291.4.79 void s1330 ( )

30.2291.4.80 void s1331 ( )

30.2291.4.81 void s1333 ( )

30.2291.4.82 void s1333_count ( )

30.2291.4.83 void s1333_cyclic ( )

30.2291.4.84 void s1334 ( )

30.2291.4.85 void s1340 ( )

30.2291.4.86 void s1341 ( )

30.2291.4.87 void s1342 ( )

30.2291.4.88 void s1343 ( )

30.2291.4.89 void s1345 ( )

30.2291.4.90 void s1346 ( )

30.2291.4.91 void s1347 ( )

30.2291.4.92 void s1348 ( )

30.2291.4.93 void s1349 ( )

30.2291.4.94 void s1350 ( )

30.2291.4.95 void s1351 ( )

30.2291.4.96 void s1352 ( )

30.2291.4.97 void s1353 ( )

30.2291.4.98 void s1354 ( )

30.2291.4.99 void s1355 ( )

30.2291.4.100 void s1358 ( )

30.2291.4.101 void s1359 ( )

30.2291.4.102 void s1361 ( )

30.2291.4.103 void s1362 ( )

30.2291.4.104 void s1366 ( )

30.2291.4.105 void s1367 ( )

30.2291.4.106 void s1370 ( )

30.2291.4.107 void s1376 ( )

30.2291.4.108 void s1377 ( )

30.2291.4.109 void s1378 ( )

30.2291.4.110 void s1381 ( )

30.2291.4.111 void s1382 ( )

30.2291.4.112 void s1384 ( )

30.2291.4.113 void s1385 ( )

30.2291.4.114 void s1393 ( )

30.2291.4.115 void s1399 ( )

30.2291.4.116 void s1435 ( )

30.2291.4.117 void s1436 ( )

30.2291.4.118 void s1437 ( )

30.2291.4.119 void s1438 ( )

30.2291.4.120 void s1452 ( )

30.2291.4.121 void s1500 ( )

30.2291.4.122 void s1504 ( )

30.2291.4.123 void s1505 ( )

30.2291.4.124 void s1507 ( )

30.2291.4.125 void s1512 ( )

30.2291.4.126 void s1513 ( )

30.2291.4.127 void s1516 ( )

30.2291.4.128 void s1517 ( )

30.2291.4.129 void s1520 ( )

30.2291.4.130 SISLCurve* s1521 ( )

30.2291.4.131 void s1528 ( )

30.2291.4.132 void s1531 ( )

30.2291.4.133 void s1540 ( )

30.2291.4.134 void s1541 ( )

30.2291.4.135 void s1604 ( )

30.2291.4.136 void s1605 ( )

30.2291.4.137 void s1612 ( )

30.2291.4.138 void s1613bez ( )

30.2291.4.139 void s1614 ( )

30.2291.4.140 void s1615 ( )

30.2291.4.141 void s1616 ( )

30.2291.4.142 void s1617 ( )

30.2291.4.143 void s1618 ( )

30.2291.4.144 void s1619 ( )

30.2291.4.145 void s1700 ( )

30.2291.4.146 void s1701 ( )

30.2291.4.147 void s1705 ( )

30.2291.4.148 void s1707 ( )

30.2291.4.149 void s1708 ( )

30.2291.4.150 void s1741 ( )

30.2291.4.151 void s1753 ( )

30.2291.4.152 void s1754 ( )

30.2291.4.153 void s1755 ( )

30.2291.4.154 void s1770 ( )

30.2291.4.155 void s1770_2D ( )

30.2291.4.156 void s1771 ( )

30.2291.4.157 void s1772 ( )

30.2291.4.158 void s1773 ( )

30.2291.4.159 void s1780 ( )

30.2291.4.160 void s1785 ( )

30.2291.4.161 void s1786 ( )

30.2291.4.162 void s1787 ( )

30.2291.4.163 void s1788 ( )

30.2291.4.164 void s1789 ( )

30.2291.4.165 void s1790 ( )

30.2291.4.166 int s1791 ( )

30.2291.4.167 double s1792 ( )

30.2291.4.168 void s1795 ( )

30.2291.4.169 void s1796 ( )

30.2291.4.170 void s1797 ( )

30.2291.4.171 void s1830 ( )

30.2291.4.172 void s1834 ( )

30.2291.4.173 void s1839 ( )

30.2291.4.174 void s1840 ( )

30.2291.4.175 void s1880 ( )

30.2291.4.176 void s1890 ( )

30.2291.4.177 void s1891 ( )

30.2291.4.178 void s1893 ( )

30.2291.4.179 void s1894 ( )

30.2291.4.180 void s1896 ( )

30.2291.4.181 void s1897 ( )

30.2291.4.182 void s1900 ( )

30.2291.4.183 void s1901 ( )

30.2291.4.184 void s1902 ( )

30.2291.4.185 void s1903 ( )

30.2291.4.186 void s1904 ( )

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30.2291.4.188 void s1906 ( )

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30.2291.4.192 void s1910 ( )

30.2291.4.193 void s1911 ( )

30.2291.4.194 void s1912 ( )

30.2291.4.195 void s1916 ( )

30.2291.4.196 void s1917 ( )

30.2291.4.197 void s1918 ( )

30.2291.4.198 void s1919 ( )

30.2291.4.199 void s1924 ( )

30.2291.4.200 void s1925 ( )

30.2291.4.201 void s1926 ( )

30.2291.4.202 void s1927 ( )

30.2291.4.203 void s1931 ( )

30.2291.4.204 void s1931unit ( )

30.2291.4.205 void s1932 ( )

30.2291.4.206 void s1933 ( )

30.2291.4.207 void s1934 ( )

30.2291.4.208 void s1935 ( )

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30.2291.4.220 void s1948 ( )

30.2291.4.221 void s1949 ( )

30.2291.4.222 void s1950 ( )

30.2291.4.223 void s1951 ( )

30.2291.4.224 void s1956 ( )

30.2291.4.225 void s1959 ( )

30.2291.4.226 void s1960 ( )

30.2291.4.227 void s1990 ( )

30.2291.4.228 void s1991 ( )

30.2291.4.229 void s1992 ( )

30.2291.4.230 void s1992cu ( )

30.2291.4.231 void s1992su ( )

30.2291.4.232 void s1993 ( )

30.2291.4.233 void s1994 ( )

30.2291.4.234 void s2501 ( )

30.2291.4.235 void s2503 ( )

30.2291.4.236 void s2505 ( )

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30.2291.4.238 void s2509 ( )

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30.2291.4.240 void s2512 ( )

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30.2291.4.242 void s2514 ( )

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30.2291.4.245 void s2533 ( )

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30.2291.4.247 void s2535 ( )

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30.2291.4.249 void s2543 ( )

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30.2291.4.253 void s2557 ( )

30.2291.4.254 void s2558 ( )

30.2291.4.255 void s2560 ( )

30.2291.4.256 void s2561 ( )

30.2291.4.257 void s6addcurve ( )

30.2291.4.258 double s6affdist ( )

30.2291.4.259 double s6ang ( )

30.2291.4.260 double s6angle ( )

30.2291.4.261 void s6chpar ( )

30.2291.4.262 void s6crss ( )

30.2291.4.263 void s6crvcheck ( )

30.2291.4.264 void s6curvature ( )

30.2291.4.265 void s6curvrad ( )

30.2291.4.266 void s6deCasteljau ( )

30.2291.4.267 void s6decomp ( )

30.2291.4.268 void s6degnorm ( )

30.2291.4.269 void s6dertopt ( )

30.2291.4.270 void s6diff ( )

30.2291.4.271 double s6dist ( )

30.2291.4.272 double s6dline ( )

30.2291.4.273 double s6dplane ( )

30.2291.4.274 int s6equal ( )

30.2291.4.275 void s6err ( )

30.2291.4.276 int s6existbox ( )

30.2291.4.277 void s6findfac ( )

30.2291.4.278 void s6fndintvl ( )

30.2291.4.279 void s6herm ( )

30.2291.4.280 void s6hermite_bezier ( )

30.2291.4.281 void s6idcon ( )

30.2291.4.282 void s6idcpt ( )

30.2291.4.283 void s6idedg ( )

30.2291.4.284 void s6identify ( )

30.2291.4.285 void s6idget ( )

30.2291.4.286 void s6idint ( )

30.2291.4.287 void s6idklist ( )

30.2291.4.288 void s6idkpt ( )

30.2291.4.289 void s6idlis ( )

30.2291.4.290 void s6idnpt ( )

30.2291.4.291 void s6idput ( )

30.2291.4.292 void s6inv4 ( )

30.2291.4.293 void s6invert ( )

30.2291.4.294 int s6knotmult ( )

30.2291.4.295 double s6length ( )

30.2291.4.296 void s6line ( )

30.2291.4.297 double s6lprj ( )

30.2291.4.298 void s6lufacp ( )

30.2291.4.299 void s6lusolp ( )

30.2291.4.300 void s6metric ( )

30.2291.4.301 void s6move ( )

30.2291.4.302 void s6mulvec ( )

30.2291.4.303 void s6mvec ( )

30.2291.4.304 void s6newbox ( )

30.2291.4.305 double s6norm ( )

30.2291.4.306 void s6ratder ( )

30.2291.4.307 void s6rotax ( )

30.2291.4.308 void s6rotmat ( )

30.2291.4.309 double s6schoen ( )

30.2291.4.310 double s6scpr ( )

30.2291.4.311 void s6sortpar ( )

30.2291.4.312 void s6sratder ( )

30.2291.4.313 void s6strider ( )

30.2291.4.314 void s6takeunion ( )

30.2291.4.315 void s6twonorm ( )

30.2291.4.316 double s9adsimp ( )

30.2291.4.317 double s9adstep ( )

30.2291.4.318 void s9boundimp ( )

30.2291.4.319 void s9boundit ( )

30.2291.4.320 void s9clipimp ( )

30.2291.4.321 void s9clipit ( )

30.2291.4.322 void s9conmarch ( )

30.2291.4.323 void s9iterate ( )

30.2291.4.324 void s9iterimp ( )

30.2291.4.325 void s9simple_knot ( )

30.2291.4.326 void s9surmarch ( )

30.2291.4.327 void sh1260 ( )

30.2291.4.328 void sh1261 ( )

30.2291.4.329 void sh1262 ( )

30.2291.4.330 void sh1263 ( )

30.2291.4.331 void sh1365 ( )

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30.2291.4.338 void sh1460 ( )

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30.2291.4.342 void sh1464 ( )

30.2291.4.343 void sh1465 ( )

30.2291.4.344 void sh1466 ( )

30.2291.4.345 void sh1467 ( )

30.2291.4.346 void sh1502 ( )

30.2291.4.347 void sh1503 ( )

30.2291.4.348 void sh1510 ( )

30.2291.4.349 void sh1511 ( )

30.2291.4.350 void sh1761 ( )

30.2291.4.351 void sh1762 ( )

30.2291.4.352 void sh1779 ( )

30.2291.4.353 void sh1779_at ( )

30.2291.4.354 void sh1780 ( )

30.2291.4.355 void sh1780_at ( )

30.2291.4.356 void sh1781 ( )

30.2291.4.357 void sh1781_at ( )

30.2291.4.358 void sh1782 ( )

30.2291.4.359 void sh1783 ( )

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30.2291.4.378 void sh1860 ( )

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30.2291.4.380 void sh1871 ( )

30.2291.4.381 void sh1922 ( )

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30.2291.4.388 void sh1929 ( )

30.2291.4.389 void sh1930 ( )

30.2291.4.390 void sh1992 ( )

30.2291.4.391 void sh1992cu ( )

30.2291.4.392 void sh1992su ( )

30.2291.4.393 void sh1993 ( )

30.2291.4.394 void sh1994 ( )

30.2291.4.395 void sh6closevert ( )

30.2291.4.396 void sh6comedg ( )

30.2291.4.397 void sh6connect ( )

30.2291.4.398 int sh6count ( )

30.2291.4.399 void sh6cvvert ( )

30.2291.4.400 void sh6degen ( )

30.2291.4.401 void sh6disconnect ( )

30.2291.4.402 void sh6edgpoint ( )

30.2291.4.403 void sh6edgred ( )

30.2291.4.404 void sh6evalint ( )

30.2291.4.405 void sh6findsplit ( )

30.2291.4.406 void sh6floop ( )

30.2291.4.407 void sh6getgeom ( )

30.2291.4.408 void sh6getlist ( )

30.2291.4.409 SISLIntpt* sh6getmain ( )

30.2291.4.410 SISLIntpt* sh6getnext ( )

30.2291.4.411 void sh6getnhbrs ( )

30.2291.4.412 void sh6getother ( )

30.2291.4.413 int sh6getprev ( )

30.2291.4.414 void sh6gettop ( )

30.2291.4.415 void sh6gettophlp ( )

30.2291.4.416 void sh6idalledg ( )

30.2291.4.417 void sh6idcon ( )

30.2291.4.418 void sh6idfcross ( )

30.2291.4.419 void sh6idget ( )

30.2291.4.420 void sh6idkpt ( )

30.2291.4.421 void sh6idlis ( )

30.2291.4.422 void sh6idnewunite ( )

30.2291.4.423 void sh6idnpt ( )

30.2291.4.424 void sh6idput ( )

30.2291.4.425 void sh6idrmcross ( )

30.2291.4.426 void sh6idsplit ( )

30.2291.4.427 void sh6idunite ( )

30.2291.4.428 void sh6insert ( )

30.2291.4.429 void sh6insertpt ( )

30.2291.4.430 int sh6isconnect ( )

30.2291.4.431 int sh6ishelp ( )

30.2291.4.432 void sh6isinside ( )

30.2291.4.433 int sh6ismain ( )

30.2291.4.434 int sh6nmbhelp ( )

30.2291.4.435 int sh6nmbmain ( )

30.2291.4.436 void sh6ptobj ( )

30.2291.4.437 void sh6putsing ( )

30.2291.4.438 void sh6puttouch ( )

30.2291.4.439 void sh6red ( )

30.2291.4.440 void sh6remcon ( )

30.2291.4.441 void sh6removept ( )

30.2291.4.442 void sh6sepcrv ( )

30.2291.4.443 void sh6setcnsdir ( )

30.2291.4.444 void sh6setdir ( )

30.2291.4.445 void sh6settop ( )

30.2291.4.446 void sh6splitgeom ( )

30.2291.4.447 void sh6tohelp ( )

30.2291.4.448 void sh6tomain ( )

30.2291.4.449 void sh6trimlist ( )

30.2291.4.450 void sh_1d_div ( )

30.2291.4.451 void sh_div_crv ( )

30.2291.4.452 void sh_div_surf ( )

30.2291.4.453 void sh_set_at ( )

30.2291.4.454 void shape ( )

30.2291.4.455 void shcheckput ( )

30.2291.4.456 int shchecktype ( )

30.2291.4.457 void shcsfsing ( )

30.2291.4.458 void shevalc ( )

30.2291.4.459 void shmkhlppts ( )

30.2291.4.460 void shsing ( )

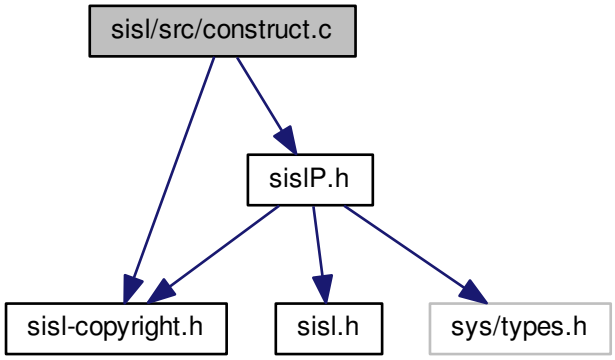
30.2291.4.461 void spli_silh ( )

30.2291.4.462 void test_cyclic_knots ( )

30.2292 sisl/src/construct.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for construct.c:



Macros

- #define CONSTRUCT

Functions

- SISLIntpt * copyIntpt (SISLIntpt *ppt)
- SISLIntpt * hp_copyIntpt (SISLIntpt *ppt)
- SISLbox * newbox (int idim)
- SISLCurve * newCurve (int in, int ik, double *et, double *ecoef, int ikind, int idim, int icopy)
- SISLdir * newdir (int idim)
- SISLEdge * newEdge (int iedge)
- SISLIntcurve * newIntcurve (int ipoint, int ipar1, int ipar2, double *epar1, double *epar2, int itype)
- SISLIntdat * newIntdat ()
- SISLIntlist * newIntlist (SISLIntpt *pfirst, SISLIntpt *plast, int itype)
- SISLIntpt * newIntpt (int ipar, double *epar, double adist)
- SISLIntsurf * newIntsurf (SISLIntlist *pintlist)
- SISLTrimpar * newTrimpar (int pt, int par)
- SISLIntpt * hp_newIntpt (int ipar, double *epar, double adist, int itype, int ileft1, int iright1, int ileft2, int iright2, int size_1, int size_2, double *egeom1, double *egeom2)
- SISLTrack * newTrack (SISLSurf *psurf_1, SISLSurf *psurf_2, SISLCurve *pcurve_3d, SISLCurve *pcurve_2d_1, SISLCurve *pcurve_2d_2, int ideg, eimpli, int sing_start, int sing_end, int turned)
- SISLObject * newObject (int iobj)
- SISLPoint * newPoint (double *ecoef, int idim, int icopy)
- SISLPtedge * newPtedge (SISLIntpt *ppt)
- SISLSurf * newSurf (int in1, int in2, int ik1, int ik2, double *et1, double *et2, double *ecoef, int ikind, int idim, int icopy)
- SISLCurve * copyCurve (SISLCurve *pcurve)
- SISLSurf * copySurface (SISLSurf *psurf)

30.2292.1 Macro Definition Documentation

30.2292.1.1 #define CONSTRUCT

Definition at line 49 of file construct.c.

30.2292.2 Function Documentation

30.2292.2.1 SISLCurve* copyCurve (SISLCurve * *pcurve*)

Definition at line 1847 of file construct.c.

30.2292.2.2 SISLIntpt* copyIntpt (SISLIntpt * *ppt*)

Definition at line 57 of file construct.c.

30.2292.2.3 SISLSurf* copySurface (SISLSurf * *psurf*)

Definition at line 1982 of file construct.c.

30.2292.2.4 SISLIntpt* hp_copyIntpt (SISLIntpt * *ppt*)

Definition at line 118 of file construct.c.

30.2292.2.5 SISLIntpt* hp_newIntpt (int *ipar,* double * *epar,* double *adist,* int *itype,* int *ileft1,* int *iright1,* int *ileft2,* int *iright2,* int *size_1,* int *size_2,* double * *egeom1,* double * *egeom2*)

Definition at line 1123 of file construct.c.

30.2292.2.6 SISLbox* newbox (int *idim*)

Definition at line 180 of file construct.c.

30.2292.2.7 SISLCurve* newCurve (int *in,* int *ik,* double * *et,* double * *ecoef,* int *ikind,* int *idim,* int *icopy*)

Definition at line 268 of file construct.c.

30.2292.2.8 SISLdir* newdir (int *idim*)

Definition at line 455 of file construct.c.

30.2292.2.9 **SISLEdge*** **newEdge (int** ***iedge*** **)**

Definition at line 509 of file construct.c.

30.2292.2.10 **SISLIntcurve*** **newIntcurve (int** ***ipoint,*** **int** ***ipar1,*** **int** ***ipar2,*** **double *** ***epar1,*** **double *** ***epar2,*** **int** ***itype*** **)**

Definition at line 589 of file construct.c.

30.2292.2.11 **SISLIntdat*** **newIntdat ( )**

Definition at line 681 of file construct.c.

30.2292.2.12 **SISLIntlist*** **newIntlist (SISLIntpt *** ***pfirst,*** **SISLIntpt *** ***plast,*** **int** ***itype*** **)**

Definition at line 753 of file construct.c.

30.2292.2.13 **SISLIntpt*** **newIntpt (int** ***ipar,*** **double *** ***epar,*** **double** ***adist*** **)**

Definition at line 823 of file construct.c.

30.2292.2.14 **SISLIntsurf*** **newIntsurf (SISLIntlist *** ***pintlist*** **)**

Definition at line 926 of file construct.c.

30.2292.2.15 **SISLObject*** **newObject (int** ***iobj*** **)**

Definition at line 1381 of file construct.c.

30.2292.2.16 **SISLPoint*** **newPoint (double *** ***ecoef,*** **int** ***idim,*** **int** ***icopy*** **)**

Definition at line 1449 of file construct.c.

30.2292.2.17 **SISLPtedge*** **newPtedge (SISLIntpt *** ***ppt*** **)**

Definition at line 1541 of file construct.c.

30.2292.2.18 **SISLSurf*** **newSurf (int** ***in1,*** **int** ***in2,*** **int** ***ik1,*** **int** ***ik2,*** **double *** ***et1,*** **double *** ***et2,*** **double *** ***ecoef,*** **int** ***ikind,*** **int** ***idim,*** **int** ***icopy*** **)**

Definition at line 1607 of file construct.c.

30.2292.2.19 **SISLTrack*** newTrack (**SISLSurf** * *psurf_1,* **SISLSurf** * *psurf_2,* **SISLCurve** * *pcurve_3d,* **SISLCurve** * *pcurve_2d_1,* **SISLCurve** * *pcurve_2d_2,* int *ideg,* eimpli , int *sing_start,* int *sing_end,* int *turned*)

Definition at line 1297 of file construct.c.

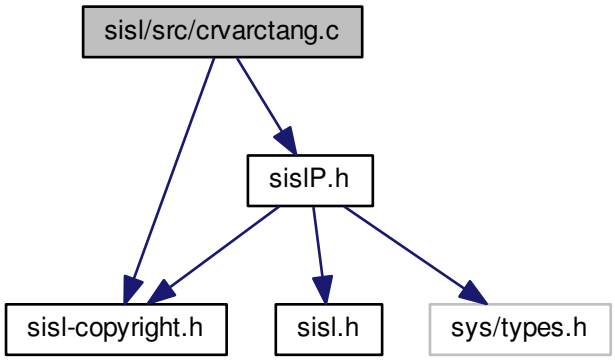
30.2292.2.20 **SISLTrimpar*** newTrimpar (int *pt,* int *par*)

Definition at line 1053 of file construct.c.

30.2293 sisl/src/crvarctang.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for crvarctang.c:



Macros

- #define CRV_ARC_TANG

Functions

- void crv_arc_tang (SISLCurve *pc1, center, double radius, double aepsge, guess_par, iter_par, int *jstat)

30.2293.1 Macro Definition Documentation

30.2293.1.1 #define CRV_ARC_TANG

Definition at line 47 of file crvarctang.c.

30.2293.2 Function Documentation

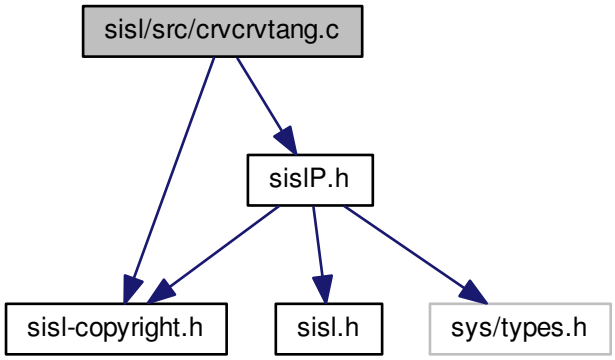
30.2293.2.1 void crv_arc_tang (SISLCurve * *pc1,* center , double *radius,* double *aepsge,* guess_par , iter_par , int * *jstat*)

Definition at line 75 of file crvarctang.c.

30.2294 sisl/src/crvcrvtang.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for crvcrvtang.c:



Macros

- #define CRV_CRV_TANG

Functions

- void crv_crv_tang (SISLCurve *pc1, SISLCurve *pc2, double aepsge, guess_par, iter_par, int *jstat)

30.2294.1 Macro Definition Documentation

30.2294.1.1 #define CRV_CRV_TANG

Definition at line 47 of file crvcrvtang.c.

30.2294.2 Function Documentation

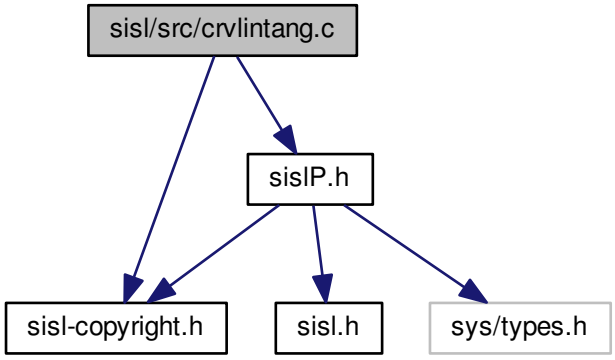
30.2294.2.1 void crv_crv_tang (SISLCurve * *pc1,* SISLCurve * *pc2,* double *aepsge,* guess_par , iter_par , int * *jstat*)

Definition at line 74 of file crvcrvtang.c.

30.2295 sisl/src/crvlintang.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for crvlintang.c:



Macros

- #define CRV_LIN_TANG

Functions

- void crv_lin_tang (SISLCurve *pc1, point, normal, double ang_tol, double guess_par, double *iter_par, int *jstat)

30.2295.1 Macro Definition Documentation

30.2295.1.1 #define CRV_LIN_TANG

Definition at line 49 of file crvlintang.c.

30.2295.2 Function Documentation

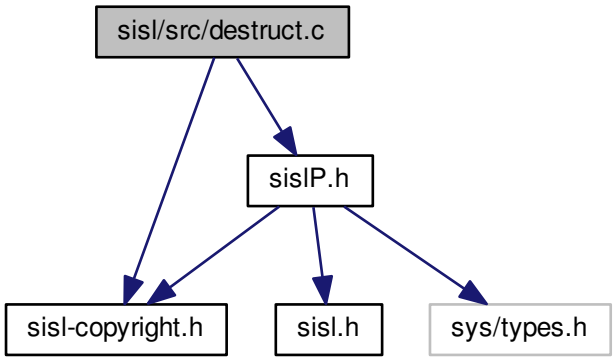
30.2295.2.1 void crv_lin_tang (SISLCurve * *pc1*, point , normal , double *ang_tol*, double *guess_par*, double * *iter_par*, int * *jstat*)

Definition at line 60 of file crvlintang.c.

30.2296 sisl/src/destruct.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for destruct.c:



Macros

- #define DESTRUCT

Functions

- void freeCurve (SISLCurve *pcurve)
- void freeEdge (SISLEdge *pedge)
- void freeIntcrvlist (SISLIntcurve **viclist, int icrv)
- void freeIntcurve (SISLIntcurve *pintc)
- void freeIntdat (SISLIntdat *pintdat)
- void freeIntlist (SISLIntlist *plist)
- void freeIntpt (SISLIntpt *ppt)
- void freeIntsurf (SISLIntsurf *intsurf)
- void freeTrimpar (SISLTrimpar *trimpar)
- void freeTrack (SISLTrack *ppt)
- void freeObject (SISLObject *pobj)
- void freePoint (SISLPoint *ppoint)
- void freePtedge (SISLPtedge *p1)
- void freeSurf (SISLSurf *psurf)

30.2296.1 Macro Definition Documentation

30.2296.1.1 #define DESTRUCT

Definition at line 49 of file destruct.c.

30.2296.2 Function Documentation

30.2296.2.1 void freeCurve (SISLCurve * *pcurve*)

Definition at line 57 of file destruct.c.

30.2296.2.2 void freeEdge (SISLEdge * *pedge*)

Definition at line 151 of file destruct.c.

30.2296.2.3 void freeIntcrvlist (SISLIntcurve ** *viclist,* int *icrv*)

Definition at line 224 of file destruct.c.

30.2296.2.4 void freeIntcurve (SISLIntcurve * *pintc*)

Definition at line 282 of file destruct.c.

30.2296.2.5 void freeIntdat (SISLIntdat * *pintdat*)

Definition at line 329 of file destruct.c.

30.2296.2.6 void freeIntlist (SISLIntlist * *plist*)

Definition at line 400 of file destruct.c.

30.2296.2.7 void freeIntpt (SISLIntpt * *ppt*)

Definition at line 445 of file destruct.c.

30.2296.2.8 void freeIntsurf (SISLIntsurf * *intsurf*)

Definition at line 503 of file destruct.c.

30.2296.2.9 void freeObject (SISLObject * *pobj*)

Definition at line 649 of file destruct.c.

30.2296.2.10 void freePoint (SISLPoint * *ppoint*)

Definition at line 713 of file destruct.c.

30.2296.2.11 void freePtedge (SISLPtedge * *p1*)

Definition at line 777 of file destruct.c.

30.2296.2.12 void freeSurf (SISLSurf * *psurf*)

Definition at line 821 of file destruct.c.

30.2296.2.13 void freeTrack (SISLTrack * *ppt*)

Definition at line 599 of file destruct.c.

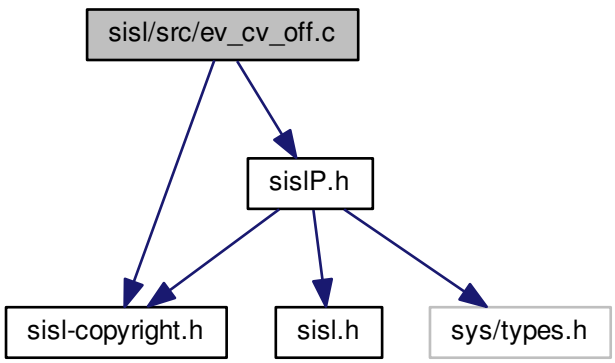
30.2296.2.14 void freeTrimpar (SISLTrimpar * *trimpar*)

Definition at line 553 of file destruct.c.

30.2297 sisl/src/ev_cv_off.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for ev_cv_off.c:



Macros

- #define EV_CV_OFF

Functions

- void ev_cv_off (SISLCurve *pc1, int ider, double ax, int *ileft, double offset, eder, int *jstat)

30.2297.1 Macro Definition Documentation

30.2297.1.1 #define EV_CV_OFF

Definition at line 49 of file ev_cv_off.c.

30.2297.2 Function Documentation

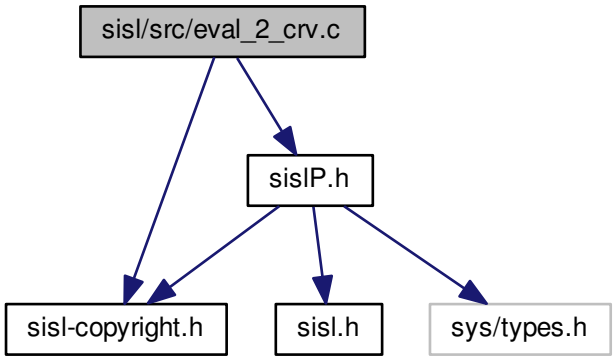
30.2297.2.1 void ev_cv_off (SISLCurve * *pc1,* int *ider,* double *ax,* int * *ileft,* double *offset,* eder , int * *jstat*)

Definition at line 58 of file ev_cv_off.c.

30.2298 sisl/src/eval_2_crv.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for eval_2_crv.c:



Macros

- #define EVAL_2_CRV

Functions

- void eval_2_crv (SISLCurve *pc1, SISLCurve *pc2, int ider, epar, int *ilfs, int *ilft, eder, int *jstat)

30.2298.1 Macro Definition Documentation

30.2298.1.1 #define EVAL_2_CRV

Definition at line 49 of file eval_2_crv.c.

30.2298.2 Function Documentation

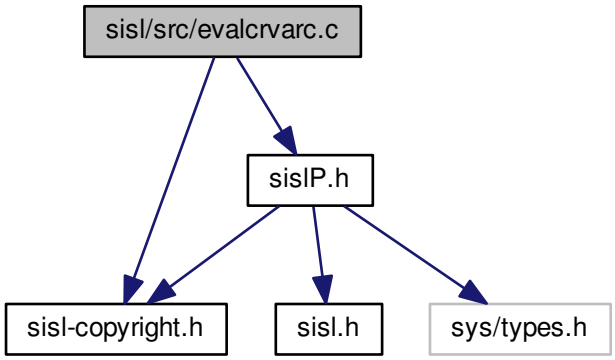
30.2298.2.1 void eval_2_crv (SISLCurve * *pc1,* SISLCurve * *pc2,* int *ider,* epar , int * *ilfs,* int * *ilft,* eder , int * *jstat*)

Definition at line 58 of file eval_2_crv.c.

30.2299 sisl/src/evalcrvarc.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for evalcrvarc.c:



Macros

- #define EVAL_CRV_ARC

Functions

- void eval_crv_arc (SISLCurve *pc1, center, double radius, int ider, epar, int *ilfs, eder, int *jstat)

30.2299.1 Macro Definition Documentation

30.2299.1.1 #define EVAL_CRV_ARC

Definition at line 49 of file evalcrvarc.c.

30.2299.2 Function Documentation

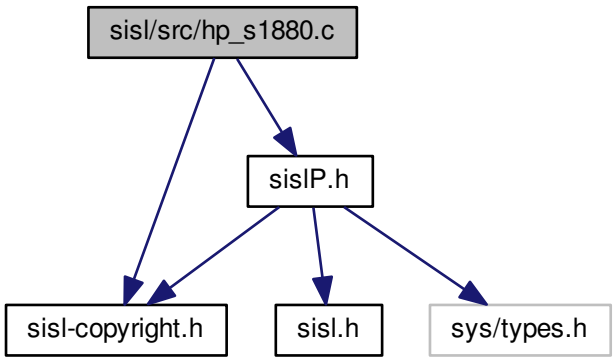
30.2299.2.1 void eval_crv_arc (SISLCurve * *pc1,* center , double *radius,* int *ider,* epar , int * *ilfs,* eder , int * *jstat*)

Definition at line 58 of file evalcrvarc.c.

30.2300 sisl/src/hp_s1880.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for hp_s1880.c:



Macros

- #define HP_S1880

Functions

- void hp_s1880 (SISLObject *po1, SISLObject *po2, int ideg, int ipar1, int ipar2, SISLIntdat *pintdat, int *jpar, double **gpar1, double **gpar2, int **pretop, int *jcrv, SISLIntcurve ***wcrv, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2300.1 Macro Definition Documentation

30.2300.1.1 #define HP_S1880

Definition at line 49 of file hp_s1880.c.

30.2300.2 Function Documentation

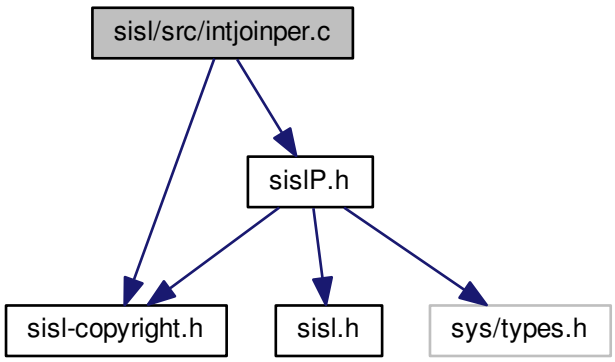
30.2300.2.1 void hp_s1880 (SISLObject * *po1*, SISLObject * *po2*, int *ideg*, int *ipar1*, int *ipar2*, SISLIntdat * *pintdat*, int * *jpar*, double ** *gpar1*, double ** *gpar2*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcrv*, int * *jsurf*, SISLIntsurf *** *wsurf*, int * *jstat*)

Definition at line 63 of file hp_s1880.c.

30.2301 sisl/src/intjoinper.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for intjoinper.c:



Macros

- #define INT_JOIN_PER

Functions

- void int_join_per (SISLIntdat **pintdat, SISLObject *po1, SISLObject *po2, eimpli, int ideg, double aepsge, int *jstat)

30.2301.1 Macro Definition Documentation

30.2301.1.1 #define INT_JOIN_PER

Definition at line 49 of file intjoinper.c.

30.2301.2 Function Documentation

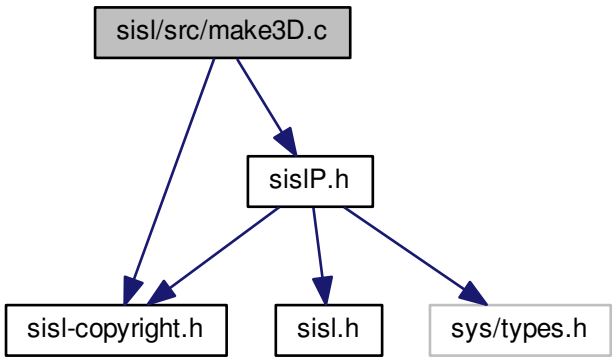
30.2301.2.1 void int_join_per (SISLIntdat ** *pintdat,* SISLObject * *po1,* SISLObject * *po2,* eimpli , int *ideg,* double *aepsge,* int * *jstat*)

Definition at line 65 of file intjoinper.c.

30.2302 sisl/src/make3D.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for make3D.c:



Macros

- #define MAKE3D

Functions

- void make3D (SISLSurf *ps, SISLSurf **rsnew, int *jstat)

30.2302.1 Macro Definition Documentation

30.2302.1.1 #define MAKE3D

Definition at line 49 of file make3D.c.

30.2302.2 Function Documentation

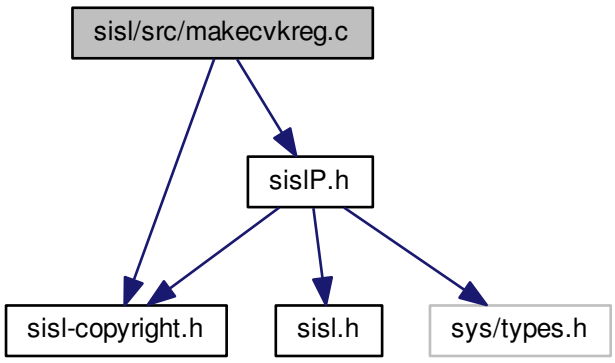
30.2302.2.1 void make3D (SISLSurf * *ps*, SISLSurf ** *rsnew*, int * *jstat*)

Definition at line 59 of file make3D.c.

30.2303 sisl/src/makecvkreg.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for makecvkreg.c:



Macros

- #define MAKE_CV_KREG

Functions

- void make_cv_kreg (SISLCurve *pc, SISLCurve **rcnew, int *jstat)

30.2303.1 Macro Definition Documentation

30.2303.1.1 #define MAKE_CV_KREG

Definition at line 49 of file makecvkreg.c.

30.2303.2 Function Documentation

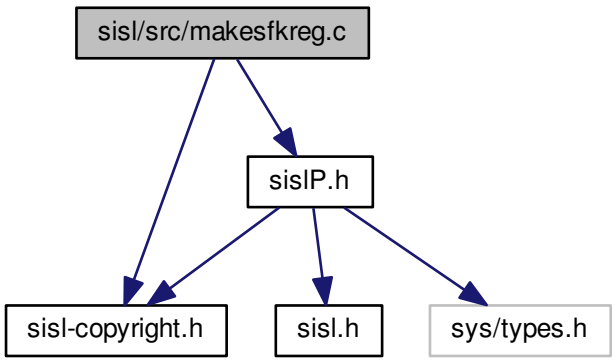
30.2303.2.1 void make_cv_kreg (SISLCurve * *pc*, SISLCurve ** *rcnew*, int * *jstat*)

Definition at line 59 of file makecvkreg.c.

30.2304 sisl/src/makesfkreg.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for makesfkreg.c:



Macros

- #define MAKE_SF_KREG

Functions

- void make_sf_kreg (SISLSurf *ps, SISLSurf **rsnew, int *jstat)

30.2304.1 Macro Definition Documentation

30.2304.1.1 #define MAKE_SF_KREG

Definition at line 49 of file makesfkreg.c.

30.2304.2 Function Documentation

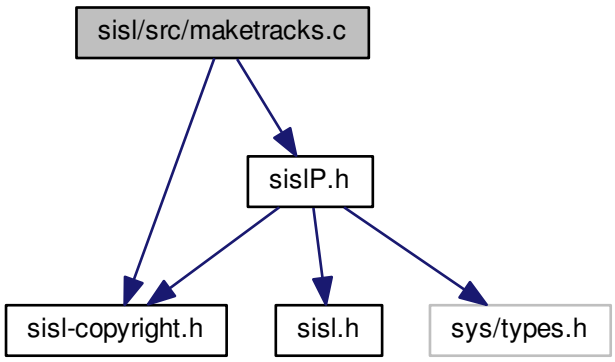
30.2304.2.1 void make_sf_kreg (SISLSurf * *ps*, SISLSurf ** *rsnew*, int * *jstat*)

Definition at line 58 of file makesfkreg.c.

30.2305 sisl/src/maketracks.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for maketracks.c:



Macros

- #define MAKE_TRACKS

Functions

- void make_tracks (SISLObject *po1, SISLObject *po2, int ideg, eimpli, int icrv, SISLIntlist **vlist, int *jtrack, SISLTrack ***wcrv, double aepsge, int *jstat)

30.2305.1 Macro Definition Documentation

30.2305.1.1 #define MAKE_TRACKS

Definition at line 49 of file maketracks.c.

30.2305.2 Function Documentation

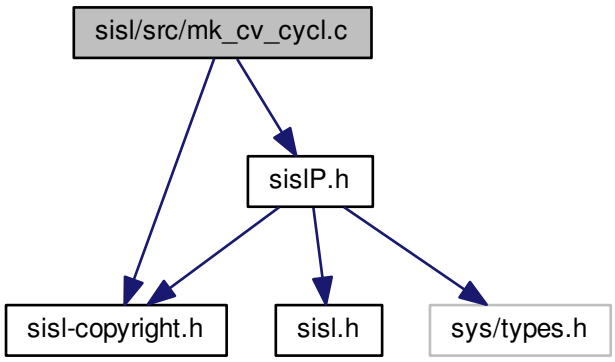
30.2305.2.1 void make_tracks (SISLObject * *po1,* SISLObject * *po2,* int *ideg,* eimpli , int *icrv,* SISLIntlist ** *vlist,* int * *jtrack,* SISLTrack *** *wcrv,* double *aepsge,* int * *jstat*)

Definition at line 57 of file maketracks.c.

30.2306 sisl/src/mk_cv_cycl.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for mk_cv_cycl.c:



Macros

- #define MAKE_CV_CYCLIC

Functions

- void make_cv_cyclic (SISLCurve *pcurve, int icont, int *jstat)

30.2306.1 Macro Definition Documentation

30.2306.1.1 #define MAKE_CV_CYCLIC

Definition at line 49 of file mk_cv_cycl.c.

30.2306.2 Function Documentation

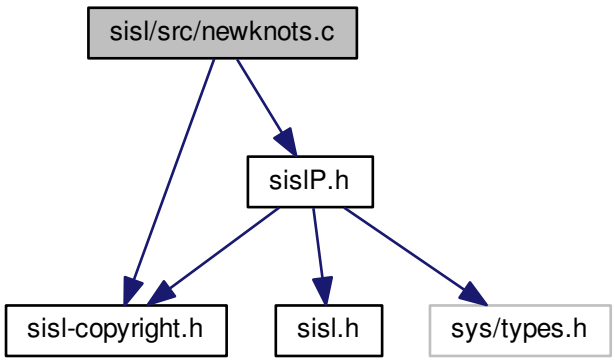
30.2306.2.1 void make_cv_cyclic (SISLCurve * *pcurve*, int *icont*, int * *jstat*)

Definition at line 57 of file mk_cv_cycl.c.

30.2307 sisl/src/newknots.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for newknots.c:



Macros

- #define NEWKNOTS

Functions

- void newknots (et, int in, int ik, epar, int inpar, double aeps, double **ginsert, int *jinsert, int *jstat)

30.2307.1 Macro Definition Documentation

30.2307.1.1 #define NEWKNOTS

Definition at line 49 of file newknots.c.

30.2307.2 Function Documentation

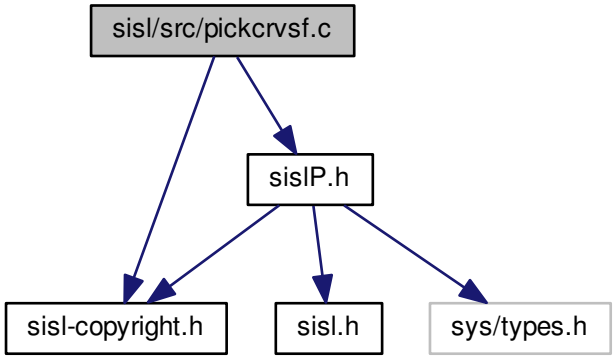
30.2307.2.1 void newknots (et , int *in*, int *ik*, epar , int *inpar*, double *aeps*, double ** *ginsert*, int * *jinsert*, int * *jstat*)

Definition at line 59 of file newknots.c.

30.2308 sisl/src/pickcrvsf.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for pickcrvsf.c:



Macros

- #define PICK_CRV_SF

Functions

- void pick_crv_sf (SISLObject *po1, SISLObject *po2, int ipar, SISLIntpt *pt1, SISLIntpt *pt2, SISLCurve **rcrv, int *jstat)

30.2308.1 Macro Definition Documentation

30.2308.1.1 #define PICK_CRV_SF

Definition at line 49 of file pickcrvsf.c.

30.2308.2 Function Documentation

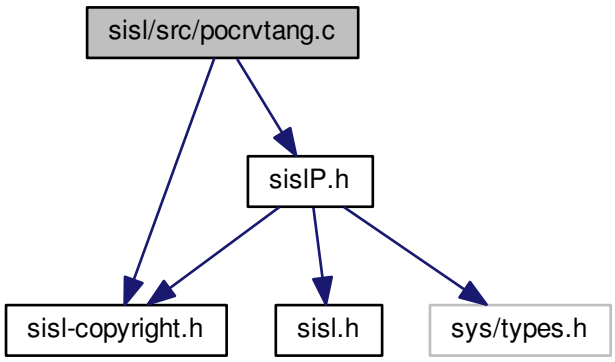
30.2308.2.1 void pick_crv_sf (SISLObject * *po1,* SISLObject * *po2,* int *ipar,* SISLIntpt * *pt1,* SISLIntpt * *pt2,* SISLCurve ** *rcrv,* int * *jstat*)

Definition at line 59 of file pickcrvsf.c.

30.2309 sisl/src/pocrvtang.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for pocrvtang.c:



Macros

- #define PO_CRV_TANG

Functions

- void po_crv_tang (SISLCurve *pcurve, point, double ang_tol, double guess_par, double *iter_par, int *jstat)

30.2309.1 Macro Definition Documentation

30.2309.1.1 #define PO_CRV_TANG

Definition at line 49 of file pocrvtang.c.

30.2309.2 Function Documentation

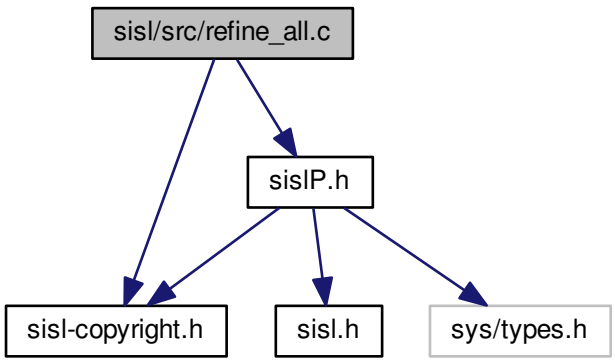
30.2309.2.1 void po_crv_tang (SISLCurve * *pcurve,* point , double *ang_tol,* double *guess_par,* double * *iter_par,* int * *jstat*)

Definition at line 58 of file pocrvtang.c.

30.2310 sisl/src/refine_all.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for refine_all.c:



Macros

- #define REFINE_ALL

Functions

- void refine_all (SISLIntdat **pintdat, SISLObject *po1, SISLObject *po2, eimpli, int ideg, double aepsge, int *jstat)

30.2310.1 Macro Definition Documentation

30.2310.1.1 #define REFINE_ALL

Definition at line 49 of file refine_all.c.

30.2310.2 Function Documentation

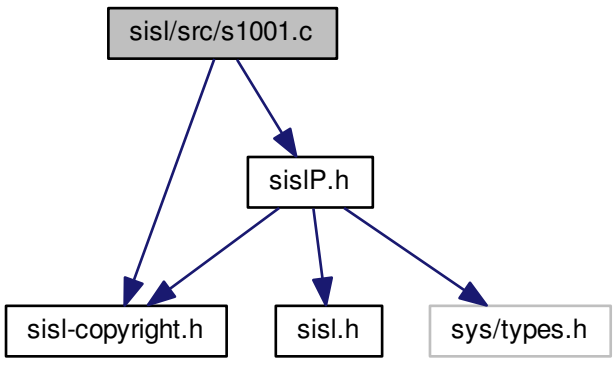
30.2310.2.1 void refine_all (SISLIntdat ** *pintdat,* SISLObject * *po1,* SISLObject * *po2,* eimpli , int *ideg,* double *aepsge,* int * *jstat*)

Definition at line 65 of file refine_all.c.

30.2311 sisl/src/s1001.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1001.c:



Macros

- #define S1001

Functions

- void s1001 (SISLSurf *ps, double min1, double min2, double max1, double max2, SISLSurf **rsnew, int *jstat)

30.2311.1 Macro Definition Documentation

30.2311.1.1 #define S1001

Definition at line 49 of file s1001.c.

30.2311.2 Function Documentation

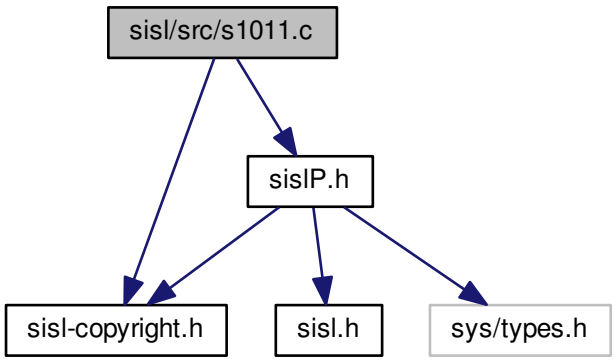
30.2311.2.1 void s1001 (SISLSurf * *ps*, double *min1*, double *min2*, double *max1*, double *max2*, SISLSurf ** *rsnew*, int * *jstat*)

Definition at line 61 of file s1001.c.

30.2312 sisl/src/s1011.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1011.c:



Macros

- #define S1011

Functions

- void s1011 (start_pos, top_pos, end_pos, double shape, int dim, SISLCurve **arc_seg, int *stat)

30.2312.1 Macro Definition Documentation

30.2312.1.1 #define S1011

Definition at line 49 of file s1011.c.

30.2312.2 Function Documentation

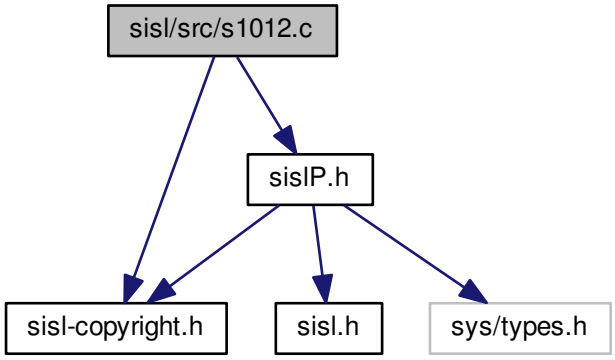
30.2312.2.1 void s1011 (start_pos , top_pos , end_pos , double *shape,* int *dim,* SISLCurve ** *arc_seg,* int * *stat*)

Definition at line 58 of file s1011.c.

30.2313 sisl/src/s1012.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1012.c:



Macros

- #define S1012

Functions

- void s1012 (start_pos, axis_pos, axis_dir, double frequency, int numb_quad, int counter_clock, SISLCurve **helix, int *stat)

30.2313.1 Macro Definition Documentation

30.2313.1.1 #define S1012

Definition at line 49 of file s1012.c.

30.2313.2 Function Documentation

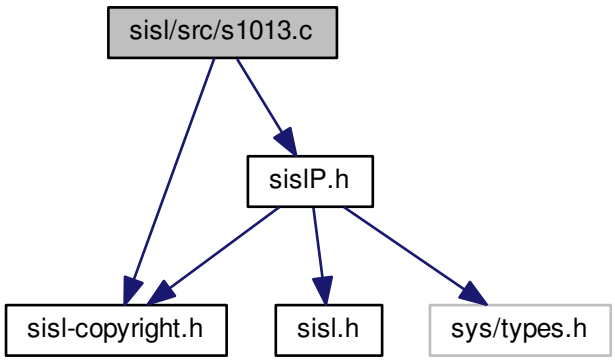
30.2313.2.1 void s1012 (start_pos , axis_pos , axis_dir , double *frequency,* int *numb_quad,* int *counter_clock,* SISLCurve ** *helix,* int * *stat*)

Definition at line 59 of file s1012.c.

30.2314 sisl/src/s1013.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1013.c:



Macros

- #define S1013

Functions

- void s1013 (SISLCurve *pcurve, double ang, double ang_tol, double guess_par, double *iter_par, int *jstat)

30.2314.1 Macro Definition Documentation

30.2314.1.1 #define S1013

Definition at line 49 of file s1013.c.

30.2314.2 Function Documentation

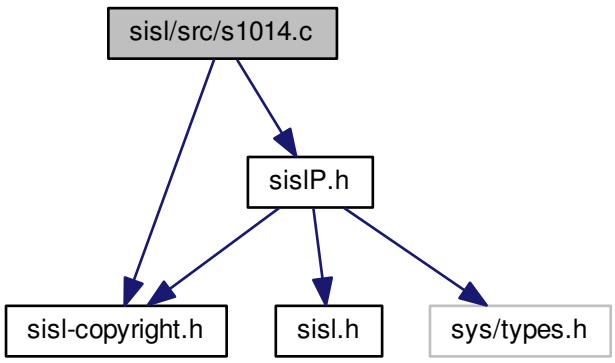
30.2314.2.1 void s1013 (SISLCurve * *pcurve,* double *ang,* double *ang_tol,* double *guess_par,* double * *iter_par,* int * *jstat*)

Definition at line 58 of file s1013.c.

30.2315 sisl/src/s1014.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1014.c:



Macros

- #define S1014

Functions

- void s1014 (SISLCurve *pc1, circ_cen, double circ_rad, double aepsge, eps1, eps2, double aradius, double *parpt1, double *parpt2, center, int *jstat)

30.2315.1 Macro Definition Documentation

30.2315.1.1 #define S1014

Definition at line 47 of file s1014.c.

30.2315.2 Function Documentation

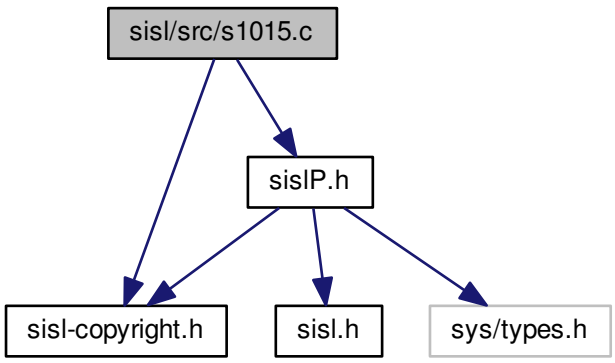
30.2315.2.1 void s1014 (SISLCurve * *pc1*, circ_cen , double *circ_rad*, double *aepsge*, eps1 , eps2 , double *aradius*, double * *parpt1*, double * *parpt2*, center , int * *jstat*)

Definition at line 74 of file s1014.c.

30.2316 sisl/src/s1015.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1015.c:



Macros

- #define S1015

Functions

- void s1015 (SISLCurve *pc1, SISLCurve *pc2, double aepsge, eps1, eps2, double aradius, double *parpt1, double *parpt2, center, int *jstat)

30.2316.1 Macro Definition Documentation

30.2316.1.1 #define S1015

Definition at line 47 of file s1015.c.

30.2316.2 Function Documentation

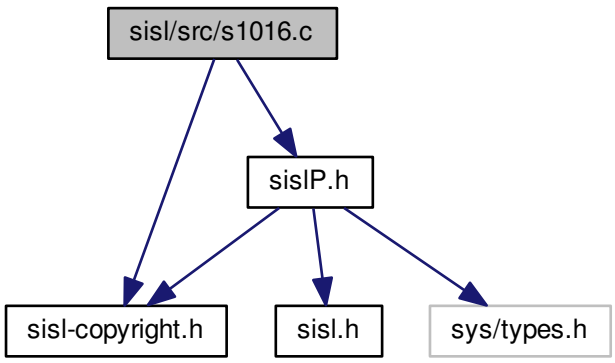
30.2316.2.1 void s1015 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsge*, eps1 , eps2 , double *aradius*, double * *parpt1*, double * *parpt2*, center , int * *jstat*)

Definition at line 74 of file s1015.c.

30.2317 sisl/src/s1016.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1016.c:



Macros

- #define S1016

Functions

- void s1016 (SISLCurve *pc1, point, normal, double aepsge, eps1, eps2, double aradius, double *parpt1, double *parpt2, center, int *jstat)

30.2317.1 Macro Definition Documentation

30.2317.1.1 #define S1016

Definition at line 47 of file s1016.c.

30.2317.2 Function Documentation

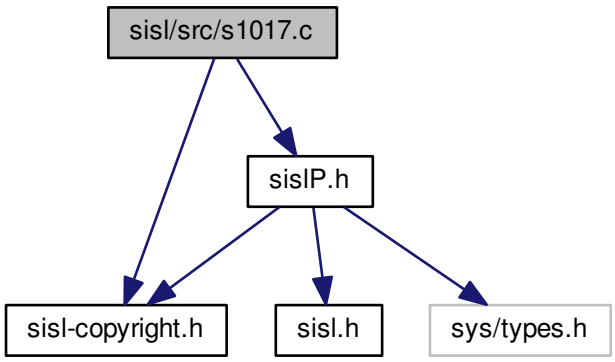
30.2317.2.1 void s1016 (SISLCurve * *pc1*, point , normal , double *aepsge*, eps1 , eps2 , double *aradius*, double * *parpt1*, double * *parpt2*, center , int * *jstat*)

Definition at line 74 of file s1016.c.

30.2318 sisl/src/s1017.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1017.c:



Macros

- #define S1017

Functions

- void s1017 (SISLCurve *pc, SISLCurve **rc, double apar, int *jstat)

30.2318.1 Macro Definition Documentation

30.2318.1.1 #define S1017

Definition at line 49 of file s1017.c.

30.2318.2 Function Documentation

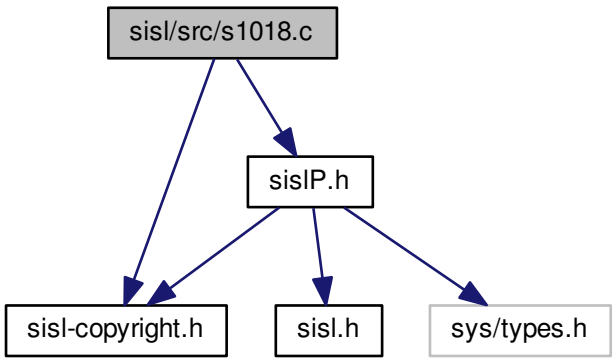
30.2318.2.1 void s1017 (SISLCurve * *pc*, SISLCurve ** *rc*, double *apar*, int * *jstat*)

Definition at line 58 of file s1017.c.

30.2319 sisl/src/s1018.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1018.c:



Macros

- #define S1018

Functions

- void s1018 (SISLCurve *pc, epar, int inpar, SISLCurve **rcnew, int *jstat)

30.2319.1 Macro Definition Documentation

30.2319.1.1 #define S1018

Definition at line 49 of file s1018.c.

30.2319.2 Function Documentation

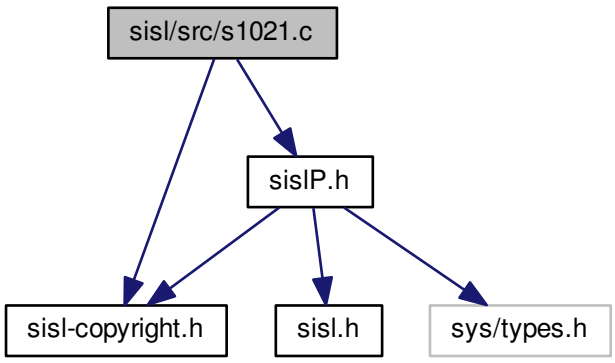
30.2319.2.1 void s1018 (SISLCurve * *pc*, epar , int *inpar*, SISLCurve ** *rcnew*, int * *jstat*)

Definition at line 58 of file s1018.c.

30.2320 sisl/src/s1021.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1021.c:



Macros

- #define S1021

Functions

- void s1021 (bottom_pos, bottom_axis, double ellipse_ratio, axis_dir, double height, SISLSurf **cyl, int *stat)

30.2320.1 Macro Definition Documentation

30.2320.1.1 #define S1021

Definition at line 49 of file s1021.c.

30.2320.2 Function Documentation

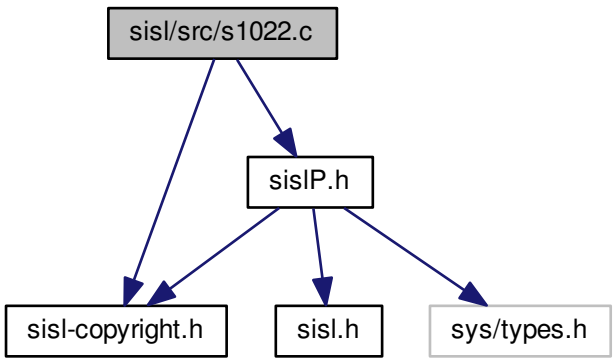
30.2320.2.1 void s1021 (bottom_pos , bottom_axis , double *ellipse_ratio,* axis_dir , double *height,* SISLSurf ** *cyl,* int * *stat*)

Definition at line 58 of file s1021.c.

30.2321 sisl/src/s1022.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1022.c:



Macros

- #define S1022

Functions

- void s1022 (bottom_pos, bottom_axis, double ellipse_ratio, axis_dir, double cone_angle, double height, SI↩ SLSurf **cone, int *stat)

30.2321.1 Macro Definition Documentation

30.2321.1.1 #define S1022

Definition at line 49 of file s1022.c.

30.2321.2 Function Documentation

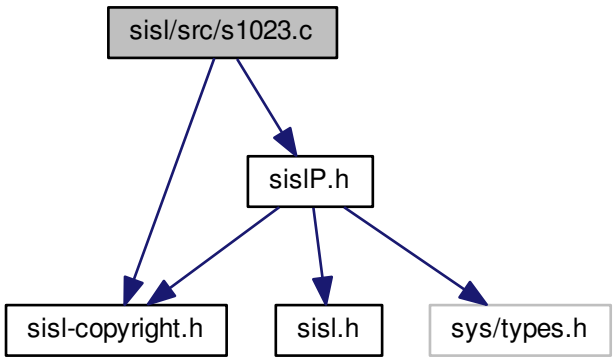
30.2321.2.1 void s1022 (bottom_pos , bottom_axis , double *ellipse_ratio,* axis_dir , double *cone_angle,* double *height,* SISLSurf ** *cone,* int * *stat*)

Definition at line 59 of file s1022.c.

30.2322 sisl/src/s1023.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1023.c:



Macros

- #define S1023

Functions

- void s1023 (center, axis, equator, int latitude, int longitude, SISLSurf **sphere, int *stat)

30.2322.1 Macro Definition Documentation

30.2322.1.1 #define S1023

Definition at line 49 of file s1023.c.

30.2322.2 Function Documentation

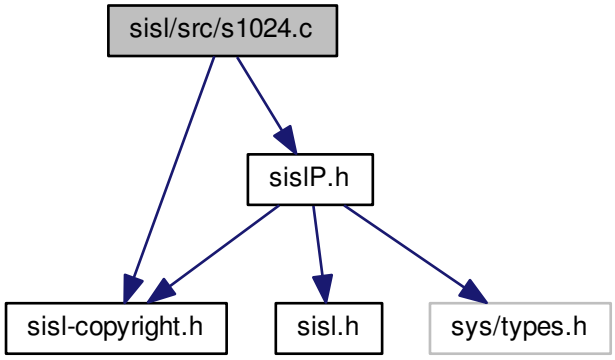
30.2322.2.1 void s1023 (center , axis , equator , int *latitude,* int *longitude,* SISLSurf ** *sphere,* int * *stat*)

Definition at line 58 of file s1023.c.

30.2323 sisl/src/s1024.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1024.c:



Macros

- #define S1024

Functions

- void s1024 (center, axis, equator, double minor_radius, int start_minor, int end_minor, int numb_major, SISLSurf **torus, int *stat)

30.2323.1 Macro Definition Documentation

30.2323.1.1 #define S1024

Definition at line 49 of file s1024.c.

30.2323.2 Function Documentation

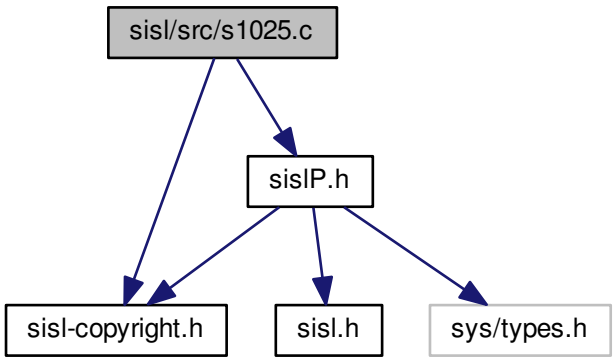
30.2323.2.1 void s1024 (center , axis , equator , double *minor_radius,* int *start_minor,* int *end_minor,* int *numb_major,* SISLSurf ** *torus,* int * *stat*)

Definition at line 59 of file s1024.c.

30.2324 sisl/src/s1025.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1025.c:



Macros

- #define S1025

Functions

- void s1025 (SISLSurf *ps, epar1, int inpar1, epar2, int inpar2, SISLSurf **rsnew, int *jstat)

30.2324.1 Macro Definition Documentation

30.2324.1.1 #define S1025

Definition at line 49 of file s1025.c.

30.2324.2 Function Documentation

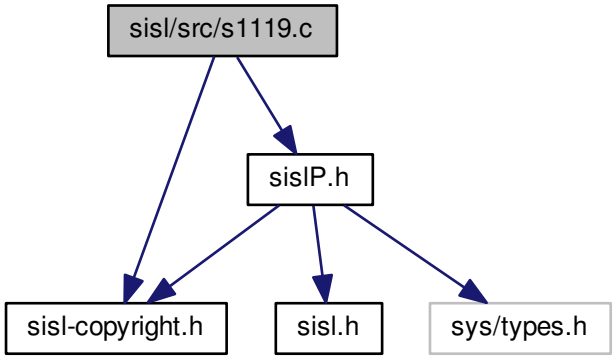
30.2324.2.1 void s1025 (SISLSurf * *ps*, epar1 , int *inpar1*, epar2 , int *inpar2*, SISLSurf ** *rsnew*, int * *jstat*)

Definition at line 60 of file s1025.c.

30.2325 sisl/src/s1119.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1119.c:



Macros

- #define S1119

Functions

- void s1119 (double *ecoef, double *et1, double *et2, int ik1, int in1, int ik2, int in2, int *jsimple, int *jind1, int *jind2, int *jstat)

30.2325.1 Macro Definition Documentation

30.2325.1.1 #define S1119

Definition at line 49 of file s1119.c.

30.2325.2 Function Documentation

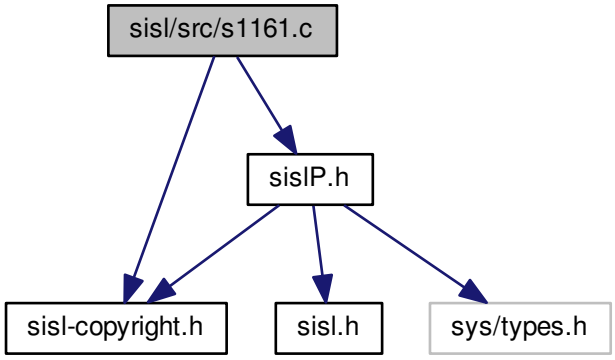
30.2325.2.1 void s1119 (double * *ecoef*, double * *et1*, double * *et2*, int *ik1*, int *in1*, int *ik2*, int *in2*, int * *jsimple*, int * *jind1*, int * *jind2*, int * *jstat*)

Definition at line 58 of file s1119.c.

30.2326 sisl/src/s1161.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1161.c:



Macros

- #define S1161

Functions

- void s1161 (SISLObject *po1, double *cmax, double aepsge, SISLIntdat **pintdat, int *jstat)

30.2326.1 Macro Definition Documentation

30.2326.1.1 #define S1161

Definition at line 49 of file s1161.c.

30.2326.2 Function Documentation

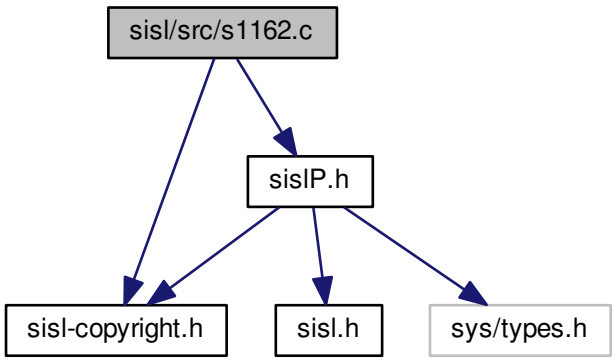
30.2326.2.1 void s1161 (SISLObject * *po1,* double * *cmax,* double *aepsge,* SISLIntdat ** *pintdat,* int * *jstat*)

Definition at line 57 of file s1161.c.

30.2327 sisl/src/s1162.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1162.c:



Macros

- #define S1162

Functions

- void s1162 (SISLObject *po1, double *cmax, double aepsge, SISLIntdat **pintdat, vedge, int ilevel, int inum, int *jstat)

30.2327.1 Macro Definition Documentation

30.2327.1.1 #define S1162

Definition at line 49 of file s1162.c.

30.2327.2 Function Documentation

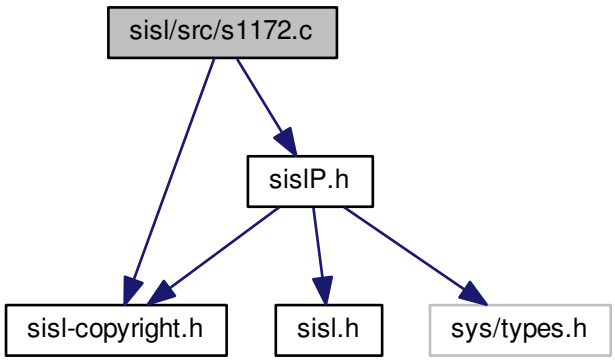
30.2327.2.1 void s1162 (SISLObject * *po1*, double * *cmax*, double *aepsge*, SISLIntdat ** *pintdat*, vedge , int *ilevel*, int *inum*, int * *jstat*)

Definition at line 85 of file s1162.c.

30.2328 sisl/src/s1172.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1172.c:



Macros

- #define S1172

Functions

- void s1172 (SISLCurve *pcurve, double astart, double aend, double anext, double *cpos, int *jstat)

30.2328.1 Macro Definition Documentation

30.2328.1.1 #define S1172

Definition at line 49 of file s1172.c.

30.2328.2 Function Documentation

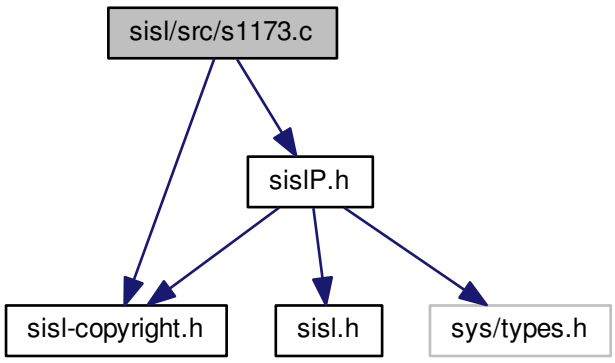
30.2328.2.1 void s1172 (SISLCurve * *pcurve*, double *astart*, double *aend*, double *anext*, double * *cpos*, int * *jstat*)

Definition at line 70 of file s1172.c.

30.2329 sisl/src/s1173.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1173.c:



Macros

- #define S1173

Functions

- void s1173 (SISLPoint *ppoint, SISLSurf *psurf, double aepsge, estart, eend, enext, gpos, int *jstat)

30.2329.1 Macro Definition Documentation

30.2329.1.1 #define S1173

Definition at line 49 of file s1173.c.

30.2329.2 Function Documentation

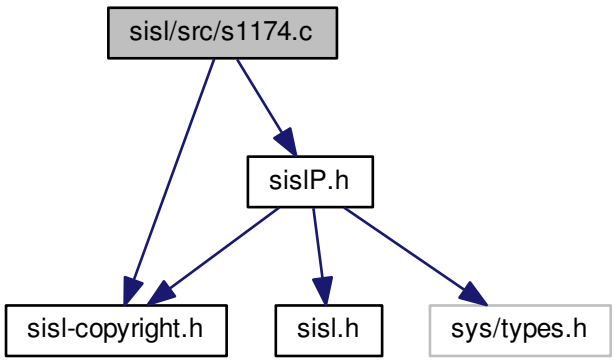
30.2329.2.1 void s1173 (SISLPoint * *ppoint,* SISLSurf * *psurf,* double *aepsge,* estart , eend , enext , gpos , int * *jstat*)

Definition at line 73 of file s1173.c.

30.2330 sisl/src/s1174.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1174.c:



Macros

- #define S1174

Functions

- void s1174 (SISLSurf *psurf, estart, eend, enext, gpos, int *jstat)

30.2330.1 Macro Definition Documentation

30.2330.1.1 #define S1174

Definition at line 49 of file s1174.c.

30.2330.2 Function Documentation

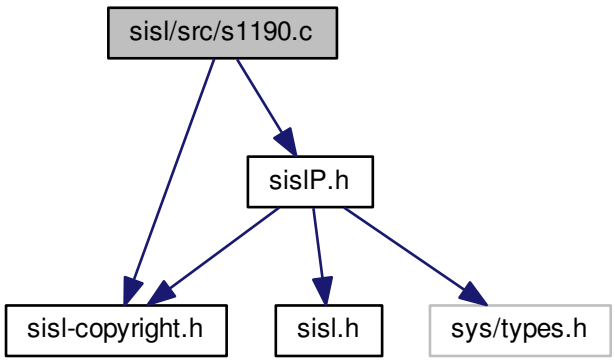
30.2330.2.1 void s1174 (SISLSurf * *psurf*, estart , eend , enext , gpos , int * *jstat*)

Definition at line 70 of file s1174.c.

30.2331 sisl/src/s1190.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1190.c:



Macros

- #define S1190

Functions

- void s1190 (SISLObject *po1, double *cmax, double aepsge, int *jstat)

30.2331.1 Macro Definition Documentation

30.2331.1.1 #define S1190

Definition at line 49 of file s1190.c.

30.2331.2 Function Documentation

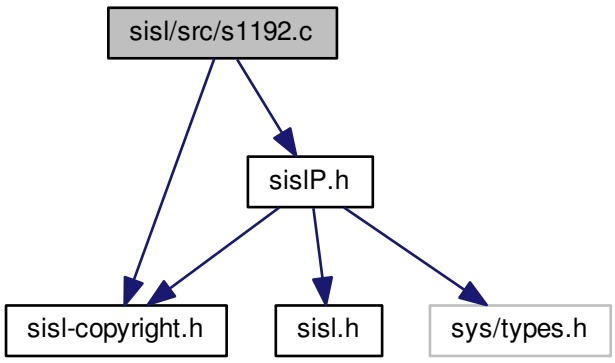
30.2331.2.1 void s1190 (SISLObject * *po1*, double * *cmax*, double *aepsge*, int * *jstat*)

Definition at line 57 of file s1190.c.

30.2332 sisl/src/s1192.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1192.c:



Macros

- #define S1192

Functions

- void s1192 (SISLObject *po, double aepsge, int *jstat)

30.2332.1 Macro Definition Documentation

30.2332.1.1 #define S1192

Definition at line 49 of file s1192.c.

30.2332.2 Function Documentation

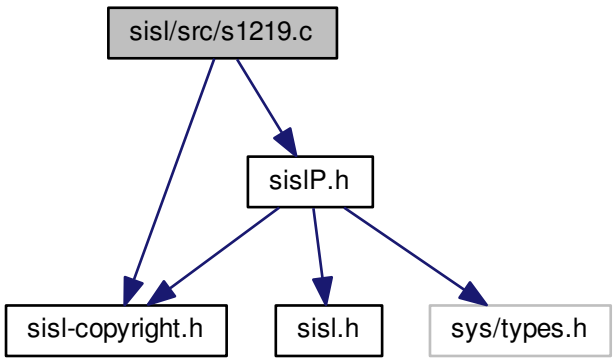
30.2332.2.1 void s1192 (SISLObject * *po*, double *aepsge*, int * *jstat*)

Definition at line 68 of file s1192.c.

30.2333 sisl/src/s1219.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1219.c:



Macros

- #define S1219

Functions

- void s1219 (double *et, int ik, int in, int *ileft, double ax, int *jstat)

30.2333.1 Macro Definition Documentation

30.2333.1.1 #define S1219

Definition at line 49 of file s1219.c.

30.2333.2 Function Documentation

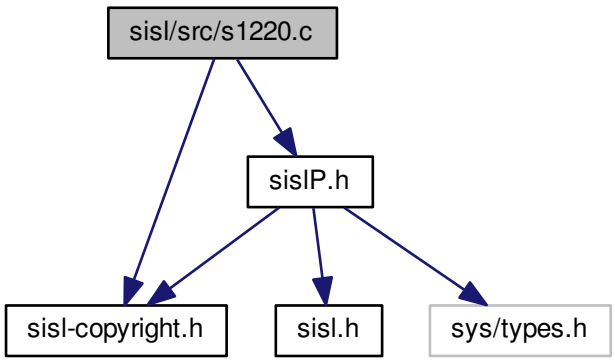
30.2333.2.1 void s1219 (double * *et*, int *ik*, int *in*, int * *ileft*, double *ax*, int * *jstat*)

Definition at line 57 of file s1219.c.

30.2334 sisl/src/s1220.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1220.c:



Macros

- #define S1220

Functions

- void s1220 (double *et, int ik, int in, int *ileft, double ax, int ider, ebder, int *jstat)

30.2334.1 Macro Definition Documentation

30.2334.1.1 #define S1220

Definition at line 49 of file s1220.c.

30.2334.2 Function Documentation

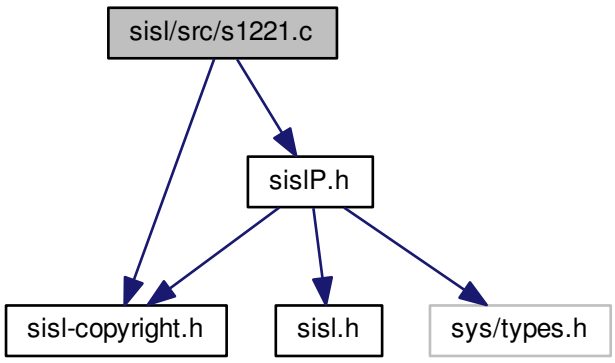
30.2334.2.1 void s1220 (double * et, int ik, int in, int * ileft, double ax, int ider, ebder , int * jstat)

Definition at line 59 of file s1220.c.

30.2335 sisl/src/s1221.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1221.c:



Macros

- #define S1221

Functions

- void s1221 (SISLCurve *pc1, int ider, double ax, int *ileft, eder, int *jstat)

30.2335.1 Macro Definition Documentation

30.2335.1.1 #define S1221

Definition at line 49 of file s1221.c.

30.2335.2 Function Documentation

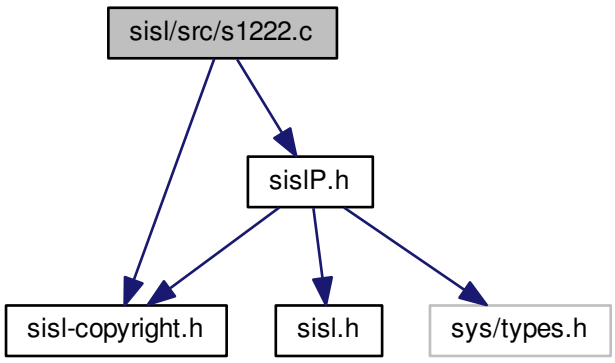
30.2335.2.1 void s1221 (SISLCurve * *pc1,* int *ider,* double *ax,* int * *ileft,* eder , int * *jstat*)

Definition at line 57 of file s1221.c.

30.2336 sisl/src/s1222.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1222.c:



Macros

- #define S1222

Functions

- void s1222 (et, int ik, int in, int ibase, double ax, int ider, ebder, int *jstat)

30.2336.1 Macro Definition Documentation

30.2336.1.1 #define S1222

Definition at line 49 of file s1222.c.

30.2336.2 Function Documentation

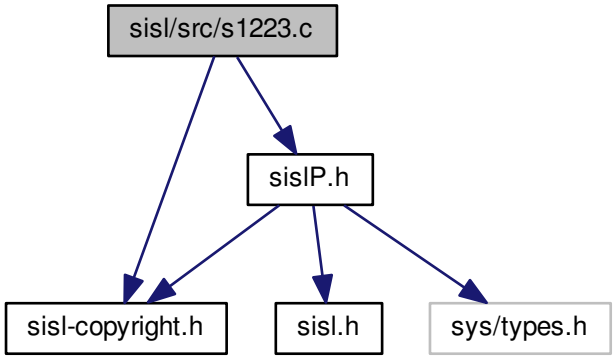
30.2336.2.1 void s1222 (et , int *ik,* int *in,* int *ibase,* double *ax,* int *ider,* ebder , int * *jstat*)

Definition at line 60 of file s1222.c.

30.2337 sisl/src/s1223.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1223.c:



Macros

- #define S1223

Functions

- void s1223 (et1, et2, int ik1, int ik2, int in1, int in2, int ibase1, int ibase2, par, int ider1, int ider2, ebder, int *jstat)

30.2337.1 Macro Definition Documentation

30.2337.1.1 #define S1223

Definition at line 49 of file s1223.c.

30.2337.2 Function Documentation

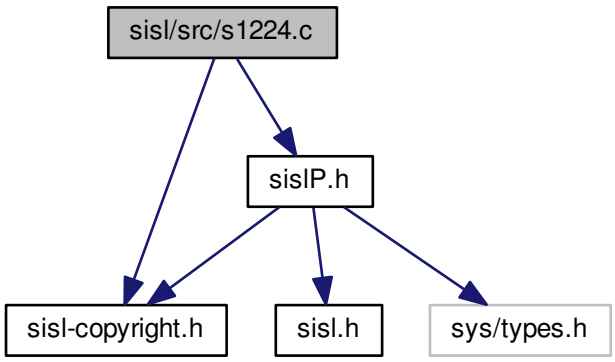
30.2337.2.1 void s1223 (et1 , et2 , int *ik1,* int *ik2,* int *in1,* int *in2,* int *ibase1,* int *ibase2,* par , int *ider1,* int *ider2,* ebder , int * *jstat*)

Definition at line 61 of file s1223.c.

30.2338 sisl/src/s1224.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1224.c:



Macros

- #define S1224

Functions

- void s1224 (et1, et2, int ik1, int ik2, int in1, int in2, int ibase1, int ibase2, par, int ider, ebder, int *jstat)

30.2338.1 Macro Definition Documentation

30.2338.1.1 #define S1224

Definition at line 49 of file s1224.c.

30.2338.2 Function Documentation

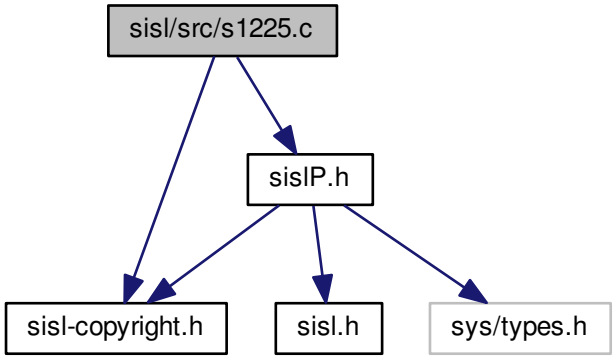
30.2338.2.1 void s1224 (et1 , et2 , int *ik1,* int *ik2,* int *in1,* int *in2,* int *ibase1,* int *ibase2,* par , int *ider,* ebder , int * *jstat*)

Definition at line 61 of file s1224.c.

30.2339 sisl/src/s1225.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1225.c:



Macros

- #define S1225

Functions

- void s1225 (SISLCurve *curve, int der, double parvalue, int *leftknot, derive, curvature, double *radius_of↩ _curvature, int *jstat)

30.2339.1 Macro Definition Documentation

30.2339.1.1 #define S1225

Definition at line 49 of file s1225.c.

30.2339.2 Function Documentation

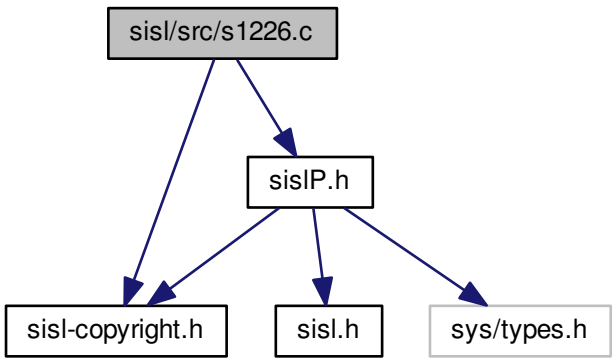
30.2339.2.1 void s1225 (SISLCurve * *curve,* int *der,* double *parvalue,* int * *leftknot,* derive , curvature , double * *radius_of_curvature,* int * *jstat*)

Definition at line 59 of file s1225.c.

30.2340 sisl/src/s1226.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1226.c:



Macros

- #define S1226

Functions

- void s1226 (SISLCurve *curve, int der, double parvalue, int *leftknot, derive, curvature, double *radius_of_curvature, int *jstat)

30.2340.1 Macro Definition Documentation

30.2340.1.1 #define S1226

Definition at line 49 of file s1226.c.

30.2340.2 Function Documentation

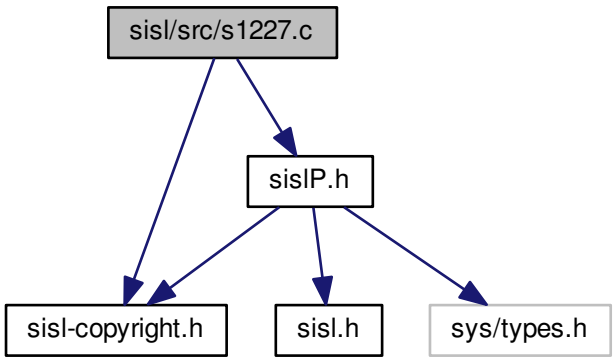
30.2340.2.1 void s1226 (SISLCurve * *curve,* int *der,* double *parvalue,* int * *leftknot,* derive , curvature , double * *radius_of_curvature,* int * *jstat*)

Definition at line 59 of file s1226.c.

30.2341 sisl/src/s1227.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1227.c:



Macros

- #define S1227

Functions

- void s1227 (SISLCurve *pc1, int ider, double ax, int *ileft, eder, int *jstat)

30.2341.1 Macro Definition Documentation

30.2341.1.1 #define S1227

Definition at line 49 of file s1227.c.

30.2341.2 Function Documentation

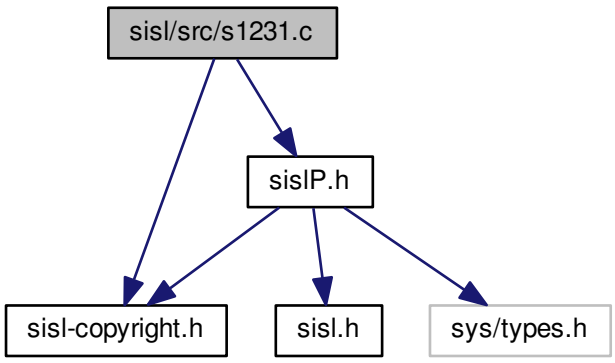
30.2341.2.1 void s1227 (SISLCurve * *pc1,* int *ider,* double *ax,* int * *ileft,* eder , int * *jstat*)

Definition at line 57 of file s1227.c.

30.2342 sisl/src/s1231.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1231.c:



Macros

- #define S1231

Functions

- void s1231 (SISLCurve *pc1, double apar, SISLCurve **rcnew1, SISLCurve **rcnew2, int *jstat)

30.2342.1 Macro Definition Documentation

30.2342.1.1 #define S1231

Definition at line 49 of file s1231.c.

30.2342.2 Function Documentation

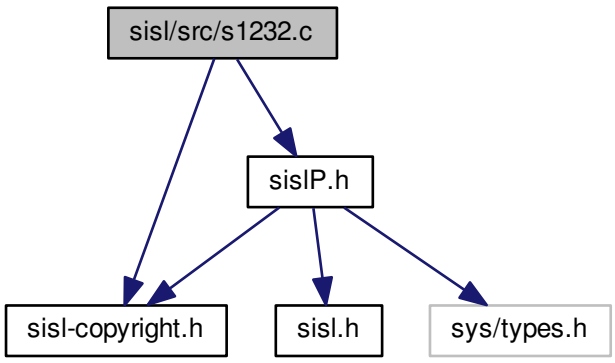
30.2342.2.1 void s1231 (SISLCurve * *pc1*, double *apar*, SISLCurve ** *rcnew1*, SISLCurve ** *rcnew2*, int * *jstat*)

Definition at line 56 of file s1231.c.

30.2343 sisl/src/s1232.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1232.c:



Macros

- #define S1232

Functions

- void s1232 (et1, int in, int ik, double afak1, double afak2, et2, int *jstat)

30.2343.1 Macro Definition Documentation

30.2343.1.1 #define S1232

Definition at line 49 of file s1232.c.

30.2343.2 Function Documentation

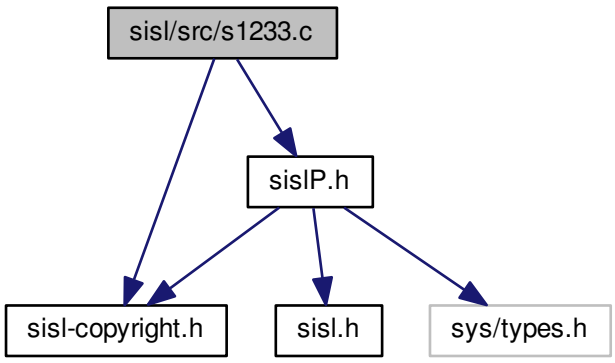
30.2343.2.1 void s1232 (et1 , int *in,* int *ik,* double *afak1,* double *afak2,* et2 , int * *jstat*)

Definition at line 58 of file s1232.c.

30.2344 sisl/src/s1233.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1233.c:



Macros

- #define S1233

Functions

- void s1233 (SISLCurve *pc, double afak1, double afak2, SISLCurve **rc, int *jstat)

30.2344.1 Macro Definition Documentation

30.2344.1.1 #define S1233

Definition at line 49 of file s1233.c.

30.2344.2 Function Documentation

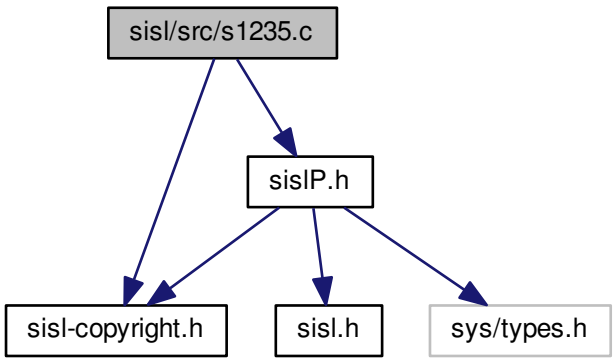
30.2344.2.1 void s1233 (SISLCurve * *pc*, double *afak1*, double *afak2*, SISLCurve ** *rc*, int * *jstat*)

Definition at line 57 of file s1233.c.

30.2345 sisl/src/s1235.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1235.c:



Macros

- #define S1235

Functions

- void s1235 (et, int in, int ik, int *jnbreak, double **gbreak, int *jstat)

30.2345.1 Macro Definition Documentation

30.2345.1.1 #define S1235

Definition at line 49 of file s1235.c.

30.2345.2 Function Documentation

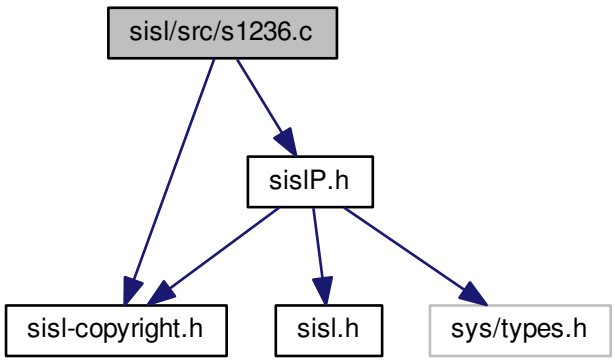
30.2345.2.1 void s1235 (et , int *in*, int *ik*, int * *jnbreak*, double ** *gbreak*, int * *jstat*)

Definition at line 57 of file s1235.c.

30.2346 sisl/src/s1236.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1236.c:



Macros

- #define S1236

Functions

- void s1236 (et, int in, int ik, int inpar, epar, int *jstat)

30.2346.1 Macro Definition Documentation

30.2346.1.1 #define S1236

Definition at line 49 of file s1236.c.

30.2346.2 Function Documentation

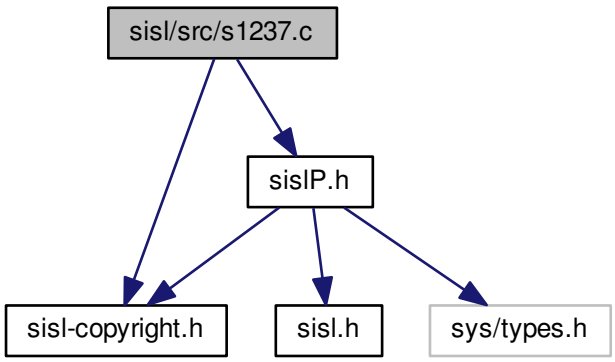
30.2346.2.1 void s1236 (et , int *in,* int *ik,* int *inpar,* epar , int * *jstat*)

Definition at line 57 of file s1236.c.

30.2347 sisl/src/s1237.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1237.c:



Macros

- #define S1237

Functions

- void s1237 (SISLSurf *psurf, int inmb1, int inmb2, double aepscu, int *jstat)

30.2347.1 Macro Definition Documentation

30.2347.1.1 #define S1237

Definition at line 49 of file s1237.c.

30.2347.2 Function Documentation

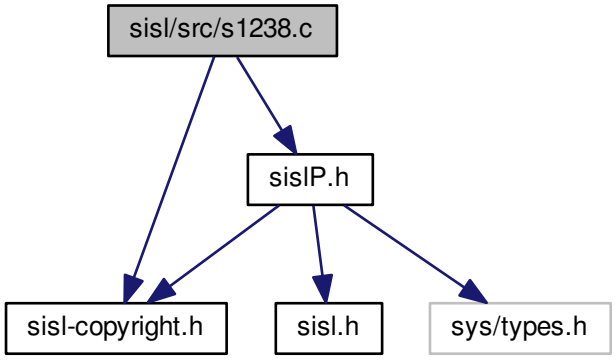
30.2347.2.1 void s1237 (SISLSurf * *psurf,* int *inmb1,* int *inmb2,* double *aepscu,* int * *jstat*)

Definition at line 57 of file s1237.c.

30.2348 sisl/src/s1238.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1238.c:



Macros

- #define S1238

Functions

- void s1238 (SISLSurf *psurf, SISLCurve *pcurve, int inmb1, int inmb2, double aepsco, double aepscu, int *jstat)

30.2348.1 Macro Definition Documentation

30.2348.1.1 #define S1238

Definition at line 49 of file s1238.c.

30.2348.2 Function Documentation

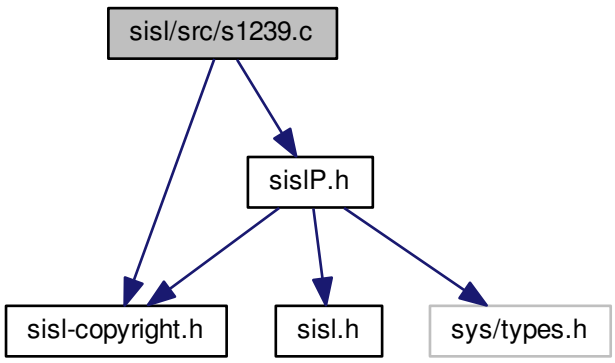
30.2348.2.1 void s1238 (SISLSurf * *psurf,* SISLCurve * *pcurve,* int *inmb1,* int *inmb2,* double *aepsco,* double *aepscu,* int * *jstat*)

Definition at line 58 of file s1238.c.

30.2349 sisl/src/s1239.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1239.c:



Macros

- #define S1239

Functions

- void s1239 (SISLCurve *pcpar, int ipar, double apar, SISLCurve *pcurve, double aepsco, double aepsge, SISLCurve **vpartc, int imax, int *jpartc, int *jstat)

30.2349.1 Macro Definition Documentation

30.2349.1.1 #define S1239

Definition at line 49 of file s1239.c.

30.2349.2 Function Documentation

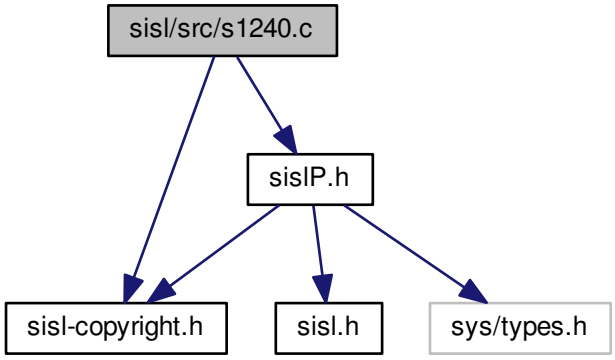
30.2349.2.1 void s1239 (SISLCurve * *pcpar,* int *ipar,* double *apar,* SISLCurve * *pcurve,* double *aepsco,* double *aepsge,* SISLCurve ** *vpartc,* int *imax,* int * *jpartc,* int * *jstat*)

Definition at line 68 of file s1239.c.

30.2350 sisl/src/s1240.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1240.c:



Macros

- #define S1240

Functions

- void s1240 (SISLCurve *pcurve, double aepsge, double *clength, int *jstat)

30.2350.1 Macro Definition Documentation

30.2350.1.1 #define S1240

Definition at line 49 of file s1240.c.

30.2350.2 Function Documentation

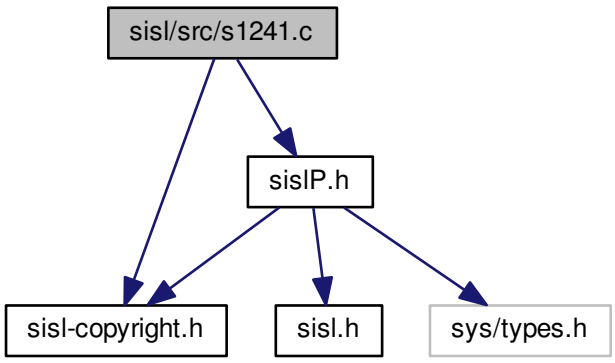
30.2350.2.1 void s1240 (SISLCurve * *pcurve*, double *aepsge*, double * *clength*, int * *jstat*)

Definition at line 57 of file s1240.c.

30.2351 sisl/src/s1241.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1241.c:



Macros

- #define S1241

Functions

- void s1241 (SISLCurve *pcurve, point, int dim, double epsge, double *area, int *stat)

30.2351.1 Macro Definition Documentation

30.2351.1.1 #define S1241

Definition at line 49 of file s1241.c.

30.2351.2 Function Documentation

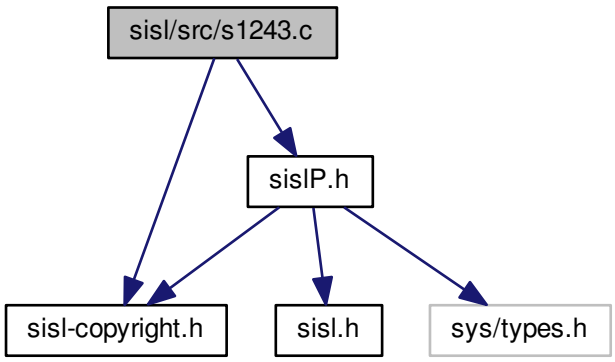
30.2351.2.1 void s1241 (SISLCurve * *pcurve*, point , int *dim*, double *epsge*, double * *area*, int * *stat*)

Definition at line 58 of file s1241.c.

30.2352 sisl/src/s1243.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1243.c:



Macros

- #define S1243

Functions

- void s1243 (SISLCurve *pcurve, point, int dim, double epsge, weight, double *area, double *moment, int *stat)

30.2352.1 Macro Definition Documentation

30.2352.1.1 #define S1243

Definition at line 49 of file s1243.c.

30.2352.2 Function Documentation

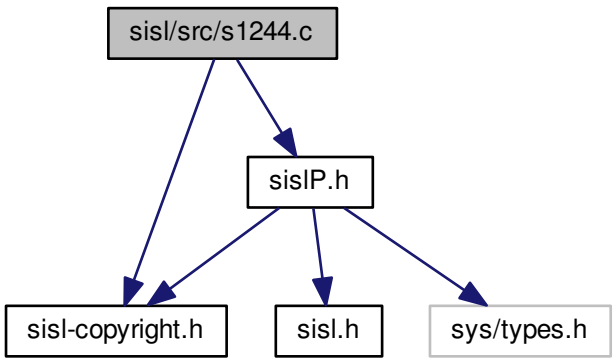
30.2352.2.1 void s1243 (SISLCurve * *pcurve,* point , int *dim,* double *epsge,* weight , double * *area,* double * *moment,* int * *stat*)

Definition at line 58 of file s1243.c.

30.2353 sisl/src/s1244.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1244.c:



Macros

- #define S1244

Functions

- void s1244 (knots, int knot_reg, int first_order, int second_order, int in, int first_index, int second_index, double *integral, int *stat)

30.2353.1 Macro Definition Documentation

30.2353.1.1 #define S1244

Definition at line 49 of file s1244.c.

30.2353.2 Function Documentation

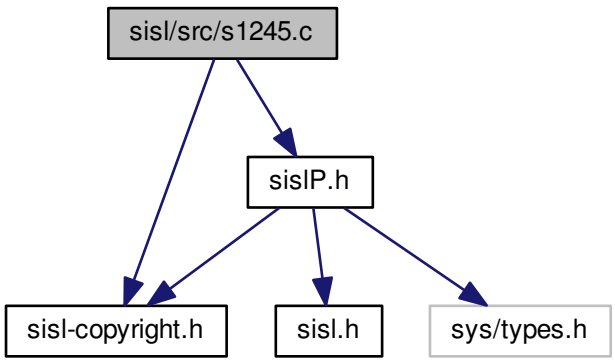
30.2353.2.1 void s1244 (knots , int *knot_reg,* int *first_order,* int *second_order,* int *in,* int *first_index,* int *second_index,* double * *integral,* int * *stat*)

Definition at line 58 of file s1244.c.

30.2354 sisl/src/s1245.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1245.c:



Macros

- #define S1245

Functions

- void s1245 (coef, int ik, int dim, point, double local_tol, int depth, weight, double *area, double *moment, int *stat)

30.2354.1 Macro Definition Documentation

30.2354.1.1 #define S1245

Definition at line 49 of file s1245.c.

30.2354.2 Function Documentation

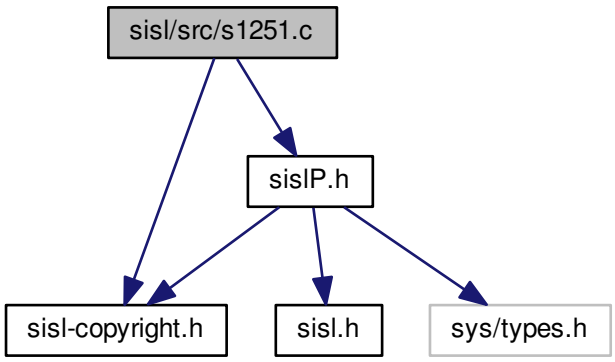
30.2354.2.1 void s1245 (coef , int *ik,* int *dim,* point , double *local_tol,* int *depth,* weight , double * *area,* double * *moment,* int * *stat*)

Definition at line 59 of file s1245.c.

30.2355 sisl/src/s1251.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1251.c:



Macros

- #define S1251

Functions

- void s1251 (SISLCurve *pcurve, double aepsco, double *clength, int *jstat)

30.2355.1 Macro Definition Documentation

30.2355.1.1 #define S1251

Definition at line 48 of file s1251.c.

30.2355.2 Function Documentation

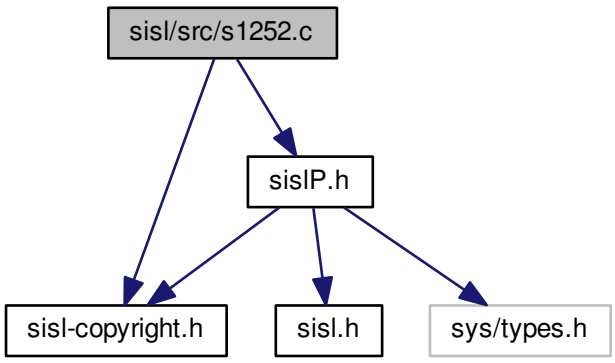
30.2355.2.1 void s1251 (SISLCurve * *pcurve*, double *aepsco*, double * *clength*, int * *jstat*)

Definition at line 56 of file s1251.c.

30.2356 sisl/src/s1252.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1252.c:



Macros

- #define S1252

Functions

- void s1252 (SISLCurve *pcurve, double aepsge, double astart, double *cpos, int *jstat)

30.2356.1 Macro Definition Documentation

30.2356.1.1 #define S1252

Definition at line 49 of file s1252.c.

30.2356.2 Function Documentation

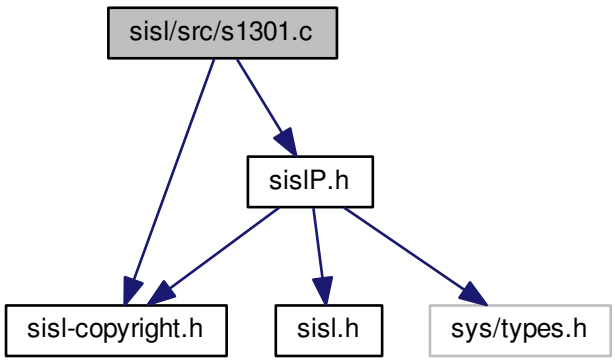
30.2356.2.1 void s1252 (SISLCurve * *pcurve*, double *aepsge*, double *astart*, double * *cpos*, int * *jstat*)

Definition at line 70 of file s1252.c.

30.2357 sisl/src/s1301.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1301.c:



Macros

- #define S1301

Functions

- void s1301 (double areler, double angle, int idim, SISLCurve **pc, int *jstat)

30.2357.1 Macro Definition Documentation

30.2357.1.1 #define S1301

Definition at line 49 of file s1301.c.

30.2357.2 Function Documentation

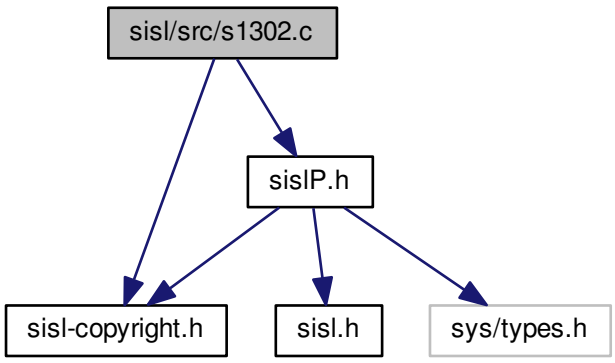
30.2357.2.1 void s1301 (double *areler,* double *angle,* int *idim,* SISLCurve ** *pc,* int * *jstat*)

Definition at line 57 of file s1301.c.

30.2358 sisl/src/s1302.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1302.c:



Macros

- #define S1302

Functions

- void s1302 (SISLCurve *pc, double aepsge, double angle, ep, eaxis, SISLSurf **rs, int *jstat)

30.2358.1 Macro Definition Documentation

30.2358.1.1 #define S1302

Definition at line 49 of file s1302.c.

30.2358.2 Function Documentation

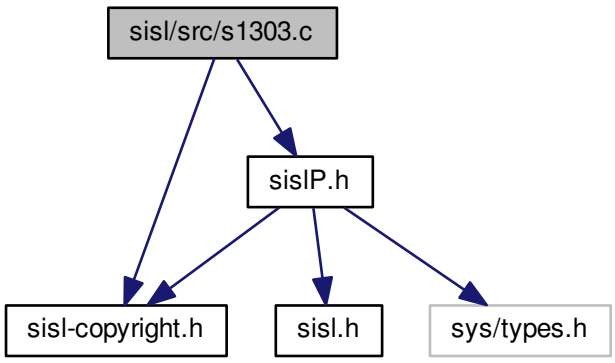
30.2358.2.1 void s1302 (SISLCurve * *pc*, double *aepsge*, double *angle*, ep , eaxis , SISLSurf ** *rs*, int * *jstat*)

Definition at line 58 of file s1302.c.

30.2359 sisl/src/s1303.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1303.c:



Macros

- #define S1303

Functions

- void s1303 (epstrt, double aepsge, double angle, epcent, eaxis, int idim, SISLCurve **rc, int *jstat)

30.2359.1 Macro Definition Documentation

30.2359.1.1 #define S1303

Definition at line 47 of file s1303.c.

30.2359.2 Function Documentation

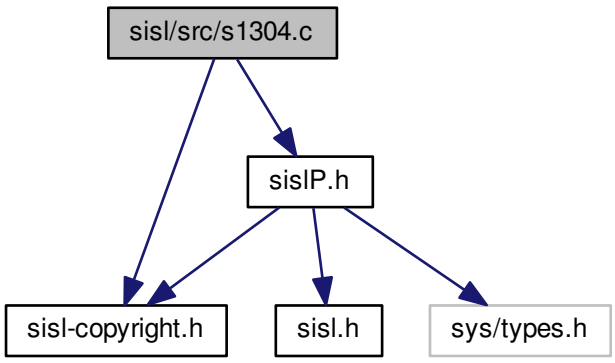
30.2359.2.1 void s1303 (epstrt , double *aepsge,* double *angle,* epcent , eaxis , int *idim,* SISLCurve ** *rc,* int * *jstat*)

Definition at line 56 of file s1303.c.

30.2360 sisl/src/s1304.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1304.c:



Macros

- #define S1304

Functions

- void s1304 (ep, eq, eparp, eparq, egeo3d, egeop, egeoq, int *jstat)

30.2360.1 Macro Definition Documentation

30.2360.1.1 #define S1304

Definition at line 49 of file s1304.c.

30.2360.2 Function Documentation

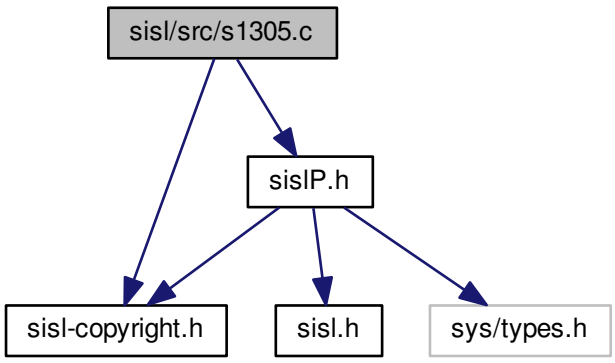
30.2360.2.1 void s1304 (ep , eq , eparp , eparq , egeo3d , egeop , egeoq , int * *jstat*)

Definition at line 58 of file s1304.c.

30.2361 sisl/src/s1305.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1305.c:



Macros

- #define S1305

Functions

- void s1305 (epar1, epar2, eval1, eval2, int *jbound, gpar, int *jstat)

30.2361.1 Macro Definition Documentation

30.2361.1.1 #define S1305

Definition at line 49 of file s1305.c.

30.2361.2 Function Documentation

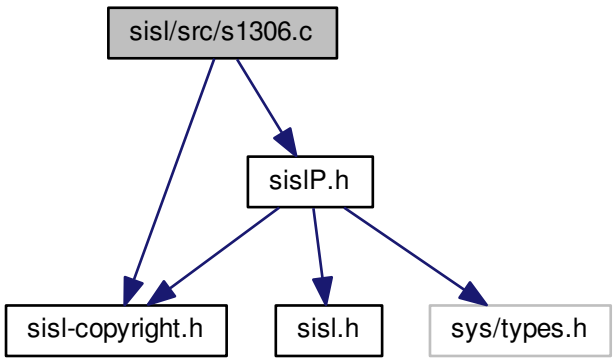
30.2361.2.1 void s1305 (epar1 , epar2 , eval1 , eval2 , int * *jbound,* gpar , int * *jstat*)

Definition at line 58 of file s1305.c.

30.2362 sisl/src/s1306.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1306.c:



Macros

- #define S1306

Functions

- void s1306 (ep, eparp, eimpli, int ideg, egeo3d, egeop, int *jstat)

30.2362.1 Macro Definition Documentation

30.2362.1.1 #define S1306

Definition at line 49 of file s1306.c.

30.2362.2 Function Documentation

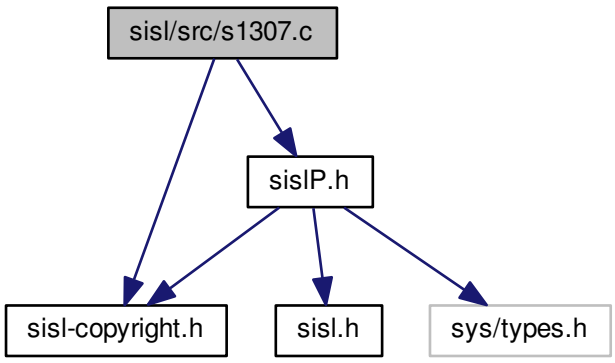
30.2362.2.1 void s1306 (ep , eparp , eimpli , int *ideg,* egeo3d , egeop , int * *jstat*)

Definition at line 58 of file s1306.c.

30.2363 sisl/src/s1307.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1307.c:



Macros

- #define S1307

Functions

- void s1307 (ep, int idim, egeo, int *jstat)

30.2363.1 Macro Definition Documentation

30.2363.1.1 #define S1307

Definition at line 47 of file s1307.c.

30.2363.2 Function Documentation

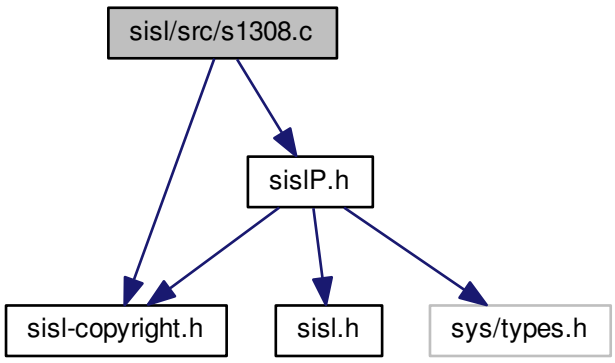
30.2363.2.1 void s1307 (ep , int *idim,* egeo , int * *jstat*)

Definition at line 55 of file s1307.c.

30.2364 sisl/src/s1308.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1308.c:



Macros

- #define S1308

Functions

- void s1308 (ep, int idim, eimpli, int ideg, enorm, int *jstat)

30.2364.1 Macro Definition Documentation

30.2364.1.1 #define S1308

Definition at line 49 of file s1308.c.

30.2364.2 Function Documentation

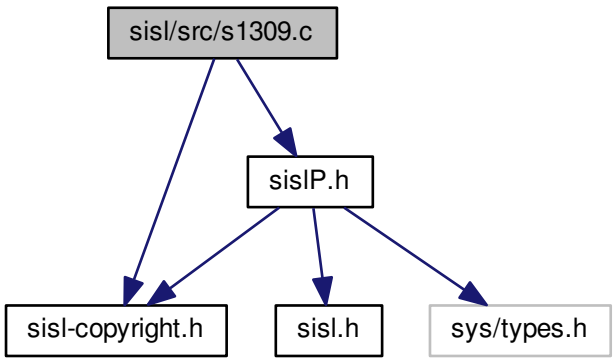
30.2364.2.1 void s1308 (ep , int *idim,* eimpli , int *ideg,* enorm , int * *jstat*)

Definition at line 57 of file s1308.c.

30.2365 sisl/src/s1309.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1309.c:



Macros

- #define S1309

Functions

- double s1309 (epnt, edir, eimpli, int ideg, int *jstat)

30.2365.1 Macro Definition Documentation

30.2365.1.1 #define S1309

Definition at line 47 of file s1309.c.

30.2365.2 Function Documentation

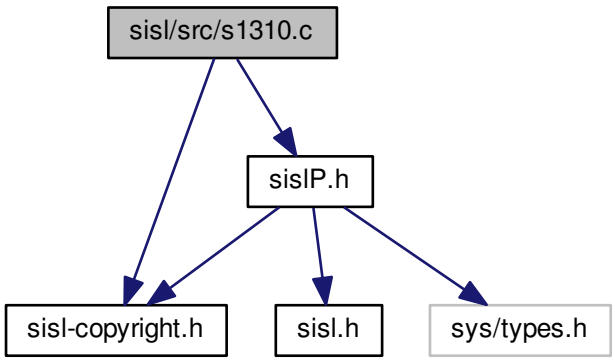
30.2365.2.1 double s1309 (epnt , edir , eimpli , int *ideg*, int * *jstat*)

Definition at line 55 of file s1309.c.

30.2366 sisl/src/s1310.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1310.c:



Macros

- #define S1310

Functions

- void s1310 (SISLSurf *psurf1, SISLSurf *psurf2, SISLIntcurve *pinter, double aepsge, double amax, int icur, int igraph, int *jstat)

30.2366.1 Macro Definition Documentation

30.2366.1.1 #define S1310

Definition at line 49 of file s1310.c.

30.2366.2 Function Documentation

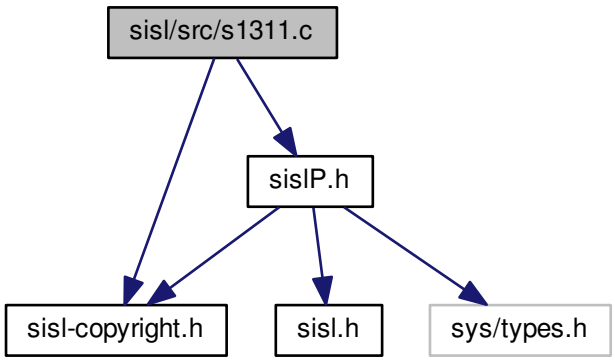
30.2366.2.1 void s1310 (SISLSurf * *psurf1,* SISLSurf * *psurf2,* SISLIntcurve * *pinter,* double *aepsge,* double *amax,* int *icur,* int *igraph,* int * *jstat*)

Definition at line 68 of file s1310.c.

30.2367 sisl/src/s1311.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1311.c:



Macros

- #define S1311

Functions

- double s1311 (double arad, double aepsge, double amax, int *jstat)

30.2367.1 Macro Definition Documentation

30.2367.1.1 #define S1311

Definition at line 49 of file s1311.c.

30.2367.2 Function Documentation

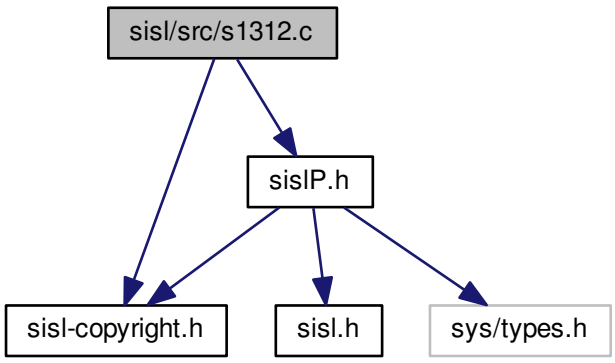
30.2367.2.1 double s1311 (double *arad,* double *aepsge,* double *amax,* int * *jstat*)

Definition at line 57 of file s1311.c.

30.2368 sisl/src/s1312.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1312.c:



Macros

- #define S1312

Functions

- void s1312 (egeo, int idim, int inbinf, int ipar, epar, SISLCurve **rcurve, int *jstat)

30.2368.1 Macro Definition Documentation

30.2368.1.1 #define S1312

Definition at line 49 of file s1312.c.

30.2368.2 Function Documentation

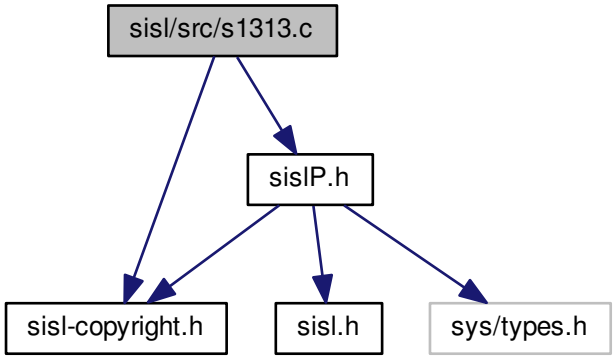
30.2368.2.1 void s1312 (egeo , int *idim,* int *inbinf,* int *ipar,* epar , SISLCurve ** *rcurve,* int * *jstat*)

Definition at line 58 of file s1312.c.

30.2369 sisl/src/s1313.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1313.c:



Macros

- #define S1313

Functions

- void s1313 (SISLSurf *ps1, eimpli, int ideg, double aepsco, double aepsge, double amax, SISLIntcurve *pintcr, int icur, int igraph, int *jstat)

30.2369.1 Macro Definition Documentation

30.2369.1.1 #define S1313

Definition at line 49 of file s1313.c.

30.2369.2 Function Documentation

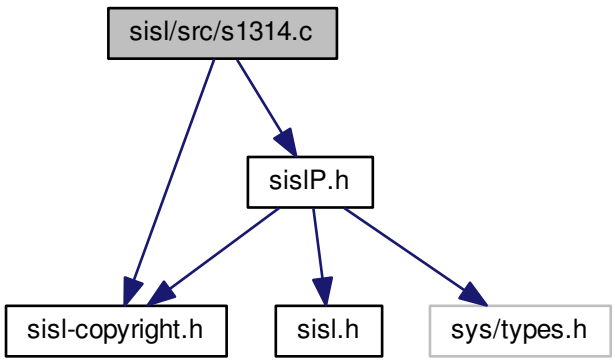
30.2369.2.1 void s1313 (SISLSurf * *ps1*, eimpli , int *ideg*, double *aepsco*, double *aepsge*, double *amax*, SISLIntcurve * *pintcr*, int *icur*, int *igraph*, int * *jstat*)

Definition at line 69 of file s1313.c.

30.2370 sisl/src/s1314.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1314.c:



Macros

- #define S1314

Functions

- void s1314 (SISLSurf *ps1, double *epoint, double *enorm, int idim, double aepsco, double aepsge, double amax, SISLIntcurve *pintcr, int icur, int igraph, int *jstat)

30.2370.1 Macro Definition Documentation

30.2370.1.1 #define S1314

Definition at line 49 of file s1314.c.

30.2370.2 Function Documentation

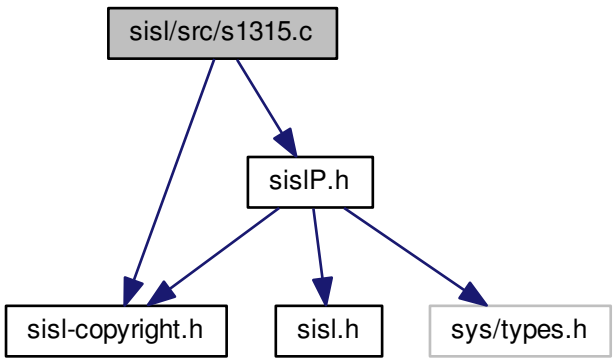
30.2370.2.1 void s1314 (SISLSurf * *ps1,* double * *epoint,* double * *enorm,* int *idim,* double *aepsco,* double *aepsge,* double *amax,* SISLIntcurve * *pintcr,* int *icur,* int *igraph,* int * *jstat*)

Definition at line 59 of file s1314.c.

30.2371 sisl/src/s1315.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1315.c:



Macros

- #define S1315

Functions

- void s1315 (SISLSurf *ps1, double *ecentr, double aradiu, int idim, double aepsco, double aepsge, double amax, SISLIntcurve *pintcr, int icur, int igraph, int *jstat)

30.2371.1 Macro Definition Documentation

30.2371.1.1 #define S1315

Definition at line 49 of file s1315.c.

30.2371.2 Function Documentation

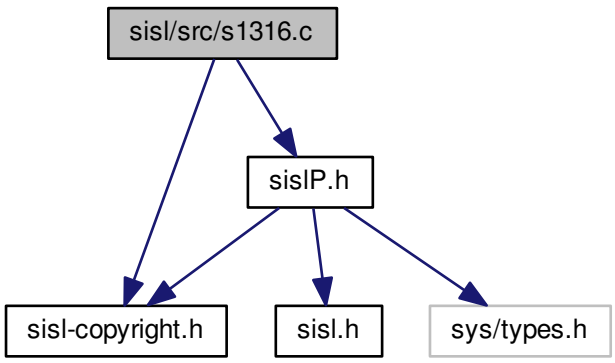
30.2371.2.1 void s1315 (SISLSurf * *ps1*, double * *ecentr*, double *aradiu*, int *idim*, double *aepsco*, double *aepsge*, double *amax*, SISLIntcurve * *pintcr*, int *icur*, int *igraph*, int * *jstat*)

Definition at line 59 of file s1315.c.

30.2372 sisl/src/s1316.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1316.c:



Macros

- #define S1316

Functions

- void s1316 (SISLSurf *ps1, double *epoint, double *edirec, double aradiu, int idim, double aepsco, double aepsge, double amax, SISLIntcurve *pintcr, int icur, int igraph, int *jstat)

30.2372.1 Macro Definition Documentation

30.2372.1.1 #define S1316

Definition at line 49 of file s1316.c.

30.2372.2 Function Documentation

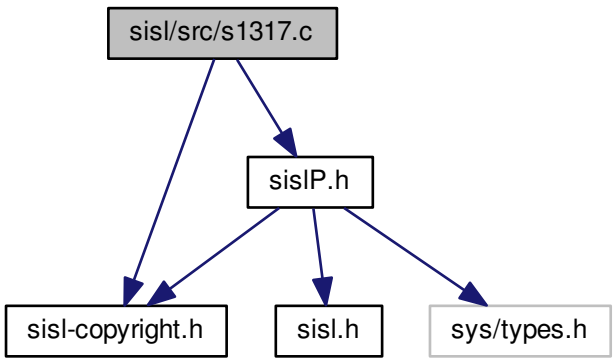
30.2372.2.1 void s1316 (SISLSurf * *ps1,* double * *epoint,* double * *edirec,* double *aradiu,* int *idim,* double *aepsco,* double *aepsge,* double *amax,* SISLIntcurve * *pintcr,* int *icur,* int *igraph,* int * *jstat*)

Definition at line 59 of file s1316.c.

30.2373 sisl/src/s1317.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1317.c:



Macros

- #define S1317

Functions

- void s1317 (SISLSurf *ps1, double *etop, double *eaxis, double *econe, int idim, double aepsco, double aepsge, double amax, SISLIntcurve *pintcr, int icur, int igraph, int *jstat)

30.2373.1 Macro Definition Documentation

30.2373.1.1 #define S1317

Definition at line 49 of file s1317.c.

30.2373.2 Function Documentation

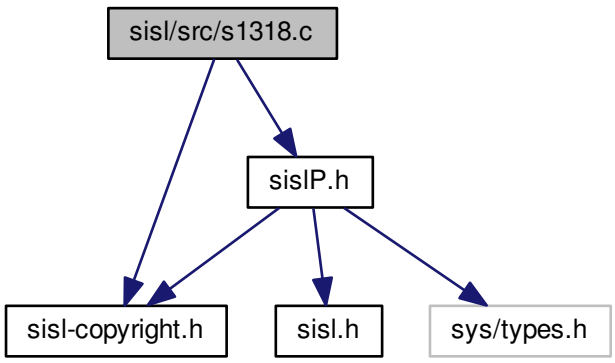
30.2373.2.1 void s1317 (SISLSurf * *ps1*, double * *etop*, double * *eaxis*, double * *econe*, int *idim*, double *aepsco*, double *aepsge*, double *amax*, SISLIntcurve * *pintcr*, int *icur*, int *igraph*, int * *jstat*)

Definition at line 59 of file s1317.c.

30.2374 sisl/src/s1318.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1318.c:



Macros

- #define S1318

Functions

- void s1318 (SISLSurf *ps1, double *ecentr, double *enorm, double abigr, double asmalr, int idim, double aepsco, double aepsge, double amax, SISLIntcurve *pintcr, int icur, int igraph, int *jstat)

30.2374.1 Macro Definition Documentation

30.2374.1.1 #define S1318

Definition at line 49 of file s1318.c.

30.2374.2 Function Documentation

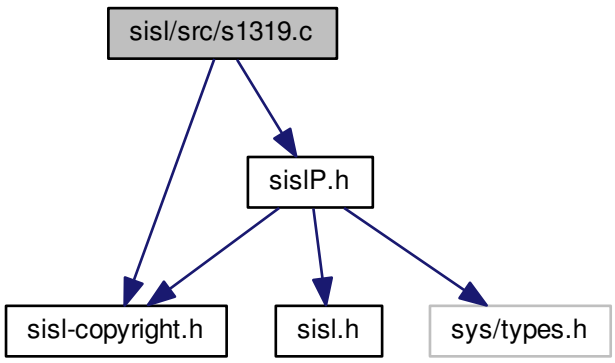
30.2374.2.1 void s1318 (SISLSurf * *ps1*, double * *ecentr*, double * *enorm*, double *abigr*, double *asmalr*, int *idim*, double *aepsco*, double *aepsge*, double *amax*, SISLIntcurve * *pintcr*, int *icur*, int *igraph*, int * *jstat*)

Definition at line 59 of file s1318.c.

30.2375 sisl/src/s1319.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1319.c:



Macros

- #define S1319

Functions

- void s1319 (SISLSurf *ps1, double *eview, int idim, double aepsco, double aepsge, double amax, SISLIntcurve *pintcr, int icur, int igraph, int *jstat)

30.2375.1 Macro Definition Documentation

30.2375.1.1 #define S1319

Definition at line 49 of file s1319.c.

30.2375.2 Function Documentation

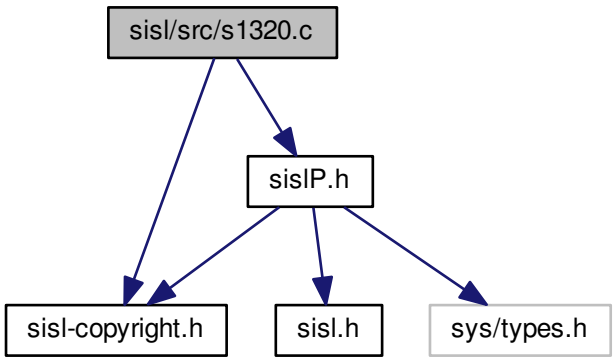
30.2375.2.1 void s1319 (SISLSurf * *ps1*, double * *eview*, int *idim*, double *aepsco*, double *aepsge*, double *amax*, SISLIntcurve * *pintcr*, int *icur*, int *igraph*, int * *jstat*)

Definition at line 58 of file s1319.c.

30.2376 sisl/src/s1320.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1320.c:



Macros

- #define S1320

Functions

- void s1320 (SISLSurf *psurf, earray, int inarr, int ratflag, SISLSurf **rsurf, int *jstat)

30.2376.1 Macro Definition Documentation

30.2376.1.1 #define S1320

Definition at line 49 of file s1320.c.

30.2376.2 Function Documentation

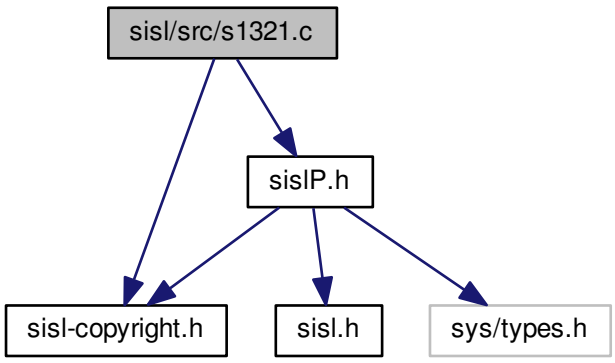
30.2376.2.1 void s1320 (SISLSurf * *psurf,* earray , int *inarr,* int *ratflag,* SISLSurf ** *rsurf,* int * *jstat*)

Definition at line 59 of file s1320.c.

30.2377 sisl/src/s1321.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1321.c:



Macros

- #define S1321

Functions

- void s1321 (ecentr, double aradiu, int idim, int inumb, carray, int *jstat)

30.2377.1 Macro Definition Documentation

30.2377.1.1 #define S1321

Definition at line 49 of file s1321.c.

30.2377.2 Function Documentation

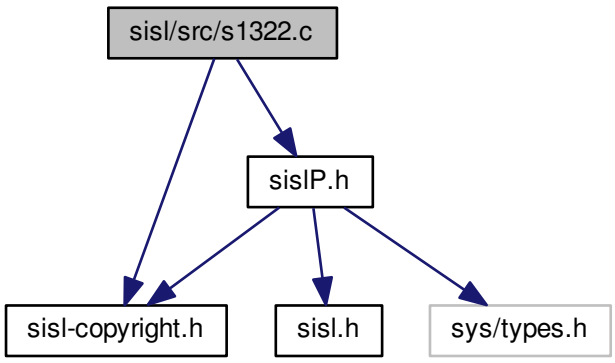
30.2377.2.1 void s1321 (ecentr , double *aradiu,* int *idim,* int *inumb,* carray , int * *jstat*)

Definition at line 58 of file s1321.c.

30.2378 sisl/src/s1322.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1322.c:



Macros

- #define S1322

Functions

- void s1322 (epoint, edirec, double aradiu, int idim, int inumb, carray, int *jstat)

30.2378.1 Macro Definition Documentation

30.2378.1.1 #define S1322

Definition at line 49 of file s1322.c.

30.2378.2 Function Documentation

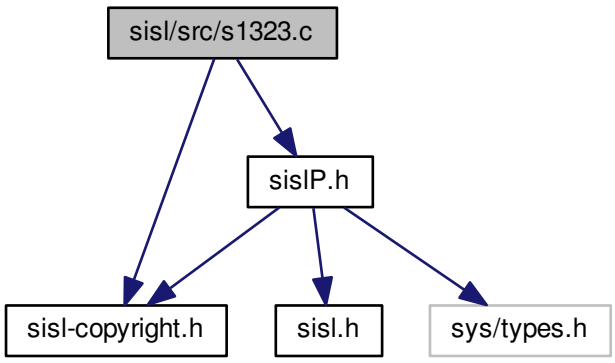
30.2378.2.1 void s1322 (epoint , edirec , double *aradiu,* int *idim,* int *inumb,* carray , int * *jstat*)

Definition at line 58 of file s1322.c.

30.2379 sisl/src/s1323.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1323.c:



Macros

- #define S1323

Functions

- void s1323 (etop, eaxis, econe, int idim, int inumb, carray, int *jstat)

30.2379.1 Macro Definition Documentation

30.2379.1.1 #define S1323

Definition at line 49 of file s1323.c.

30.2379.2 Function Documentation

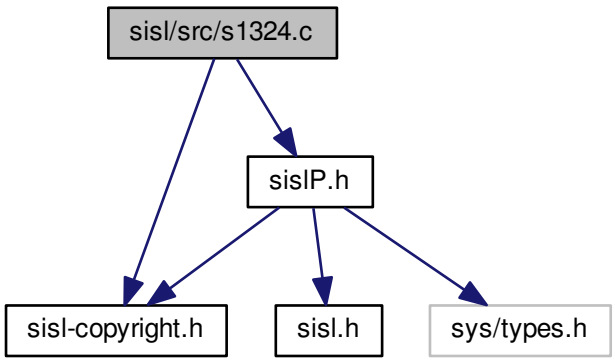
30.2379.2.1 void s1323 (etop , eaxis , econe , int *idim,* int *inumb,* carray , int * *jstat*)

Definition at line 58 of file s1323.c.

30.2380 sisl/src/s1324.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1324.c:



Macros

- #define S1324

Functions

- void s1324 (ecentr, double aradiu, enorm, int idim, carray, int *jstat)

30.2380.1 Macro Definition Documentation

30.2380.1.1 #define S1324

Definition at line 49 of file s1324.c.

30.2380.2 Function Documentation

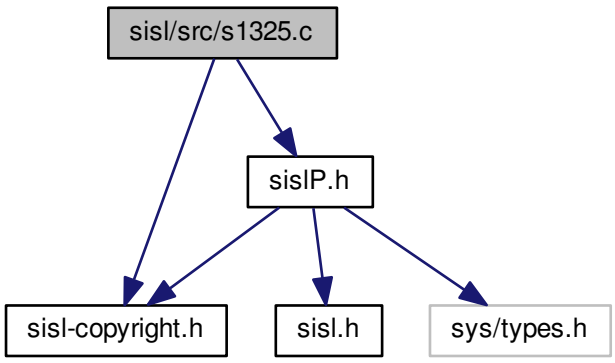
30.2380.2.1 void s1324 (ecentr , double *aradiu,* enorm , int *idim,* carray , int * *jstat*)

Definition at line 58 of file s1324.c.

30.2381 sisl/src/s1325.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1325.c:



Macros

- #define S1325

Functions

- double s1325 (double aradiu, double angle)

30.2381.1 Macro Definition Documentation

30.2381.1.1 #define S1325

Definition at line 49 of file s1325.c.

30.2381.2 Function Documentation

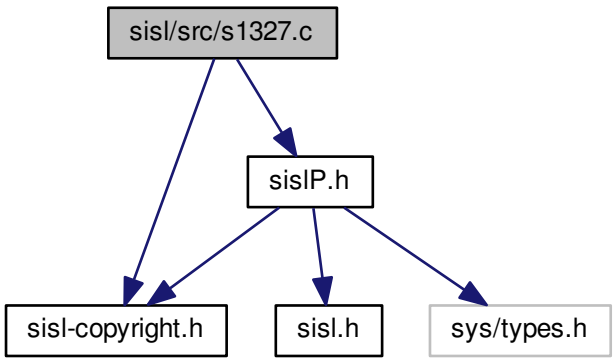
30.2381.2.1 double s1325 (double *aradiu,* double *angle*)

Definition at line 57 of file s1325.c.

30.2382 sisl/src/s1327.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1327.c:



Macros

- #define S1327

Functions

- void s1327 (SISLCurve *pcold, epoint, enorm1, enorm2, int idim, SISLCurve **rcnew, int *jstat)

30.2382.1 Macro Definition Documentation

30.2382.1.1 #define S1327

Definition at line 49 of file s1327.c.

30.2382.2 Function Documentation

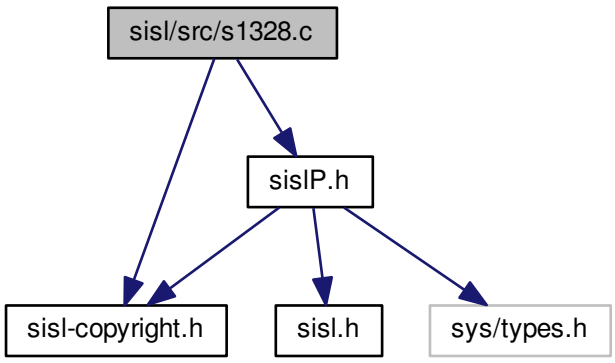
30.2382.2.1 void s1327 (SISLCurve * *pcold,* epoint , enorm1 , enorm2 , int *idim,* SISLCurve ** *rcnew,* int * *jstat*)

Definition at line 58 of file s1327.c.

30.2383 sisl/src/s1328.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1328.c:



Macros

- #define S1328

Functions

- void s1328 (SISLSurf *psold, epoint, enorm1, enorm2, int idim, SISLSurf **rsnew, int *jstat)

30.2383.1 Macro Definition Documentation

30.2383.1.1 #define S1328

Definition at line 49 of file s1328.c.

30.2383.2 Function Documentation

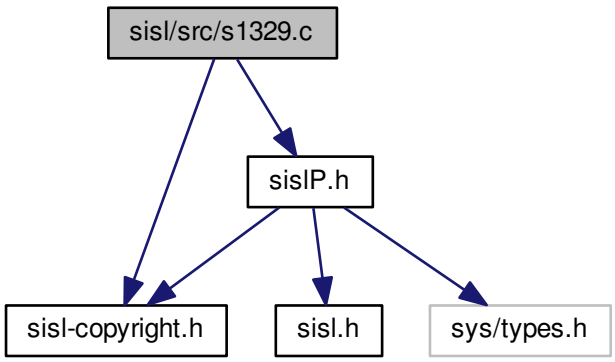
30.2383.2.1 void s1328 (SISLSurf * *psold,* epoint , enorm1 , enorm2 , int *idim,* SISLSurf ** *rsnew,* int * *jstat*)

Definition at line 58 of file s1328.c.

30.2384 sisl/src/s1329.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1329.c:



Macros

- #define S1329

Functions

- void s1329 (SISLSurf *psold, epoint, enorm, int idim, SISLSurf **rsnew, int *jstat)

30.2384.1 Macro Definition Documentation

30.2384.1.1 #define S1329

Definition at line 49 of file s1329.c.

30.2384.2 Function Documentation

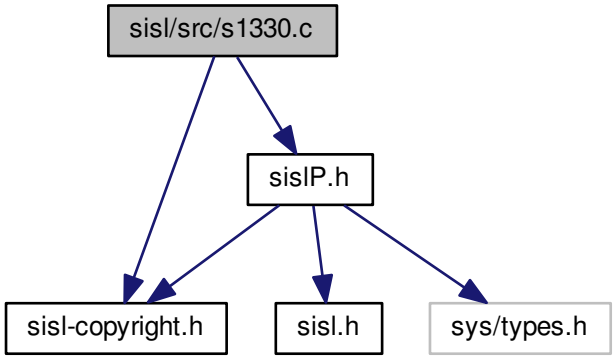
30.2384.2.1 void s1329 (SISLSurf * *psold*, epoint , enorm , int *idim*, SISLSurf ** *rsnew*, int * *jstat*)

Definition at line 58 of file s1329.c.

30.2385 sisl/src/s1330.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1330.c:



Macros

- #define S1330

Functions

- void s1330 (epar11, epar12, epar21, epar22, eval11, eval12, eval21, eval22, int *jbound, gpar1, gpar2, int *jstat)

30.2385.1 Macro Definition Documentation

30.2385.1.1 #define S1330

Definition at line 49 of file s1330.c.

30.2385.2 Function Documentation

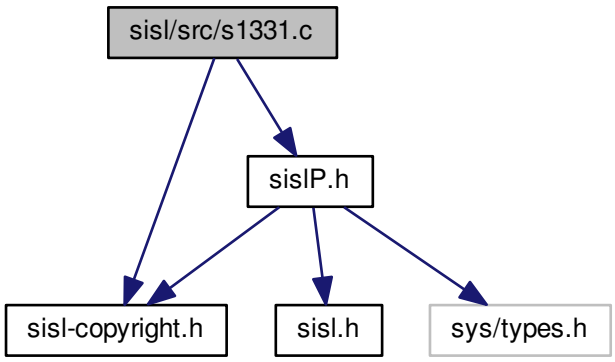
30.2385.2.1 void s1330 (epar11 , epar12 , epar21 , epar22 , eval11 , eval12 , eval21 , eval22 , int * *jbound,* gpar1 , gpar2 , int * *jstat*)

Definition at line 59 of file s1330.c.

30.2386 sisl/src/s1331.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1331.c:



Macros

- #define S1331

Functions

- void s1331 (ep, eimpli, int ideg, int ider, gder, gnorm, int *jstat)

30.2386.1 Macro Definition Documentation

30.2386.1.1 #define S1331

Definition at line 49 of file s1331.c.

30.2386.2 Function Documentation

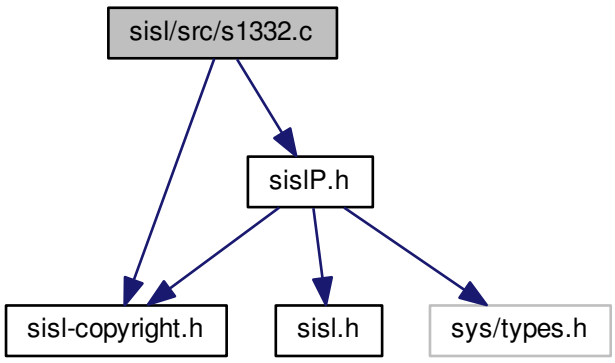
30.2386.2.1 void s1331 (ep , eimpli , int *ideg,* int *ider,* gder , gnorm , int * *jstat*)

Definition at line 58 of file s1331.c.

30.2387 sisl/src/s1332.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1332.c:



Macros

- #define S1332

Functions

- void s1332 (SISLCurve *pc1, SISLCurve *pc2, double aepsge, ep, SISLSurf **rs, int *jstat)

30.2387.1 Macro Definition Documentation

30.2387.1.1 #define S1332

Definition at line 49 of file s1332.c.

30.2387.2 Function Documentation

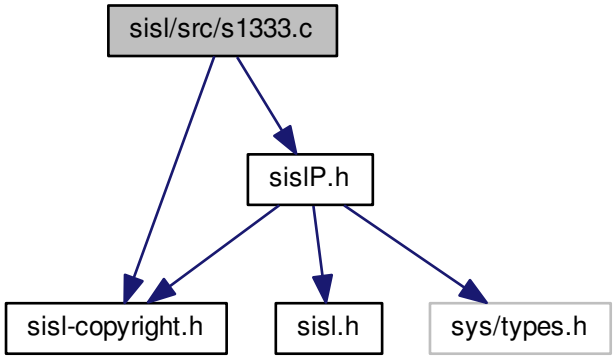
30.2387.2.1 void s1332 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsge*, ep , SISLSurf ** *rs*, int * *jstat*)

Definition at line 57 of file s1332.c.

30.2388 sisl/src/s1333.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1333.c:



Macros

- #define S1333

Functions

- void s1333 (int inbcrv, vpcurv, nctyp, double astpar, int iopen, int iord2, int iflag, SISLSurf **rsurf, double **gpar, int *jstat)

30.2388.1 Macro Definition Documentation

30.2388.1.1 #define S1333

Definition at line 49 of file s1333.c.

30.2388.2 Function Documentation

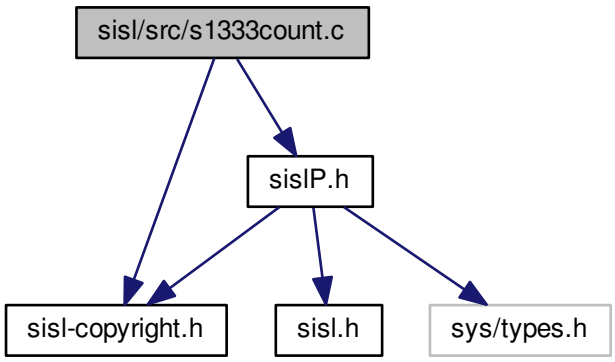
30.2388.2.1 void s1333 (int *inbcrv,* vpcurv , nctyp , **double** *astpar,* int *iopen,* int *iord2,* int *iflag,* **SISLSurf** ** *rsurf,* **double** ** *gpar,* int * *jstat*)

Definition at line 59 of file s1333.c.

30.2389 sisl/src/s1333count.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1333count.c:



Macros

- #define S1333_COUNT

Functions

- void s1333_count (int inbcrv, vpcurv, int *jcont, int *jstat)

30.2389.1 Macro Definition Documentation

30.2389.1.1 #define S1333_COUNT

Definition at line 49 of file s1333count.c.

30.2389.2 Function Documentation

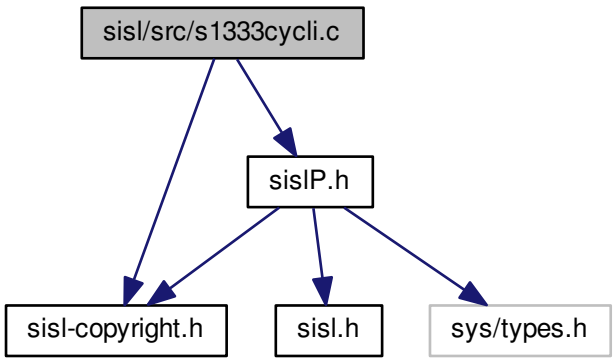
30.2389.2.1 void s1333_count (int *inbcrv,* vpcurv , int * *jcont,* int * *jstat*)

Definition at line 56 of file s1333count.c.

30.2390 sisl/src/s1333cycli.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1333cycli.c:



Macros

- #define S1333_CYCLIC

Functions

- void s1333_cyclic (SISLSurf *vsurf, int icont, int *jstat)

30.2390.1 Macro Definition Documentation

30.2390.1.1 #define S1333_CYCLIC

Definition at line 49 of file s1333cycli.c.

30.2390.2 Function Documentation

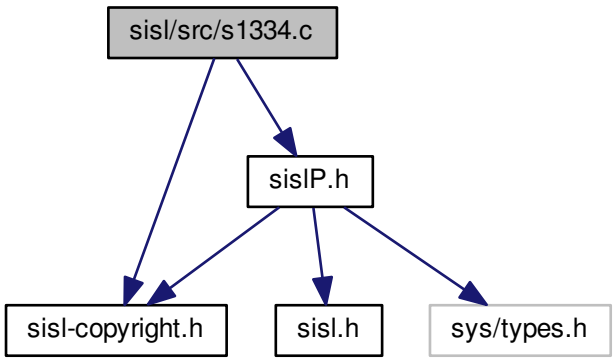
30.2390.2.1 void s1333_cyclic (SISLSurf * *vsurf,* int *icont,* int * *jstat*)

Definition at line 57 of file s1333cycli.c.

30.2391 sisl/src/s1334.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1334.c:



Macros

- #define S1334

Functions

- void s1334 (epoint, int inbpnt, int idim, nptyp, int icnsta, int icnend, int iopen, int ik, double astpar, double *cendpar, SISLCurve **rc, double **gpar, int *jnbpar, int *jstat)

30.2391.1 Macro Definition Documentation

30.2391.1.1 #define S1334

Definition at line 49 of file s1334.c.

30.2391.2 Function Documentation

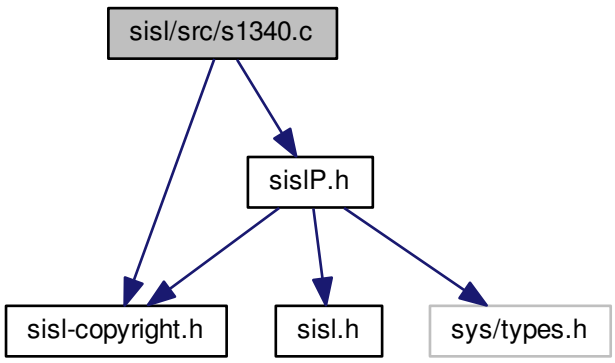
30.2391.2.1 void s1334 (epoint , int *inbpnt,* int *idim,* nptyp , int *icnsta,* int *icnend,* int *iopen,* int *ik,* double *astpar,* double * *cendpar,* SISLCurve ** *rc,* double ** *gpar,* int * *jnbpar,* int * *jstat*)

Definition at line 59 of file s1334.c.

30.2392 sisl/src/s1340.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1340.c:



Macros

- #define S1340

Functions

- void s1340 (SISLCurve *oldcurve, eps, int startfix, int endfix, double epsco, int itmax, SISLCurve **newcurve, maxerr, int *stat)

30.2392.1 Macro Definition Documentation

30.2392.1.1 #define S1340

Definition at line 48 of file s1340.c.

30.2392.2 Function Documentation

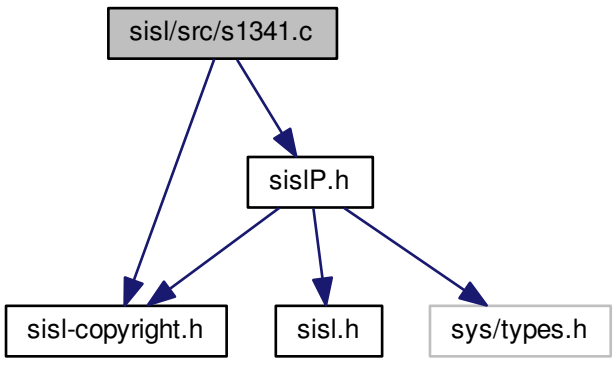
30.2392.2.1 void s1340 (SISLCurve * *oldcurve,* eps , int *startfix,* int *endfix,* double *epsco,* int *itmax,* SISLCurve ** *newcurve,* maxerr , int * *stat*)

Definition at line 59 of file s1340.c.

30.2393 sisl/src/s1341.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1341.c:



Macros

- #define S1341

Functions

- void s1341 (ep, int im, int idim, int ipar, epar, eeps, int ilend, int irend, double afctol, double aepsco, int itmax, int ik, SISLCurve **rc, emxerr, int *jstat)

30.2393.1 Macro Definition Documentation

30.2393.1.1 #define S1341

Definition at line 48 of file s1341.c.

30.2393.2 Function Documentation

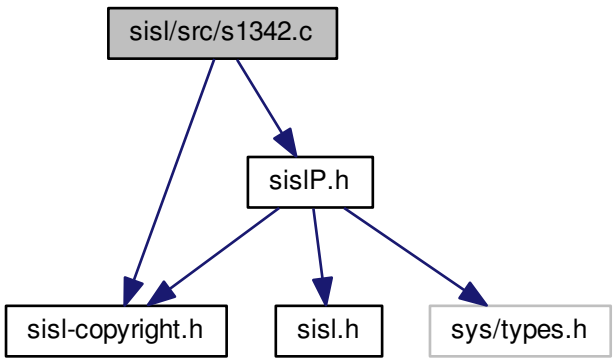
30.2393.2.1 void s1341 (ep , int *im,* int *idim,* int *ipar,* epar , eeps , int *ilend,* int *irend,* double *afctol,* double *aepsco,* int *itmax,* int *ik,* SISLCurve ** *rc,* emxerr , int * *jstat*)

Definition at line 57 of file s1341.c.

30.2394 sisl/src/s1342.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1342.c:



Macros

- #define S1342

Functions

- void s1342 (ep, ev, int im, int idim, int ipar, epar, eeps, int ilend, int irend, double aepsco, int itmax, SISLCurve **rc, emxerr, int *jstat)

30.2394.1 Macro Definition Documentation

30.2394.1.1 #define S1342

Definition at line 48 of file s1342.c.

30.2394.2 Function Documentation

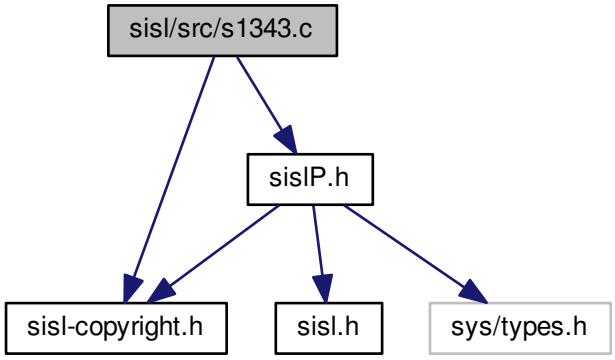
30.2394.2.1 void s1342 (ep , ev , int *im,* int *idim,* int *ipar,* epar , eeps , int *ilend,* int *irend,* double *aepsco,* int *itmax,* SISLCurve ** *rc,* emxerr , int * *jstat*)

Definition at line 57 of file s1342.c.

30.2395 sisl/src/s1343.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1343.c:



Macros

- #define S1343

Functions

- void s1343 (SISLCurve *pc, eeps, int ilend, int irend, double aepsco, int itmax, SISLCurve **rc, int *jstat)

30.2395.1 Macro Definition Documentation

30.2395.1.1 #define S1343

Definition at line 48 of file s1343.c.

30.2395.2 Function Documentation

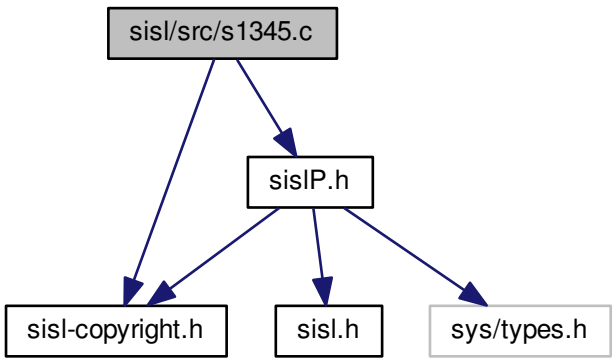
30.2395.2.1 void s1343 (SISLCurve * *pc,* eeps , int *ilend,* int *irend,* double *aepsco,* int *itmax,* SISLCurve ** *rc,* int * *jstat*)

Definition at line 56 of file s1343.c.

30.2396 sisl/src/s1345.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1345.c:



Macros

- #define S1345

Functions

- void s1345 (SISLSurf *oldsurf, eps, edgefix, edgeps, double epsco, int opt, int itmax, SISLSurf **newsurf, maxerr, int *stat)

30.2396.1 Macro Definition Documentation

30.2396.1.1 #define S1345

Definition at line 48 of file s1345.c.

30.2396.2 Function Documentation

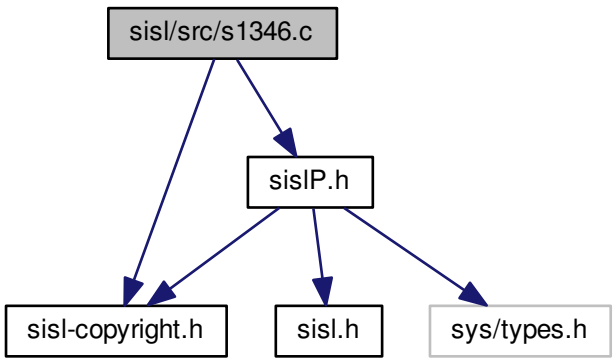
30.2396.2.1 void s1345 (SISLSurf * *oldsurf*, eps , edgefix , edgeps , double *epsco*, int *opt*, int *itmax*, SISLSurf ** *newsurf*, maxerr , int * *stat*)

Definition at line 58 of file s1345.c.

30.2397 sisl/src/s1346.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1346.c:



Macros

- #define S1346

Functions

- void s1346 (ep, int im1, int im2, int idim, int ipar, epar1, epar2, eeps, nend, edgeps, double afctol, double aepsco, int iopt, int itmax, int ik1, int ik2, SISLSurf **rs, emxerr, int *jstat)

30.2397.1 Macro Definition Documentation

30.2397.1.1 #define S1346

Definition at line 48 of file s1346.c.

30.2397.2 Function Documentation

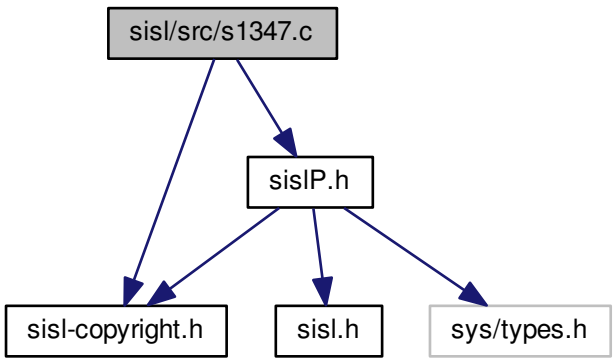
30.2397.2.1 void s1346 (ep , int *im1,* int *im2,* int *idim,* int *ipar,* epar1 , epar2 , eeps , nend , edgeps , double *afctol,* double *aepsco,* int *iopt,* int *itmax,* int *ik1,* int *ik2,* SISLSurf ∗∗ *rs,* emxerr , int ∗ *jstat*)

Definition at line 58 of file s1346.c.

30.2398 sisl/src/s1347.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1347.c:



Macros

- #define S1347

Functions

- void s1347 (ep, etang1, etang2, eder11, int im1, int im2, int idim, int ipar, epar1, epar2, eeps, nend, edgeps, double aepsco, int iopt, int itmax, SISLSurf ∗∗rs, emxerr, int ∗jstat)

30.2398.1 Macro Definition Documentation

30.2398.1.1 #define S1347

Definition at line 48 of file s1347.c.

30.2398.2 Function Documentation

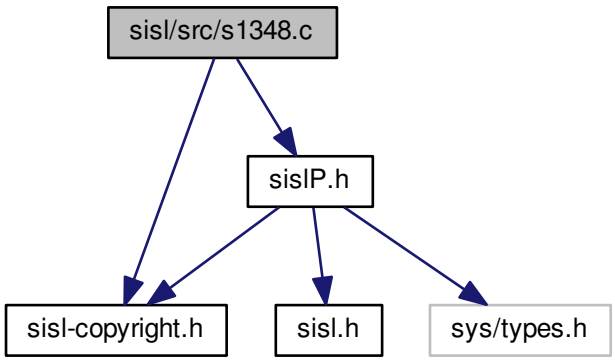
30.2398.2.1 void s1347 (ep , etang1 , etang2 , eder11 , int *im1,* int *im2,* int *idim,* int *ipar,* epar1 , epar2 , eeps , nend , edgeps , double *aepsco,* int *iopt,* int *itmax,* SISLSurf ** *rs,* emxerr , int * *jstat*)

Definition at line 58 of file s1347.c.

30.2399 sisl/src/s1348.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1348.c:



Macros

- #define S1348

Functions

- void s1348 (SISLSurf *ps, eeps, nend, edgeps, double aepsco, int iopt, int itmax, SISLSurf **rs, int *jstat)

30.2399.1 Macro Definition Documentation

30.2399.1.1 #define S1348

Definition at line 48 of file s1348.c.

30.2399.2 Function Documentation

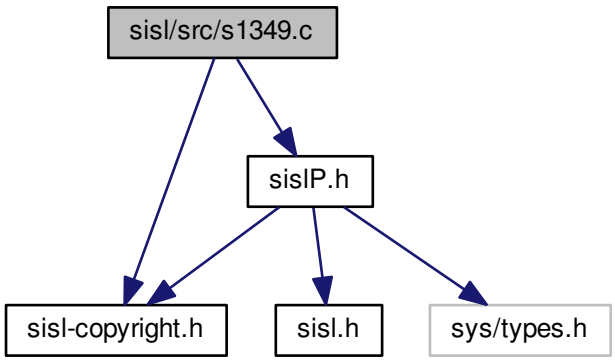
30.2399.2.1 void s1348 (SISLSurf * *ps*, eeps , nend , edgeps , double *aepsco*, int *iopt*, int *itmax*, SISLSurf ** *rs*, int * *jstat*)

Definition at line 56 of file s1348.c.

30.2400 sisl/src/s1349.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1349.c:



Macros

- #define S1349

Functions

- void s1349 (int inbcrv, vpcrv, int *jstat)

30.2400.1 Macro Definition Documentation

30.2400.1.1 #define S1349

Definition at line 49 of file s1349.c.

30.2400.2 Function Documentation

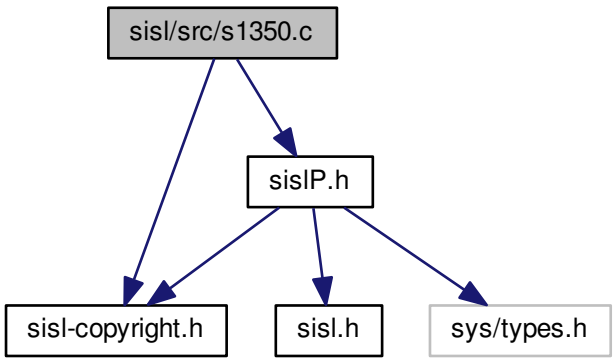
30.2400.2.1 void s1349 (int *inbcrv,* vpcrv , int * *jstat*)

Definition at line 57 of file s1349.c.

30.2401 sisl/src/s1350.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1350.c:



Macros

- #define S1350

Functions

- void s1350 (ep, epar, int im, int idim, int ik, SISLCurve **rc, int *jstat)

30.2401.1 Macro Definition Documentation

30.2401.1.1 #define S1350

Definition at line 48 of file s1350.c.

30.2401.2 Function Documentation

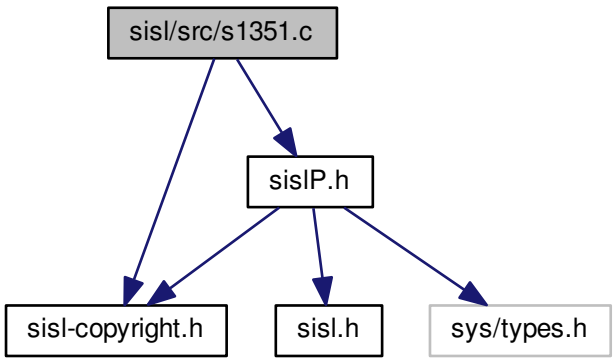
30.2401.2.1 void s1350 (ep , epar , int *im,* int *idim,* int *ik,* SISLCurve ** *rc,* int * *jstat*)

Definition at line 57 of file s1350.c.

30.2402 sisl/src/s1351.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1351.c:



Macros

- #define S1351

Functions

- void s1351 (ep, int ipar, int im, int idim, int ik, SISLCurve **rc, int *jstat)

30.2402.1 Macro Definition Documentation

30.2402.1.1 #define S1351

Definition at line 48 of file s1351.c.

30.2402.2 Function Documentation

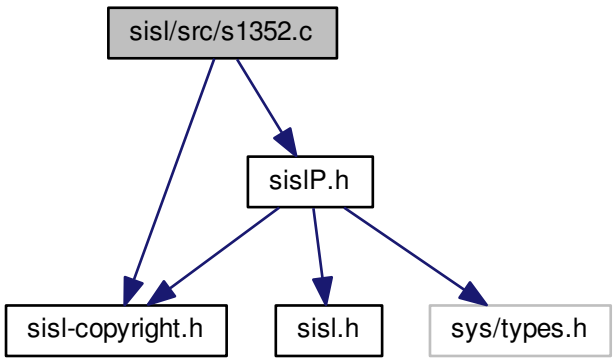
30.2402.2.1 void s1351 (ep , int *ipar,* int *im,* int *idim,* int *ik,* SISLCurve ** *rc,* int * *jstat*)

Definition at line 57 of file s1351.c.

30.2403 sisl/src/s1352.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1352.c:



Macros

- #define S1352

Functions

- void s1352 (t, int n, int k, inteps, lefteps, righteps, int dim, int leftfix, int rightfix, eps, int *stat)

30.2403.1 Macro Definition Documentation

30.2403.1.1 #define S1352

Definition at line 48 of file s1352.c.

30.2403.2 Function Documentation

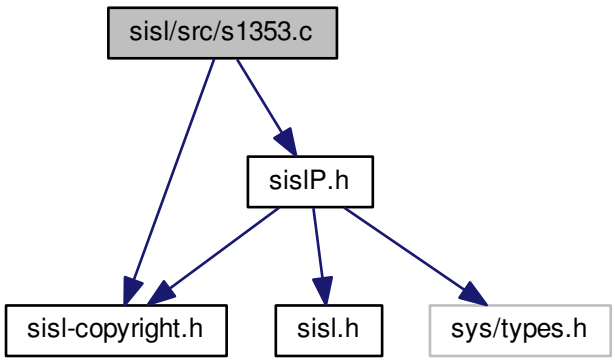
30.2403.2.1 void s1352 (t , int *n*, int *k*, inteps , lefteps , righteps , int *dim*, int *leftfix*, int *rightfix*, eps , int * *stat*)

Definition at line 57 of file s1352.c.

30.2404 sisl/src/s1353.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1353.c:



Macros

- #define S1353

Functions

- void s1353 (SISLCurve *curve, eps, rank_info *ranking, int *stat)

30.2404.1 Macro Definition Documentation

30.2404.1.1 #define S1353

Definition at line 48 of file s1353.c.

30.2404.2 Function Documentation

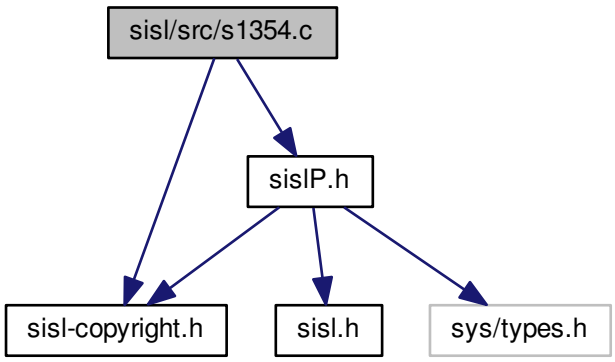
30.2404.2.1 void s1353 (SISLCurve * *curve,* eps , rank_info * *ranking,* int * *stat*)

Definition at line 55 of file s1353.c.

30.2405 sisl/src/s1354.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1354.c:



Macros

- #define S1354

Functions

- void s1354 (SISLCurve *oldcurve, SISLCurve *rankcurve, rank_info *ranking, eps, epsco, int startfix, int endfix, int mini, int maxi, SISLCurve **newcurve, maxerr, int *stat)

30.2405.1 Macro Definition Documentation

30.2405.1.1 #define S1354

Definition at line 48 of file s1354.c.

30.2405.2 Function Documentation

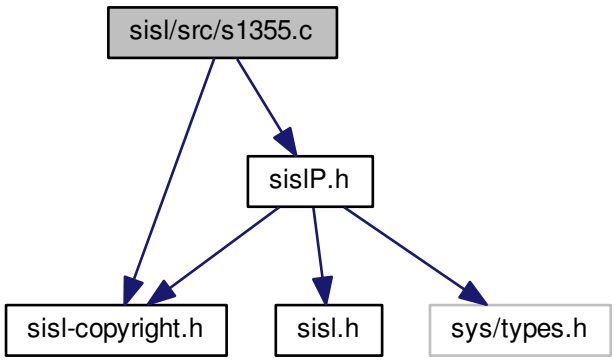
30.2405.2.1 void s1354 (SISLCurve * *oldcurve,* SISLCurve * *rankcurve,* rank_info * *ranking,* eps , epsco , int *startfix,* int *endfix,* int *mini,* int *maxi,* SISLCurve ** *newcurve,* maxerr , int * *stat*)

Definition at line 57 of file s1354.c.

30.2406 sisl/src/s1355.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1355.c:



Macros

- #define S1355

Functions

- void s1355 (SISLCurve *pc, eeps, double **epar, int *im, int *jstat)

30.2406.1 Macro Definition Documentation

30.2406.1.1 #define S1355

Definition at line 48 of file s1355.c.

30.2406.2 Function Documentation

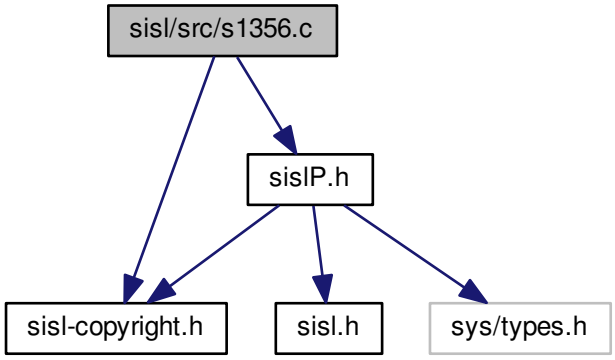
30.2406.2.1 void s1355 (SISLCurve * *pc*, eeps , double ** *epar*, int * *im*, int * *jstat*)

Definition at line 56 of file s1355.c.

30.2407 sisl/src/s1356.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1356.c:



Macros

- #define S1356

Functions

- void s1356 (epoint, int inbpnt, int idim, nptyp, int icnsta, int icnend, int iopen, int ik, double astpar, double *cendpar, SISLCurve **rc, double **gpar, int *jnbpar, int *jstat)

30.2407.1 Macro Definition Documentation

30.2407.1.1 #define S1356

Definition at line 42 of file s1356.c.

30.2407.2 Function Documentation

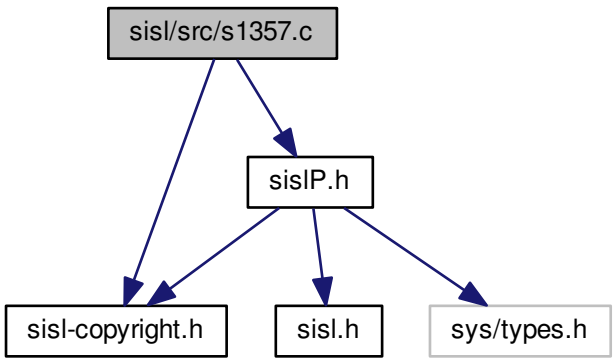
30.2407.2.1 void s1356 (epoint , int *inbpnt,* int *idim,* nptyp , int *icnsta,* int *icnend,* int *iopen,* int *ik,* double *astpar,* double * *cendpar,* SISLCurve ** *rc,* double ** *gpar,* int * *jnbpar,* int * *jstat*)

Definition at line 52 of file s1356.c.

30.2408 sisl/src/s1357.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1357.c:



Macros

- #define S1357

Functions

- void s1357 (epoint, int inbpnt, int idim, ntype, epar, int icnsta, int icnend, int iopen, int ik, double astpar, double *cendpar, SISLCurve **rc, double **gpar, int *jnbpar, int *jstat)

30.2408.1 Macro Definition Documentation

30.2408.1.1 #define S1357

Definition at line 43 of file s1357.c.

30.2408.2 Function Documentation

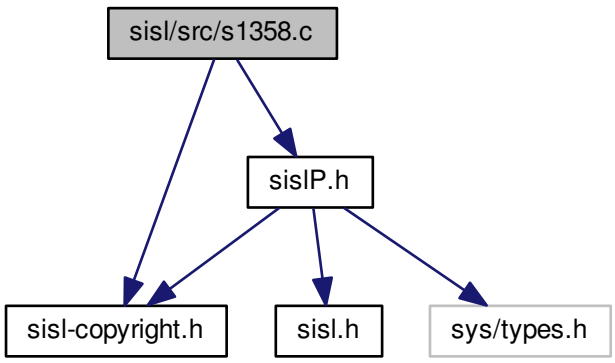
30.2408.2.1 void s1357 (epoint , int *inbpnt,* int *idim,* ntype , epar , int *icnsta,* int *icnend,* int *iopen,* int *ik,* **double** *astpar,* **double** * *cendpar,* **SISLCurve** ** *rc,* **double** ** *gpar,* int * *jnbpar,* int * *jstat*)

Definition at line 53 of file s1357.c.

30.2409 sisl/src/s1358.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1358.c:



Macros

- #define S1358

Functions

- void s1358 (epoint, int inbpnt, int idim, ntype, epar, int icnsta, int icnend, int iopen, int ik, double astpar, double *cendpar, SISLCurve **rc, double **gpar, int *jnbpar, int *jstat)

30.2409.1 Macro Definition Documentation

30.2409.1.1 #define S1358

Definition at line 49 of file s1358.c.

30.2409.2 Function Documentation

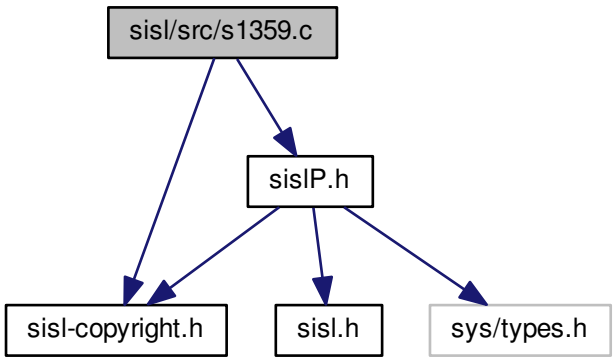
30.2409.2.1 void s1358 (epoint , int *inbpnt,* int *idim,* ntype , epar , int *icnsta,* int *icnend,* int *iopen,* int *ik,* double *astpar,* double * *cendpar,* SISLCurve ** *rc,* double ** *gpar,* int * *jnbpar,* int * *jstat*)

Definition at line 59 of file s1358.c.

30.2410 sisl/src/s1359.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1359.c:



Macros

- #define S1359

Functions

- void s1359 (egeo, double aepsge, int idim, int inbinf, int ipar, epar, SISLCurve **rcurve, int *jstat)

30.2410.1 Macro Definition Documentation

30.2410.1.1 #define S1359

Definition at line 47 of file s1359.c.

30.2410.2 Function Documentation

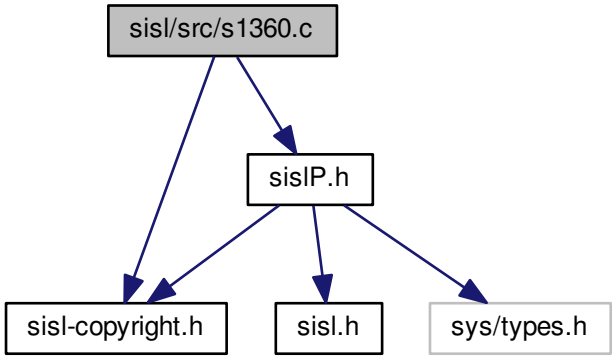
30.2410.2.1 void s1359 (egeo , double *aepsge,* int *idim,* int *inbinf,* int *ipar,* epar , SISLCurve ** *rcurve,* int * *jstat*)

Definition at line 56 of file s1359.c.

30.2411 sisl/src/s1360.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1360.c:



Macros

- #define S1360

Functions

- void s1360 (SISLCurve *pc, double aoffset, double aepsge, enorm, double amax, int idim, SISLCurve **rc, int *jstat)

30.2411.1 Macro Definition Documentation

30.2411.1.1 #define S1360

Definition at line 49 of file s1360.c.

30.2411.2 Function Documentation

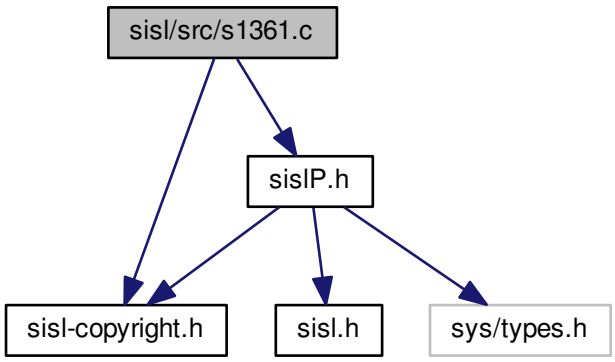
30.2411.2.1 void s1360 (SISLCurve * *pc*, double *aoffset*, double *aepsge*, enorm , double *amax*, int *idim*, SISLCurve ** *rc*, int * *jstat*)

Definition at line 58 of file s1360.c.

30.2412 sisl/src/s1361.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1361.c:



Macros

- #define S1361

Functions

- void s1361 (epnt1, epnt2, int idim, gmidd, gmtang, int *jstat)

30.2412.1 Macro Definition Documentation

30.2412.1.1 #define S1361

Definition at line 47 of file s1361.c.

30.2412.2 Function Documentation

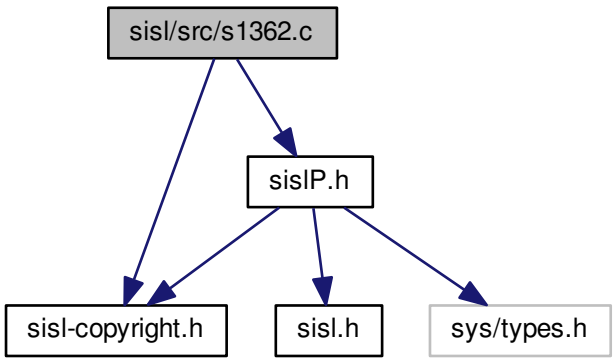
30.2412.2.1 void s1361 (epnt1 , epnt2 , int *idim,* gmidd , gmtang , int * *jstat*)

Definition at line 56 of file s1361.c.

30.2413 sisl/src/s1362.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1362.c:



Macros

- #define S1362

Functions

- void s1362 (SISLCurve *pc1, double aoffset, enorm, int idim, int ider, double ax, int *ileft, eder, int *jstat)

30.2413.1 Macro Definition Documentation

30.2413.1.1 #define S1362

Definition at line 49 of file s1362.c.

30.2413.2 Function Documentation

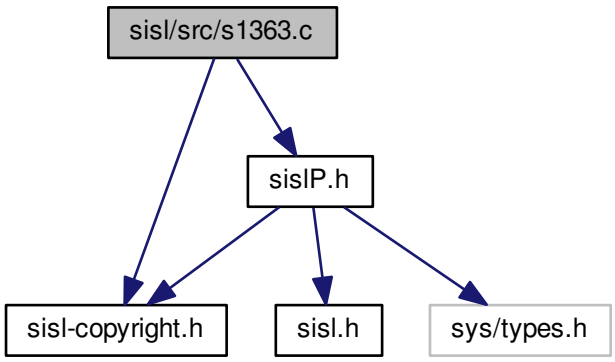
30.2413.2.1 void s1362 (SISLCurve * *pc1*, double *aoffset*, enorm , int *idim*, int *ider*, double *ax*, int * *ileft*, eder , int * *jstat*)

Definition at line 58 of file s1362.c.

30.2414 sisl/src/s1363.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1363.c:



Macros

- #define S1363

Functions

- void s1363 (SISLCurve *pc, double *cmin, double *cmax, int *jstat)

30.2414.1 Macro Definition Documentation

30.2414.1.1 #define S1363

Definition at line 49 of file s1363.c.

30.2414.2 Function Documentation

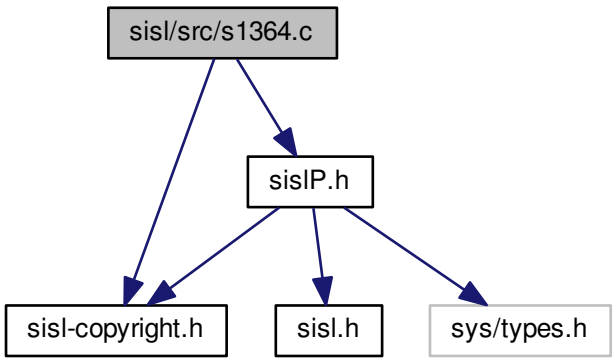
30.2414.2.1 void s1363 (SISLCurve * *pc*, double * *cmin*, double * *cmax*, int * *jstat*)

Definition at line 57 of file s1363.c.

30.2415 sisl/src/s1364.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1364.c:



Macros

- #define S1364

Functions

- void s1364 (SISLCurve *pc, double aepsge, int *jstat)

30.2415.1 Macro Definition Documentation

30.2415.1.1 #define S1364

Definition at line 49 of file s1364.c.

30.2415.2 Function Documentation

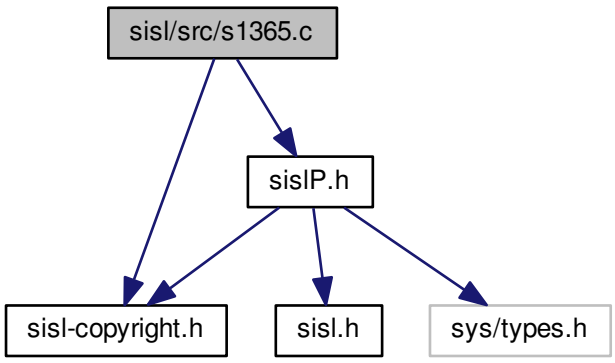
30.2415.2.1 void s1364 (SISLCurve * *pc*, double *aepsge*, int * *jstat*)

Definition at line 57 of file s1364.c.

30.2416 sisl/src/s1365.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1365.c:



Macros

- #define S1365

Functions

- void s1365 (SISLSurf *ps, double aoffset, double aepsge, double amax, int idim, SISLSurf **rs, int *jstat)

30.2416.1 Macro Definition Documentation

30.2416.1.1 #define S1365

Definition at line 49 of file s1365.c.

30.2416.2 Function Documentation

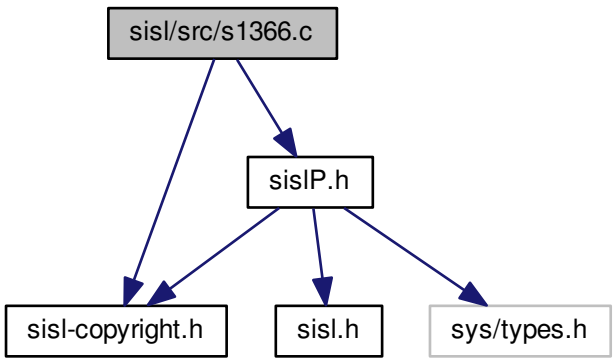
30.2416.2.1 void s1365 (SISLSurf * *ps*, double *aoffset*, double *aepsge*, double *amax*, int *idim*, SISLSurf ** *rs*, int * *jstat*)

Definition at line 57 of file s1365.c.

30.2417 sisl/src/s1366.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1366.c:



Macros

- #define S1366

Functions

- void s1366 (SISLSurf *ps, double aoffset, double aepsge, double amax, int idim, double *eknot13, int in13, int ik13, double *eknot24, int in24, int ik24, SISLSurf **rs, int *jstat)

30.2417.1 Macro Definition Documentation

30.2417.1.1 #define S1366

Definition at line 49 of file s1366.c.

30.2417.2 Function Documentation

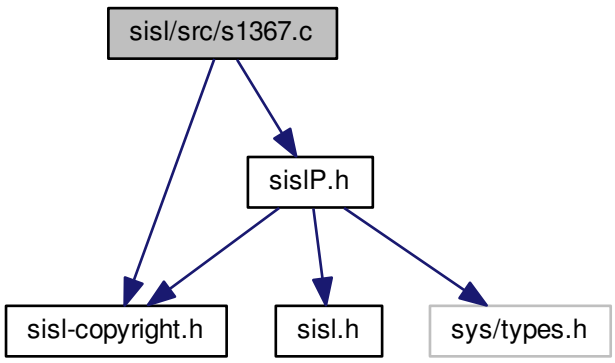
30.2417.2.1 void s1366 (SISLSurf * *ps*, double *aoffset*, double *aepsge*, double *amax*, int *idim*, double * *eknot13*, int *in13*, int *ik13*, double * *eknot24*, int *in24*, int *ik24*, SISLSurf ** *rs*, int * *jstat*)

Definition at line 59 of file s1366.c.

30.2418 sisl/src/s1367.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1367.c:



Macros

- #define S1366

Functions

- void s1367 (SISLSurf *ps, double aoffset, double aepsge, int idim, epar, int ider, int *ilfs, int *ilft, eder, int *jstat)

30.2418.1 Macro Definition Documentation

30.2418.1.1 #define S1366

Definition at line 49 of file s1367.c.

30.2418.2 Function Documentation

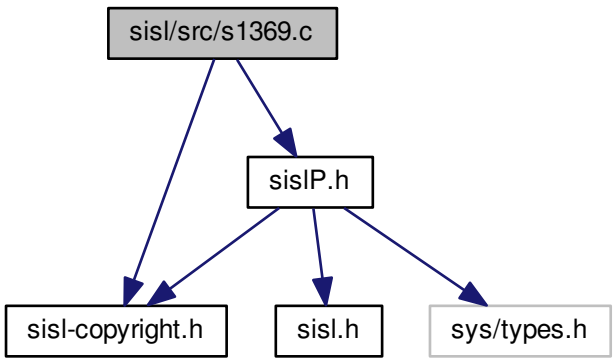
30.2418.2.1 void s1367 (SISLSurf * *ps*, double *aoffset*, double *aepsge*, int *idim*, epar , int *ider*, int * *ilfs*, int * *ilft*, eder , int * *jstat*)

Definition at line 58 of file s1367.c.

30.2419 sisl/src/s1369.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1369.c:



Macros

- #define S1369

Functions

- void s1369 (SISLSurf *ps, ecentr, enorm, double abigr, double asmalr, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2419.1 Macro Definition Documentation

30.2419.1.1 #define S1369

Definition at line 49 of file s1369.c.

30.2419.2 Function Documentation

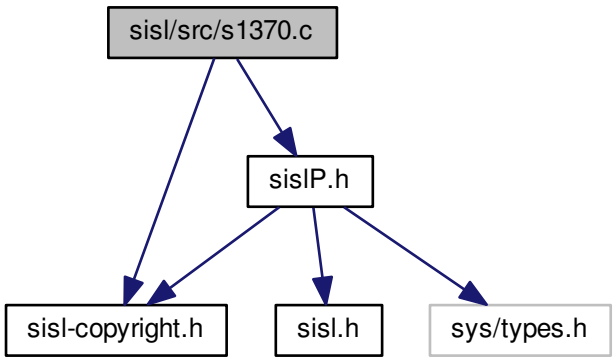
30.2419.2.1 void s1369 (SISLSurf * *ps*, ecentr , enorm , double *abigr*, double *asmalr*, int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1369.c.

30.2420 sisl/src/s1370.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1370.c:



Macros

- #define S1370

Functions

- void s1370 (SISLCurve *pcurv, earray, int idim, int inarr, int ratflag, SISLCurve **rcurv, int *jstat)

30.2420.1 Macro Definition Documentation

30.2420.1.1 #define S1370

Definition at line 49 of file s1370.c.

30.2420.2 Function Documentation

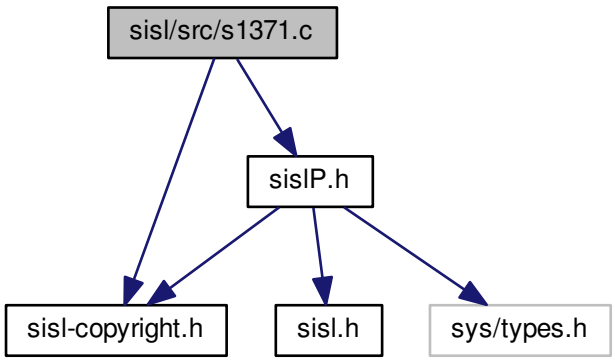
30.2420.2.1 void s1370 (SISLCurve * *pcurv,* earray , int *idim,* int *inarr,* int *ratflag,* SISLCurve ** *rcurv,* int * *jstat*)

Definition at line 59 of file s1370.c.

30.2421 sisl/src/s1371.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1371.c:



Macros

- #define S1371

Functions

- void s1371 (SISLCurve *pc1, ecentr, double aradiu, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2421.1 Macro Definition Documentation

30.2421.1.1 #define S1371

Definition at line 49 of file s1371.c.

30.2421.2 Function Documentation

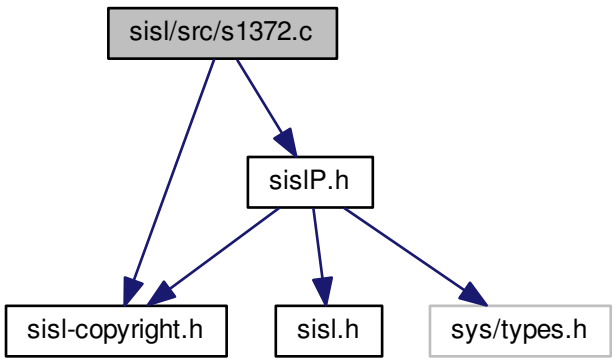
30.2421.2.1 void s1371 (SISLCurve * *pc1*, ecentr , double *aradiu*, int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1371.c.

30.2422 sisl/src/s1372.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1372.c:



Macros

- #define S1372

Functions

- void s1372 (SISLCurve *pc1, epoint, edirec, double aradiu, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2422.1 Macro Definition Documentation

30.2422.1.1 #define S1372

Definition at line 49 of file s1372.c.

30.2422.2 Function Documentation

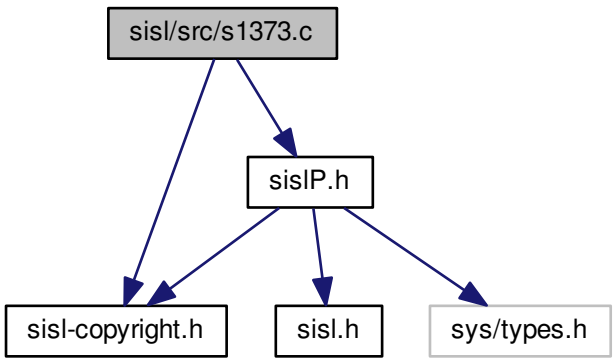
30.2422.2.1 void s1372 (SISLCurve * *pc1,* epoint , edirec , double *aradiu,* int *idim,* double *aepsco,* double *aepsge,* int * *jpt,* double ** *gpar,* int * *jcrv,* SISLIntcurve *** *wcurve,* int * *jstat*)

Definition at line 58 of file s1372.c.

30.2423 sisl/src/s1373.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1373.c:



Macros

- #define S1373

Functions

- void s1373 (SISLCurve *pc1, etop, eaxis, econe, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2423.1 Macro Definition Documentation

30.2423.1.1 #define S1373

Definition at line 49 of file s1373.c.

30.2423.2 Function Documentation

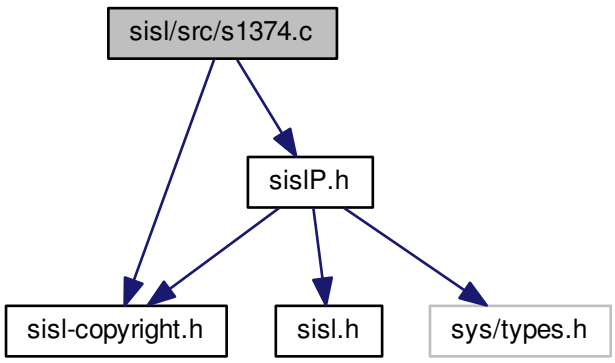
30.2423.2.1 void s1373 (SISLCurve * *pc1*, etop , eaxis , econe , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1373.c.

30.2424 sisl/src/s1374.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1374.c:



Macros

- #define S1374

Functions

- void s1374 (SISLCurve *pc1, earray, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2424.1 Macro Definition Documentation

30.2424.1.1 #define S1374

Definition at line 49 of file s1374.c.

30.2424.2 Function Documentation

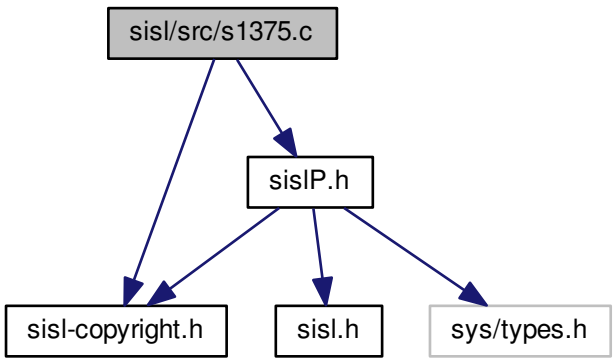
30.2424.2.1 void s1374 (SISLCurve * *pc1*, earray , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 57 of file s1374.c.

30.2425 sisl/src/s1375.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1375.c:



Macros

- #define S1375

Functions

- void s1375 (SISLCurve *pc1, ecentr, enorm, double abigr, double asmalr, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2425.1 Macro Definition Documentation

30.2425.1.1 #define S1375

Definition at line 49 of file s1375.c.

30.2425.2 Function Documentation

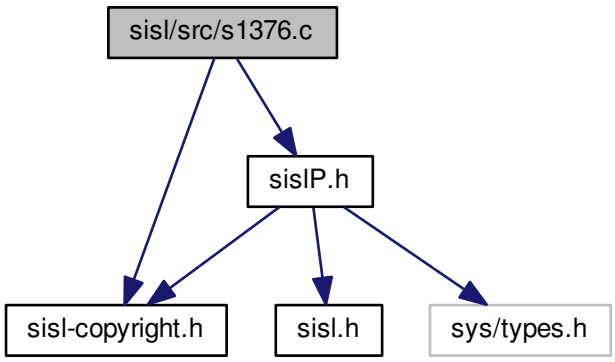
30.2425.2.1 void s1375 (SISLCurve * *pc1*, ecentr , enorm , double *abigr*, double *asmalr*, int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1375.c.

30.2426 sisl/src/s1376.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1376.c:



Macros

- #define S1376

Functions

- void s1376 (et, int in, int ik, double **gt, int *jkn, int *jkk, int *jstat)

30.2426.1 Macro Definition Documentation

30.2426.1.1 #define S1376

Definition at line 49 of file s1376.c.

30.2426.2 Function Documentation

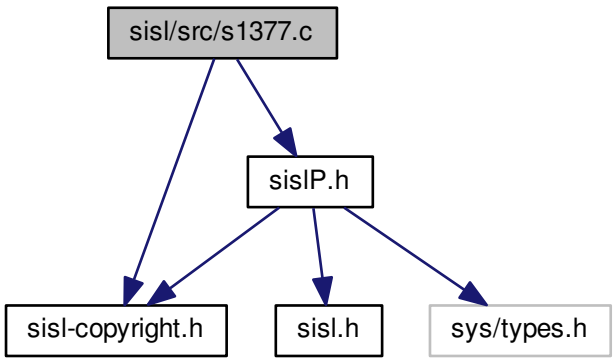
30.2426.2.1 void s1376 (et , int *in,* int *ik,* double ** *gt,* int * *jkn,* int * *jkk,* int * *jstat*)

Definition at line 57 of file s1376.c.

30.2427 sisl/src/s1377.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1377.c:



Macros

- #define S1377

Functions

- void s1377 (SISLCurve *pcurv, econic, int ideg, int idim, SISLCurve **rcurv, int *jstat)

30.2427.1 Macro Definition Documentation

30.2427.1.1 #define S1377

Definition at line 49 of file s1377.c.

30.2427.2 Function Documentation

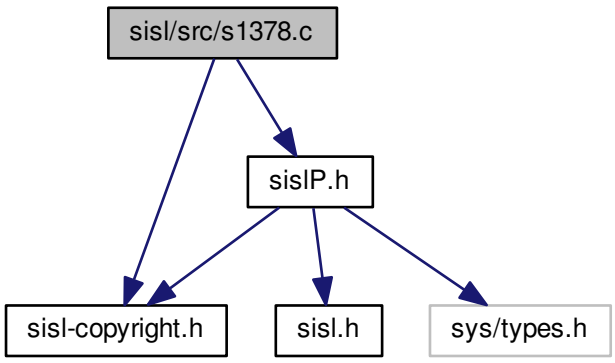
30.2427.2.1 void s1377 (SISLCurve * *pcurv*, econic , int *ideg*, int *idim*, SISLCurve ** *rcurv*, int * *jstat*)

Definition at line 59 of file s1377.c.

30.2428 sisl/src/s1378.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1378.c:



Macros

- #define S1378

Functions

- void s1378 (SISLSurf *psurf, econic, int ideg, int idim, SISLSurf **rsurf, int *jstat)

30.2428.1 Macro Definition Documentation

30.2428.1.1 #define S1378

Definition at line 49 of file s1378.c.

30.2428.2 Function Documentation

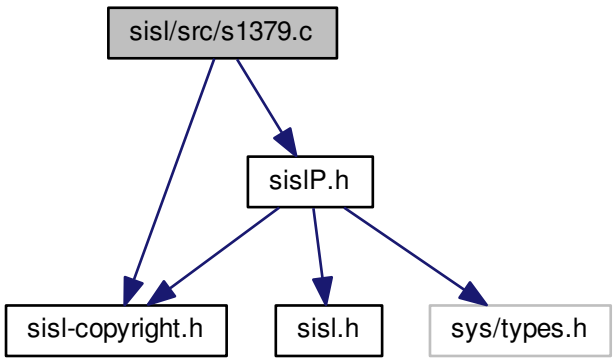
30.2428.2.1 void s1378 (SISLSurf * *psurf,* econic , int *ideg,* int *idim,* SISLSurf ** *rsurf,* int * *jstat*)

Definition at line 59 of file s1378.c.

30.2429 sisl/src/s1379.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1379.c:



Macros

- #define S1379

Functions

- void s1379 (ep, ev, epar, int im, int idim, SISLCurve **rcurve, int *jstat)

30.2429.1 Macro Definition Documentation

30.2429.1.1 #define S1379

Definition at line 49 of file s1379.c.

30.2429.2 Function Documentation

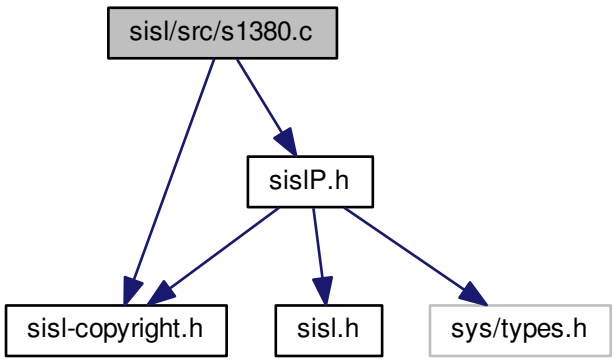
30.2429.2.1 void s1379 (ep , ev , epar , int *im,* int *idim,* SISLCurve ** *rcurve,* int * *jstat*)

Definition at line 58 of file s1379.c.

30.2430 sisl/src/s1380.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1380.c:



Macros

- #define S1380

Functions

- void s1380 (ep, ev, int im, int idim, int ipar, SISLCurve **rcurve, int *jstat)

30.2430.1 Macro Definition Documentation

30.2430.1.1 #define S1380

Definition at line 49 of file s1380.c.

30.2430.2 Function Documentation

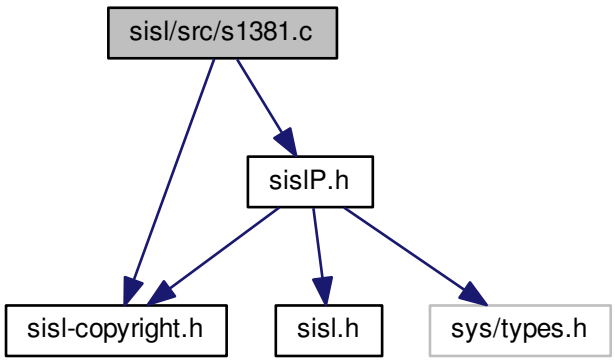
30.2430.2.1 void s1380 (ep , ev , int *im,* int *idim,* int *ipar,* SISLCurve ** *rcurve,* int * *jstat*)

Definition at line 58 of file s1380.c.

30.2431 sisl/src/s1381.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1381.c:



Macros

- #define S1381

Functions

- void s1381 (et, int in, int ik, double **gt, int *jkn, int jkk, int *jstat)

30.2431.1 Macro Definition Documentation

30.2431.1.1 #define S1381

Definition at line 49 of file s1381.c.

30.2431.2 Function Documentation

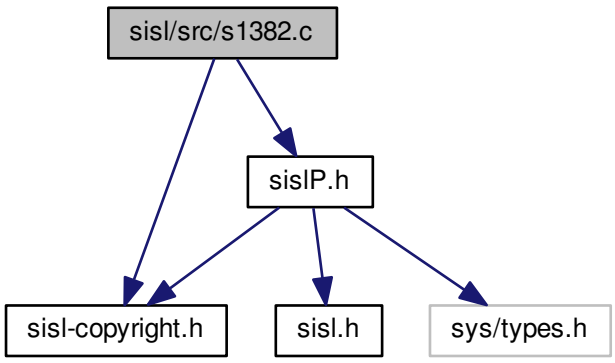
30.2431.2.1 void s1381 (et , int *in,* int *ik,* double ** *gt,* int * *jkn,* int *jkk,* int * *jstat*)

Definition at line 57 of file s1381.c.

30.2432 sisl/src/s1382.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1382.c:



Macros

- #define S1382

Functions

- void s1382 (SISLSurf *psurf, eview, int idim, SISLSurf **rsurf, int *jstat)

30.2432.1 Macro Definition Documentation

30.2432.1.1 #define S1382

Definition at line 49 of file s1382.c.

30.2432.2 Function Documentation

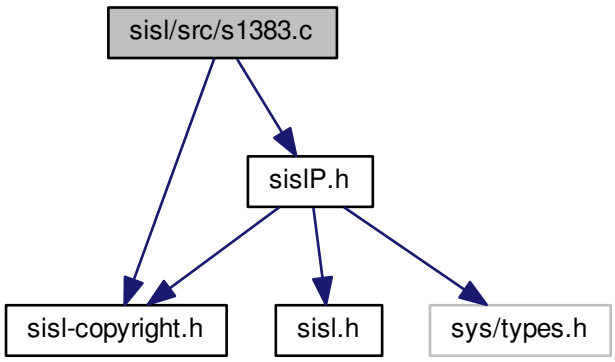
30.2432.2.1 void s1382 (SISLSurf * *psurf,* eview , int *idim,* SISLSurf ** *rsurf,* int * *jstat*)

Definition at line 59 of file s1382.c.

30.2433 sisl/src/s1383.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1383.c:



Macros

- #define S1383

Functions

- void s1383 (SISLSurf *psurf, SISLCurve *pcurv, double aepsge, double amax, int ider, SISLCurve **rcpos, SISLCurve **rcder1, SISLCurve **rcder2, int *jstat)

30.2433.1 Macro Definition Documentation

30.2433.1.1 #define S1383

Definition at line 49 of file s1383.c.

30.2433.2 Function Documentation

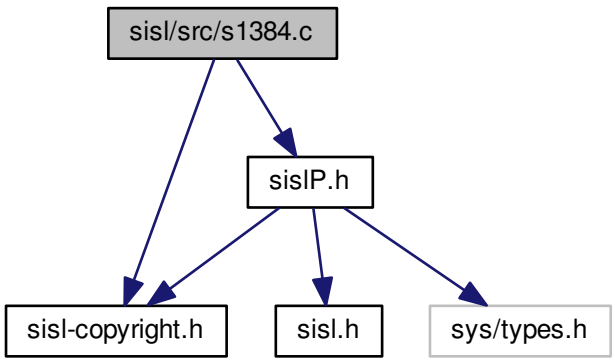
30.2433.2.1 void s1383 (SISLSurf * *psurf,* SISLCurve * *pcurv,* double *aepsge,* double *amax,* int *ider,* SISLCurve ** *rcpos,* SISLCurve ** *rcder1,* SISLCurve ** *rcder2,* int * *jstat*)

Definition at line 58 of file s1383.c.

30.2434 sisl/src/s1384.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1384.c:



Macros

- #define S1384

Functions

- void s1384 (SISLCurve *pcurve, SISLSurf *psurf, int idim, int iside, double ax, int *ileftc, int *ilefts1, int *ilefts2, eder, ederu, ederv, edern, int *jstat)

30.2434.1 Macro Definition Documentation

30.2434.1.1 #define S1384

Definition at line 49 of file s1384.c.

30.2434.2 Function Documentation

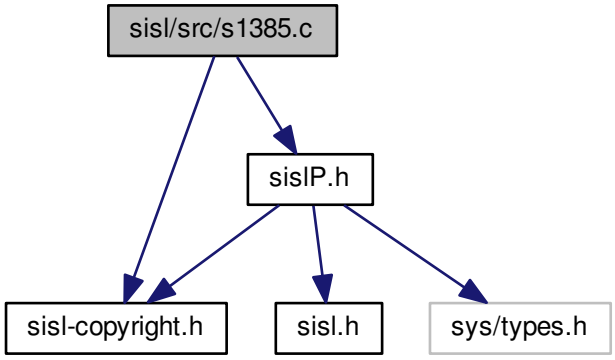
30.2434.2.1 void s1384 (SISLCurve * *pcurve,* SISLSurf * *psurf,* int *idim,* int *iside,* double *ax,* int * *ileftc,* int * *ilefts1,* int * *ilefts2,* eder , ederu , ederv , edern , int * *jstat*)

Definition at line 59 of file s1384.c.

30.2435 sisl/src/s1385.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1385.c:



Macros

- #define S1385

Functions

- void s1385 (ep0, ept, ep1, double as, int idim, double aepsge, SISLCurve **rc, int *jstat)

30.2435.1 Macro Definition Documentation

30.2435.1.1 #define S1385

Definition at line 49 of file s1385.c.

30.2435.2 Function Documentation

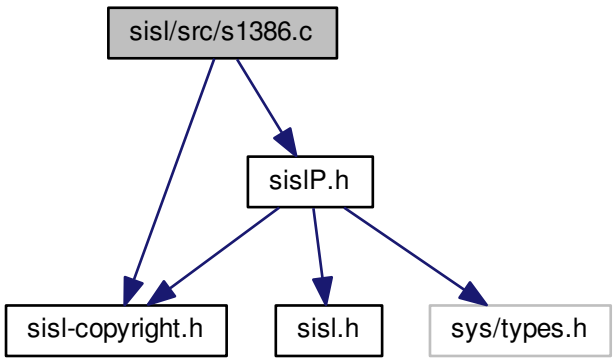
30.2435.2.1 void s1385 (ep0 , ept , ep1 , double *as,* int *idim,* double *aepsge,* SISLCurve ** *rc,* int * *jstat*)

Definition at line 58 of file s1385.c.

30.2436 sisl/src/s1386.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1386.c:



Macros

- #define S1386

Functions

- void s1386 (SISLSurf *ps, int ider1, int ider2, SISLSurf **rsnew, int *jstat)

30.2436.1 Macro Definition Documentation

30.2436.1.1 #define S1386

Definition at line 49 of file s1386.c.

30.2436.2 Function Documentation

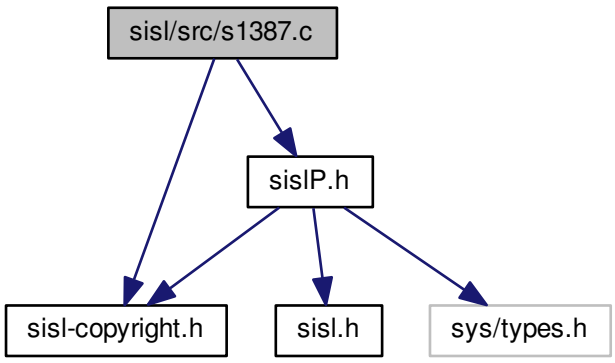
30.2436.2.1 void s1386 (SISLSurf * *ps*, int *ider1*, int *ider2*, SISLSurf ** *rsnew*, int * *jstat*)

Definition at line 57 of file s1386.c.

30.2437 sisl/src/s1387.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1387.c:



Macros

- #define S1387

Functions

- void s1387 (SISLSurf *ps, int ik1, int ik2, SISLSurf **rsnew, int *jstat)

30.2437.1 Macro Definition Documentation

30.2437.1.1 #define S1387

Definition at line 49 of file s1387.c.

30.2437.2 Function Documentation

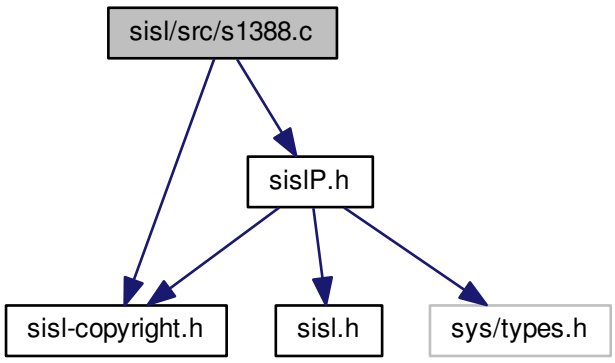
30.2437.2.1 void s1387 (SISLSurf * *ps*, int *ik1*, int *ik2*, SISLSurf ** *rsnew*, int * *jstat*)

Definition at line 57 of file s1387.c.

30.2438 sisl/src/s1388.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1388.c:



Macros

- #define S1388

Functions

- void s1388 (SISLSurf *ps1, gcoons, int *jnumb1, int *jnumb2, int *jdim, int *jstat)

30.2438.1 Macro Definition Documentation

30.2438.1.1 #define S1388

Definition at line 49 of file s1388.c.

30.2438.2 Function Documentation

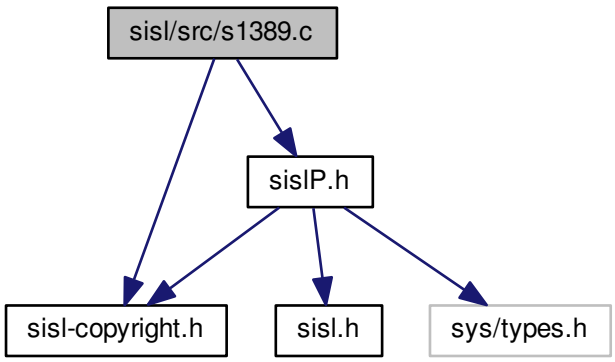
30.2438.2.1 void s1388 (SISLSurf * *ps1*, gcoons , int * *jnumb1*, int * *jnumb2*, int * *jdim*, int * *jstat*)

Definition at line 57 of file s1388.c.

30.2439 sisl/src/s1389.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1389.c:



Macros

- #define S1389

Functions

- void s1389 (SISLCurve *pc1, gcubic, int *jnumb, int *jdim, int *jstat)

30.2439.1 Macro Definition Documentation

30.2439.1.1 #define S1389

Definition at line 49 of file s1389.c.

30.2439.2 Function Documentation

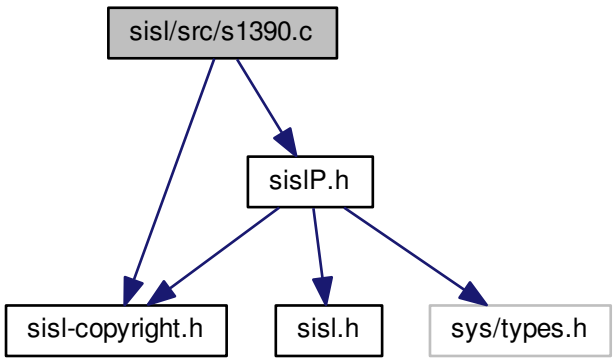
30.2439.2.1 void s1389 (SISLCurve * *pc1*, gcubic , int * *jnumb*, int * *jdim*, int * *jstat*)

Definition at line 57 of file s1389.c.

30.2440 sisl/src/s1390.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1390.c:



Macros

- #define S1390

Functions

- void s1390 (pc1, SISLSurf **ps1, nder, int *jstat)

30.2440.1 Macro Definition Documentation

30.2440.1.1 #define S1390

Definition at line 49 of file s1390.c.

30.2440.2 Function Documentation

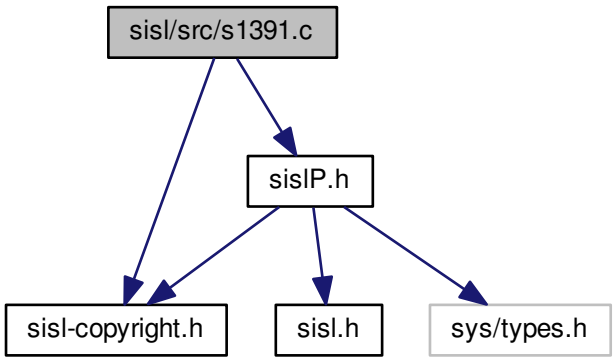
30.2440.2.1 void s1390 (pc1 , SISLSurf ** *ps1*, nder , int * *jstat*)

Definition at line 58 of file s1390.c.

30.2441 sisl/src/s1391.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1391.c:



Macros

- #define S1391

Typedefs

- typedef void(* fshapeProc) ()

Functions

- void s1391 (SISLCurve **pc, SISLSurf ***ws, int icurv, nder, int *jstat)

30.2441.1 Macro Definition Documentation

30.2441.1.1 #define S1391

Definition at line 49 of file s1391.c.

30.2441.2 Typedef Documentation

30.2441.2.1 typedef void(* fshapeProc) ()

Definition at line 53 of file s1391.c.

30.2441.3 Function Documentation

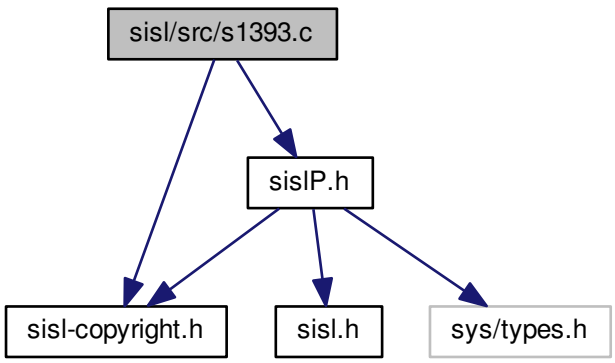
30.2441.3.1 void s1391 (SISLCurve ** *pc*, SISLSurf *** *ws*, int *icurv*, nder , int * *jstat*)

Definition at line 68 of file s1391.c.

30.2442 sisl/src/s1393.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1393.c:



Macros

- #define S1393

Functions

- void s1393 (int n1, pc1, sc1, ec1, int *jstat)

30.2442.1 Macro Definition Documentation

30.2442.1.1 #define S1393

Definition at line 49 of file s1393.c.

30.2442.2 Function Documentation

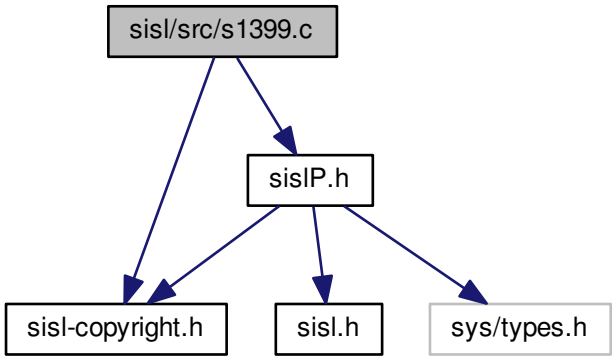
30.2442.2.1 void s1393 (int *n1*, pc1 , sc1 , ec1 , int * *jstat*)

Definition at line 57 of file s1393.c.

30.2443 sisl/src/s1399.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1399.c:



Macros

- #define S1399

Functions

- void s1399 (SISLCurve *pc, double astart, double astop)

30.2443.1 Macro Definition Documentation

30.2443.1.1 #define S1399

Definition at line 49 of file s1399.c.

30.2443.2 Function Documentation

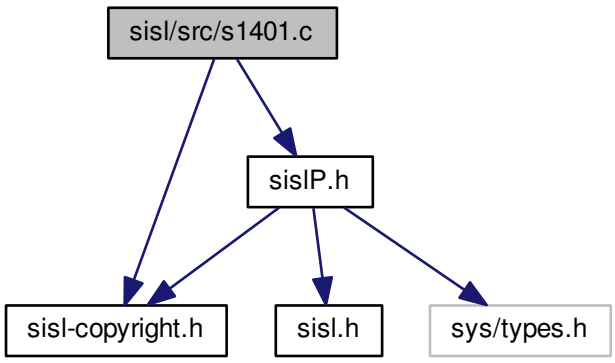
30.2443.2.1 void s1399 (SISLCurve * *pc*, double *astart*, double *astop*)

Definition at line 57 of file s1399.c.

30.2444 sisl/src/s1401.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1401.c:



Macros

- #define S1401

Functions

- void s1401 (vcurve, etwist, SISLSurf **rsurf, int *jstat)

30.2444.1 Macro Definition Documentation

30.2444.1.1 #define S1401

Definition at line 49 of file s1401.c.

30.2444.2 Function Documentation

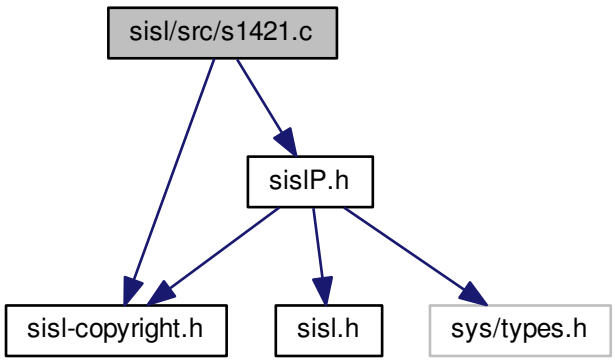
30.2444.2.1 void s1401 (vcurve , etwist , SISLSurf ** *rsurf*, int * *jstat*)

Definition at line 70 of file s1401.c.

30.2445 sisl/src/s1421.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1421.c:



Macros

- #define S1421

Functions

- void s1421 (SISLSurf *ps1, int ider, epar, int *ilfs, int *ilft, eder, enorm, int *jstat)

30.2445.1 Macro Definition Documentation

30.2445.1.1 #define S1421

Definition at line 47 of file s1421.c.

30.2445.2 Function Documentation

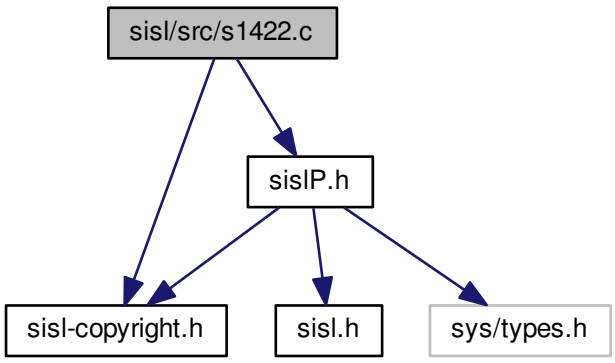
30.2445.2.1 void s1421 (SISLSurf * *ps1,* int *ider,* epar , int * *ilfs,* int * *ilft,* eder , enorm , int * *jstat*)

Definition at line 56 of file s1421.c.

30.2446 sisl/src/s1422.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1422.c:



Macros

- #define S1422

Functions

- void s1422 (SISLSurf *ps1, int ider, int iside1, int iside2, epar, int *ilfs, int *ilft, eder, enorm, int *jstat)

30.2446.1 Macro Definition Documentation

30.2446.1.1 #define S1422

Definition at line 49 of file s1422.c.

30.2446.2 Function Documentation

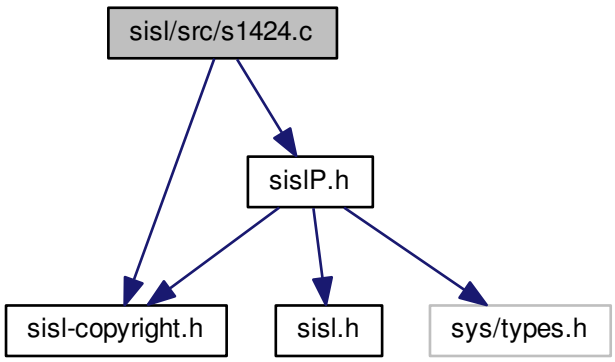
30.2446.2.1 void s1422 (SISLSurf * *ps1,* int *ider,* int *iside1,* int *iside2,* epar , int * *ilfs,* int * *ilft,* eder , enorm , int * *jstat*)

Definition at line 58 of file s1422.c.

30.2447 sisl/src/s1424.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1424.c:



Macros

- #define S1424

Functions

- void s1424 (SISLSurf *ps1, int ider1, int ider2, epar, int *ileft1, int *ileft2, eder, int *jstat)

30.2447.1 Macro Definition Documentation

30.2447.1.1 #define S1424

Definition at line 49 of file s1424.c.

30.2447.2 Function Documentation

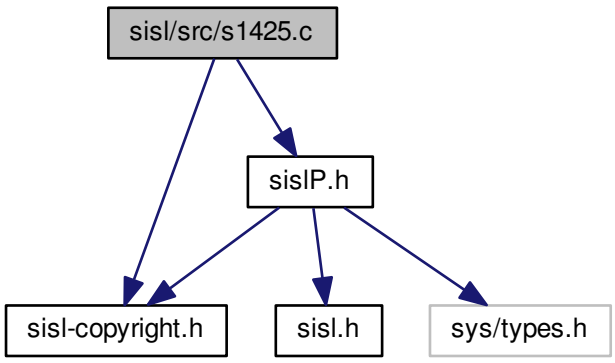
30.2447.2.1 void s1424 (SISLSurf * *ps1*, int *ider1*, int *ider2*, epar , int * *ileft1*, int * *ileft2*, eder , int * *jstat*)

Definition at line 58 of file s1424.c.

30.2448 sisl/src/s1425.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1425.c:



Macros

- #define S1425

Functions

- void s1425 (SISLSurf *ps1, int ider1, int ider2, int iside1, int iside2, epar, int *ileft1, int *ileft2, eder, int *jstat)

30.2448.1 Macro Definition Documentation

30.2448.1.1 #define S1425

Definition at line 49 of file s1425.c.

30.2448.2 Function Documentation

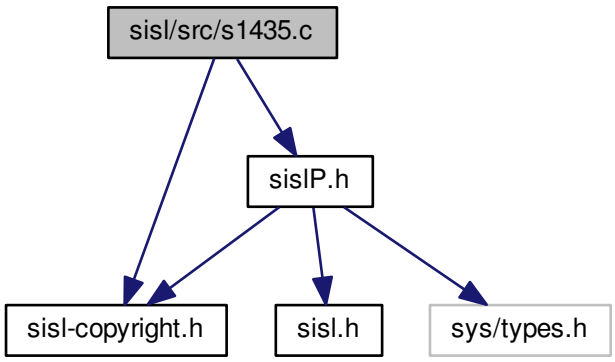
30.2448.2.1 void s1425 (SISLSurf * *ps1*, int *ider1*, int *ider2*, int *iside1*, int *iside2*, epar , int * *ileft1*, int * *ileft2*, eder , int * *jstat*)

Definition at line 58 of file s1425.c.

30.2449 sisl/src/s1435.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1435.c:



Macros

- #define S1435

Functions

- void s1435 (SISLSurf *ps1, int iedge, SISLCurve **rcedge, double *cpar, int *jstat)

30.2449.1 Macro Definition Documentation

30.2449.1.1 #define S1435

Definition at line 49 of file s1435.c.

30.2449.2 Function Documentation

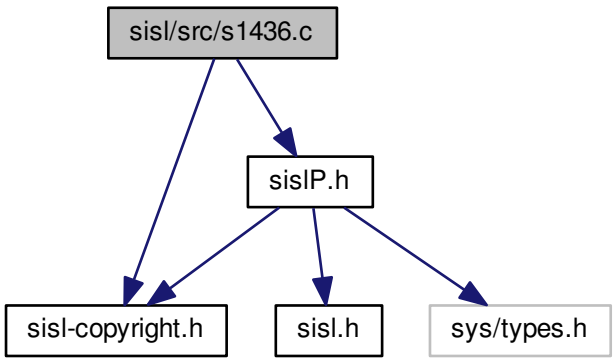
30.2449.2.1 void s1435 (SISLSurf * *ps1*, int *iedge*, SISLCurve ** *rcedge*, double * *cpar*, int * *jstat*)

Definition at line 57 of file s1435.c.

30.2450 sisl/src/s1436.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1436.c:



Macros

- #define S1436

Functions

- void s1436 (SISLSurf *ps1, double apar, SISLCurve **rcurve, int *jstat)

30.2450.1 Macro Definition Documentation

30.2450.1.1 #define S1436

Definition at line 49 of file s1436.c.

30.2450.2 Function Documentation

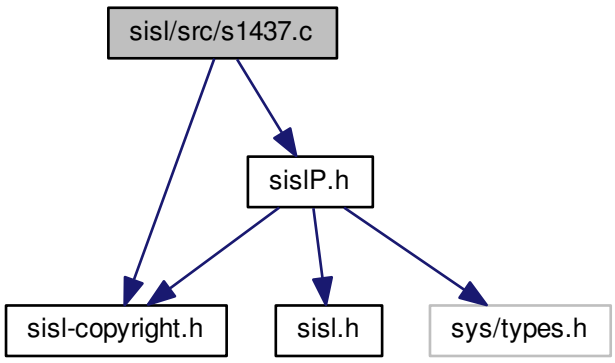
30.2450.2.1 void s1436 (SISLSurf * *ps1*, double *apar*, SISLCurve ** *rcurve*, int * *jstat*)

Definition at line 57 of file s1436.c.

30.2451 sisl/src/s1437.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1437.c:



Macros

- #define S1437

Functions

- void s1437 (SISLSurf *ps1, double apar, SISLCurve **rcurve, int *jstat)

30.2451.1 Macro Definition Documentation

30.2451.1.1 #define S1437

Definition at line 49 of file s1437.c.

30.2451.2 Function Documentation

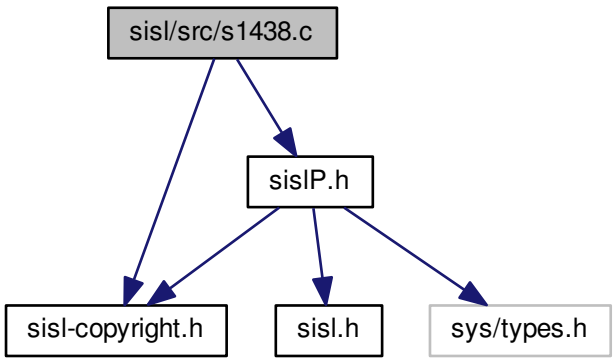
30.2451.2.1 void s1437 (SISLSurf * *ps1*, double *apar*, SISLCurve ** *rcurve*, int * *jstat*)

Definition at line 57 of file s1437.c.

30.2452 sisl/src/s1438.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1438.c:



Macros

- #define S1438

Functions

- void s1438 (SISLCurve *pc, int iedge, SISLPoint **rpedge, double *cpar, int *jstat)

30.2452.1 Macro Definition Documentation

30.2452.1.1 #define S1438

Definition at line 49 of file s1438.c.

30.2452.2 Function Documentation

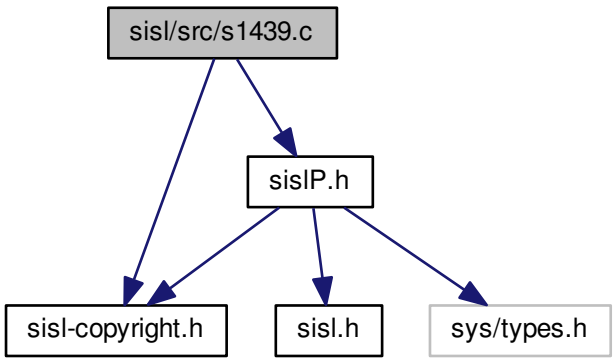
30.2452.2.1 void s1438 (SISLCurve * *pc*, int *iedge*, SISLPoint ** *rpedge*, double * *cpar*, int * *jstat*)

Definition at line 57 of file s1438.c.

30.2453 sisl/src/s1439.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1439.c:



Macros

- #define S1439

Functions

- void s1439 (SISLSurf *ps1, double apar, int idirec, SISLCurve **rcurve, int *jstat)

30.2453.1 Macro Definition Documentation

30.2453.1.1 #define S1439

Definition at line 49 of file s1439.c.

30.2453.2 Function Documentation

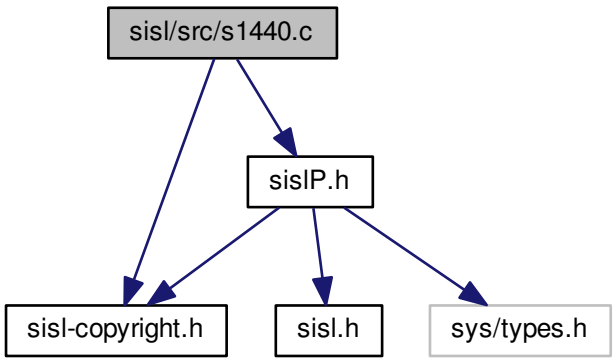
30.2453.2.1 void s1439 (SISLSurf * *ps1*, double *apar*, int *idirec*, SISLCurve ** *rcurve*, int * *jstat*)

Definition at line 56 of file s1439.c.

30.2454 sisl/src/s1440.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1440.c:



Macros

- #define S1440

Functions

- void s1440 (SISLSurf *ps1, SISLSurf **rs2, int *jstat)

30.2454.1 Macro Definition Documentation

30.2454.1.1 #define S1440

Definition at line 49 of file s1440.c.

30.2454.2 Function Documentation

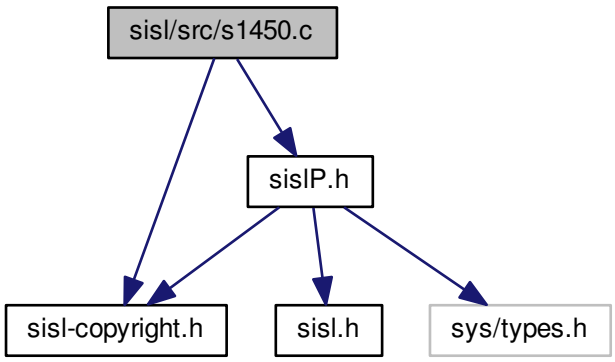
30.2454.2.1 void s1440 (SISLSurf * *ps1*, SISLSurf ** *rs2*, int * *jstat*)

Definition at line 57 of file s1440.c.

30.2455 sisl/src/s1450.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1450.c:



Macros

- #define S1450

Functions

- void s1450 (SISLSurf *ps1, double aepsge, int *jclos1, int *jclos2, int *jdgen1, int *jdgen2, int *jdgen3, int *jdgen4, int *jstat)

30.2455.1 Macro Definition Documentation

30.2455.1.1 #define S1450

Definition at line 49 of file s1450.c.

30.2455.2 Function Documentation

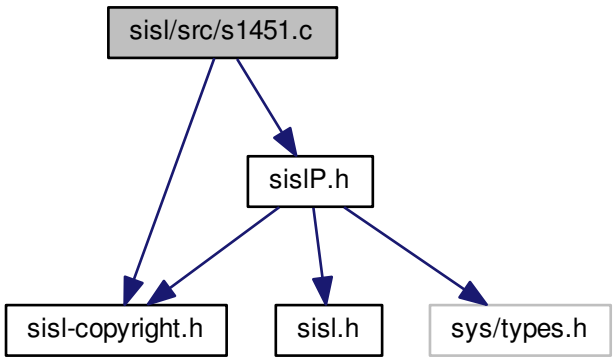
30.2455.2.1 void s1450 (SISLSurf * *ps1*, double *aepsge*, int * *jclos1*, int * *jclos2*, int * *jdgen1*, int * *jdgen2*, int * *jdgen3*, int * *jdgen4*, int * *jstat*)

Definition at line 58 of file s1450.c.

30.2456 sisl/src/s1451.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1451.c:



Macros

- #define S1451

Functions

- void s1451 (SISLCurve *pc1, double aepsge, int *jdgen, int *jstat)

30.2456.1 Macro Definition Documentation

30.2456.1.1 #define S1451

Definition at line 49 of file s1451.c.

30.2456.2 Function Documentation

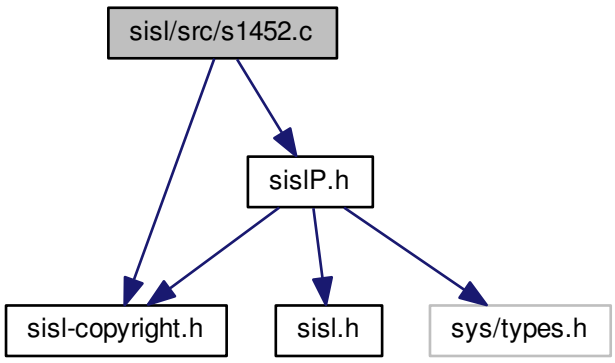
30.2456.2.1 void s1451 (SISLCurve * *pc1*, double *aepsge*, int * *jdgen*, int * *jstat*)

Definition at line 57 of file s1451.c.

30.2457 sisl/src/s1452.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1452.c:



Macros

- #define S1452

Functions

- void s1452 (SISLSurf *ps, double aepsge, double aoffset, SISLSurf **rs, int *jstat)

30.2457.1 Macro Definition Documentation

30.2457.1.1 #define S1452

Definition at line 42 of file s1452.c.

30.2457.2 Function Documentation

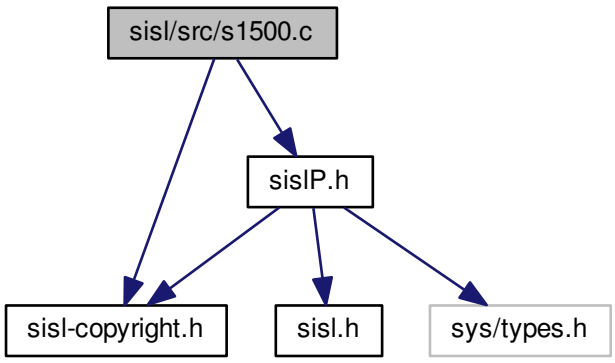
30.2457.2.1 void s1452 (SISLSurf * *ps*, double *aepsge*, double *aoffset*, SISLSurf ** *rs*, int * *jstat*)

Definition at line 50 of file s1452.c.

30.2458 sisl/src/s1500.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1500.c:



Macros

- #define S1500

Functions

- void s1500 (base, norm, axisA, double alpha, double ratio, int idim, int inumb, carray, int *jstat)

30.2458.1 Macro Definition Documentation

30.2458.1.1 #define S1500

Definition at line 49 of file s1500.c.

30.2458.2 Function Documentation

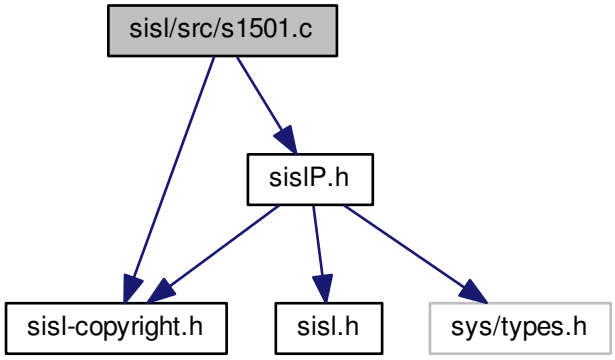
30.2458.2.1 void s1500 (base , norm , axisA , double *alpha,* double *ratio,* int *idim,* int *inumb,* carray , int * *jstat*)

Definition at line 58 of file s1500.c.

30.2459 sisl/src/s1501.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1501.c:



Macros

- #define S1501

Functions

- void s1501 (SISLSurf *ps1, double *base, double *norm, double *axisA, double alpha, double ratio, int idim, double aepsco, double aepsge, double amax, SISLIntcurve *pintcr, int icur, int igraph, int *jstat)

30.2459.1 Macro Definition Documentation

30.2459.1.1 #define S1501

Definition at line 49 of file s1501.c.

30.2459.2 Function Documentation

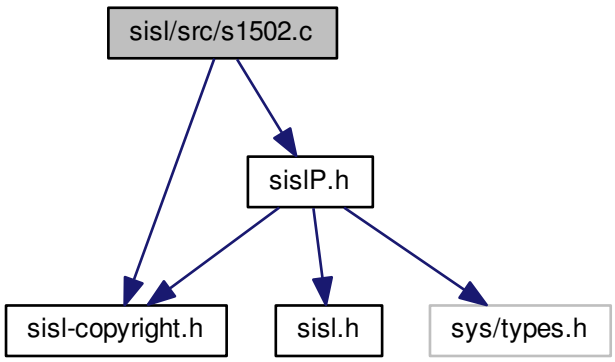
30.2459.2.1 void s1501 (SISLSurf * *ps1,* double * *base,* double * *norm,* double * *axisA,* double *alpha,* double *ratio,* int *idim,* double *aepsco,* double *aepsge,* double *amax,* SISLIntcurve * *pintcr,* int *icur,* int *igraph,* int * *jstat*)

Definition at line 59 of file s1501.c.

30.2460 sisl/src/s1502.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1502.c:



Macros

- #define S1502

Functions

- void s1502 (SISLCurve *pc1, base, norm, axisA, alpha, ratio, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2460.1 Macro Definition Documentation

30.2460.1.1 #define S1502

Definition at line 49 of file s1502.c.

30.2460.2 Function Documentation

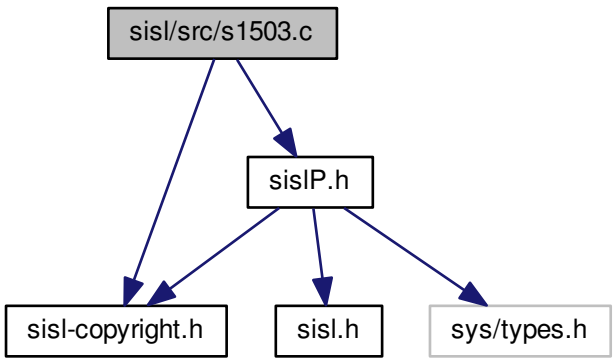
30.2460.2.1 void s1502 (SISLCurve * *pc1,* base , norm , axisA , alpha , ratio , int *idim,* double *aepsco,* double *aepsge,* int * *jpt,* double ** *gpar,* int * *jcrv,* SISLIntcurve *** *wcurve,* int * *jstat*)

Definition at line 58 of file s1502.c.

30.2461 sisl/src/s1503.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1503.c:



Macros

- #define S1503

Functions

- void s1503 (SISLSurf *ps1, base, norm, axisA, double alpha, double ratio, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2461.1 Macro Definition Documentation

30.2461.1.1 #define S1503

Definition at line 49 of file s1503.c.

30.2461.2 Function Documentation

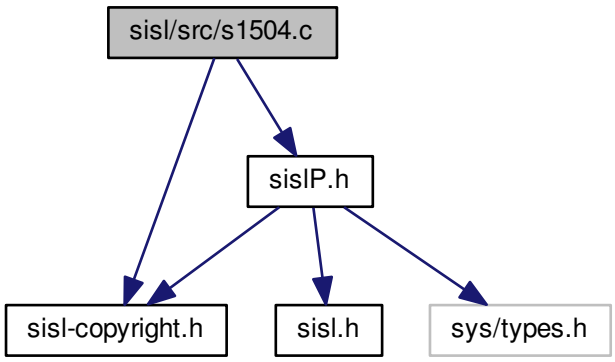
30.2461.2.1 void s1503 (SISLSurf * *ps1*, base , norm , axisA , double *alpha*, double *ratio*, int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1503.c.

30.2462 sisl/src/s1504.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1504.c:



Macros

- #define S1504

Functions

- void s1504 (double *et, int ik, int in, double *ax, int im, int ider, ebder, ileft, int *jstat)

30.2462.1 Macro Definition Documentation

30.2462.1.1 #define S1504

Definition at line 49 of file s1504.c.

30.2462.2 Function Documentation

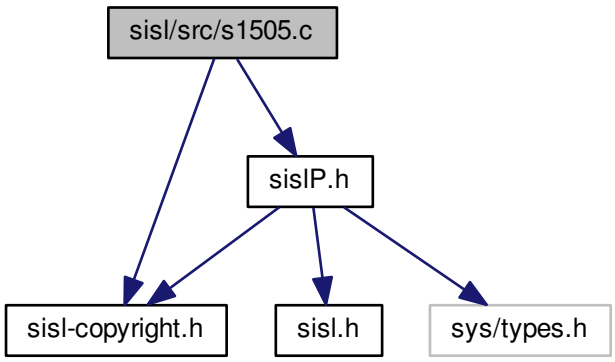
30.2462.2.1 void s1504 (double * *et*, int *ik*, int *in*, double * *ax*, int *im*, int *ider*, ebder , ileft , int * *jstat*)

Definition at line 59 of file s1504.c.

30.2463 sisl/src/s1505.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1505.c:



Macros

- #define S1505

Functions

- void s1505 (SISLSurf *ps1, int ider, int m1, int m2, double *ebder1, double *ebder2, int *ileft1, int *ileft2, eder, norm, int *jstat)

30.2463.1 Macro Definition Documentation

30.2463.1.1 #define S1505

Definition at line 47 of file s1505.c.

30.2463.2 Function Documentation

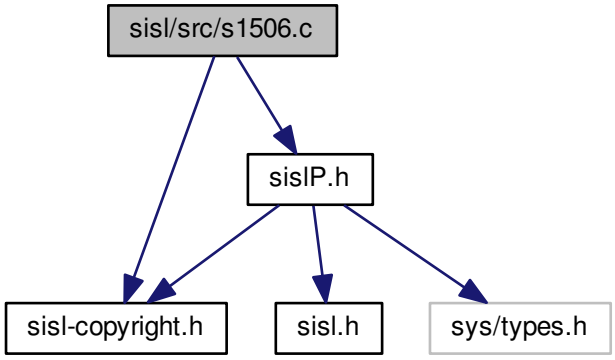
30.2463.2.1 void s1505 (SISLSurf * *ps1,* int *ider,* int *m1,* int *m2,* double * *ebder1,* double * *ebder2,* int * *ileft1,* int * *ileft2,* eder , norm , int * *jstat*)

Definition at line 56 of file s1505.c.

30.2464 sisl/src/s1506.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1506.c:



Macros

- #define S1506

Functions

- void s1506 (SISLSurf *ps1, int ider, int m1, double *x, int m2, double *y, eder, norm, int *jstat)

30.2464.1 Macro Definition Documentation

30.2464.1.1 #define S1506

Definition at line 47 of file s1506.c.

30.2464.2 Function Documentation

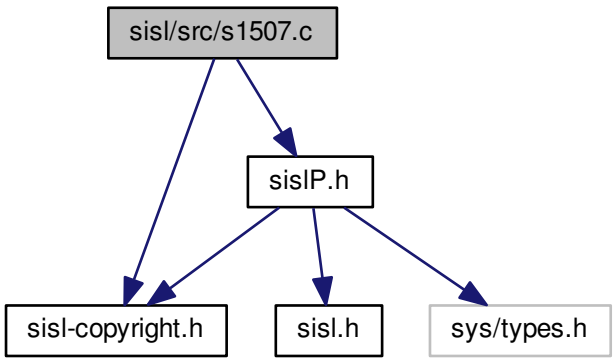
30.2464.2.1 void s1506 (SISLSurf * *ps1*, int *ider*, int *m1*, double * *x*, int *m2*, double * *y*, eder , norm , int * *jstat*)

Definition at line 56 of file s1506.c.

30.2465 sisl/src/s1507.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1507.c:



Macros

- #define S1507

Functions

- void s1507 (SISLCurve **curves, int nc, int periodic, SISLCurve ***newcurves, int *jstat)

30.2465.1 Macro Definition Documentation

30.2465.1.1 #define S1507

Definition at line 49 of file s1507.c.

30.2465.2 Function Documentation

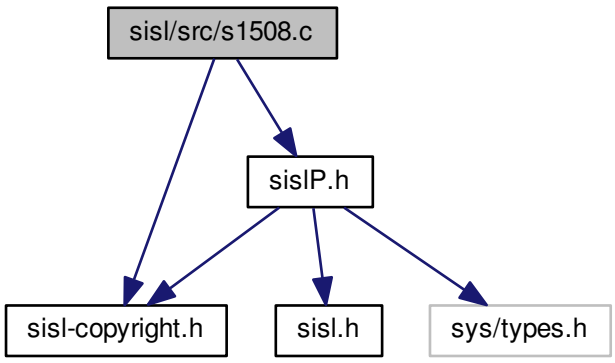
30.2465.2.1 void s1507 (SISLCurve ** *curves*, int *nc*, int *periodic*, SISLCurve *** *newcurves*, int * *jstat*)

Definition at line 57 of file s1507.c.

30.2466 sisl/src/s1508.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1508.c:



Macros

- #define S1508

Functions

- void s1508 (int inbcrv, SISLCurve **vpcurv, par_arr, SISLSurf **rsurf, int *jstat)

30.2466.1 Macro Definition Documentation

30.2466.1.1 #define S1508

Definition at line 49 of file s1508.c.

30.2466.2 Function Documentation

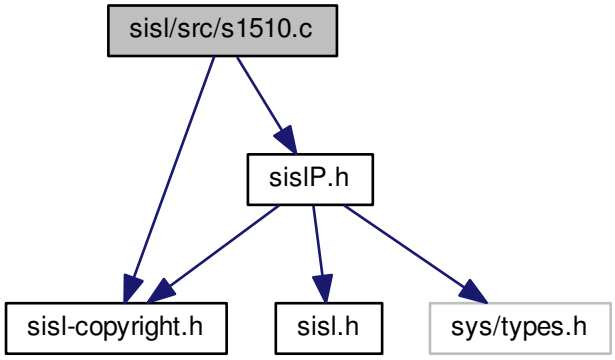
30.2466.2.1 void s1508 (int *inbcrv,* SISLCurve ** *vpcurv,* par_arr , SISLSurf ** *rsurf,* int * *jstat*)

Definition at line 59 of file s1508.c.

30.2467 sisl/src/s1510.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1510.c:



Macros

- #define S1510

Functions

- void s1510 (SISLSurf *ps, eyepoint, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2467.1 Macro Definition Documentation

30.2467.1.1 #define S1510

Definition at line 49 of file s1510.c.

30.2467.2 Function Documentation

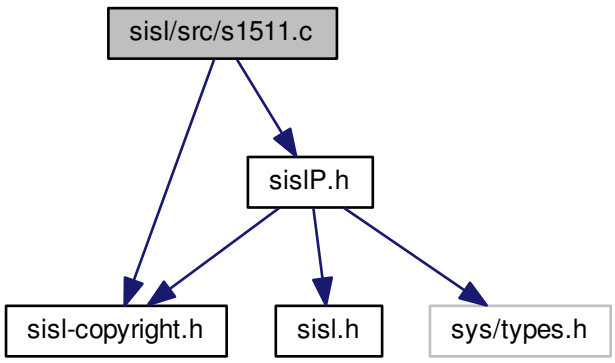
30.2467.2.1 void s1510 (SISLSurf * *ps*, eyepoint , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1510.c.

30.2468 sisl/src/s1511.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1511.c:



Macros

- #define S1511

Functions

- void s1511 (SISLSurf *ps, qpoint, bvec, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2468.1 Macro Definition Documentation

30.2468.1.1 #define S1511

Definition at line 49 of file s1511.c.

30.2468.2 Function Documentation

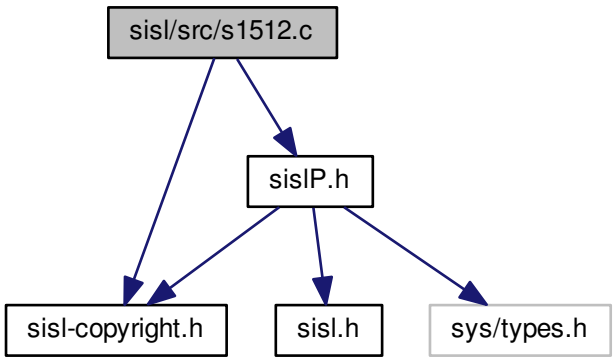
30.2468.2.1 void s1511 (SISLSurf * *ps*, qpoint , bvec , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1511.c.

30.2469 sisl/src/s1512.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1512.c:



Macros

- #define S1512

Functions

- void s1512 (SISLSurf *psurf, eyepoint, int idim, SISLSurf **rsurf, int *jstat)

30.2469.1 Macro Definition Documentation

30.2469.1.1 #define S1512

Definition at line 49 of file s1512.c.

30.2469.2 Function Documentation

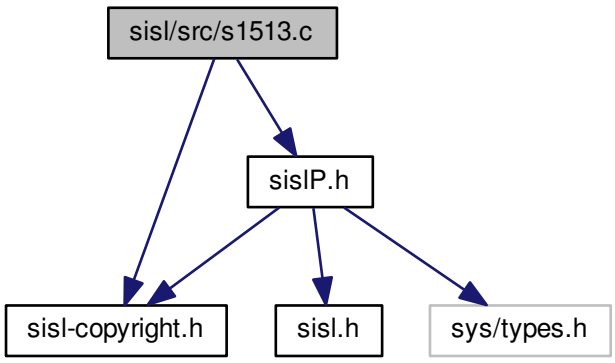
30.2469.2.1 void s1512 (SISLSurf * *psurf,* eyepoint , int *idim,* SISLSurf ** *rsurf,* int * *jstat*)

Definition at line 59 of file s1512.c.

30.2470 sisl/src/s1513.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1513.c:



Macros

- #define S1513

Functions

- void s1513 (SISLSurf *psurf, qpoint, bvec, int idim, SISLSurf **rsurf, int *jstat)

30.2470.1 Macro Definition Documentation

30.2470.1.1 #define S1513

Definition at line 49 of file s1513.c.

30.2470.2 Function Documentation

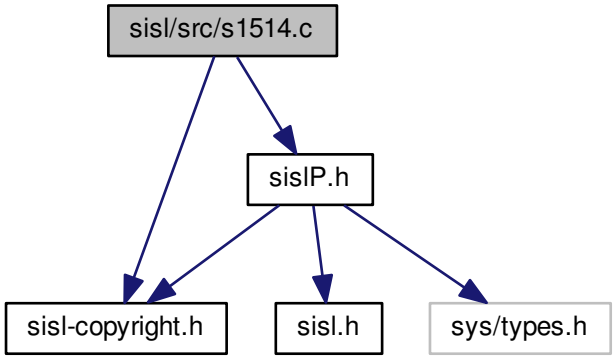
30.2470.2.1 void s1513 (SISLSurf * *psurf,* qpoint , bvec , int *idim,* SISLSurf ** *rsurf,* int * *jstat*)

Definition at line 59 of file s1513.c.

30.2471 sisl/src/s1514.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1514.c:



Macros

- #define S1514

Functions

- void s1514 (SISLSurf *ps1, eyepoint, int idim, double aepsco, double aepsge, double amax, SISLIntcurve *pintcr, int icur, int igraph, int *jstat)

30.2471.1 Macro Definition Documentation

30.2471.1.1 #define S1514

Definition at line 49 of file s1514.c.

30.2471.2 Function Documentation

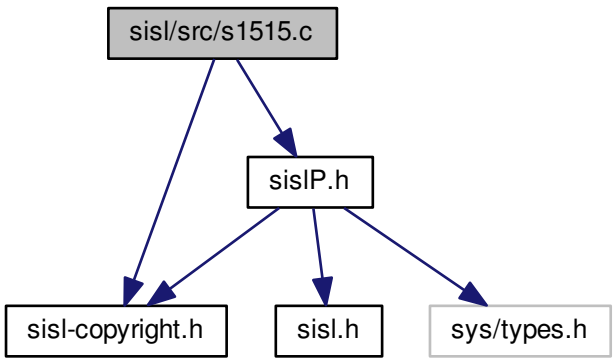
30.2471.2.1 void s1514 (SISLSurf * *ps1,* eyepoint , int *idim,* double *aepsco,* double *aepsge,* double *amax,* SISLIntcurve * *pintcr,* int *icur,* int *igraph,* int * *jstat*)

Definition at line 59 of file s1514.c.

30.2472 sisl/src/s1515.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1515.c:



Macros

- #define S1515

Functions

- void s1515 (SISLSurf *ps1, qpoint, bvec, int idim, double aepsco, double aepsge, double amax, SISLIntcurve *pintcr, int icur, int igraph, int *jstat)

30.2472.1 Macro Definition Documentation

30.2472.1.1 #define S1515

Definition at line 49 of file s1515.c.

30.2472.2 Function Documentation

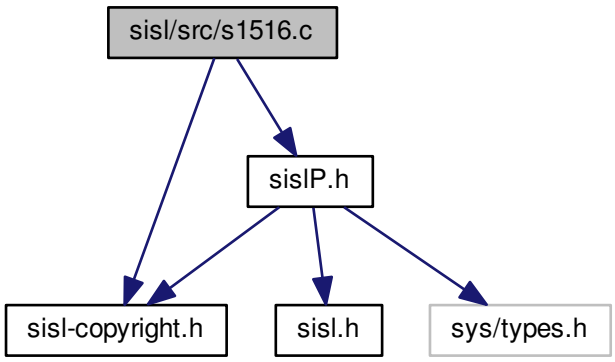
30.2472.2.1 void s1515 (SISLSurf * *ps1*, qpoint , bvec , int *idim*, double *aepsco*, double *aepsge*, double *amax*, SISLIntcurve * *pintcr*, int *icur*, int *igraph*, int * *jstat*)

Definition at line 59 of file s1515.c.

30.2473 sisl/src/s1516.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1516.c:



Macros

- #define S1516

Functions

- void s1516 (ep, epar, int im, int idim, double **ev, int *jstat)

30.2473.1 Macro Definition Documentation

30.2473.1.1 #define S1516

Definition at line 49 of file s1516.c.

30.2473.2 Function Documentation

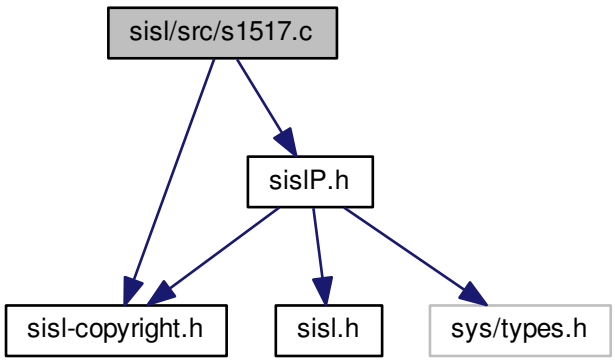
30.2473.2.1 void s1516 (ep , epar , int *im,* int *idim,* double ** *ev,* int * *jstat*)

Definition at line 57 of file s1516.c.

30.2474 sisl/src/s1517.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1517.c:



Macros

- #define S1517

Functions

- void s1517 (ep, ev, epar, int im, double mu, double **evnew, int *jstat)

30.2474.1 Macro Definition Documentation

30.2474.1.1 #define S1517

Definition at line 49 of file s1517.c.

30.2474.2 Function Documentation

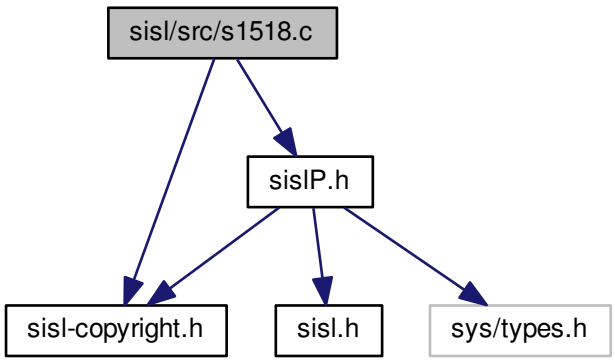
30.2474.2.1 void s1517 (ep , ev , epar , int *im,* double *mu,* double ** *evnew,* int * *jstat*)

Definition at line 57 of file s1517.c.

30.2475 sisl/src/s1518.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1518.c:



Macros

- #define S1518

Functions

- void s1518 (SISLSurf *surf, point, dir, double epsge, start, end, parin, parout, int *stat)

30.2475.1 Macro Definition Documentation

30.2475.1.1 #define S1518

Definition at line 48 of file s1518.c.

30.2475.2 Function Documentation

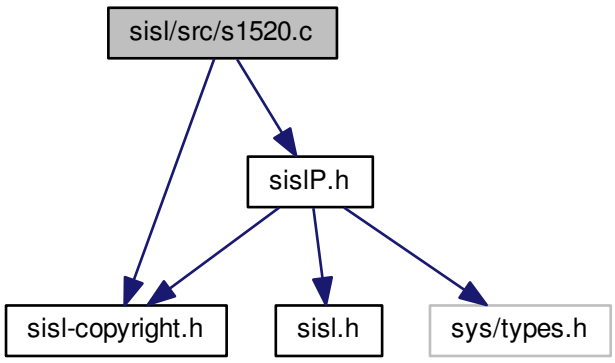
30.2475.2.1 void s1518 (SISLSurf * *surf*, point , dir , double *epsge*, start , end , parin , parout , int * *stat*)

Definition at line 59 of file s1518.c.

30.2476 sisl/src/s1520.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1520.c:



Macros

- #define S1520

Functions

- void s1520 (SISLCurve *pc, double angle, ep, eaxis, SISLSurf **rs, int *jstat)

30.2476.1 Macro Definition Documentation

30.2476.1.1 #define S1520

Definition at line 49 of file s1520.c.

30.2476.2 Function Documentation

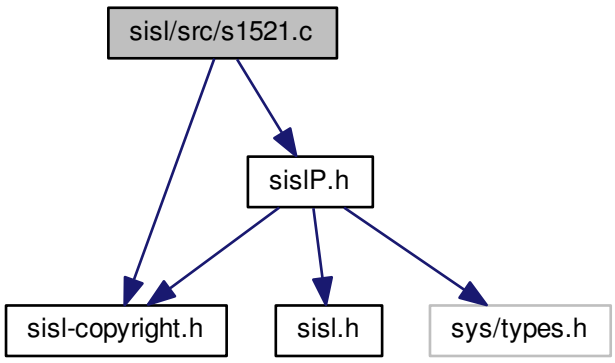
30.2476.2.1 void s1520 (SISLCurve * *pc*, double *angle*, ep , eaxis , SISLSurf ** *rs*, int * *jstat*)

Definition at line 59 of file s1520.c.

30.2477 sisl/src/s1521.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1521.c:



Macros

- #define S1521

Functions

- SISLCurve * s1521 (SISLCurve *pc, int *jstat)

30.2477.1 Macro Definition Documentation

30.2477.1.1 #define S1521

Definition at line 49 of file s1521.c.

30.2477.2 Function Documentation

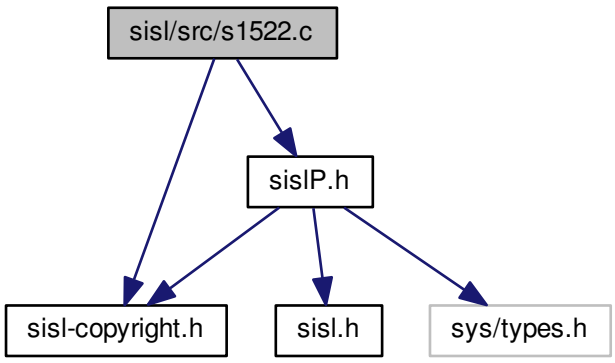
30.2477.2.1 SISLCurve* s1521 (SISLCurve * *pc*, int * *jstat*)

Definition at line 57 of file s1521.c.

30.2478 sisl/src/s1522.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1522.c:



Macros

- #define S1522

Functions

- void s1522 (normal, centre, ellipaxis, double ratio, int dim, SISLCurve **ellipse, int *jstat)

30.2478.1 Macro Definition Documentation

30.2478.1.1 #define S1522

Definition at line 42 of file s1522.c.

30.2478.2 Function Documentation

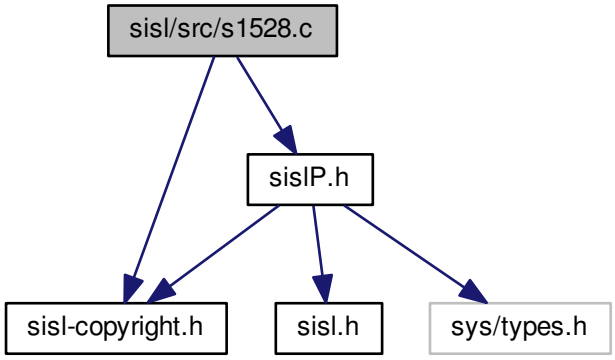
30.2478.2.1 void s1522 (normal , centre , ellipaxis , double *ratio,* int *dim,* SISLCurve** *ellipse,* int * *jstat*)

Definition at line 50 of file s1522.c.

30.2479 sisl/src/s1528.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1528.c:



Macros

- #define S1528

Functions

- void s1528 (int idim, int m1, int m2, points, int ipar, int iopen1, int iopen2, double **par1, double **par2, int *jstat)

30.2479.1 Macro Definition Documentation

30.2479.1.1 #define S1528

Definition at line 42 of file s1528.c.

30.2479.2 Function Documentation

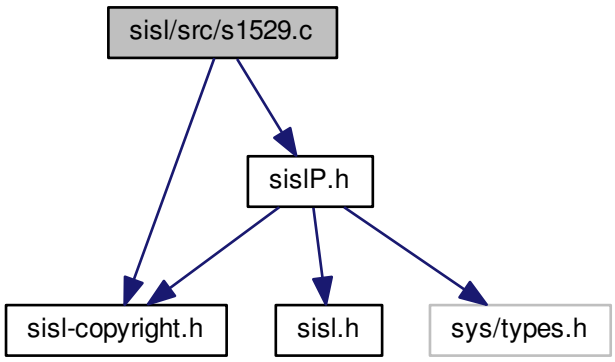
30.2479.2.1 void s1528 (int *idim,* int *m1,* int *m2,* points , int *ipar,* int *iopen1,* int *iopen2,* double ** *par1,* double ** *par2,* int * *jstat*)

Definition at line 50 of file s1528.c.

30.2480 sisl/src/s1529.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1529.c:



Macros

- #define S1529

Functions

- void s1529 (ep, eder10, eder01, eder11, int im1, int im2, int idim, int ipar, SISLSurf **rsurf, int *jstat)

30.2480.1 Macro Definition Documentation

30.2480.1.1 #define S1529

Definition at line 42 of file s1529.c.

30.2480.2 Function Documentation

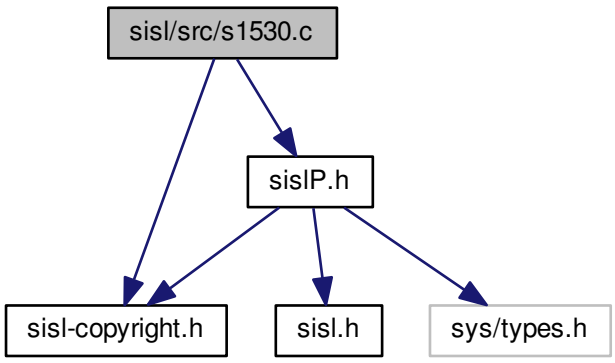
30.2480.2.1 void s1529 (ep , eder10 , eder01 , eder11 , int *im1,* int *im2,* int *idim,* int *ipar,* SISLSurf ∗∗ *rsurf,* int ∗ *jstat*)

Definition at line 51 of file s1529.c.

30.2481 sisl/src/s1530.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1530.c:



Macros

- #define S1530

Functions

- void s1530 (ep, eder10, eder01, eder11, epar1, epar2, int im1, int im2, int idim, SISLSurf ∗∗rsurf, int ∗jstat)

30.2481.1 Macro Definition Documentation

30.2481.1.1 #define S1530

Definition at line 49 of file s1530.c.

30.2481.2 Function Documentation

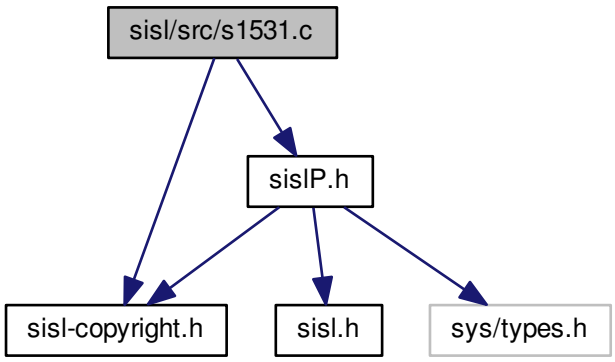
30.2481.2.1 void s1530 (ep , eder10 , eder01 , eder11 , epar1 , epar2 , int *im1,* int *im2,* int *idim,* SISLSurf ∗∗ *rsurf,* int ∗ *jstat*)

Definition at line 59 of file s1530.c.

30.2482 sisl/src/s1531.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1531.c:



Macros

- #define S1531

Functions

- void s1531 (ea, int idim, int in1, int in2, double ∗∗eb, int ∗jstat)

30.2482.1 Macro Definition Documentation

30.2482.1.1 #define S1531

Definition at line 49 of file s1531.c.

30.2482.2 Function Documentation

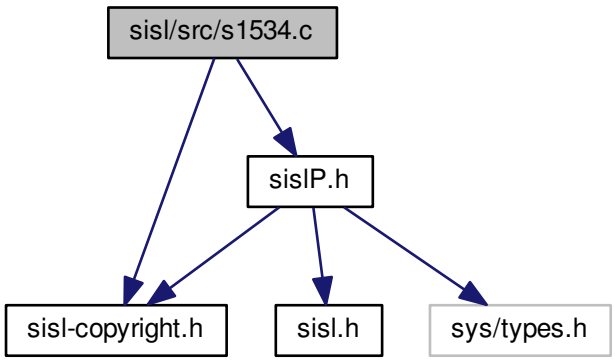
30.2482.2.1 void s1531 (ea , int *idim,* int *in1,* int *in2,* double ** *eb,* int * *jstat*)

Definition at line 56 of file s1531.c.

30.2483 sisl/src/s1534.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1534.c:



Macros

- #define S1534

Functions

- void s1534 (points, der10, der01, der11, int im1, int im2, int idim, int ipar, int con1, int con2, int con3, int con4, int order1, int order2, int iopen1, int iopen2, SISLSurf **rsurf, int *jstat)

30.2483.1 Macro Definition Documentation

30.2483.1.1 #define S1534

Definition at line 42 of file s1534.c.

30.2483.2 Function Documentation

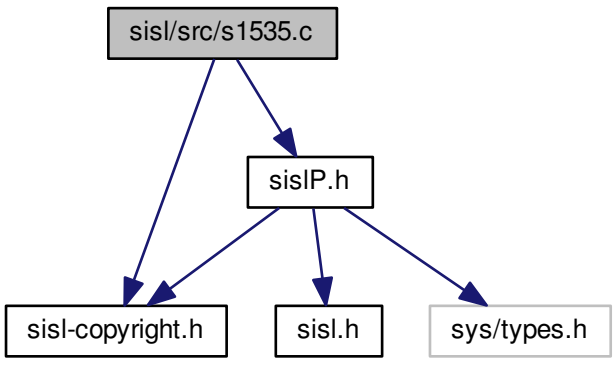
30.2483.2.1 void s1534 (points , der10 , der01 , der11 , int *im1,* int *im2,* int *idim,* int *ipar,* int *con1,* int *con2,* int *con3,* int *con4,* int *order1,* int *order2,* int *iopen1,* int *iopen2,* SISLSurf ** *rsurf,* int * *jstat*)

Definition at line 52 of file s1534.c.

30.2484 sisl/src/s1535.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1535.c:



Macros

- #define S1535

Functions

- void s1535 (points, der10, der01, der11, int im1, int im2, int idim, par1, par2, int con1, int con2, int con3, int con4, int order1, int order2, int iopen1, int iopen2, SISLSurf **rsurf, int *jstat)

30.2484.1 Macro Definition Documentation

30.2484.1.1 #define S1535

Definition at line 42 of file s1535.c.

30.2484.2 Function Documentation

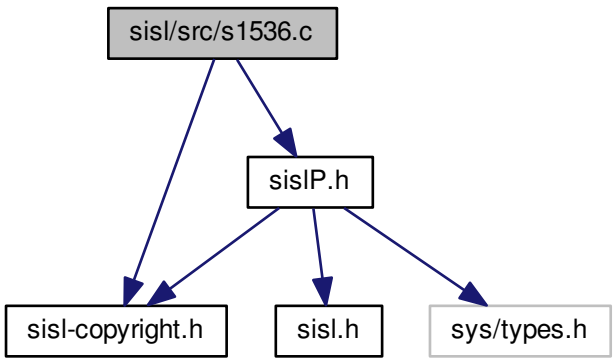
30.2484.2.1 void s1535 (points , der10 , der01 , der11 , int *im1,* int *im2,* int *idim,* par1 , par2 , int *con1,* int *con2,* int *con3,* int *con4,* int *order1,* int *order2,* int *iopen1,* int *iopen2,* SISLSurf ** *rsurf,* int * *jstat*)

Definition at line 53 of file s1535.c.

30.2485 sisl/src/s1536.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1536.c:



Macros

- #define S1536

Functions

- void s1536 (points, int im1, int im2, int idim, int ipar, int con1, int con2, int con3, int con4, int order1, int order2, int iopen1, int iopen2, SISLSurf **rsurf, int *jstat)

30.2485.1 Macro Definition Documentation

30.2485.1.1 #define S1536

Definition at line 42 of file s1536.c.

30.2485.2 Function Documentation

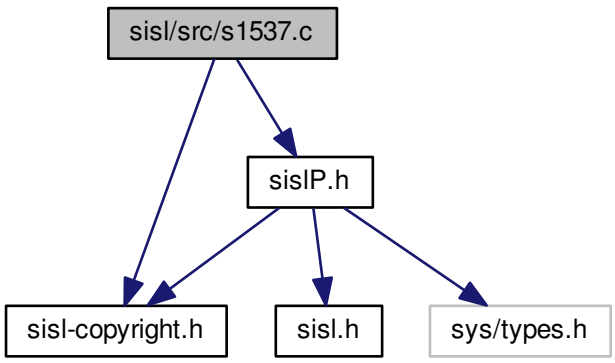
30.2485.2.1 void s1536 (points , int *im1,* int *im2,* int *idim,* int *ipar,* int *con1,* int *con2,* int *con3,* int *con4,* int *order1,* int *order2,* int *iopen1,* int *iopen2,* SISLSurf ** *rsurf,* int * *jstat*)

Definition at line 51 of file s1536.c.

30.2486 sisl/src/s1537.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1537.c:



Macros

- #define S1537

Functions

- void s1537 (points, int im1, int im2, int idim, par1, par2, int con1, int con2, int con3, int con4, int order1, int order2, int iopen1, int iopen2, SISLSurf **rsurf, int *jstat)

30.2486.1 Macro Definition Documentation

30.2486.1.1 #define S1537

Definition at line 42 of file s1537.c.

30.2486.2 Function Documentation

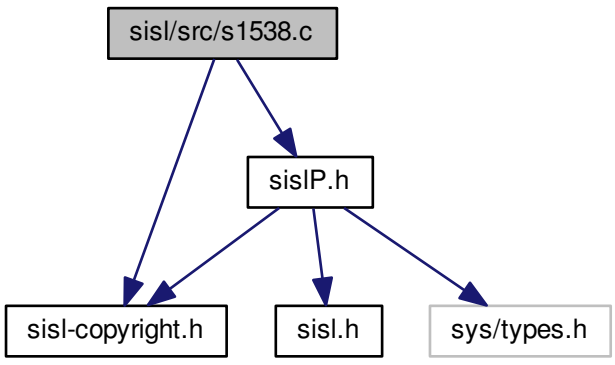
30.2486.2.1 void s1537 (points , int *im1,* int *im2,* int *idim,* par1 , par2 , int *con1,* int *con2,* int *con3,* int *con4,* int *order1,* int *order2,* int *iopen1,* int *iopen2,* SISLSurf ∗∗ *rsurf,* int ∗ *jstat*)

Definition at line 52 of file s1537.c.

30.2487 sisl/src/s1538.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1538.c:



Macros

- #define S1538

Functions

- void s1538 (int inbcrv, vpcurv, nctyp, double astpar, int iopen, int iord2, int iflag, SISLSurf ∗∗rsurf, double ∗∗gpar, int ∗jstat)

30.2487.1 Macro Definition Documentation

30.2487.1.1 #define S1538

Definition at line 42 of file s1538.c.

30.2487.2 Function Documentation

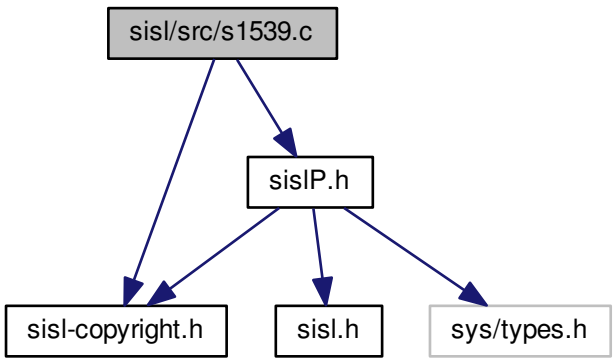
30.2487.2.1 void s1538 (int *inbcrv,* vpcurv , nctyp , double *astpar,* int *iopen,* int *iord2,* int *iflag,* SISLSurf ** *rsurf,* double ** *gpar,* int * *jstat*)

Definition at line 52 of file s1538.c.

30.2488 sisl/src/s1539.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1539.c:



Macros

- #define S1539

Functions

- void s1539 (int inbcrv, vpcurv, nctyp, epar, double astpar, int iopen, int iord2, int iflag, SISLSurf **rsurf, double **gpar, int *jstat)

30.2488.1 Macro Definition Documentation

30.2488.1.1 #define S1539

Definition at line 42 of file s1539.c.

30.2488.2 Function Documentation

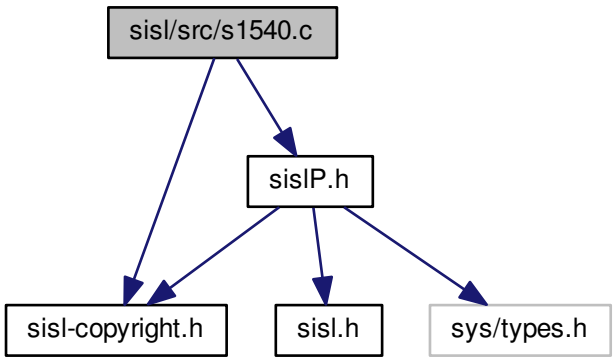
30.2488.2.1 void s1539 (int *inbcrv,* vpcurv , nctyp , epar , **double** *astpar,* int *iopen,* int *iord2,* int *iflag,* **SISLSurf** ** *rsurf,* **double** ** *gpar,* int * *jstat*)

Definition at line 52 of file s1539.c.

30.2489 sisl/src/s1540.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1540.c:



Macros

- #define S1540

Functions

- void s1540 (et, int ik, int in, ax, int im, int ider, ebder, ileft, int *jstat)

30.2489.1 Macro Definition Documentation

30.2489.1.1 #define S1540

Definition at line 47 of file s1540.c.

30.2489.2 Function Documentation

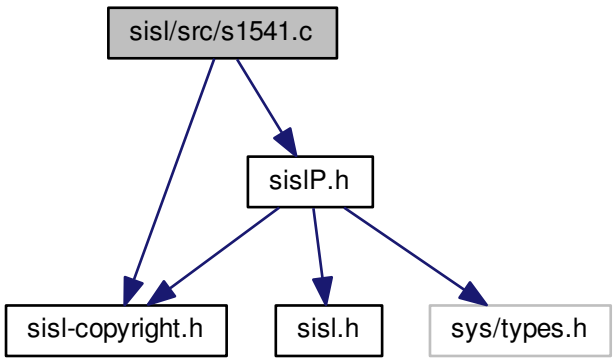
30.2489.2.1 void s1540 (et , int *ik,* int *in,* ax , int *im,* int *ider,* ebder , ileft , int * *jstat*)

Definition at line 65 of file s1540.c.

30.2490 sisl/src/s1541.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1541.c:



Macros

- #define S1541

Functions

- void s1541 (SISLCurve *pc1, int npol, ebder, ileft, eder, int *jstat)

30.2490.1 Macro Definition Documentation

30.2490.1.1 #define S1541

Definition at line 47 of file s1541.c.

30.2490.2 Function Documentation

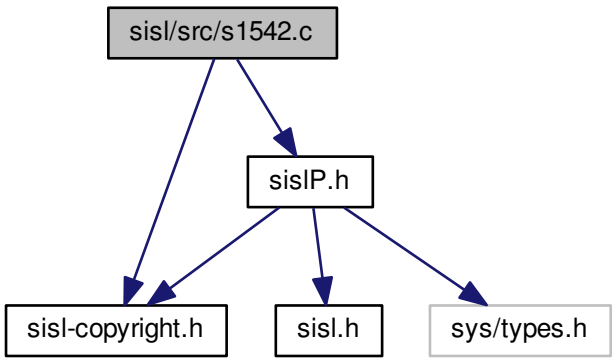
30.2490.2.1 void s1541 (SISLCurve* *pc1,* int *npol,* ebder , ileft , eder , int * *jstat*)

Definition at line 62 of file s1541.c.

30.2491 sisl/src/s1542.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1542.c:



Macros

- #define S1542

Functions

- void s1542 (SISLCurve *pc1, int m, x, eder, int *jstat)

30.2491.1 Macro Definition Documentation

30.2491.1.1 #define S1542

Definition at line 47 of file s1542.c.

30.2491.2 Function Documentation

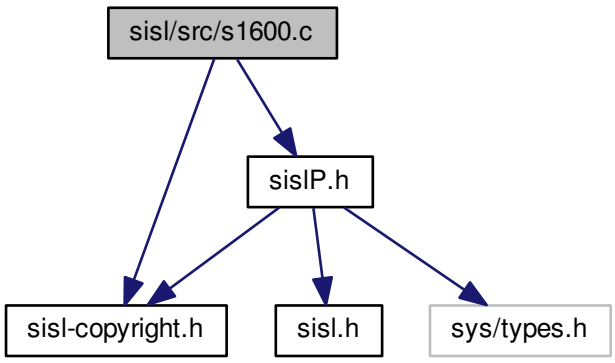
30.2491.2.1 void s1542 (SISLCurve * *pc1*, int *m*, x , eder , int * *jstat*)

Definition at line 55 of file s1542.c.

30.2492 sisl/src/s1600.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1600.c:



Macros

- #define S1600

Functions

- void s1600 (SISLCurve *pc, epoint, enorm, int idim, SISLCurve **rc, int *jstat)

30.2492.1 Macro Definition Documentation

30.2492.1.1 #define S1600

Definition at line 49 of file s1600.c.

30.2492.2 Function Documentation

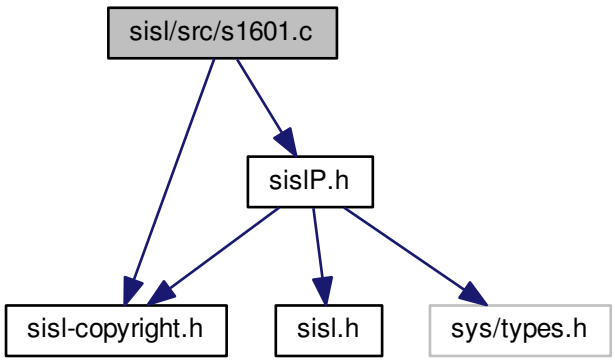
30.2492.2.1 void s1600 (SISLCurve * *pc*, epoint , enorm , int *idim*, SISLCurve ** *rc*, int * *jstat*)

Definition at line 57 of file s1600.c.

30.2493 sisl/src/s1601.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1601.c:



Macros

- #define S1601

Functions

- void s1601 (SISLSurf *psurf, epoint, enorm, int idim, SISLSurf **rsurf, int *jstat)

30.2493.1 Macro Definition Documentation

30.2493.1.1 #define S1601

Definition at line 49 of file s1601.c.

30.2493.2 Function Documentation

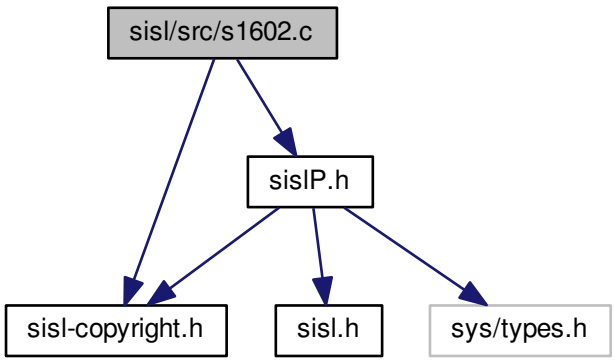
30.2493.2.1 void s1601 (SISLSurf * *psurf,* epoint , enorm , int *idim,* SISLSurf ** *rsurf,* int * *jstat*)

Definition at line 57 of file s1601.c.

30.2494 sisl/src/s1602.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1602.c:



Macros

- #define S1602

Functions

- void s1602 (estapt, endpt, int ik, int idim, double astpar, double *cendpar, SISLCurve **rc, int *jstat)

30.2494.1 Macro Definition Documentation

30.2494.1.1 #define S1602

Definition at line 49 of file s1602.c.

30.2494.2 Function Documentation

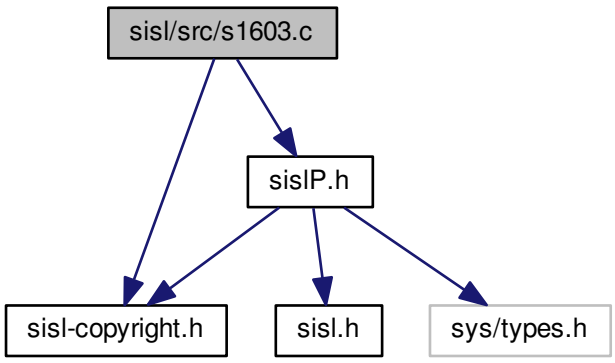
30.2494.2.1 void s1602 (estapt , endpt , int *ik,* int *idim,* double *astpar,* double * *cendpar,* SISLCurve ** *rc,* int * *jstat*)

Definition at line 58 of file s1602.c.

30.2495 sisl/src/s1603.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1603.c:



Macros

- #define S1603

Functions

- void s1603 (SISLSurf *psurf, double *cmin1, double *cmin2, double *cmax1, double *cmax2, int *jstat)

30.2495.1 Macro Definition Documentation

30.2495.1.1 #define S1603

Definition at line 49 of file s1603.c.

30.2495.2 Function Documentation

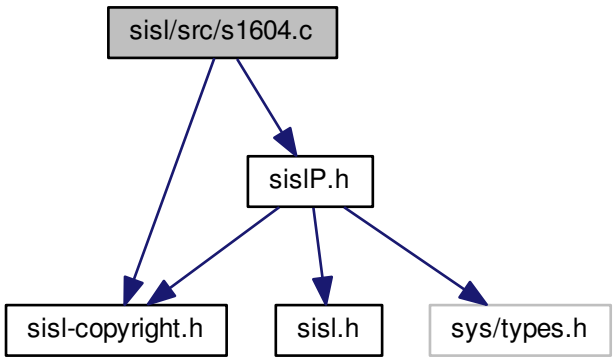
30.2495.2.1 void s1603 (SISLSurf * *psurf*, double * *cmin1*, double * *cmin2*, double * *cmax1*, double * *cmax2*, int * *jstat*)

Definition at line 57 of file s1603.c.

30.2496 sisl/src/s1604.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1604.c:



Macros

- #define S1604

Functions

- void s1604 (epoint, int inbpnt, double astpar, int iopen, int idim, int ik, SISLCurve **rc, int *jstat)

30.2496.1 Macro Definition Documentation

30.2496.1.1 #define S1604

Definition at line 49 of file s1604.c.

30.2496.2 Function Documentation

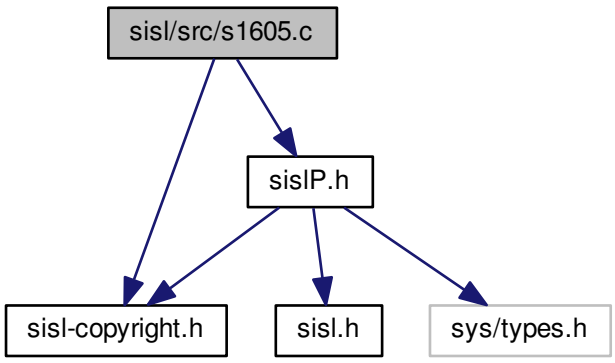
30.2496.2.1 void s1604 (epoint , int *inbpnt,* double *astpar,* int *iopen,* int *idim,* int *ik,* SISLCurve ** *rc,* int * *jstat*)

Definition at line 58 of file s1604.c.

30.2497 sisl/src/s1605.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1605.c:



Macros

- #define S1605

Functions

- void s1605 (SISLCurve *pc, double aepsge, double **gpoint, int *jnbpnt, int *jstat)

30.2497.1 Macro Definition Documentation

30.2497.1.1 #define S1605

Definition at line 49 of file s1605.c.

30.2497.2 Function Documentation

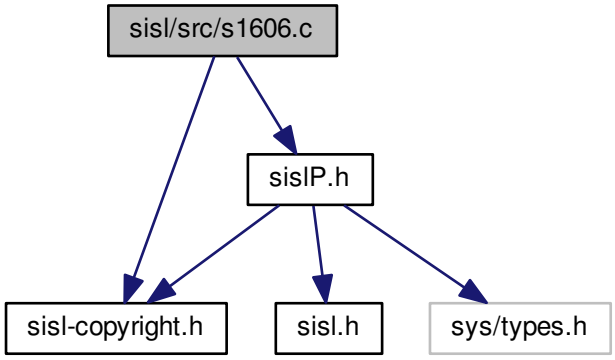
30.2497.2.1 void s1605 (SISLCurve * *pc*, double *aepsge*, double ** *gpoint*, int * *jnbpnt*, int * *jstat*)

Definition at line 57 of file s1605.c.

30.2498 sisl/src/s1606.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1606.c:



Macros

- #define S1606

Functions

- void s1606 (SISLCurve *pc1, SISLCurve *pc2, double aepsge, epoint1, epoint2, int itype, int idim, int ik, SISLCurve **rc, int *jstat)

30.2498.1 Macro Definition Documentation

30.2498.1.1 #define S1606

Definition at line 49 of file s1606.c.

30.2498.2 Function Documentation

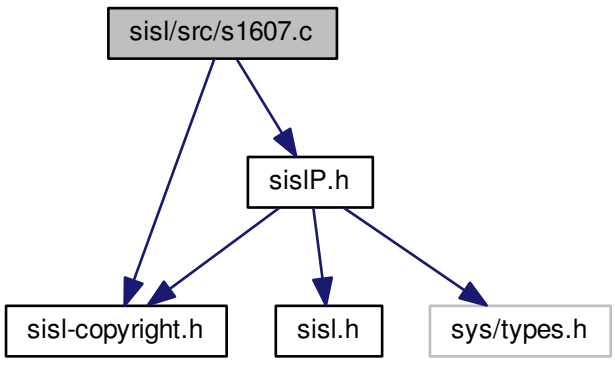
30.2498.2.1 void s1606 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsge*, epoint1 , epoint2 , int *itype*, int *idim*, int *ik*, SISLCurve ** *rc*, int * *jstat*)

Definition at line 59 of file s1606.c.

30.2499 sisl/src/s1607.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1607.c:



Macros

- #define S1607

Functions

- void s1607 (SISLCurve *pc1, SISLCurve *pc2, double aepsge, double aend1, double afil1, double aend2, double afil2, int itype, int idim, int ik, SISLCurve **rc, int *jstat)

30.2499.1 Macro Definition Documentation

30.2499.1.1 #define S1607

Definition at line 49 of file s1607.c.

30.2499.2 Function Documentation

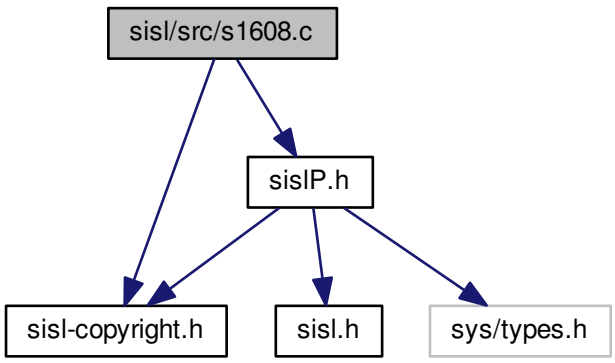
30.2499.2.1 void s1607 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsge*, double *aend1*, double *afil1*, double *aend2*, double *afil2*, int *itype*, int *idim*, int *ik*, SISLCurve ** *rc*, int * *jstat*)

Definition at line 61 of file s1607.c.

30.2500 sisl/src/s1608.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1608.c:



Macros

- #define S1608

Functions

- void s1608 (SISLCurve *pc1, SISLCurve *pc2, double aepsge, ep11, epf1, ep21, epf2, int itype, int idim, int ik, SISLCurve **rc, double *ct11, double *ctf1, double *ct21, double *ctf2, int *jstat)

30.2500.1 Macro Definition Documentation

30.2500.1.1 #define S1608

Definition at line 49 of file s1608.c.

30.2500.2 Function Documentation

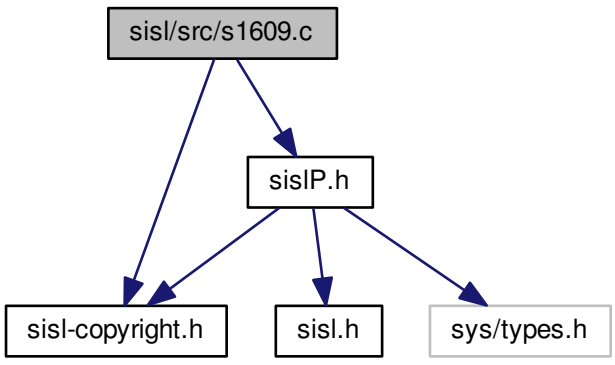
30.2500.2.1 void s1608 (SISLCurve * *pc1,* SISLCurve * *pc2,* double *aepsge,* ep11 , epf1 , ep21 , epf2 , int *itype,* int *idim,* int *ik,* SISLCurve ** *rc,* double * *ct11,* double * *ct1f1,* double * *ct21,* double * *ct2f2,* int * *jstat*)

Definition at line 60 of file s1608.c.

30.2501 sisl/src/s1609.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1609.c:



Macros

- #define S1609

Functions

- void s1609 (SISLCurve *pc1, SISLCurve *pc2, double aepsge, eps1, epf, eps2, double aradius, enorm, int itype, int idim, int ik, SISLCurve **rc, double *ct11, double *ctf1, double *ct21, double *ctf2, int *jstat)

30.2501.1 Macro Definition Documentation

30.2501.1.1 #define S1609

Definition at line 49 of file s1609.c.

30.2501.2 Function Documentation

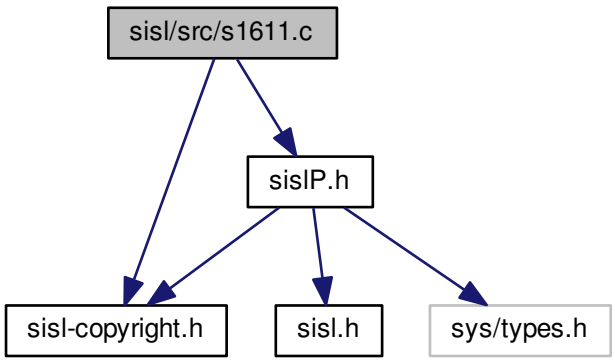
30.2501.2.1 void s1609 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsge*, eps1 , epf , eps2 , double *aradius*, enorm , int *itype*, int *idim*, int *ik*, SISLCurve ** *rc*, double * *ct11*, double * *ctf1*, double * *ct21*, double * *ctf2*, int * *jstat*)

Definition at line 61 of file s1609.c.

30.2502 sisl/src/s1611.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1611.c:



Macros

- #define S1611

Functions

- void s1611 (epoint, int inbpnt, int idim, eptyp, int iopen, int ik, double astpar, double aepsge, double *cendpar, SISLCurve **rc, int *jstat)

30.2502.1 Macro Definition Documentation

30.2502.1.1 #define S1611

Definition at line 49 of file s1611.c.

30.2502.2 Function Documentation

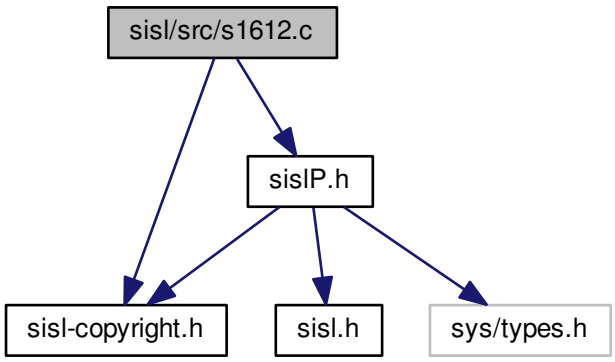
30.2502.2.1 void s1611 (epoint , int *inbpnt,* int *idim,* eptyp , int *iopen,* int *ik,* double *astpar,* double *aepsge,* double * *cendpar,* SISLCurve ** *rc,* int * *jstat*)

Definition at line 60 of file s1611.c.

30.2503 sisl/src/s1612.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1612.c:



Macros

- #define S1612

Functions

- void s1612 (SISLCurve *pc, double aepsge, double **gpoint, int *jnbpnt, int *jleng, int *jstat)

30.2503.1 Macro Definition Documentation

30.2503.1.1 #define S1612

Definition at line 49 of file s1612.c.

30.2503.2 Function Documentation

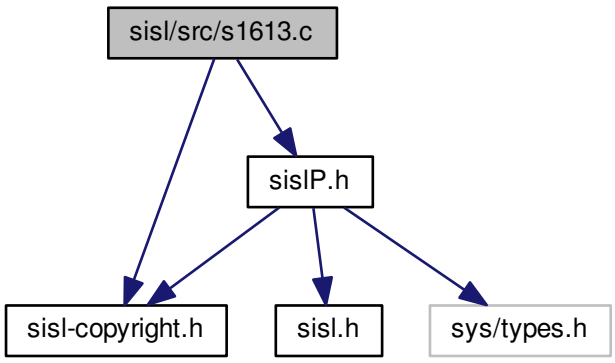
30.2503.2.1 void s1612 (SISLCurve * *pc*, double *aepsge*, double ** *gpoint*, int * *jnbpnt*, int * *jleng*, int * *jstat*)

Definition at line 57 of file s1612.c.

30.2504 sisl/src/s1613.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1613.c:



Macros

- #define S1613

Functions

- void s1613 (SISLCurve *pc, double aepsge, double **gpoint, int *jnbpnt, int *jstat)

30.2504.1 Macro Definition Documentation

30.2504.1.1 #define S1613

Definition at line 49 of file s1613.c.

30.2504.2 Function Documentation

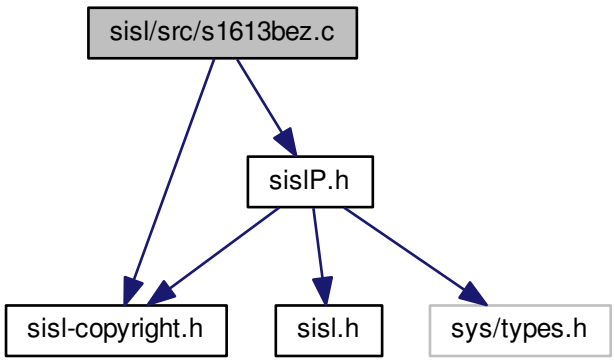
30.2504.2.1 void s1613 (SISLCurve * *pc*, double *aepsge*, double ** *gpoint*, int * *jnbpnt*, int * *jstat*)

Definition at line 57 of file s1613.c.

30.2505 sisl/src/s1613bez.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1613bez.c:



Macros

- #define S1613BEZ

Functions

- void s1613bez (SISLCurve *pc, int idiv, double aepsge, double **gpar, int *jnpar, int *jstat)

30.2505.1 Macro Definition Documentation

30.2505.1.1 #define S1613BEZ

Definition at line 49 of file s1613bez.c.

30.2505.2 Function Documentation

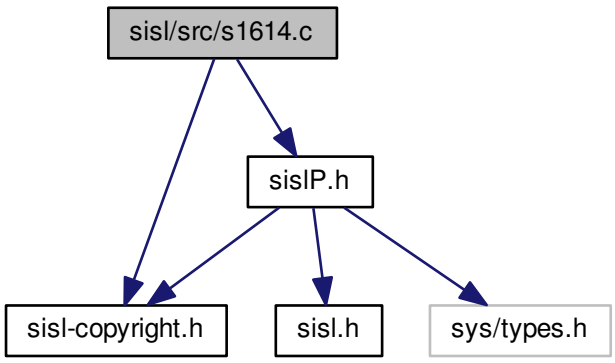
30.2505.2.1 void s1613bez (SISLCurve * *pc,* int *idiv,* double *aepsge,* double ** *gpar,* int * *jnpar,* int * *jstat*)

Definition at line 57 of file s1613bez.c.

30.2506 sisl/src/s1614.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1614.c:



Macros

- #define S1614

Functions

- void s1614 (epoint, int inbpnt, int idim, eptyp, spoint, int *jnbpnt, sptyp, int *jstat)

30.2506.1 Macro Definition Documentation

30.2506.1.1 #define S1614

Definition at line 49 of file s1614.c.

30.2506.2 Function Documentation

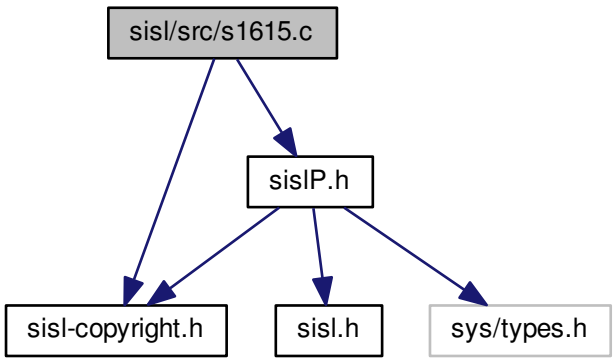
30.2506.2.1 void s1614 (epoint , int *inbpnt,* int *idim,* eptyp , spoint , int * *jnbpnt,* sptyp , int * *jstat*)

Definition at line 58 of file s1614.c.

30.2507 sisl/src/s1615.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1615.c:



Macros

- #define S1615

Functions

- void s1615 (epoint, int inbpnt, int idim, eptyp, int *jstat)

30.2507.1 Macro Definition Documentation

30.2507.1.1 #define S1615

Definition at line 49 of file s1615.c.

30.2507.2 Function Documentation

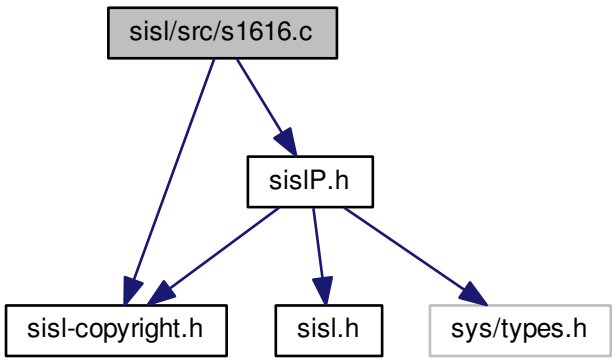
30.2507.2.1 void s1615 (epoint , int *inbpnt,* int *idim,* eptyp , int * *jstat*)

Definition at line 56 of file s1615.c.

30.2508 sisl/src/s1616.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1616.c:



Macros

- #define S1616

Functions

- void s1616 (epoint, int inbpnt, int idim, eptyp, econic, int *jstat)

30.2508.1 Macro Definition Documentation

30.2508.1.1 #define S1616

Definition at line 49 of file s1616.c.

30.2508.2 Function Documentation

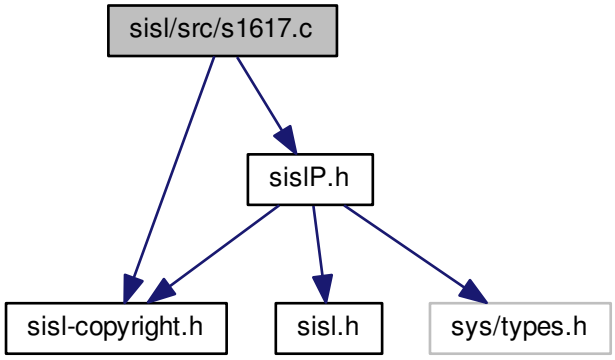
30.2508.2.1 void s1616 (epoint , int *inbpnt,* int *idim,* eptyp , econic , int * *jstat*)

Definition at line 57 of file s1616.c.

30.2509 sisl/src/s1617.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1617.c:



Macros

- #define S1617

Functions

- void s1617 (epoint, int inbpnt, int idim, eptyp, double aepsge, econic, estart, etang, estop, double *ashape, int *jstat)

30.2509.1 Macro Definition Documentation

30.2509.1.1 #define S1617

Definition at line 49 of file s1617.c.

30.2509.2 Function Documentation

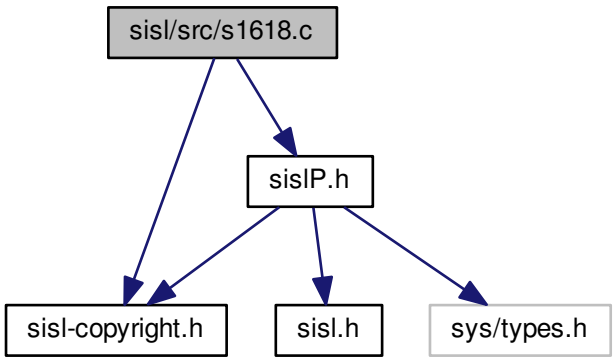
30.2509.2.1 void s1617 (epoint , int *inbpnt,* int *idim,* eptyp , double *aepsge,* econic , estart , etang , estop , double * *ashape,* int * *jstat*)

Definition at line 59 of file s1617.c.

30.2510 sisl/src/s1618.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1618.c:



Macros

- #define S1618

Functions

- void s1618 (ematrix, eright, esol, int in, double *adiff)

30.2510.1 Macro Definition Documentation

30.2510.1.1 #define S1618

Definition at line 49 of file s1618.c.

30.2510.2 Function Documentation

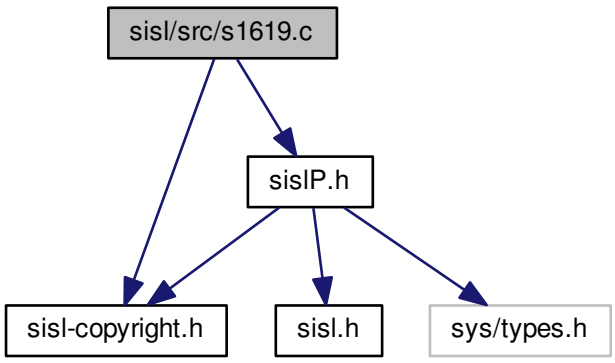
30.2510.2.1 void s1618 (ematrix , eright , esol , int *in,* double * *adiff*)

Definition at line 57 of file s1618.c.

30.2511 sisl/src/s1619.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1619.c:



Macros

- #define S1619

Functions

- void s1619 (epoint, int inbpnt, int idim, eptyp, econic, int ityp, etang, double *ashape, int *jstat)

30.2511.1 Macro Definition Documentation

30.2511.1.1 #define S1619

Definition at line 49 of file s1619.c.

30.2511.2 Function Documentation

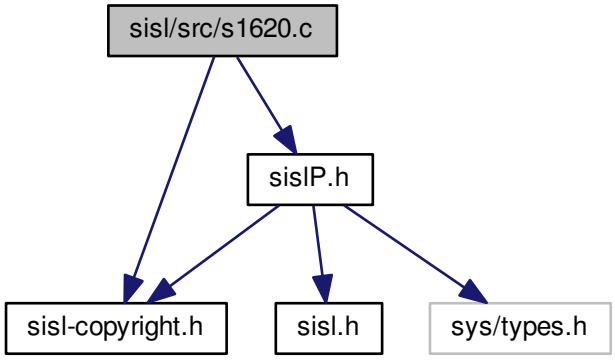
30.2511.2.1 void s1619 (epoint , int *inbpnt,* int *idim,* eptyp , econic , int *ityp,* etang , double * *ashape,* int * *jstat*)

Definition at line 58 of file s1619.c.

30.2512 sisl/src/s1620.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1620.c:



Macros

- #define S1620

Functions

- void s1620 (epoint, int inbpnt1, int inbpnt2, int ipar, int iopen1, int iopen2, int ik1, int ik2, int idim, SISLSurf **rs, int *jstat)

30.2512.1 Macro Definition Documentation

30.2512.1.1 #define S1620

Definition at line 48 of file s1620.c.

30.2512.2 Function Documentation

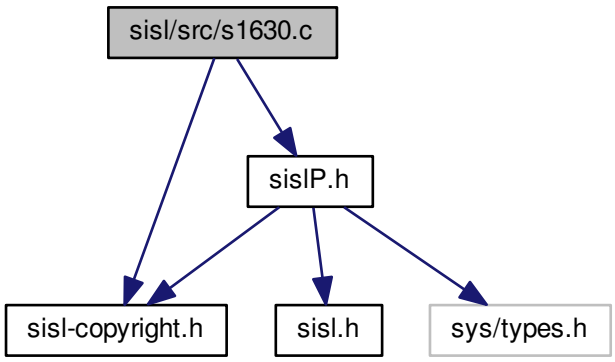
30.2512.2.1 void s1620 (epoint , int *inbpnt1,* int *inbpnt2,* int *ipar,* int *iopen1,* int *iopen2,* int *ik1,* int *ik2,* int *idim,* SISLSurf ** *rs,* int * *jstat*)

Definition at line 57 of file s1620.c.

30.2513 sisl/src/s1630.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1630.c:



Macros

- #define S1630

Functions

- void s1630 (epoint, int inbpnt, double astpar, int iopen, int idim, int ik, SISLCurve **rc, int *jstat)

30.2513.1 Macro Definition Documentation

30.2513.1.1 #define S1630

Definition at line 42 of file s1630.c.

30.2513.2 Function Documentation

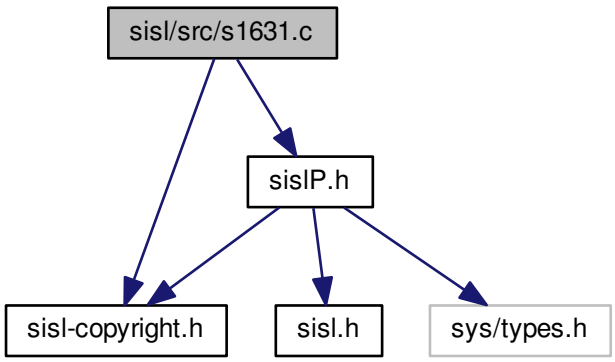
30.2513.2.1 void s1630 (epoint , int *inbpnt,* double *astpar,* int *iopen,* int *idim,* int *ik,* SISLCurve ** *rc,* int * *jstat*)

Definition at line 51 of file s1630.c.

30.2514 sisl/src/s1631.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1631.c:



Macros

- #define S1631

Functions

- void s1631 (SISLCurve *pc, epoint, enorm, projdir, int idim, SISLCurve **rc, int *jstat)

30.2514.1 Macro Definition Documentation

30.2514.1.1 #define S1631

Definition at line 43 of file s1631.c.

30.2514.2 Function Documentation

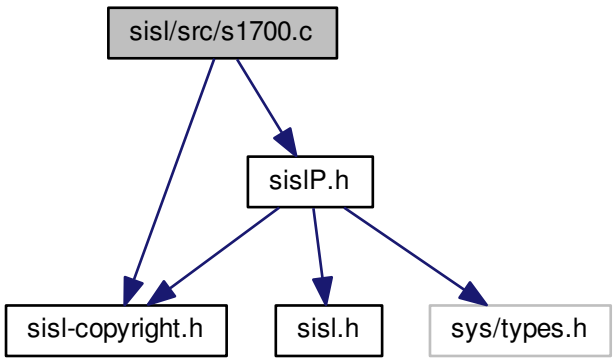
30.2514.2.1 void s1631 (SISLCurve * *pc*, epoint , enorm , projdir , int *idim*, SISLCurve ** *rc*, int * *jstat*)

Definition at line 51 of file s1631.c.

30.2515 sisl/src/s1700.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1700.c:



Macros

- #define S1700

Functions

- void s1700 (int imy, int ik, int in, int iv, int *jpl, int *jfi, int *jla, double *et, double apar, double *galfa, int *jstat)

30.2515.1 Macro Definition Documentation

30.2515.1.1 #define S1700

Definition at line 49 of file s1700.c.

30.2515.2 Function Documentation

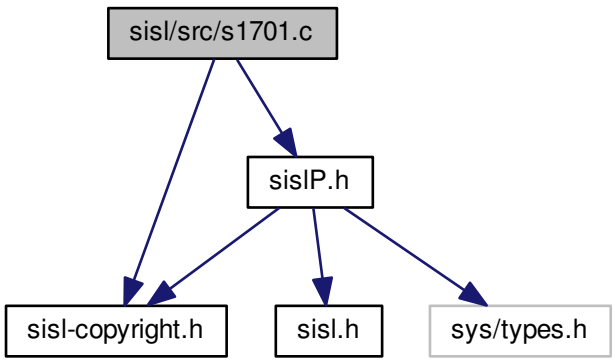
30.2515.2.1 void s1700 (int *imy,* int *ik,* int *in,* int *iv,* int * *jpl,* int * *jfi,* int * *jla,* double * *et,* double *apar,* double * *galfa,* int * *jstat*)

Definition at line 58 of file s1700.c.

30.2516 sisl/src/s1701.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1701.c:



Macros

- #define S1701

Functions

- void s1701 (int ij, int imy, int ik, int in, int *jpl, int *jfi, int *jla, double *et, double *etau, double *ep, double *galfa, int *jstat)

30.2516.1 Macro Definition Documentation

30.2516.1.1 #define S1701

Definition at line 49 of file s1701.c.

30.2516.2 Function Documentation

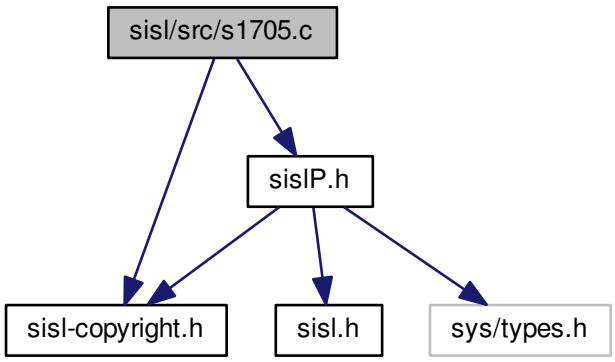
30.2516.2.1 void s1701 (int *ij*, int *imy*, int *ik*, int *in*, int * *jpl*, int * *jfi*, int * *jla*, double * *et*, double * *etau*, double * *ep*, double * *galfa*, int * *jstat*)

Definition at line 58 of file s1701.c.

30.2517 sisl/src/s1705.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1705.c:



Macros

- #define S1705

Functions

- void s1705 (SISLCurve *pc, int *jstat)

30.2517.1 Macro Definition Documentation

30.2517.1.1 #define S1705

Definition at line 49 of file s1705.c.

30.2517.2 Function Documentation

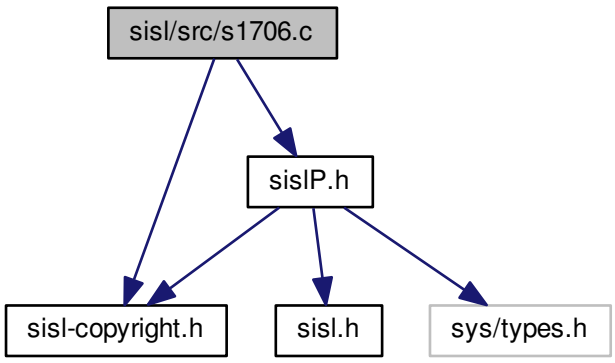
30.2517.2.1 void s1705 (SISLCurve * *pc*, int * *jstat*)

Definition at line 57 of file s1705.c.

30.2518 sisl/src/s1706.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1706.c:



Macros

- #define S1706

Functions

- void s1706 (SISLCurve *pc)

30.2518.1 Macro Definition Documentation

30.2518.1.1 #define S1706

Definition at line 49 of file s1706.c.

30.2518.2 Function Documentation

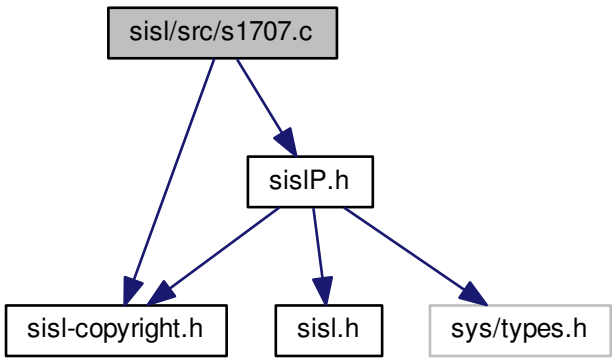
30.2518.2.1 void s1706 (SISLCurve * *pc*)

Definition at line 57 of file s1706.c.

30.2519 sisl/src/s1707.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1707.c:



Macros

- #define S1707

Functions

- void s1707 (SISLCurve *pc, int *jstat)

30.2519.1 Macro Definition Documentation

30.2519.1.1 #define S1707

Definition at line 49 of file s1707.c.

30.2519.2 Function Documentation

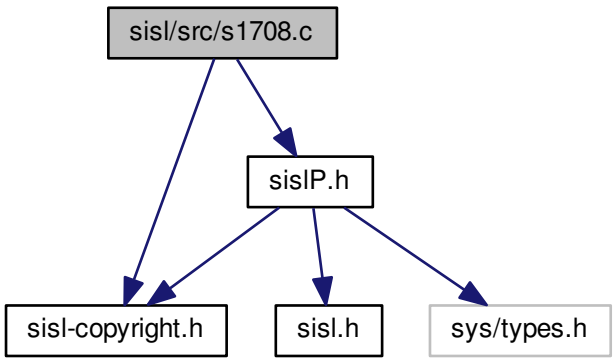
30.2519.2.1 void s1707 (SISLCurve * *pc*, int * *jstat*)

Definition at line 56 of file s1707.c.

30.2520 sisl/src/s1708.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1708.c:



Macros

- #define S1708

Functions

- void s1708 (SISLSurf *ps, int *jstat)

30.2520.1 Macro Definition Documentation

30.2520.1.1 #define S1708

Definition at line 42 of file s1708.c.

30.2520.2 Function Documentation

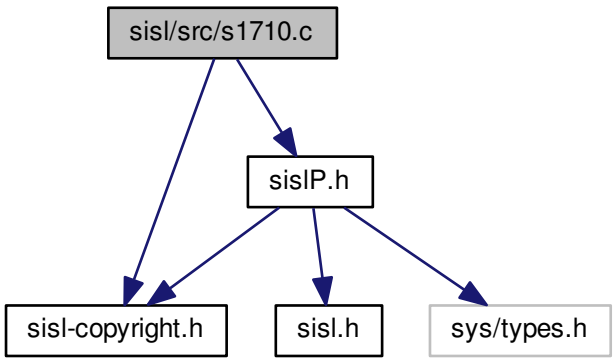
30.2520.2.1 void s1708 (SISLSurf * *ps*, int * *jstat*)

Definition at line 49 of file s1708.c.

30.2521 sisl/src/s1710.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1710.c:



Macros

- #define S1710

Functions

- void s1710 (SISLCurve *pc1, double apar, SISLCurve **rcnew1, SISLCurve **rcnew2, int *jstat)

30.2521.1 Macro Definition Documentation

30.2521.1.1 #define S1710

Definition at line 49 of file s1710.c.

30.2521.2 Function Documentation

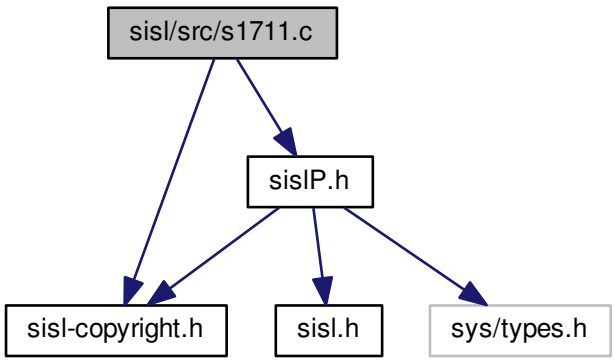
30.2521.2.1 void s1710 (SISLCurve * *pc1*, double *apar*, SISLCurve ** *rcnew1*, SISLCurve ** *rcnew2*, int * *jstat*)

Definition at line 58 of file s1710.c.

30.2522 sisl/src/s1711.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1711.c:



Macros

- #define S1711

Functions

- void s1711 (SISLSurf *ps, int ipar, double apar, SISLSurf **rsnew1, SISLSurf **rsnew2, int *jstat)

30.2522.1 Macro Definition Documentation

30.2522.1.1 #define S1711

Definition at line 49 of file s1711.c.

30.2522.2 Function Documentation

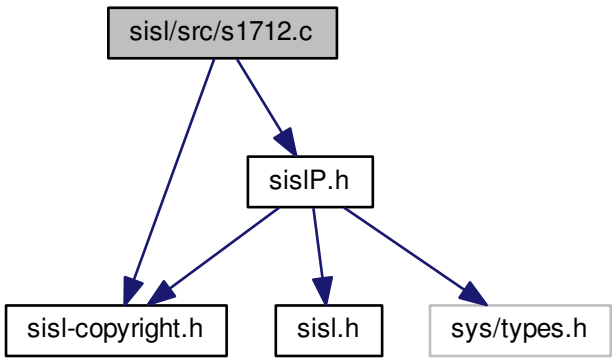
30.2522.2.1 void s1711 (SISLSurf * *ps*, int *ipar*, double *apar*, SISLSurf ** *rsnew1*, SISLSurf ** *rsnew2*, int * *jstat*)

Definition at line 57 of file s1711.c.

30.2523 sisl/src/s1712.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1712.c:



Macros

- #define S1712

Functions

- void s1712 (SISLCurve *pc, double abeg, double aend, SISLCurve **rcnew, int *jstat)

30.2523.1 Macro Definition Documentation

30.2523.1.1 #define S1712

Definition at line 49 of file s1712.c.

30.2523.2 Function Documentation

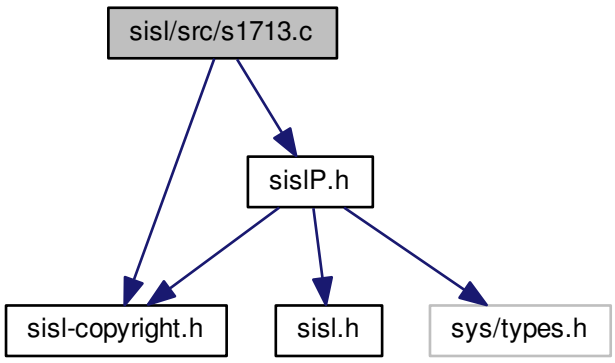
30.2523.2.1 void s1712 (SISLCurve * *pc*, double *abeg*, double *aend*, SISLCurve ** *rcnew*, int * *jstat*)

Definition at line 58 of file s1712.c.

30.2524 sisl/src/s1713.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1713.c:



Macros

- #define S1713

Functions

- void s1713 (SISLCurve *pc, double abeg, double aend, SISLCurve **rcnew, int *jstat)

30.2524.1 Macro Definition Documentation

30.2524.1.1 #define S1713

Definition at line 49 of file s1713.c.

30.2524.2 Function Documentation

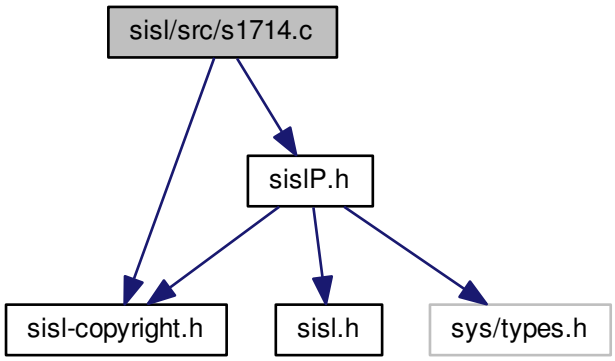
30.2524.2.1 void s1713 (SISLCurve * *pc,* double *abeg,* double *aend,* SISLCurve ** *rcnew,* int * *jstat*)

Definition at line 57 of file s1713.c.

30.2525 sisl/src/s1714.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1714.c:



Macros

- #define S1714
- #define SISL_CRV_PERIODIC -1
- #define SISL_CRV_OPEN 1
- #define SISL_CRV_CLOSED 0

Functions

- void s1714 (SISLCurve *pc, double apar1, double apar2, SISLCurve **rcnew1, SISLCurve **rcnew2, int *jstat)

30.2525.1 Macro Definition Documentation

30.2525.1.1 #define S1714

Definition at line 49 of file s1714.c.

30.2525.1.2 #define SISL_CRV_CLOSED 0

Definition at line 53 of file s1714.c.

30.2525.1.3 #define SISL_CRV_OPEN 1

Definition at line 52 of file s1714.c.

30.2525.1.4 #define SISL_CRV_PERIODIC -1

Definition at line 51 of file s1714.c.

30.2525.2 Function Documentation

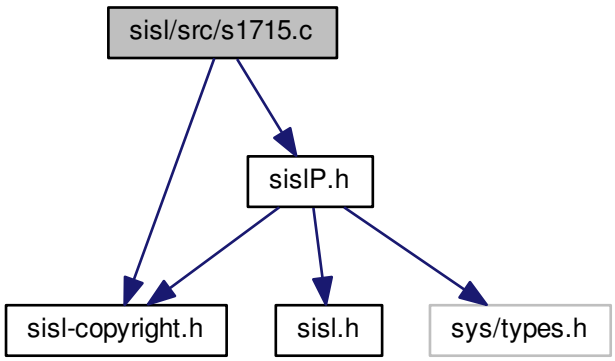
30.2525.2.1 void s1714 (SISLCurve * *pc*, double *apar1*, double *apar2*, SISLCurve ** *rcnew1*, SISLCurve ** *rcnew2*, int * *jstat*)

Definition at line 62 of file s1714.c.

30.2526 sisl/src/s1715.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1715.c:



Macros

- #define S1715

Functions

- void s1715 (SISLCurve *pc1, SISLCurve *pc2, int iend1, int iend2, SISLCurve **rcnew, int *jstat)

30.2526.1 Macro Definition Documentation

30.2526.1.1 #define S1715

Definition at line 49 of file s1715.c.

30.2526.2 Function Documentation

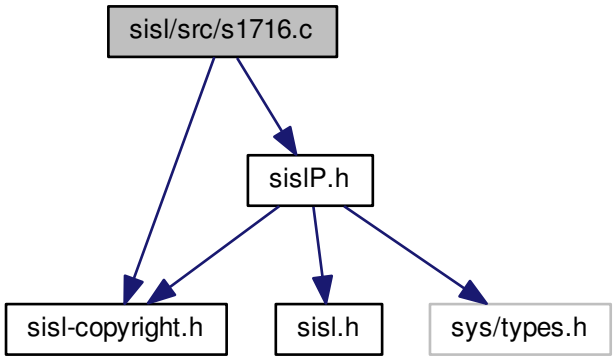
30.2526.2.1 void s1715 (SISLCurve * *pc1*, SISLCurve * *pc2*, int *iend1*, int *iend2*, SISLCurve ** *rcnew*, int * *jstat*)

Definition at line 57 of file s1715.c.

30.2527 sisl/src/s1716.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1716.c:



Macros

- #define S1716

Functions

- void s1716 (SISLCurve *pc1, SISLCurve *pc2, double aeps, SISLCurve **rcnew, int *jstat)

30.2527.1 Macro Definition Documentation

30.2527.1.1 #define S1716

Definition at line 49 of file s1716.c.

30.2527.2 Function Documentation

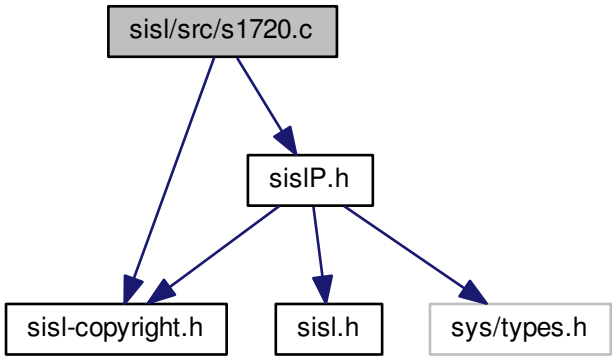
30.2527.2.1 void s1716 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aeps*, SISLCurve ** *rcnew*, int * *jstat*)

Definition at line 57 of file s1716.c.

30.2528 sisl/src/s1720.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1720.c:



Macros

- #define S1720

Functions

- void s1720 (SISLCurve *pc, int ider, SISLCurve **rcnew, int *jstat)

30.2528.1 Macro Definition Documentation

30.2528.1.1 #define S1720

Definition at line 49 of file s1720.c.

30.2528.2 Function Documentation

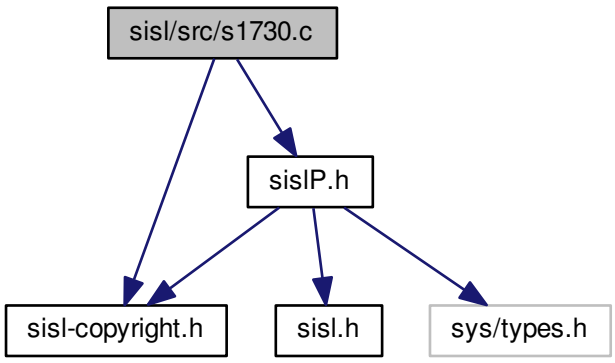
30.2528.2.1 void s1720 (SISLCurve * *pc*, int *ider*, SISLCurve ** *rcnew*, int * *jstat*)

Definition at line 57 of file s1720.c.

30.2529 sisl/src/s1730.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1730.c:



Macros

- #define S1730

Functions

- void s1730 (SISLCurve *pc, SISLCurve **rcnew, int *jstat)

30.2529.1 Macro Definition Documentation

30.2529.1.1 #define S1730

Definition at line 49 of file s1730.c.

30.2529.2 Function Documentation

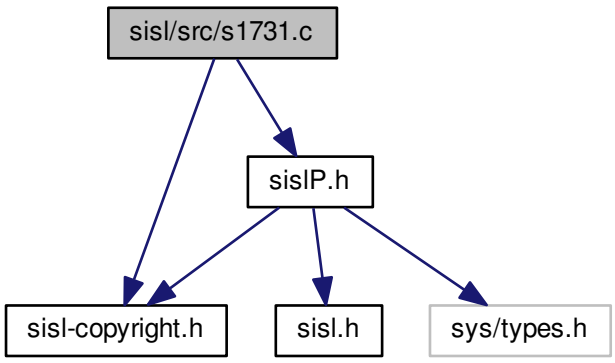
30.2529.2.1 void s1730 (SISLCurve * *pc*, SISLCurve ** *rcnew*, int * *jstat*)

Definition at line 57 of file s1730.c.

30.2530 sisl/src/s1731.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1731.c:



Macros

- #define S1731

Functions

- void s1731 (SISLSurf *ps, SISLSurf **rsnew, int *jstat)

30.2530.1 Macro Definition Documentation

30.2530.1.1 #define S1731

Definition at line 49 of file s1731.c.

30.2530.2 Function Documentation

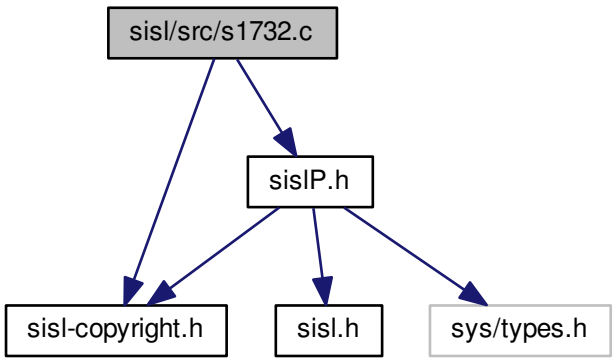
30.2530.2.1 void s1731 (SISLSurf * *ps*, SISLSurf ** *rsnew*, int * *jstat*)

Definition at line 57 of file s1731.c.

30.2531 sisl/src/s1732.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1732.c:



Macros

- #define S1732

Functions

- void s1732 (SISLCurve *pc, int icont, double *cstart, double *cend, double *gcoef, int *jstat)

30.2531.1 Macro Definition Documentation

30.2531.1.1 #define S1732

Definition at line 49 of file s1732.c.

30.2531.2 Function Documentation

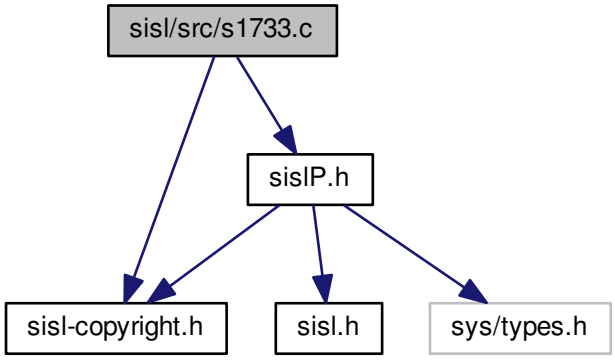
30.2531.2.1 void s1732 (SISLCurve * *pc,* int *icont,* double * *cstart,* double * *cend,* double * *gcoef,* int * *jstat*)

Definition at line 57 of file s1732.c.

30.2532 sisl/src/s1733.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1733.c:



Macros

- #define S1733

Functions

- void s1733 (SISLSurf *ps, int icont1, int icont2, double *cstart1, double *cend1, double *cstart2, double *cend2, double *gcoef, int *jstat)

30.2532.1 Macro Definition Documentation

30.2532.1.1 #define S1733

Definition at line 49 of file s1733.c.

30.2532.2 Function Documentation

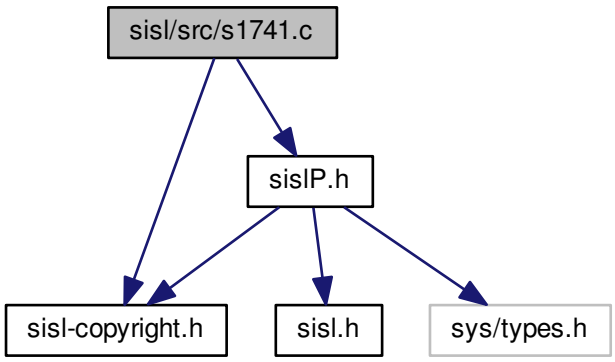
30.2532.2.1 void s1733 (SISLSurf * *ps*, int *icont1*, int *icont2*, double * *cstart1*, double * *cend1*, double * *cstart2*, double * *cend2*, double * *gcoef*, int * *jstat*)

Definition at line 58 of file s1733.c.

30.2533 sisl/src/s1741.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1741.c:



Macros

- #define S1741

Functions

- void s1741 (SISLObject *po1, SISLObject *po2, double aepsge, int *jstat)

30.2533.1 Macro Definition Documentation

30.2533.1.1 #define S1741

Definition at line 49 of file s1741.c.

30.2533.2 Function Documentation

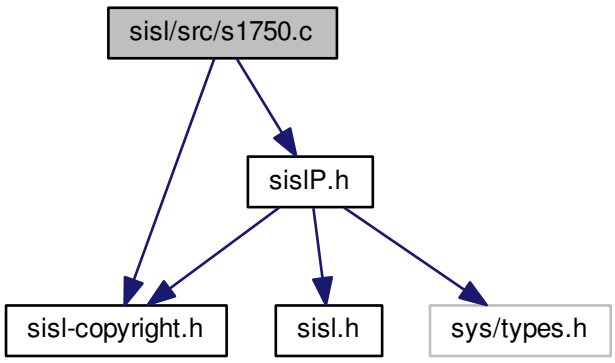
30.2533.2.1 void s1741 (SISLObject * *po1*, SISLObject * *po2*, double *aepsge*, int * *jstat*)

Definition at line 57 of file s1741.c.

30.2534 sisl/src/s1750.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1750.c:



Macros

- #define S1750

Functions

- void s1750 (SISLCurve *pc, int ikh, SISLCurve **rc, int *jstat)

30.2534.1 Macro Definition Documentation

30.2534.1.1 #define S1750

Definition at line 49 of file s1750.c.

30.2534.2 Function Documentation

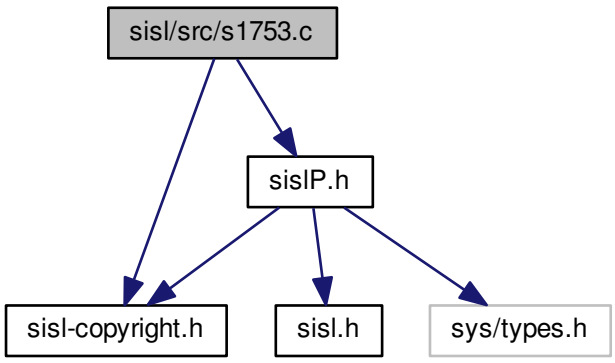
30.2534.2.1 void s1750 (SISLCurve * *pc*, int *ikh*, SISLCurve ** *rc*, int * *jstat*)

Definition at line 57 of file s1750.c.

30.2535 sisl/src/s1753.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1753.c:



Macros

- #define S1753

Functions

- void s1753 (et, ecf, int in, int ik, int idim, etr, ecfr, int inr, ecc, ecw, int *jstat)

30.2535.1 Macro Definition Documentation

30.2535.1.1 #define S1753

Definition at line 49 of file s1753.c.

30.2535.2 Function Documentation

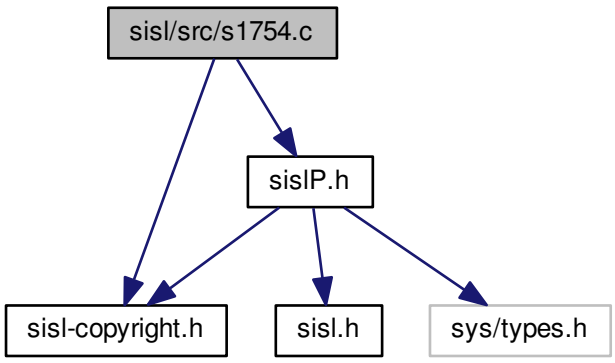
30.2535.2.1 void s1753 (et , ecf , int *in,* int *ik,* int *idim,* etr , ecfr , int *inr,* ecc , ecw , int * *jstat*)

Definition at line 60 of file s1753.c.

30.2536 sisl/src/s1754.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1754.c:



Macros

- #define S1754

Functions

- void s1754 (double *et, int in, int ik, int ikh, double **iknt, int *inh, int *jstat)

30.2536.1 Macro Definition Documentation

30.2536.1.1 #define S1754

Definition at line 49 of file s1754.c.

30.2536.2 Function Documentation

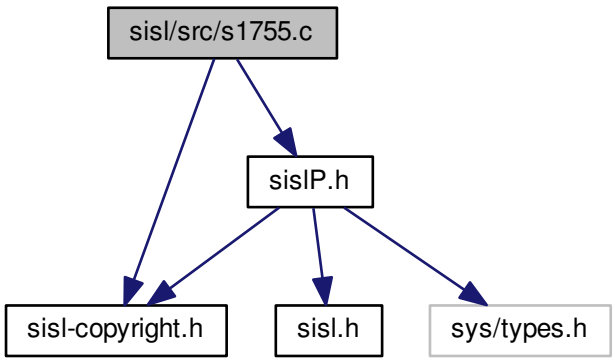
30.2536.2.1 void s1754 (double * *et*, int *in*, int *ik*, int *ikh*, double ** *iknt*, int * *inh*, int * *jstat*)

Definition at line 60 of file s1754.c.

30.2537 sisl/src/s1755.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1755.c:



Macros

- #define S1755

Functions

- void s1755 (orknt, int in, int ik, extknt, int *inh, int *jstat)

30.2537.1 Macro Definition Documentation

30.2537.1.1 #define S1755

Definition at line 49 of file s1755.c.

30.2537.2 Function Documentation

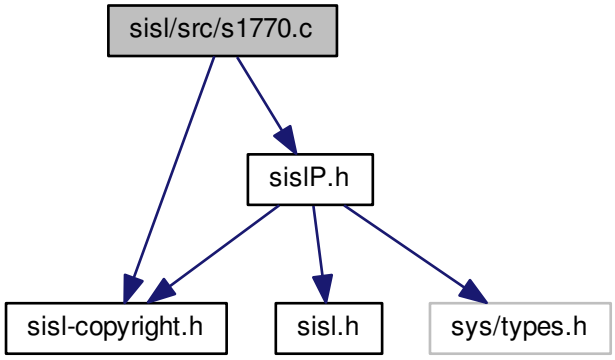
30.2537.2.1 void s1755 (orknt , int *in,* int *ik,* extknt , int * *inh,* int * *jstat*)

Definition at line 60 of file s1755.c.

30.2538 sisl/src/s1770.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1770.c:



Macros

- #define S1770

Functions

- void s1770 (SISLCurve *pcurve1, SISLCurve *pcurve2, double aepsge, double astart1, double astart2, double aend1, double aend2, double anext1, double anext2, double *cpos1, double *cpos2, int *jstat)

30.2538.1 Macro Definition Documentation

30.2538.1.1 #define S1770

Definition at line 47 of file s1770.c.

30.2538.2 Function Documentation

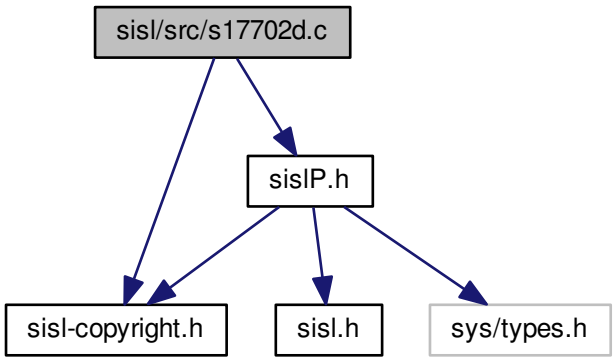
30.2538.2.1 void s1770 (SISLCurve * *pcurve1*, SISLCurve * *pcurve2*, double *aepsge*, double *astart1*, double *astart2*, double *aend1*, double *aend2*, double *anext1*, double *anext2*, double * *cpos1*, double * *cpos2*, int * *jstat*)

Definition at line 74 of file s1770.c.

30.2539 sisl/src/s17702d.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s17702d.c:



Macros

- #define S1770_2D
- #define SINGULAR 1.0e-16
- #define copy2(a, b, c) for (ki=0;ki<(c);ki++) (a)[ki]=(b)[ki]
- #define copy3(a, b, c, d) for (ki=0;ki<(d);ki++) (a)[ki]=(b)[ki]=(c)[ki]
- #define incr2(a, b, c) for (ki=0;ki<(c);ki++) (a)[ki]+=(b)[ki]
- #define decr2(a, b, c) for (ki=0;ki<(c);ki++) (a)[ki]-=(b)[ki]
- #define set_order(a) {if((a)==1) order=0; else order=1;}

Functions

- void s1770_2D (SISLCurve *pcurve1, SISLCurve *pcurve2, double aepsge, double astart1, double astart2, double aend1, double aend2, double anext1, double anext2, double *cpos1, double *cpos2, int *jstat)

30.2539.1 Macro Definition Documentation

30.2539.1.1 #define copy2(*a*, b, c) for (ki=0;ki<(c);ki++) (a)[ki]=(b)[ki]

Definition at line 53 of file s17702d.c.

30.2539.1.2 #define copy3(*a*, b, c, *d*) for (ki=0;ki<(d);ki++) (a)[ki]=(b)[ki]=(c)[ki]

Definition at line 54 of file s17702d.c.

30.2539.1.3 #define decr2(*a*, b, c) for (ki=0;ki<(c);ki++) (a)[ki]-=(b)[ki]

Definition at line 56 of file s17702d.c.

30.2539.1.4 #define incr2(*a*, b, c) for (ki=0;ki<(c);ki++) (a)[ki]+=(b)[ki]

Definition at line 55 of file s17702d.c.

30.2539.1.5 #define S1770_2D

Definition at line 47 of file s17702d.c.

30.2539.1.6 #define set_order(*a*) {if((a)==1) order=0; else order=1;}

Definition at line 57 of file s17702d.c.

30.2539.1.7 #define SINGULAR 1.0e-16

Definition at line 52 of file s17702d.c.

30.2539.2 Function Documentation

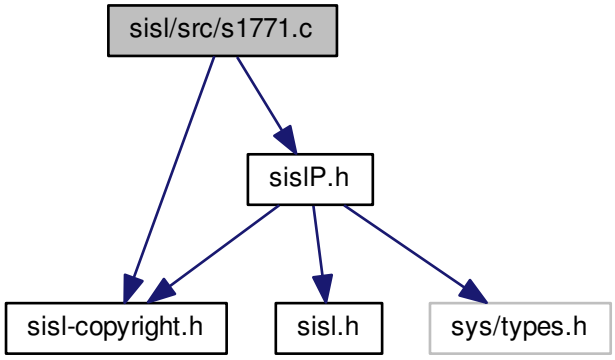
30.2539.2.1 void s1770_2D (SISLCurve * *pcurve1*, SISLCurve * *pcurve2*, double *aepsge*, double *astart1*, double *astart2*, double *aend1*, double *aend2*, double *anext1*, double *anext2*, double * *cpos1*, double * *cpos2*, int * *jstat*)

Definition at line 100 of file s17702d.c.

30.2540 sisl/src/s1771.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1771.c:



Macros

- #define S1771

Functions

- void s1771 (SISLPoint *ppoint, SISLCurve *pcurve, double aepsge, double astart, double aend, double anext, double *cpos, int *jstat)

30.2540.1 Macro Definition Documentation

30.2540.1.1 #define S1771

Definition at line 47 of file s1771.c.

30.2540.2 Function Documentation

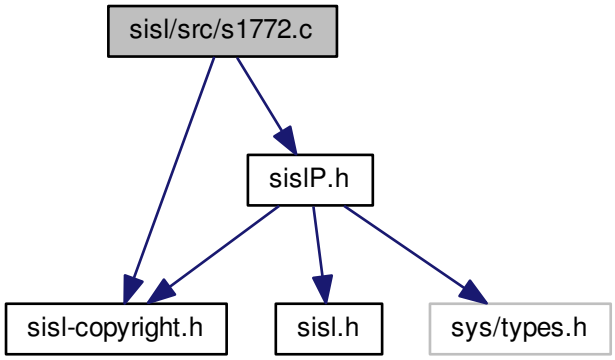
30.2540.2.1 void s1771 (SISLPoint * *ppoint*, SISLCurve * *pcurve*, double *aepsge*, double *astart*, double *aend*, double *anext*, double * *cpos*, int * *jstat*)

Definition at line 78 of file s1771.c.

30.2541 sisl/src/s1772.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1772.c:



Macros

- #define S1772
- #define SINGULAR 1.0e-16
- #define copy2(a, b, c) for (ki=0;ki<(c);ki++) (a)[ki]=(b)[ki]
- #define copy3(a, b, c, d) for (ki=0;ki<(d);ki++) (a)[ki]=(b)[ki]=(c)[ki]
- #define incr2(a, b, c) for (ki=0;ki<(c);ki++) (a)[ki]+=(b)[ki]
- #define decr2(a, b, c) for (ki=0;ki<(c);ki++) (a)[ki]-=(b)[ki]
- #define set_order(a) if((a)==1) {s_v=s_uu;order=0;} else {s_v=s_v1;order=1;}

Functions

- void s1772 (SISLCurve *pcurve, SISLSurf *psurf, double aepsge, double astart1, estart2, double aend1, eend2, double anext1, enext2, double *cpos1, gpos2, int *jstat)

30.2541.1 Macro Definition Documentation

30.2541.1.1 #define copy2(*a*, b, c) for (ki=0;ki<(c);ki++) (a)[ki]=(b)[ki]

Definition at line 52 of file s1772.c.

30.2541.1.2 #define copy3(*a*, b, c, *d*) for (ki=0;ki<(d);ki++) (a)[ki]=(b)[ki]=(c)[ki]

Definition at line 53 of file s1772.c.

30.2541.1.3 #define decr2(a, b, c) for (ki=0;ki<(c);ki++) (a)[ki]-=(b)[ki]

Definition at line 55 of file s1772.c.

30.2541.1.4 #define incr2(a, b, c) for (ki=0;ki<(c);ki++) (a)[ki]+=(b)[ki]

Definition at line 54 of file s1772.c.

30.2541.1.5 #define S1772

Definition at line 47 of file s1772.c.

30.2541.1.6 #define set_order(a) if((a)==1) {s_v=s_uu;order=0;} else {s_v=s_v1;order=1;}

Definition at line 56 of file s1772.c.

30.2541.1.7 #define SINGULAR 1.0e-16

Definition at line 51 of file s1772.c.

30.2541.2 Function Documentation

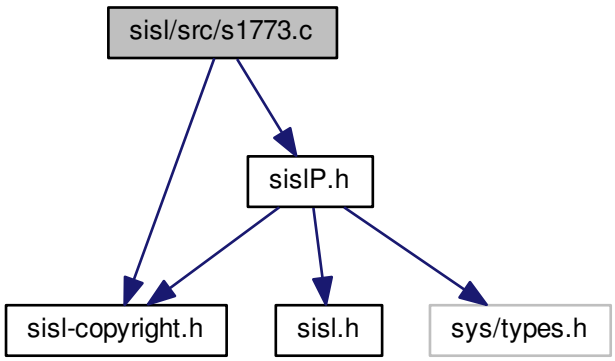
30.2541.2.1 void s1772 (SISLCurve * *pcurve*, SISLSurf * *psurf*, double *aepsge*, double *astart1*, estart2 , double *aend1*, eend2 , double *anext1*, enext2 , double * *cpos1*, gpos2 , int * *jstat*)

Definition at line 94 of file s1772.c.

30.2542 sisl/src/s1773.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1773.c:



Macros

- #define S1773

Functions

- void s1773 (SISLPoint *ppoint, SISLSurf *psurf, double aepsge, estart, eend, enext, gpos, int *jstat)

30.2542.1 Macro Definition Documentation

30.2542.1.1 #define S1773

Definition at line 47 of file s1773.c.

30.2542.2 Function Documentation

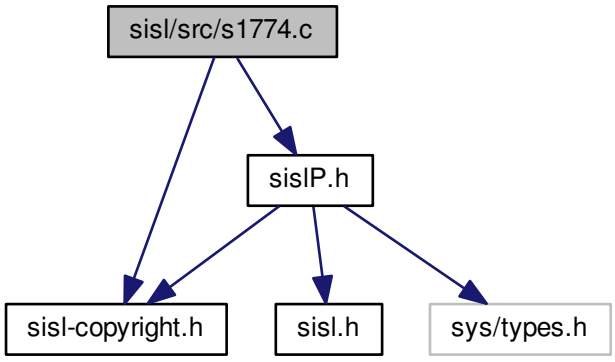
30.2542.2.1 void s1773 (SISLPoint * *ppoint*, SISLSurf * *psurf*, double *aepsge*, estart , eend , enext , gpos , int * *jstat*)

Definition at line 74 of file s1773.c.

30.2543 sisl/src/s1774.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1774.c:



Macros

- #define S1774

Functions

- void s1774 (SISLCurve *crv, point, int dim, double epsge, double start, double end, double guess, double *clpar, int *stat)

30.2543.1 Macro Definition Documentation

30.2543.1.1 #define S1774

Definition at line 47 of file s1774.c.

30.2543.2 Function Documentation

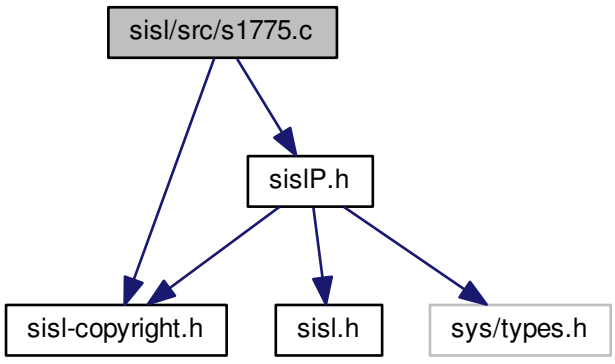
30.2543.2.1 void s1774 (SISLCurve * *crv*, point , int *dim*, double *epsge*, double *start*, double *end*, double *guess*, double * *clpar*, int * *stat*)

Definition at line 57 of file s1774.c.

30.2544 sisl/src/s1775.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1775.c:



Macros

- #define S1775

Functions

- void s1775 (SISLSurf *surf, point, int dim, double epsge, start, end, guess, clpar, int *stat)

30.2544.1 Macro Definition Documentation

30.2544.1.1 #define S1775

Definition at line 47 of file s1775.c.

30.2544.2 Function Documentation

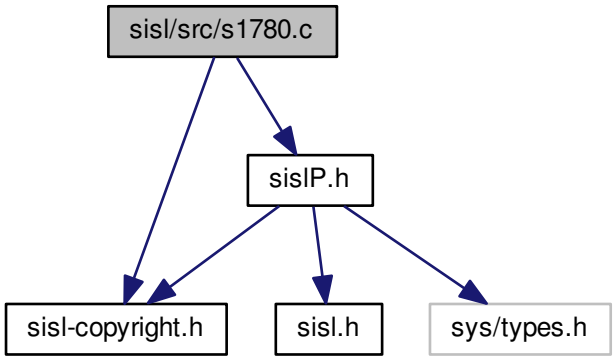
30.2544.2.1 void s1775 (SISLSurf * *surf*, point , int *dim*, double *epsge*, start , end , guess , clpar , int * *stat*)

Definition at line 58 of file s1775.c.

30.2545 sisl/src/s1780.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1780.c:



Macros

- #define S1780

Functions

- void s1780 (SISLCurve *pc1, SISLCurve *pc2, vipt, int *jstat)

30.2545.1 Macro Definition Documentation

30.2545.1.1 #define S1780

Definition at line 49 of file s1780.c.

30.2545.2 Function Documentation

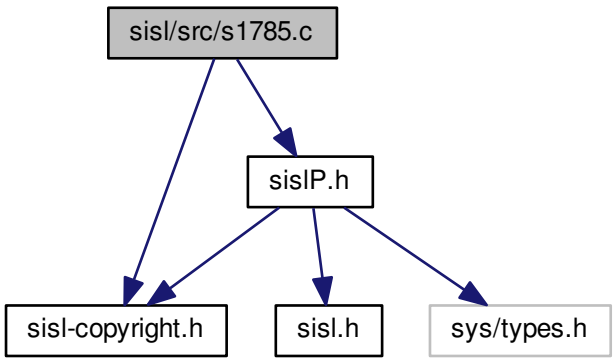
30.2545.2.1 void s1780 (SISLCurve * *pc1*, SISLCurve * *pc2*, vipt , int * *jstat*)

Definition at line 57 of file s1780.c.

30.2546 sisl/src/s1785.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1785.c:



Macros

- #define S1785

Functions

- void s1785 (SISLCurve *pcurve, SISLSurf *psurf, double aepsge, epar1, epar2, int icur, int *jstat)

30.2546.1 Macro Definition Documentation

30.2546.1.1 #define S1785

Definition at line 47 of file s1785.c.

30.2546.2 Function Documentation

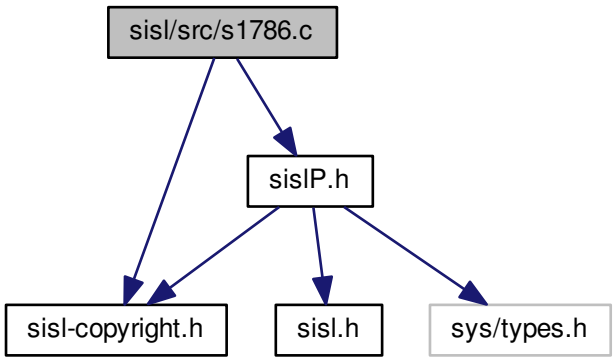
30.2546.2.1 void s1785 (SISLCurve * *pcurve,* SISLSurf * *psurf,* double *aepsge,* epar1 , epar2 , int *icur,* int * *jstat*)

Definition at line 63 of file s1785.c.

30.2547 sisl/src/s1786.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1786.c:



Macros

- #define S1786

Typedefs

- typedef void(* fevalcProc) ()

Functions

- void s1786 (SISLCurve *pc1, SISLCurve *pc2, double aepsge, epar1, epar2, int *jstat)

30.2547.1 Macro Definition Documentation

30.2547.1.1 #define S1786

Definition at line 47 of file s1786.c.

30.2547.2 Typedef Documentation

30.2547.2.1 typedef void(* fevalcProc) ()

Definition at line 51 of file s1786.c.

30.2547.3 Function Documentation

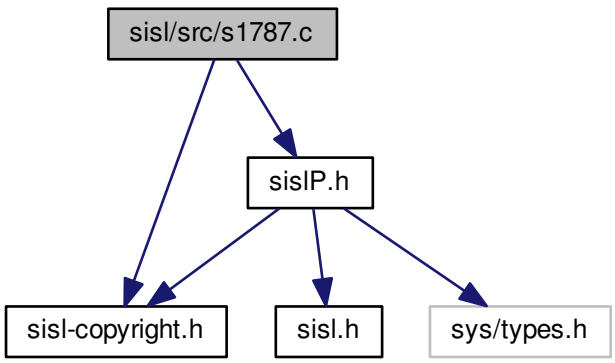
30.2547.3.1 void s1786 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsge*, epar1 , epar2 , int * *jstat*)

Definition at line 77 of file s1786.c.

30.2548 sisl/src/s1787.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1787.c:



Macros

- #define S1787

Functions

- void s1787 (SISLSurf ∗ps, double alevel, double aepsge, epar, gpar1, gpar2, int ∗jstat)

30.2548.1 Macro Definition Documentation

30.2548.1.1 #define S1787

Definition at line 49 of file s1787.c.

30.2548.2 Function Documentation

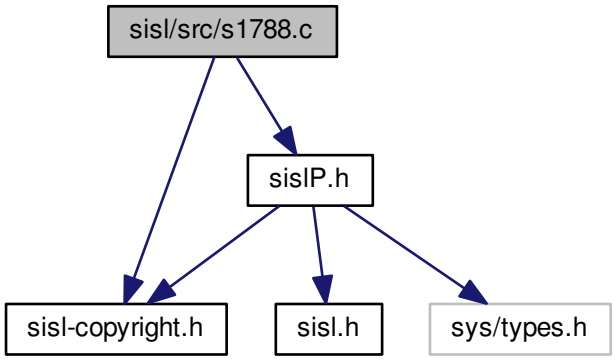
30.2548.2.1 void s1787 (SISLSurf ∗ *ps,* double *alevel,* double *aepsge,* epar , gpar1 , gpar2 , int ∗ *jstat*)

Definition at line 58 of file s1787.c.

30.2549 sisl/src/s1788.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1788.c:



Macros

- #define S1788

Functions

- void s1788 (SISLSurf ∗ps1, SISLSurf ∗ps2, double aepsge, epar, gpar1, gpar2, int ∗jstat)

30.2549.1 Macro Definition Documentation

30.2549.1.1 #define S1788

Definition at line 49 of file s1788.c.

30.2549.2 Function Documentation

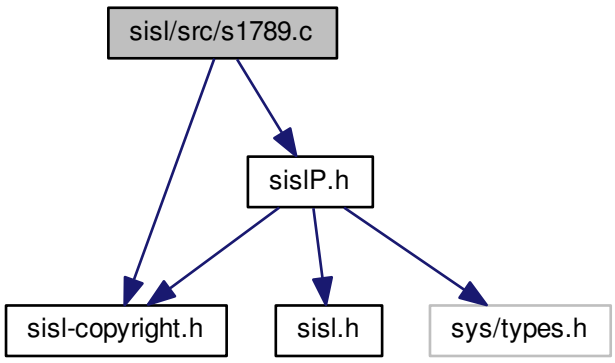
30.2549.2.1 void s1788 (SISLSurf * *ps1,* SISLSurf * *ps2,* double *aepsge,* epar , gpar1 , gpar2 , int * *jstat*)

Definition at line 58 of file s1788.c.

30.2550 sisl/src/s1789.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1789.c:



Macros

- #define S1789

Functions

- void s1789 (SISLPoint *ppoint, SISLSurf *psurf, double aepsge, epar1, epar2, int *jstat)

30.2550.1 Macro Definition Documentation

30.2550.1.1 #define S1789

Definition at line 42 of file s1789.c.

30.2550.2 Function Documentation

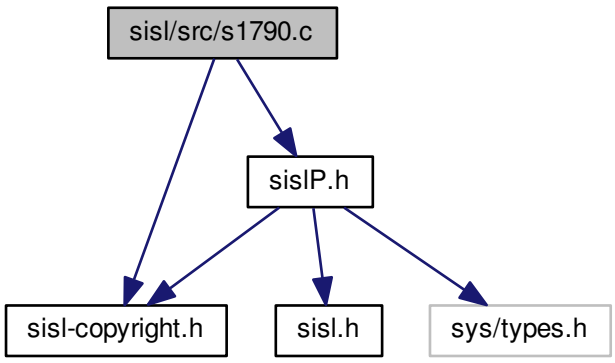
30.2550.2.1 void s1789 (SISLPoint * *ppoint,* SISLSurf * *psurf,* double *aepsge,* epar1 , epar2 , int * *jstat*)

Definition at line 60 of file s1789.c.

30.2551 sisl/src/s1790.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1790.c:



Macros

- #define S1790

Functions

- void s1790 (SISLObject *po1, SISLObject *po2, double aepsge, int *jstat)

30.2551.1 Macro Definition Documentation

30.2551.1.1 #define S1790

Definition at line 49 of file s1790.c.

30.2551.2 Function Documentation

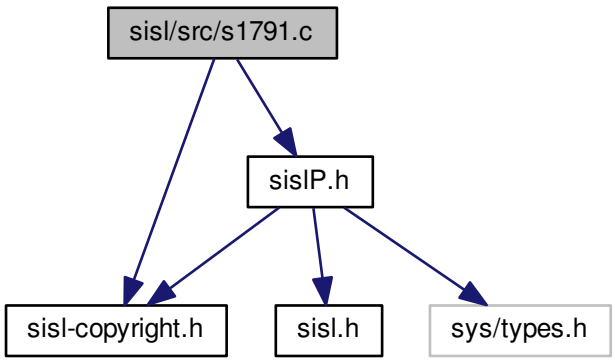
30.2551.2.1 void s1790 (SISLObject * *po1*, SISLObject * *po2*, double *aepsge*, int * *jstat*)

Definition at line 57 of file s1790.c.

30.2552 sisl/src/s1791.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1791.c:



Macros

- #define S1791

Functions

- int s1791 (et, int ik, int in)

30.2552.1 Macro Definition Documentation

30.2552.1.1 #define S1791

Definition at line 49 of file s1791.c.

30.2552.2 Function Documentation

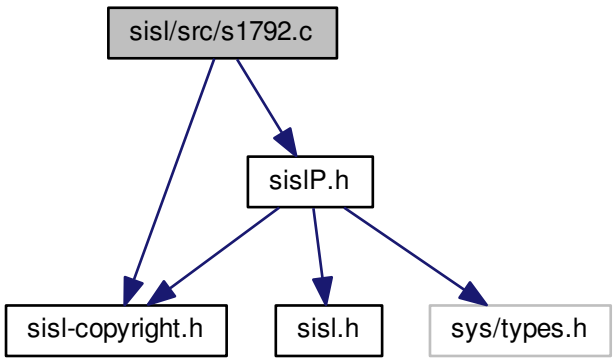
30.2552.2.1 int s1791 (et , int *ik,* int *in*)

Definition at line 57 of file s1791.c.

30.2553 sisl/src/s1792.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1792.c:



Macros

- #define S1792

Functions

- double s1792 (et, int ik, int in)

30.2553.1 Macro Definition Documentation

30.2553.1.1 #define S1792

Definition at line 49 of file s1792.c.

30.2553.2 Function Documentation

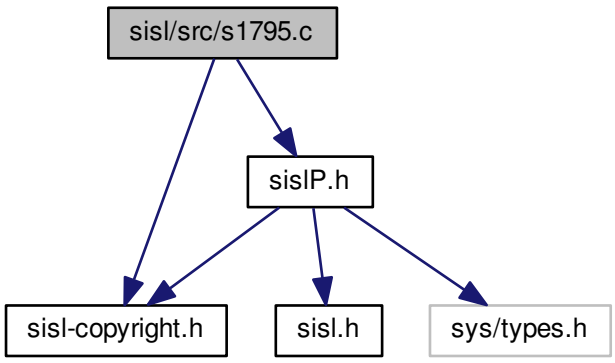
30.2553.2.1 double s1792 (et , int *ik*, int *in*)

Definition at line 57 of file s1792.c.

30.2554 sisl/src/s1795.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1795.c:



Macros

- #define S1795

Functions

- void s1795 (SISLSurf ∗ps1, SISLSurf ∗ps2, double aepsge, double aang, int ∗jstat)

30.2554.1 Macro Definition Documentation

30.2554.1.1 #define S1795

Definition at line 49 of file s1795.c.

30.2554.2 Function Documentation

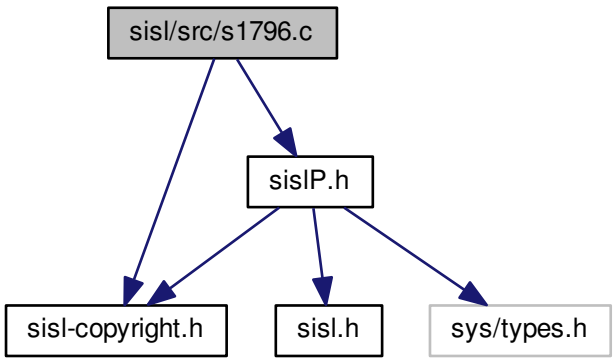
30.2554.2.1 void s1795 (SISLSurf * *ps1*, SISLSurf * *ps2*, double *aepsge*, double *aang*, int * *jstat*)

Definition at line 57 of file s1795.c.

30.2555 sisl/src/s1796.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1796.c:



Macros

- #define S1796

Functions

- void s1796 (SISLCurve *pc1, SISLCurve *pc2, double aepsge, double aang, int *jstat)

30.2555.1 Macro Definition Documentation

30.2555.1.1 #define S1796

Definition at line 47 of file s1796.c.

30.2555.2 Function Documentation

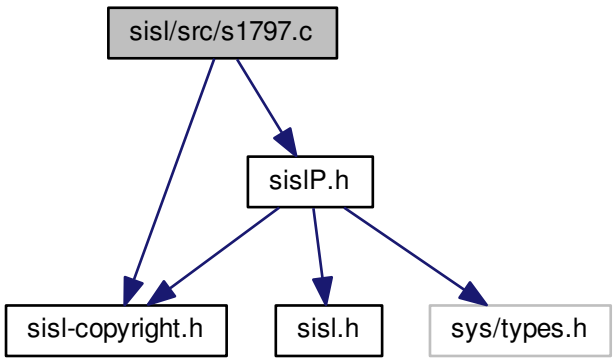
30.2555.2.1 void s1796 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsge*, double *aang*, int * *jstat*)

Definition at line 55 of file s1796.c.

30.2556 sisl/src/s1797.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1797.c:



Macros

- #define S1797

Functions

- void s1797 (SISLSurf *ps1, SISLCurve *pc1, double aepsge, double aang, int *jstat)

30.2556.1 Macro Definition Documentation

30.2556.1.1 #define S1797

Definition at line 47 of file s1797.c.

30.2556.2 Function Documentation

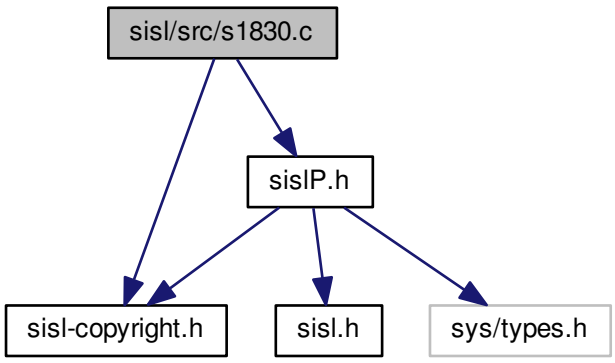
30.2556.2.1 void s1797 (SISLSurf * *ps1*, SISLCurve * *pc1*, double *aepsge*, double *aang*, int * *jstat*)

Definition at line 55 of file s1797.c.

30.2557 sisl/src/s1830.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1830.c:



Macros

- #define S1830

Functions

- void s1830 (SISLSurf *psurf, SISLCurve *pcurve, int *jstat)

30.2557.1 Macro Definition Documentation

30.2557.1.1 #define S1830

Definition at line 49 of file s1830.c.

30.2557.2 Function Documentation

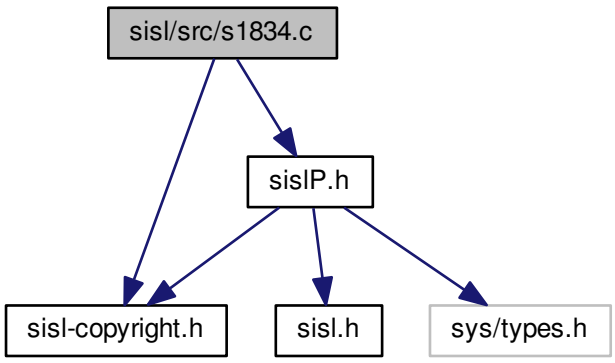
30.2557.2.1 void s1830 (SISLSurf * *psurf,* SISLCurve * *pcurve,* int * *jstat*)

Definition at line 57 of file s1830.c.

30.2558 sisl/src/s1834.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1834.c:



Macros

- #define S1834

Functions

- void s1834 (ecoef1, int in1, ecoef2, int in2, int idim, edir1, edir2, int *jstat)

30.2558.1 Macro Definition Documentation

30.2558.1.1 #define S1834

Definition at line 49 of file s1834.c.

30.2558.2 Function Documentation

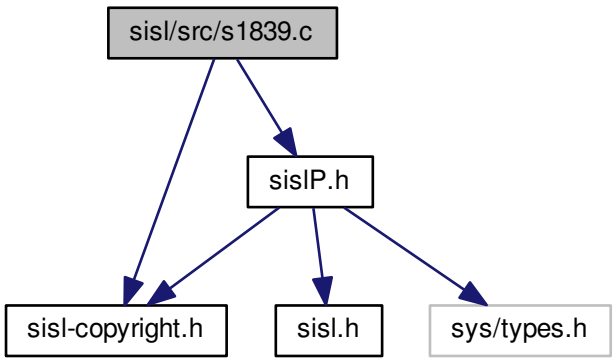
30.2558.2.1 void s1834 (ecoef1 , int *in1,* ecoef2 , int *in2,* int *idim,* edir1 , edir2 , int * *jstat*)

Definition at line 73 of file s1834.c.

30.2559 sisl/src/s1839.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1839.c:



Macros

- #define S1839

Functions

- void s1839 (SISLSurf *ps1, epol, int in, int idim, int *jstat)

30.2559.1 Macro Definition Documentation

30.2559.1.1 #define S1839

Definition at line 49 of file s1839.c.

30.2559.2 Function Documentation

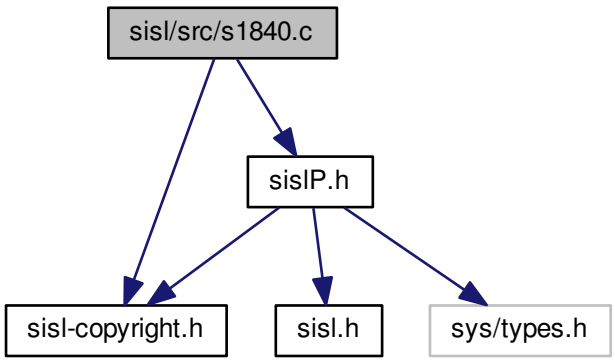
30.2559.2.1 void s1839 (SISLSurf * *ps1*, epol , int *in*, int *idim*, int * *jstat*)

Definition at line 57 of file s1839.c.

30.2560 sisl/src/s1840.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1840.c:



Macros

- #define S1840

Functions

- void s1840 (SISLCurve *pcurve, double *cdist, int *jstat)

30.2560.1 Macro Definition Documentation

30.2560.1.1 #define S1840

Definition at line 49 of file s1840.c.

30.2560.2 Function Documentation

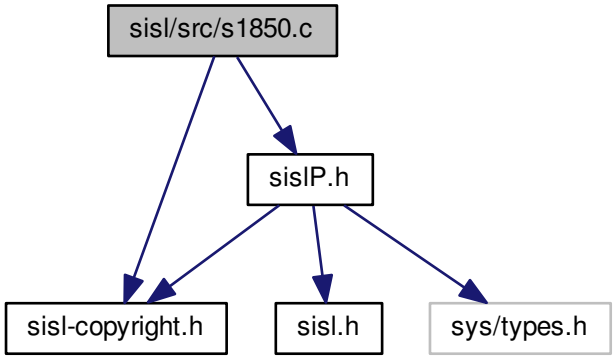
30.2560.2.1 void s1840 (SISLCurve * *pcurve*, double * *cdist*, int * *jstat*)

Definition at line 57 of file s1840.c.

30.2561 sisl/src/s1850.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1850.c:



Macros

- #define S1850

Functions

- void s1850 (SISLCurve *pc1, epoint, enorm, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2561.1 Macro Definition Documentation

30.2561.1.1 #define S1850

Definition at line 49 of file s1850.c.

30.2561.2 Function Documentation

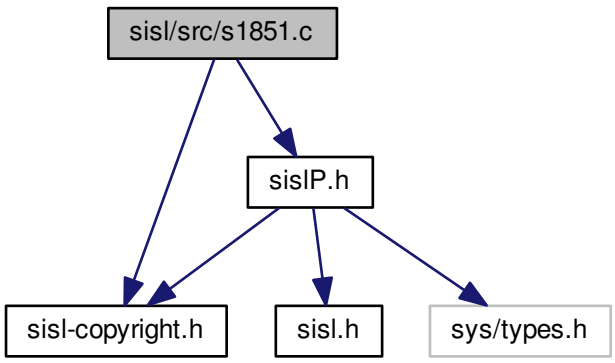
30.2561.2.1 void s1850 (SISLCurve * *pc1,* epoint , enorm , int *idim,* double *aepsco,* double *aepsge,* int * *jpt,* double ** *gpar,* int * *jcrv,* SISLIntcurve *** *wcurve,* int * *jstat*)

Definition at line 58 of file s1850.c.

30.2562 sisl/src/s1851.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1851.c:



Macros

- #define S1851

Functions

- void s1851 (SISLSurf *ps1, epoint, enorm, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2562.1 Macro Definition Documentation

30.2562.1.1 #define S1851

Definition at line 49 of file s1851.c.

30.2562.2 Function Documentation

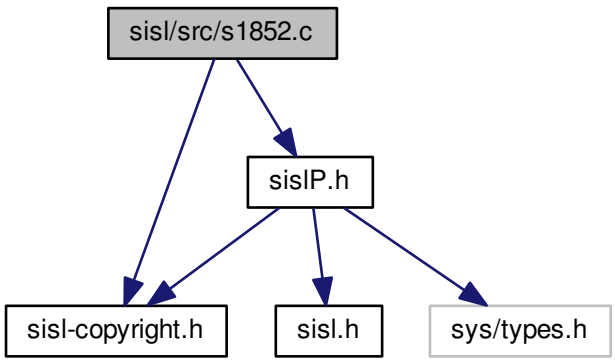
30.2562.2.1 void s1851 (SISLSurf * *ps1*, epoint , enorm , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1851.c.

30.2563 sisl/src/s1852.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1852.c:



Macros

- #define S1852

Functions

- void s1852 (SISLSurf *ps1, ecenter, double aradius, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2563.1 Macro Definition Documentation

30.2563.1.1 #define S1852

Definition at line 49 of file s1852.c.

30.2563.2 Function Documentation

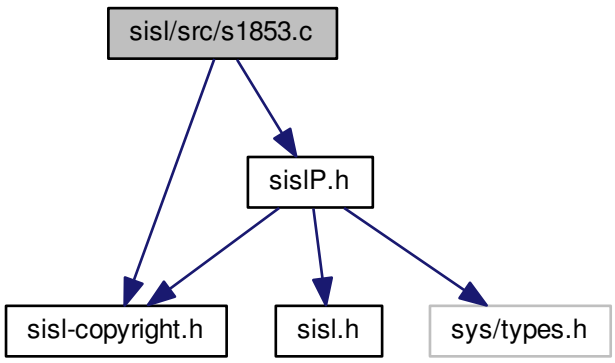
30.2563.2.1 void s1852 (SISLSurf * *ps1*, ecenter , double *aradius*, int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 59 of file s1852.c.

30.2564 sisl/src/s1853.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1853.c:



Macros

- #define S1853

Functions

- void s1853 (SISLSurf *ps1, epoint, edirec, double aradius, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2564.1 Macro Definition Documentation

30.2564.1.1 #define S1853

Definition at line 49 of file s1853.c.

30.2564.2 Function Documentation

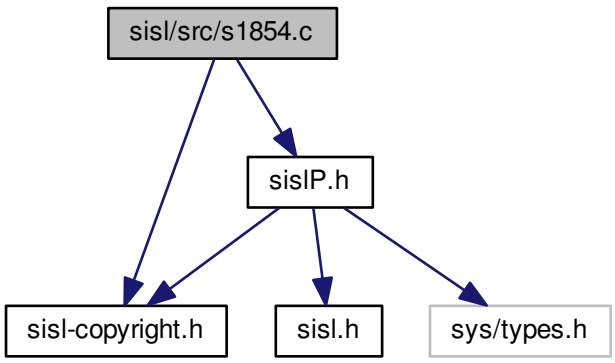
30.2564.2.1 void s1853 (SISLSurf * *ps1*, epoint , edirec , double *aradius*, int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1853.c.

30.2565 sisl/src/s1854.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1854.c:



Macros

- #define S1854

Functions

- void s1854 (SISLSurf *ps1, etop, eaxis, econe, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2565.1 Macro Definition Documentation

30.2565.1.1 #define S1854

Definition at line 49 of file s1854.c.

30.2565.2 Function Documentation

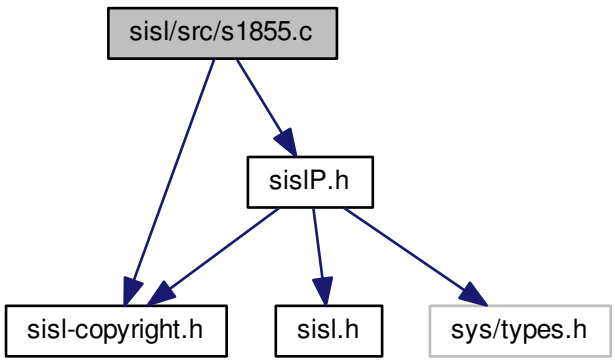
30.2565.2.1 void s1854 (SISLSurf * *ps1*, etop , eaxis , econe , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1854.c.

30.2566 sisl/src/s1855.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1855.c:



Macros

- #define S1855

Functions

- void s1855 (SISLSurf *ps1, ecentr, double aradius, enorm, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2566.1 Macro Definition Documentation

30.2566.1.1 #define S1855

Definition at line 49 of file s1855.c.

30.2566.2 Function Documentation

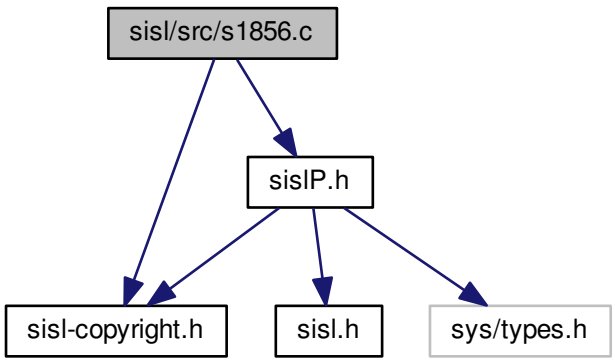
30.2566.2.1 void s1855 (SISLSurf * *ps1*, ecentr , double *aradius*, enorm , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1855.c.

30.2567 sisl/src/s1856.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1856.c:



Macros

- #define S1856

Functions

- void s1856 (SISLSurf *ps1, epoint, edir, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2567.1 Macro Definition Documentation

30.2567.1.1 #define S1856

Definition at line 49 of file s1856.c.

30.2567.2 Function Documentation

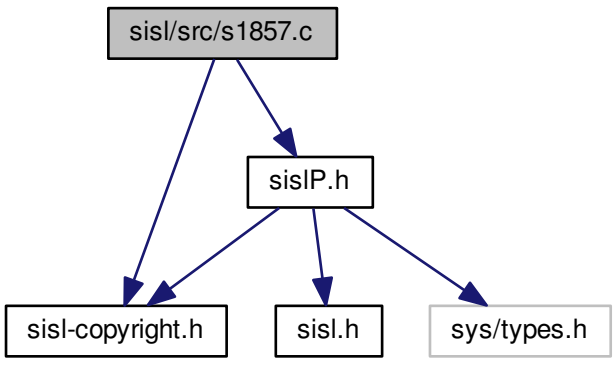
30.2567.2.1 void s1856 (SISLSurf * *ps1*, epoint , edir , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1856.c.

30.2568 sisl/src/s1857.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1857.c:



Macros

- #define S1857

Functions

- void s1857 (SISLCurve *pc1, SISLCurve *pc2, double aepsco, double aepsge, int *jpt, double **gpar1, double **gpar2, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2568.1 Macro Definition Documentation

30.2568.1.1 #define S1857

Definition at line 49 of file s1857.c.

30.2568.2 Function Documentation

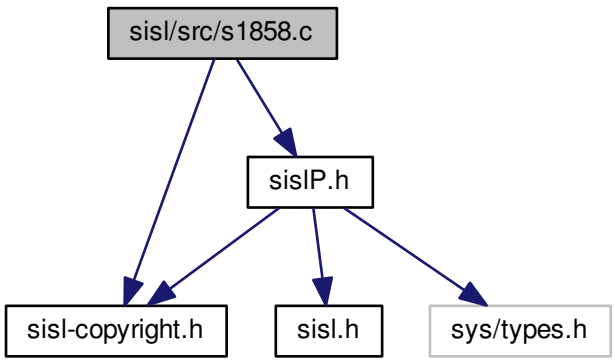
30.2568.2.1 void s1857 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar1*, double ** *gpar2*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1857.c.

30.2569 sisl/src/s1858.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1858.c:



Macros

- #define S1858

Functions

- void s1858 (SISLSurf *ps1, SISLCurve *pc1, double aepsco, double aepsge, int *jpt, double **gpar1, double **gpar2, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2569.1 Macro Definition Documentation

30.2569.1.1 #define S1858

Definition at line 49 of file s1858.c.

30.2569.2 Function Documentation

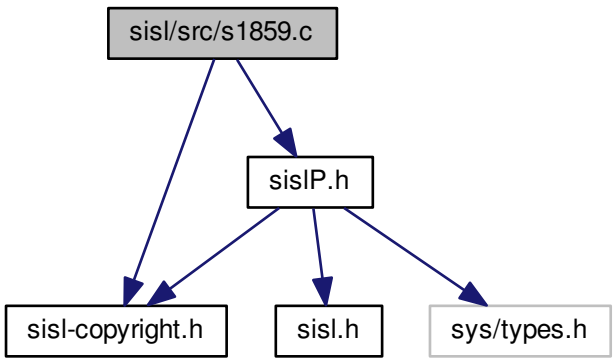
30.2569.2.1 void s1858 (SISLSurf * *ps1*, SISLCurve * *pc1*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar1*, double ** *gpar2*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1858.c.

30.2570 sisl/src/s1859.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1859.c:



Macros

- #define S1859

Functions

- void s1859 (SISLSurf *ps1, SISLSurf *ps2, double aepsco, double aepsge, int *jpt, double **gpar1, double **gpar2, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2570.1 Macro Definition Documentation

30.2570.1.1 #define S1859

Definition at line 49 of file s1859.c.

30.2570.2 Function Documentation

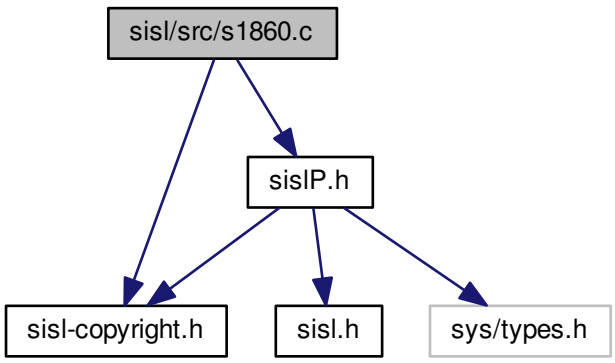
30.2570.2.1 void s1859 (SISLSurf * *ps1*, SISLSurf * *ps2*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar1*, double ** *gpar2*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1859.c.

30.2571 sisl/src/s1860.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1860.c:



Macros

- #define S1860

Functions

- void s1860 (SISLSurf *ps, eview, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2571.1 Macro Definition Documentation

30.2571.1.1 #define S1860

Definition at line 49 of file s1860.c.

30.2571.2 Function Documentation

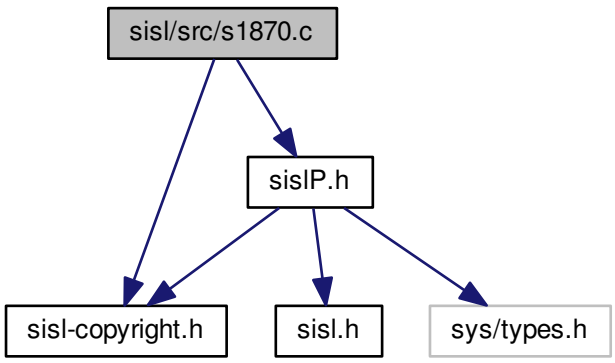
30.2571.2.1 void s1860 (SISLSurf * *ps*, eview , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 57 of file s1860.c.

30.2572 sisl/src/s1870.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1870.c:



Macros

- #define S1870

Functions

- void s1870 (SISLSurf *ps1, double *pt1, int idim, double aepsge, int *jpt, double **gpar1, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2572.1 Macro Definition Documentation

30.2572.1.1 #define S1870

Definition at line 42 of file s1870.c.

30.2572.2 Function Documentation

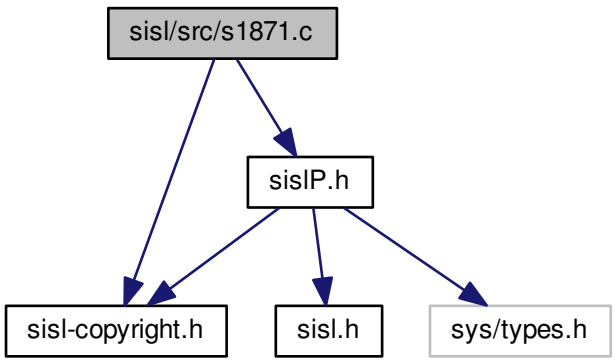
30.2572.2.1 void s1870 (SISLSurf * *ps1*, double * *pt1*, int *idim*, double *aepsge*, int * *jpt*, double ** *gpar1*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 51 of file s1870.c.

30.2573 sisl/src/s1871.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1871.c:



Macros

- #define S1871

Functions

- void s1871 (SISLCurve *pc1, double *pt1, int idim, double aepsge, int *jpt, double **gpar1, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2573.1 Macro Definition Documentation

30.2573.1.1 #define S1871

Definition at line 42 of file s1871.c.

30.2573.2 Function Documentation

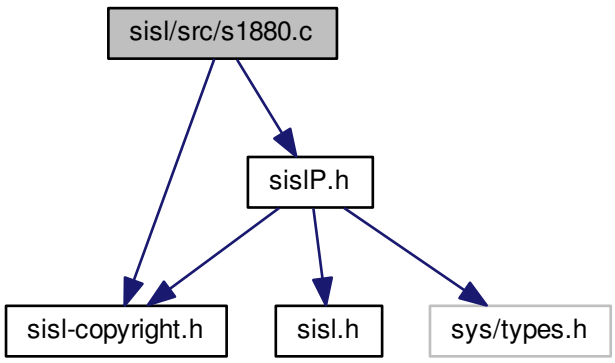
30.2573.2.1 void s1871 (SISLCurve * *pc1*, double * *pt1*, int *idim*, double *aepsge*, int * *jpt*, double ** *gpar1*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 51 of file s1871.c.

30.2574 sisl/src/s1880.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1880.c:



Macros

- #define S1880

Functions

- void s1880 (int ipar1, int ipar2, int *jpt, SISLIntpt **vpoint, int *jlist, SISLIntlist **vlist, int *jpar, double **gpar1, double **gpar2, int *jcrv, SISLIntcurve ***wcrv, int *jstat)

30.2574.1 Macro Definition Documentation

30.2574.1.1 #define S1880

Definition at line 49 of file s1880.c.

30.2574.2 Function Documentation

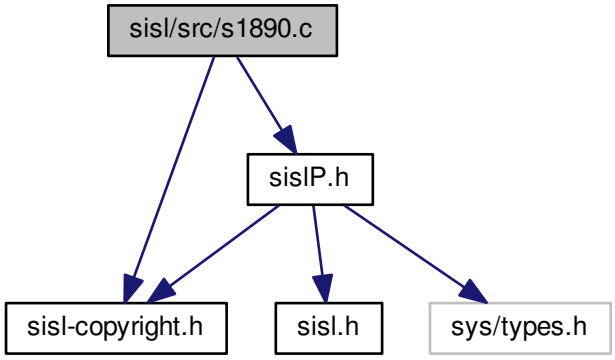
30.2574.2.1 void s1880 (int *ipar1*, int *ipar2*, int * *jpt*, SISLIntpt ** *vpoint*, int * *jlist*, SISLIntlist ** *vlist*, int * *jpar*, double ** *gpar1*, double ** *gpar2*, int * *jcrv*, SISLIntcurve *** *wcrv*, int * *jstat*)

Definition at line 58 of file s1880.c.

30.2575 sisl/src/s1890.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1890.c:



Macros

- #define S1890

Functions

- void s1890 (oknots, int oik, int oin, par, der, int *jstat)

30.2575.1 Macro Definition Documentation

30.2575.1.1 #define S1890

Definition at line 49 of file s1890.c.

30.2575.2 Function Documentation

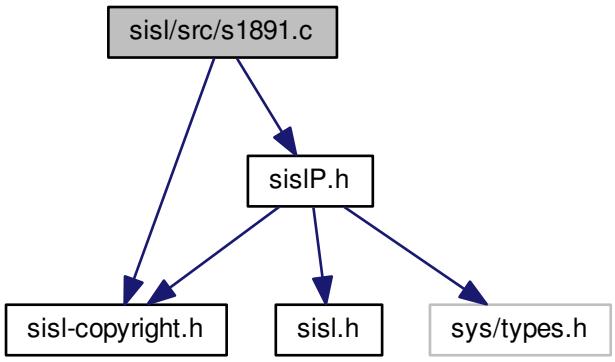
30.2575.2.1 void s1890 (oknots , int *oik,* int *oin,* par , der , int * *jstat*)

Definition at line 59 of file s1890.c.

30.2576 sisl/src/s1891.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1891.c:



Macros

- #define S1891
- #define MAX_SIZE 50

Functions

- void s1891 (etau, epoint, int idim, int inbpnt, int iright, eder, int iopen, et, ebcoef, int *in, int ik, int inlr, int inrc, int *jstat)

30.2576.1 Macro Definition Documentation

30.2576.1.1 #define MAX_SIZE 50

Definition at line 52 of file s1891.c.

30.2576.1.2 #define S1891

Definition at line 49 of file s1891.c.

30.2576.2 Function Documentation

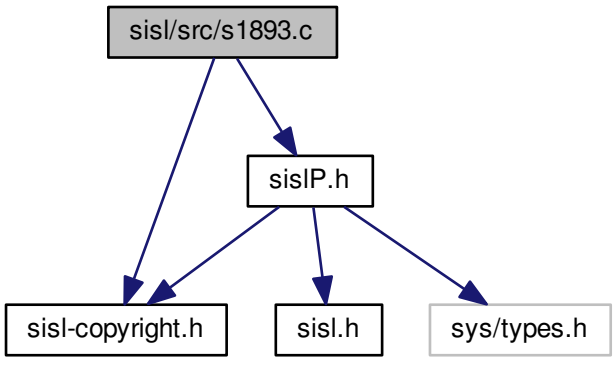
30.2576.2.1 void s1891 (etau , epoint , int *idim,* int *inbpnt,* int *iright,* eder , int *iopen,* et , ebcoef , int * *in,* int *ik,* int *inlr,* int *inrc,* int * *jstat*)

Definition at line 63 of file s1891.c.

30.2577 sisl/src/s1893.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1893.c:



Macros

- #define S1893

Functions

- void s1893 (SISLCurve *orig, earray, int dimp1, int narr, int der1, int der2, SISLCurve **ncurve, int *jstat)

30.2577.1 Macro Definition Documentation

30.2577.1.1 #define S1893

Definition at line 49 of file s1893.c.

30.2577.2 Function Documentation

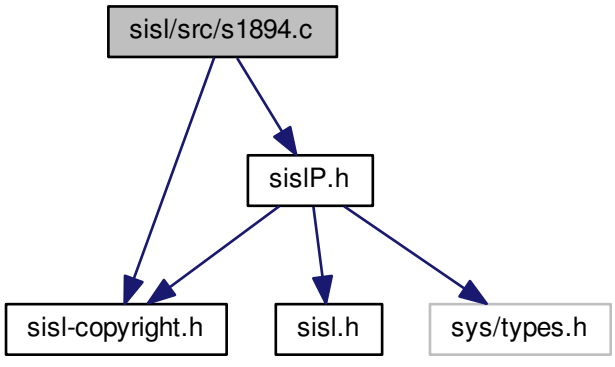
30.2577.2.1 void s1893 (SISLCurve * *orig*, earray , int *dimp1*, int *narr*, int *der1*, int *der2*, SISLCurve ** *ncurve*, int * *jstat*)

Definition at line 60 of file s1893.c.

30.2578 sisl/src/s1894.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1894.c:



Macros

- #define S1894

Functions

- void s1894 (oknots, int oik, int oin, int der1, int der2, earray, int dimp1, int narr, nknots, int ∗nik, int ∗nin, int ∗jstat)

30.2578.1 Macro Definition Documentation

30.2578.1.1 #define S1894

Definition at line 49 of file s1894.c.

30.2578.2 Function Documentation

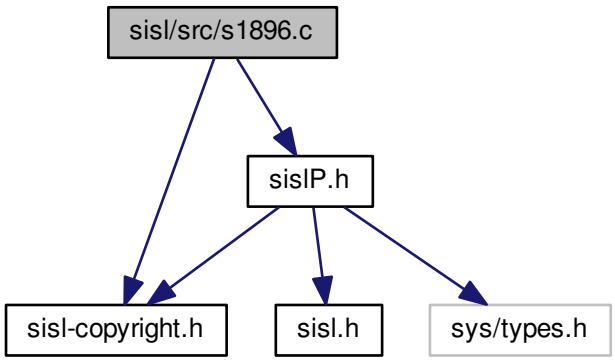
30.2578.2.1 void s1894 (oknots , int *oik,* int *oin,* int *der1,* int *der2,* earray , int *dimp1,* int *narr,* nknots , int ∗ *nik,* int ∗ *nin,* int ∗ *jstat*)

Definition at line 59 of file s1894.c.

30.2579 sisl/src/s1896.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1896.c:



Macros

- #define S1896

Functions

- void s1896 (SISLSurf *osurf, earray, int dimp1, int narr, ders1, dert1, ders2, dert2, SISLSurf **nsurf, int *jstat)

30.2579.1 Macro Definition Documentation

30.2579.1.1 #define S1896

Definition at line 49 of file s1896.c.

30.2579.2 Function Documentation

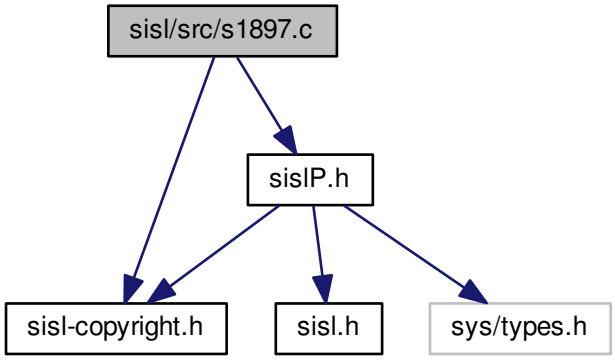
30.2579.2.1 void s1896 (SISLSurf * *osurf,* earray , int *dimp1,* int *narr,* ders1 , dert1 , ders2 , dert2 , SISLSurf ** *nsurf,* int * *jstat*)

Definition at line 60 of file s1896.c.

30.2580 sisl/src/s1897.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1897.c:



Macros

- #define S1897
- #define MAX_IK 50

Functions

- void s1897 (et, int ik, double ax, int left, int deriv, ebiatx, int *jstat)

30.2580.1 Macro Definition Documentation

30.2580.1.1 #define MAX_IK 50

Definition at line 53 of file s1897.c.

30.2580.1.2 #define S1897

Definition at line 49 of file s1897.c.

30.2580.2 Function Documentation

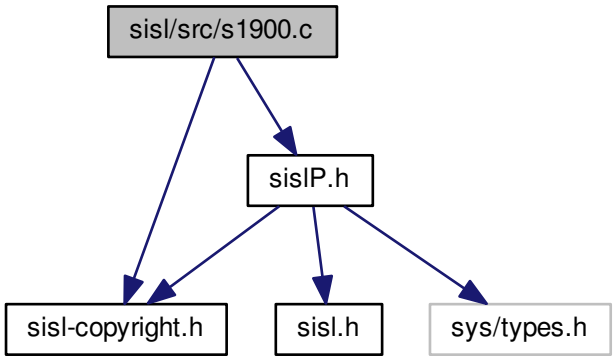
30.2580.2.1 void s1897 (et , int *ik,* double *ax,* int *left,* int *deriv,* ebiatx , int * *jstat*)

Definition at line 61 of file s1897.c.

30.2581 sisl/src/s1900.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1900.c:



Macros

- #define S1900

Functions

- void s1900 (param, knots, econd, ntype, int inpt, int ik, int idim, int iopen, double *cendpar, SISLCurve **rcurve, double **gpar, int *jnbpar, int *jstat)

30.2581.1 Macro Definition Documentation

30.2581.1.1 #define S1900

Definition at line 49 of file s1900.c.

30.2581.2 Function Documentation

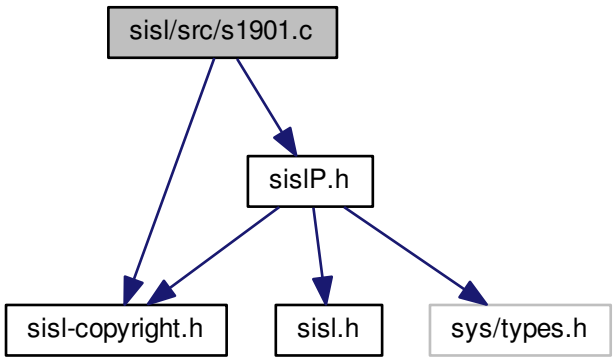
30.2581.2.1 void s1900 (param , knots , econd , ntype , int *inpt,* int *ik,* int *idim,* int *iopen,* double * *cendpar,* SISLCurve ** *rcurve,* double ** *gpar,* int * *jnbpar,* int * *jstat*)

Definition at line 61 of file s1900.c.

30.2582 sisl/src/s1901.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1901.c:



Macros

- #define S1901

Typedefs

- typedef void(∗ fparamProc) ()
- typedef void(∗ fknotsProc) ()

Functions

- void s1901 (fparamProc fparam, fknotsProc fknots, econd, ntype, int inpt, double astpar, int ik, int idim, int iopen, double ∗cendpar, SISLCurve ∗∗rcurve, double ∗∗gpar, int ∗jnbpar, int ∗jstat)

30.2582.1 Macro Definition Documentation

30.2582.1.1 #define S1901

Definition at line 49 of file s1901.c.

30.2582.2 Typedef Documentation

30.2582.2.1 typedef void(∗ fknotsProc) ()

Definition at line 59 of file s1901.c.

30.2582.2.2 typedef void(∗ fparamProc) ()

Definition at line 58 of file s1901.c.

30.2582.3 Function Documentation

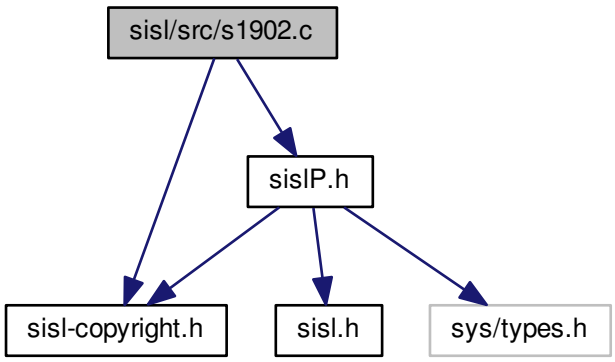
30.2582.3.1 void s1901 (fparamProc *fparam,* fknotsProc *fknots,* econd , ntype , int *inpt,* double *astpar,* int *ik,* int *idim,* int *iopen,* double ∗ *cendpar,* SISLCurve ∗∗ *rcurve,* double ∗∗ *gpar,* int ∗ *jnbpar,* int ∗ *jstat*)

Definition at line 71 of file s1901.c.

30.2583 sisl/src/s1902.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1902.c:



Macros

- #define S1902

Functions

- void s1902 (epar, int in, int ik, int cuopen, double **eknots, int *jstat)

30.2583.1 Macro Definition Documentation

30.2583.1.1 #define S1902

Definition at line 49 of file s1902.c.

30.2583.2 Function Documentation

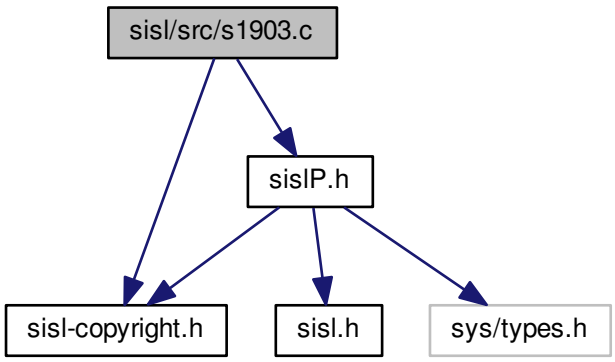
30.2583.2.1 void s1902 (epar , int *in,* int *ik,* int *cuopen,* double ** *eknots,* int * *jstat*)

Definition at line 59 of file s1902.c.

30.2584 sisl/src/s1903.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1903.c:



Macros

- #define S1903

Functions

- void s1903 (epar, int in, int ik, int cuopen, eknots, int ∗jstat)

30.2584.1 Macro Definition Documentation

30.2584.1.1 #define S1903

Definition at line 49 of file s1903.c.

30.2584.2 Function Documentation

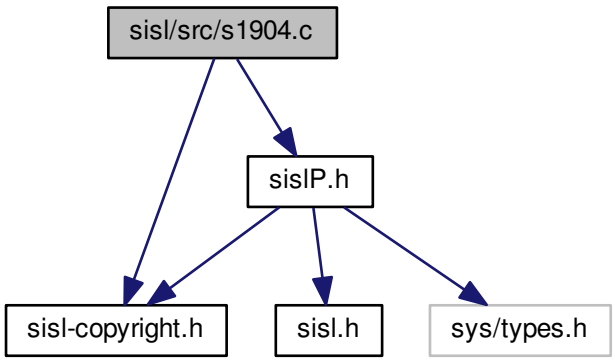
30.2584.2.1 void s1903 (epar , int *in,* int *ik,* int *cuopen,* eknots , int ∗ *jstat*)

Definition at line 59 of file s1903.c.

30.2585 sisl/src/s1904.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1904.c:



Macros

- #define S1904

Functions

- void s1904 (epar, int in, int ik, int cuopen, eknots, int ∗jstat)

30.2585.1 Macro Definition Documentation

30.2585.1.1 #define S1904

Definition at line 49 of file s1904.c.

30.2585.2 Function Documentation

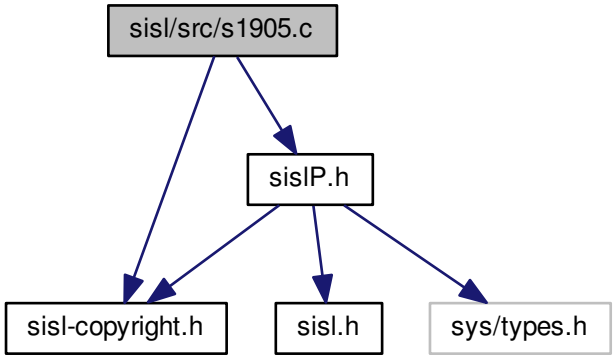
30.2585.2.1 void s1904 (epar , int *in,* int *ik,* int *cuopen,* eknots , int ∗ *jstat*)

Definition at line 59 of file s1904.c.

30.2586 sisl/src/s1905.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1905.c:



Macros

- #define S1905

Functions

- void s1905 (econd1, ntype1, int inpt1, int ik, int idim, int iopen, double **gcond2, int **mtype2, int *jnpt2, int *jstat)

30.2586.1 Macro Definition Documentation

30.2586.1.1 #define S1905

Definition at line 49 of file s1905.c.

30.2586.2 Function Documentation

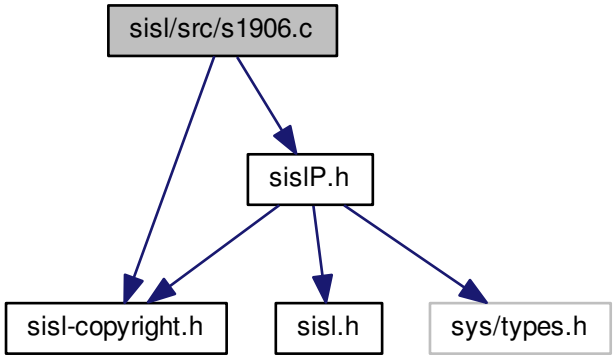
30.2586.2.1 void s1905 (econd1 , ntype1 , int *inpt1,* int *ik,* int *idim,* int *iopen,* double ** *gcond2,* int ** *mtype2,* int * *jnpt2,* int * *jstat*)

Definition at line 59 of file s1905.c.

30.2587 sisl/src/s1906.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1906.c:



Macros

- #define S1906

Functions

- void s1906 (double *epoint, int *etype, int icnsta, int icnend, int inbpnt, int idim, double **opoint, int **otype, int *knbpnt, int *jstat)

30.2587.1 Macro Definition Documentation

30.2587.1.1 #define S1906

Definition at line 49 of file s1906.c.

30.2587.2 Function Documentation

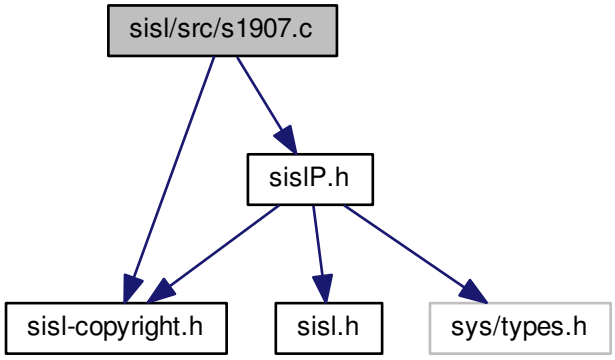
30.2587.2.1 void s1906 (double * *epoint*, int * *etype*, int *icnsta*, int *icnend*, int *inbpnt*, int *idim*, double ** *opoint*, int ** *otype*, int * *knbpnt*, int * *jstat*)

Definition at line 59 of file s1906.c.

30.2588 sisl/src/s1907.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1907.c:



Macros

- #define S1907

Functions

- void s1907 (double *epoint, int *ntype, double *epar, int iopen, int icnsta, int icnend, int inbpnt, int idim, opoint, otype, opar, int *knbpnt, int *jstat)

30.2588.1 Macro Definition Documentation

30.2588.1.1 #define S1907

Definition at line 49 of file s1907.c.

30.2588.2 Function Documentation

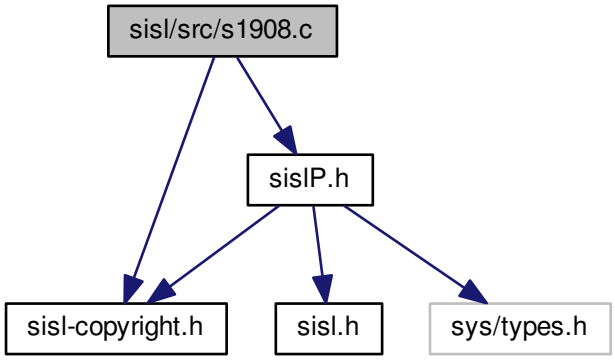
30.2588.2.1 void s1907 (double * *epoint*, int * *ntype*, double * *epar*, int *iopen*, int *icnsta*, int *icnend*, int *inbpnt*, int *idim*, opoint , otype , opar , int * *knbpnt*, int * *jstat*)

Definition at line 58 of file s1907.c.

30.2589 sisl/src/s1908.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1908.c:



Macros

- #define S1908
- #define MAX_SIZE 30

Functions

- void s1908 (econd1, ntype1, epar, int inpt1, int ik, int idim, int iopen, gcond2, mtype2, mpar, int ∗jnpt2, int ∗jstat)

30.2589.1 Macro Definition Documentation

30.2589.1.1 #define MAX_SIZE 30

Definition at line 52 of file s1908.c.

30.2589.1.2 #define S1908

Definition at line 49 of file s1908.c.

30.2589.2 Function Documentation

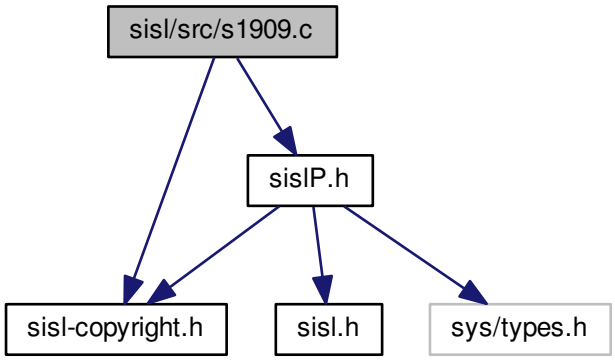
30.2589.2.1 void s1908 (econd1 , ntype1 , epar , int *inpt1,* int *ik,* int *idim,* int *iopen,* gcond2 , mtype2 , mpar , int ∗ *jnpt2,* int ∗ *jstat*)

Definition at line 61 of file s1908.c.

30.2590 sisl/src/s1909.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1909.c:



Macros

- #define S1909

Functions

- void s1909 (econd, ntype, int inpt, int idim, int iopen, double astpar, double ∗cendpar, epar1, epar2, int ∗jstat)

30.2590.1 Macro Definition Documentation

30.2590.1.1 #define S1909

Definition at line 49 of file s1909.c.

30.2590.2 Function Documentation

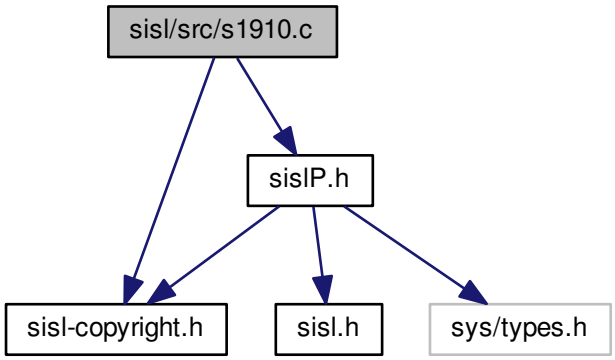
30.2590.2.1 void s1909 (econd , ntype , int *inpt,* int *idim,* int *iopen,* double *astpar,* double ∗ *cendpar,* epar1 , epar2 , int ∗ *jstat*)

Definition at line 60 of file s1909.c.

30.2591 sisl/src/s1910.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1910.c:



Macros

- #define S1910

Functions

- void s1910 (econd, ntype, int inpt, int idim, int iopen, double astpar, double ∗cendpar, epar1, epar2, int ∗jstat)

30.2591.1 Macro Definition Documentation

30.2591.1.1 #define S1910

Definition at line 49 of file s1910.c.

30.2591.2 Function Documentation

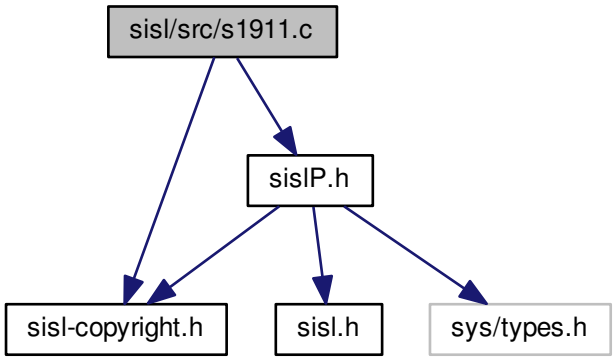
30.2591.2.1 void s1910 (econd , ntype , int *inpt,* int *idim,* int *iopen,* double *astpar,* double ∗ *cendpar,* epar1 , epar2 , int ∗ *jstat*)

Definition at line 60 of file s1910.c.

30.2592 sisl/src/s1911.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1911.c:



Macros

- #define S1911

Functions

- void s1911 (econd, ntype, int inpt, int idim, int iopen, double astpar, double ∗cendpar, epar1, epar2, int ∗jstat)

30.2592.1 Macro Definition Documentation

30.2592.1.1 #define S1911

Definition at line 49 of file s1911.c.

30.2592.2 Function Documentation

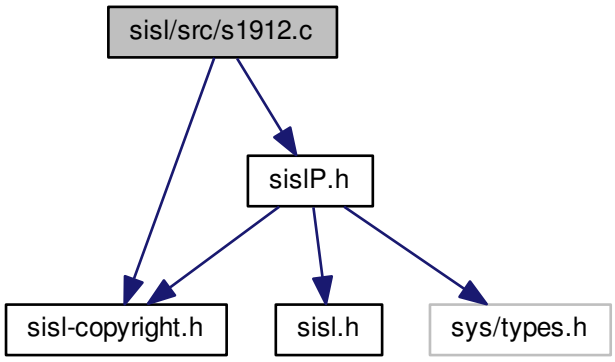
30.2592.2.1 void s1911 (econd , ntype , int *inpt,* int *idim,* int *iopen,* double *astpar,* double ∗ *cendpar,* epar1 , epar2 , int ∗ *jstat*)

Definition at line 60 of file s1911.c.

30.2593 sisl/src/s1912.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1912.c:



Macros

- #define S1912

Typedefs

- typedef void(∗ fparamProc) ()
- typedef void(∗ fknotsProc) ()

Functions

- void s1912 (fparamProc fparam, fknotsProc fknots, econd, ntype, int inpt, double astpar, int ik, int idim, int iopen, double ∗cendpar, SISLCurve ∗∗rcurve, double ∗∗gpar, int ∗jnbpar, int ∗jstat)

30.2593.1 Macro Definition Documentation

30.2593.1.1 #define S1912

Definition at line 42 of file s1912.c.

30.2593.2 Typedef Documentation

30.2593.2.1 typedef void(∗ fknotsProc) ()

Definition at line 52 of file s1912.c.

30.2593.2.2 typedef void(* fparamProc) ()

Definition at line 51 of file s1912.c.

30.2593.3 Function Documentation

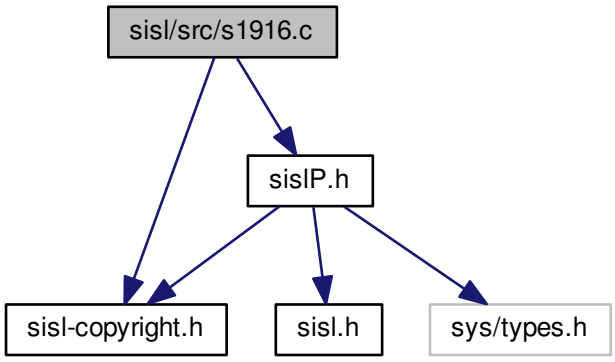
30.2593.3.1 void s1912 (fparamProc *fparam,* fknotsProc *fknots,* econd , ntype , int *inpt,* double *astpar,* int *ik,* int *idim,* int *iopen,* double * *cendpar,* SISLCurve ** *rcurve,* double ** *gpar,* int * *jnbpar,* int * *jstat*)

Definition at line 64 of file s1912.c.

30.2594 sisl/src/s1916.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1916.c:



Macros

- #define S1916

Functions

- void s1916 (int inbcrv, et2, ecoef, int in2, int iord, int idim, int iopen, par, der, int *jstat)

30.2594.1 Macro Definition Documentation

30.2594.1.1 #define S1916

Definition at line 49 of file s1916.c.

30.2594.2 Function Documentation

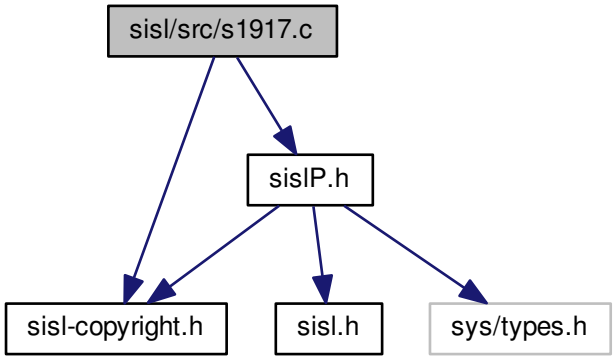
30.2594.2.1 void s1916 (int *inbcrv,* et2 *,* ecoef *,* int *in2,* int *iord,* int *idim,* int *iopen,* par *,* der *,* int ∗ *jstat*)

Definition at line 59 of file s1916.c.

30.2595 sisl/src/s1917.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1917.c:



Macros

- #define S1917

Functions

- void s1917 (int inbcrv, ecoef, int in2, int idim, eptyp, double astpar, int iopen, par, der, int ∗inumb, int ∗jstat)

30.2595.1 Macro Definition Documentation

30.2595.1.1 #define S1917

Definition at line 49 of file s1917.c.

30.2595.2 Function Documentation

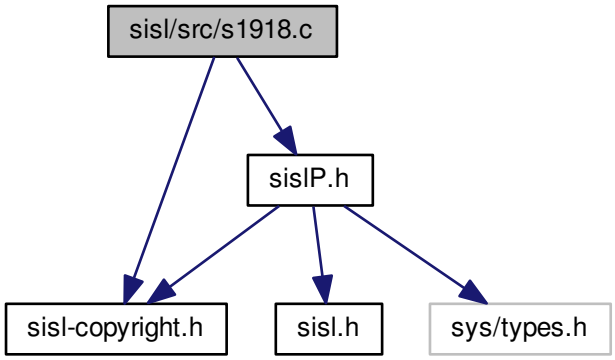
30.2595.2.1 void s1917 (int *inbcrv,* ecoef , int *in2,* int *idim,* eptyp , double *astpar,* int *iopen,* par , der , int * *inumb,* int * *jstat*)

Definition at line 59 of file s1917.c.

30.2596 sisl/src/s1918.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1918.c:



Macros

- #define S1918

Functions

- void s1918 (int inbcrv, et2, ecoef, int in2, int iord, int idim, par, der, int *jstat)

30.2596.1 Macro Definition Documentation

30.2596.1.1 #define S1918

Definition at line 49 of file s1918.c.

30.2596.2 Function Documentation

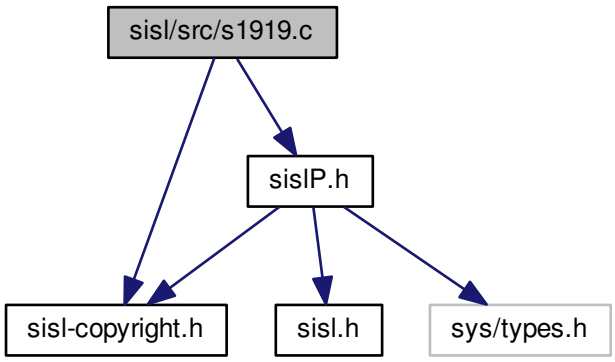
30.2596.2.1 void s1918 (int *inbcrv,* et2 *,* ecoef *,* int *in2,* int *iord,* int *idim,* par *,* der *,* int * *jstat*)

Definition at line 59 of file s1918.c.

30.2597 sisl/src/s1919.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1919.c:



Macros

- #define S1919

Functions

- void s1919 (et, prev, curr, deriv, follow, int in, int ik, int idim, int iip, int iif, double ap, double ac, double af, int *jstat)

30.2597.1 Macro Definition Documentation

30.2597.1.1 #define S1919

Definition at line 49 of file s1919.c.

30.2597.2 Function Documentation

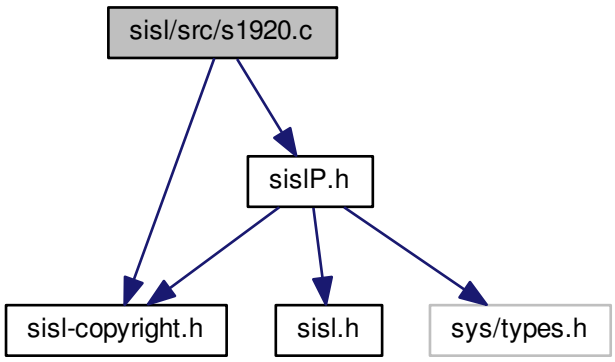
30.2597.2.1 void s1919 (et , prev , curr , deriv , follow , int *in*, int *ik*, int *idim*, int *iip*, int *iif*, double *ap*, double *ac*, double *af*, int * *jstat*)

Definition at line 60 of file s1919.c.

30.2598 sisl/src/s1920.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1920.c:



Macros

- #define S1920

Functions

- void s1920 (SISLCurve *pc1, edir, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2598.1 Macro Definition Documentation

30.2598.1.1 #define S1920

Definition at line 49 of file s1920.c.

30.2598.2 Function Documentation

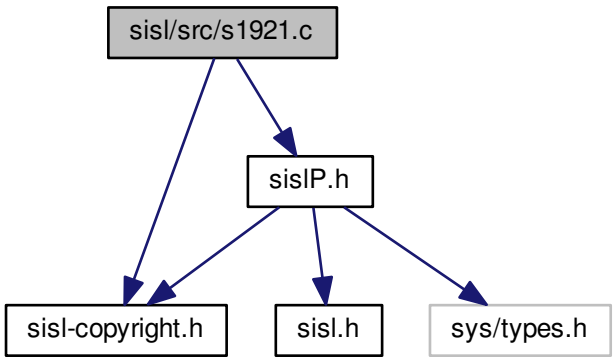
30.2598.2.1 void s1920 (SISLCurve * *pc1*, edir , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1920.c.

30.2599 sisl/src/s1921.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1921.c:



Macros

- #define S1921

Functions

- void s1921 (SISLSurf *ps1, edir, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2599.1 Macro Definition Documentation

30.2599.1.1 #define S1921

Definition at line 49 of file s1921.c.

30.2599.2 Function Documentation

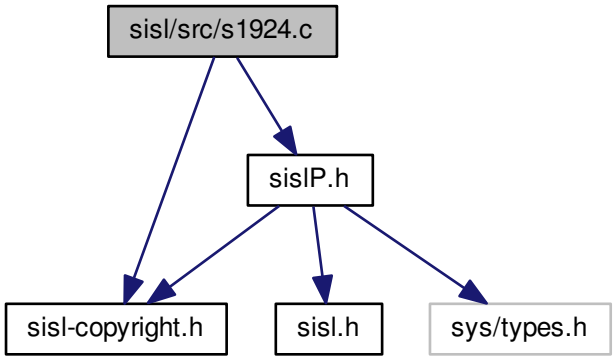
30.2599.2.1 void s1921 (SISLSurf * *ps1*, edir , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1921.c.

30.2600 sisl/src/s1924.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1924.c:



Macros

- #define S1924

Functions

- void s1924 (int id1, int id2, int id3, int id4, int in1, int in2, double **ew, int *jstat)

30.2600.1 Macro Definition Documentation

30.2600.1.1 #define S1924

Definition at line 49 of file s1924.c.

30.2600.2 Function Documentation

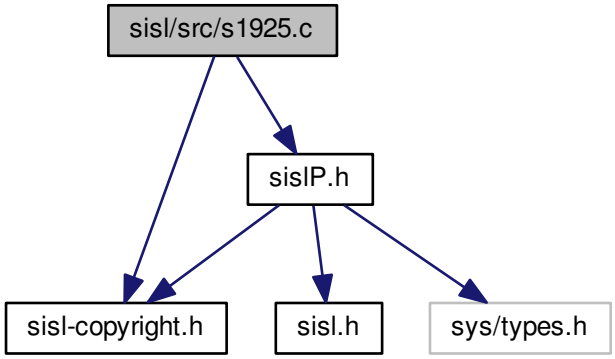
30.2600.2.1 void s1924 (int *id1,* int *id2,* int *id3,* int *id4,* int *in1,* int *in2,* double ** *ew,* int * *jstat*)

Definition at line 60 of file s1924.c.

30.2601 sisl/src/s1925.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1925.c:



Macros

- #define S1925
- #define s1925_MAX_ARRAY_SIZE 50

Functions

- void s1925 (etau, epoint, int inbpnt, eder, et, ebcoef, int in, int ik, int iright, int dim, ew1, int nur, ed, ew2, int inrc, ew3, int inlr, int *jstat)

30.2601.1 Macro Definition Documentation

30.2601.1.1 #define S1925

Definition at line 49 of file s1925.c.

30.2601.1.2 #define s1925_MAX_ARRAY_SIZE 50

Definition at line 52 of file s1925.c.

30.2601.2 Function Documentation

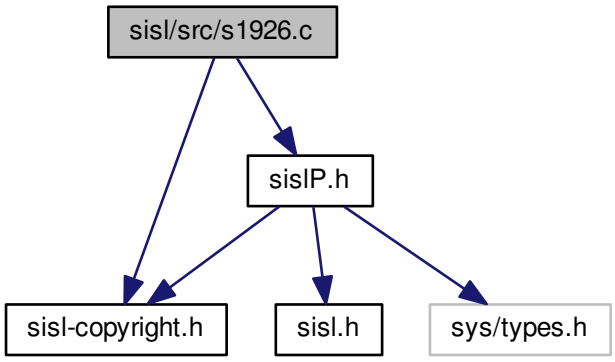
30.2601.2.1 void s1925 (etau , epoint , int *inbpnt,* eder , et , ebcoef , int *in,* int *ik,* int *iright,* int *dim,* ew1 , int *nur,* ed , ew2 , int *inrc,* ew3 , int *inlr,* int * *jstat*)

Definition at line 62 of file s1925.c.

30.2602 sisl/src/s1926.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1926.c:



Macros

- #define S1926

Functions

- void s1926 (double *w1, int nur, int ik, int *ed, double *w2, int nrc, double *w3, int nlr, int *jstat)

30.2602.1 Macro Definition Documentation

30.2602.1.1 #define S1926

Definition at line 49 of file s1926.c.

30.2602.2 Function Documentation

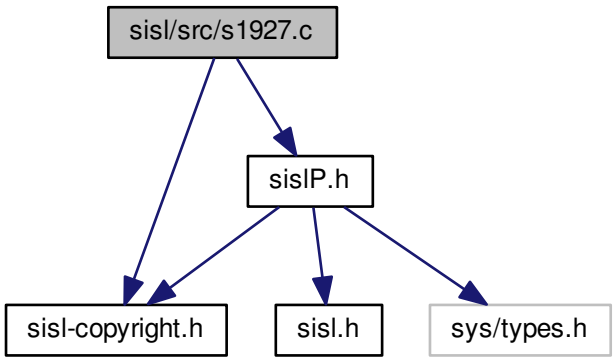
30.2602.2.1 void s1926 (double * *w1*, int *nur*, int *ik*, int * *ed*, double * *w2*, int *nrc*, double * *w3*, int *nlr*, int * *jstat*)

Definition at line 60 of file s1926.c.

30.2603 sisl/src/s1927.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1927.c:



Macros

- #define S1927

Functions

- void s1927 (double *w1, int nur, int ik, int *ed, double *w2, int nrc, double *w3, int nlr, ex, double *ey, int *jstat)

30.2603.1 Macro Definition Documentation

30.2603.1.1 #define S1927

Definition at line 49 of file s1927.c.

30.2603.2 Function Documentation

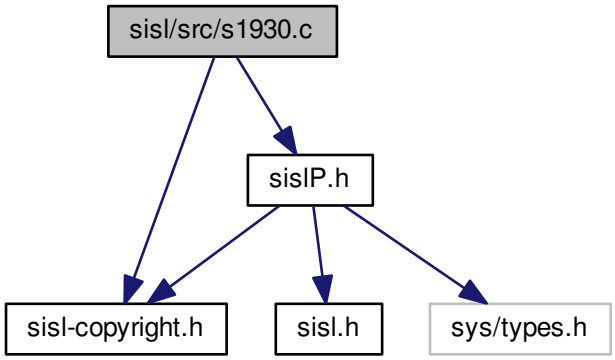
30.2603.2.1 void s1927 (double * *w1*, int *nur*, int *ik*, int * *ed*, double * *w2*, int *nrc*, double * *w3*, int *nlr*, ex , double * *ey*, int * *jstat*)

Definition at line 59 of file s1927.c.

30.2604 sisl/src/s1930.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1930.c:



Macros

- #define S1930

Functions

- void s1930 (int inbcrv, SISLCurve **vpcrv, double **gknot2, double **gcoef2, int *jn2, int *jord2, int *jstat)

30.2604.1 Macro Definition Documentation

30.2604.1.1 #define S1930

Definition at line 49 of file s1930.c.

30.2604.2 Function Documentation

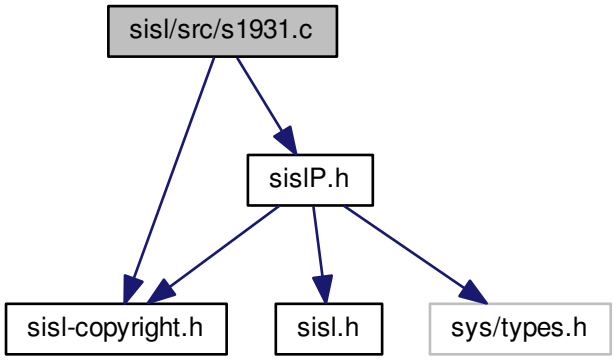
30.2604.2.1 void s1930 (int *inbcrv,* SISLCurve ** *vpcrv,* double ** *gknot2,* double ** *gcoef2,* int * *jn2,* int * *jord2,* int * *jstat*)

Definition at line 59 of file s1930.c.

30.2605 sisl/src/s1931.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1931.c:



Macros

- #define S1931

Functions

- void s1931 (int inbcrv, SISLCurve **vpcrv, double **gknot2, double **gcoef2, int *jn2, int *jord2, int *jstat)

30.2605.1 Macro Definition Documentation

30.2605.1.1 #define S1931

Definition at line 49 of file s1931.c.

30.2605.2 Function Documentation

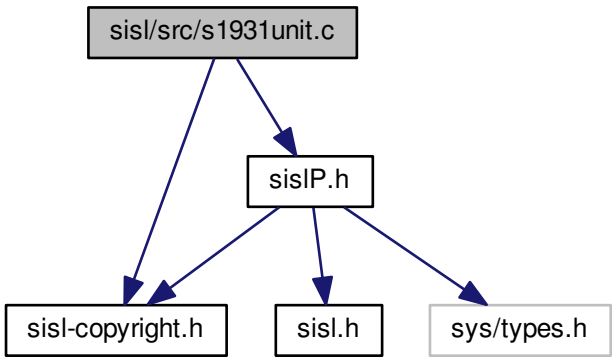
30.2605.2.1 void s1931 (int *inbcrv,* SISLCurve ** *vpcrv,* double ** *gknot2,* double ** *gcoef2,* int * *jn2,* int * *jord2,* int * *jstat*)

Definition at line 59 of file s1931.c.

30.2606 sisl/src/s1931unit.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1931unit.c:



Macros

- #define S1931UNIT

Functions

- void s1931unit (int inbcrv, SISLCurve **vpcrv, double **gknot2, double **gcoef2, int *jn2, int *jord2, int *jstat)

30.2606.1 Macro Definition Documentation

30.2606.1.1 #define S1931UNIT

Definition at line 49 of file s1931unit.c.

30.2606.2 Function Documentation

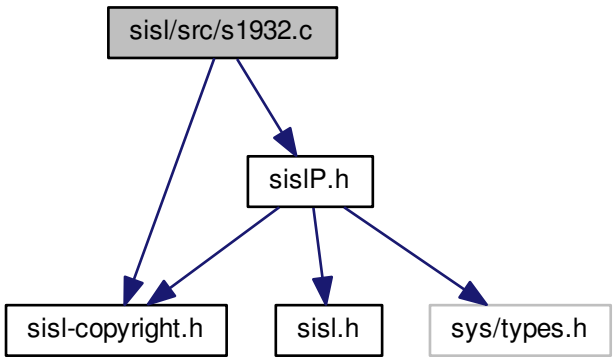
30.2606.2.1 void s1931unit (int *inbcrv,* SISLCurve ** *vpcrv,* double ** *gknot2,* double ** *gcoef2,* int * *jn2,* int * *jord2,* int * *jstat*)

Definition at line 59 of file s1931unit.c.

30.2607 sisl/src/s1932.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1932.c:



Macros

- #define S1932

Functions

- void s1932 (int inbcrv, SISLCurve **crvarr, double start, double stop, double *et, int in, int iordr, double **iright, int *jstat)

30.2607.1 Macro Definition Documentation

30.2607.1.1 #define S1932

Definition at line 49 of file s1932.c.

30.2607.2 Function Documentation

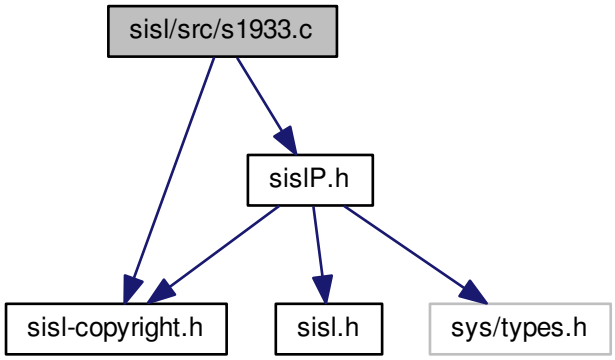
30.2607.2.1 void s1932 (int *inbcrv,* SISLCurve ** *crvarr,* double *start,* double *stop,* double * *et,* int *in,* int *iordr,* double ** *iright,* int * *jstat*)

Definition at line 60 of file s1932.c.

30.2608 sisl/src/s1933.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1933.c:



Macros

- #define S1933

Functions

- void s1933 (int inbcrv, crvarr, double start, double stop, double **it, int *in, int *iordr, int *jstat)

30.2608.1 Macro Definition Documentation

30.2608.1.1 #define S1933

Definition at line 49 of file s1933.c.

30.2608.2 Function Documentation

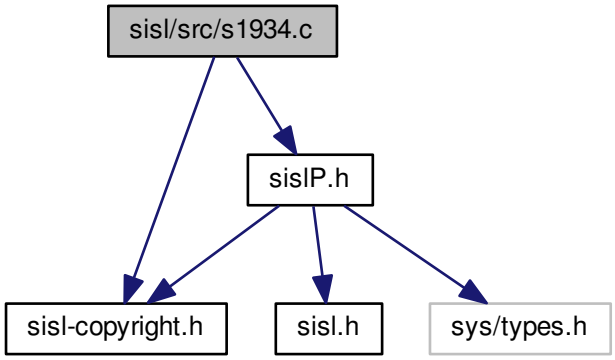
30.2608.2.1 void s1933 (int *inbcrv,* crvarr *,* double *start,* double *stop,* double ** *it,* int * *in,* int * *iordr,* int * *jstat*)

Definition at line 60 of file s1933.c.

30.2609 sisl/src/s1934.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1934.c:



Macros

- #define S1934

Functions

- void s1934 (double *et, int in, int ik, double start, double end, int *jstat)

30.2609.1 Macro Definition Documentation

30.2609.1.1 #define S1934

Definition at line 49 of file s1934.c.

30.2609.2 Function Documentation

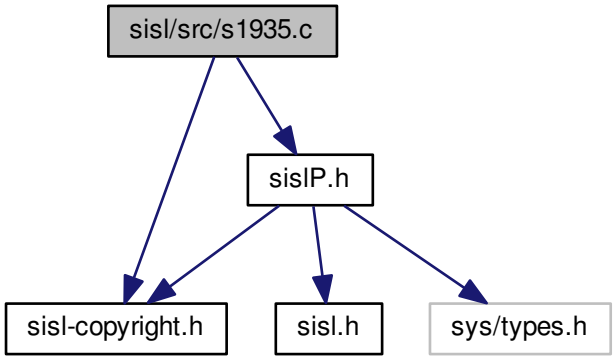
30.2609.2.1 void s1934 (double * et, int in, int ik, double start, double end, int * jstat)

Definition at line 59 of file s1934.c.

30.2610 sisl/src/s1935.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1935.c:



Macros

- #define S1935

Functions

- void s1935 (double *et1, int in1, double *et2, int in2, knt, int *in, int ik, int *jstat)

30.2610.1 Macro Definition Documentation

30.2610.1.1 #define S1935

Definition at line 49 of file s1935.c.

30.2610.2 Function Documentation

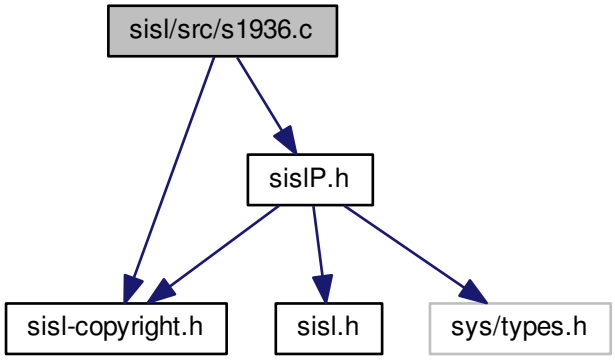
30.2610.2.1 void s1935 (double * *et1*, int *in1*, double * *et2*, int *in2*, knt , int * *in*, int *ik*, int * *jstat*)

Definition at line 59 of file s1935.c.

30.2611 sisl/src/s1936.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1936.c:



Macros

- #define S1936
- #define MAX_SIZE 50

Functions

- void s1936 (SISLCurve *crv, etd, int ind, double *curvd, int *jstat)

30.2611.1 Macro Definition Documentation

30.2611.1.1 #define MAX_SIZE 50

Definition at line 52 of file s1936.c.

30.2611.1.2 #define S1936

Definition at line 49 of file s1936.c.

30.2611.2 Function Documentation

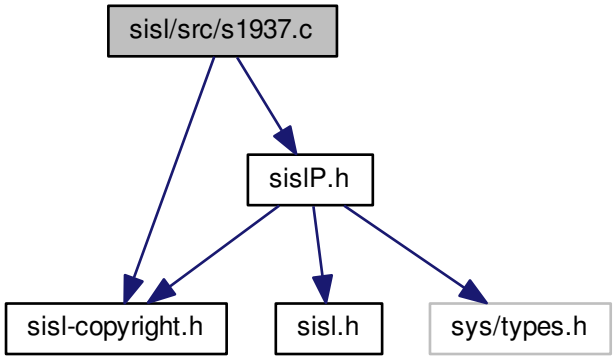
30.2611.2.1 void s1936 (SISLCurve * *crv*, etd , int *ind*, double * *curvd*, int * *jstat*)

Definition at line 61 of file s1936.c.

30.2612 sisl/src/s1937.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1937.c:



Macros

- #define S1937

Functions

- void s1937 (et, int iordr, int ref, int left, alfa, etref)

30.2612.1 Macro Definition Documentation

30.2612.1.1 #define S1937

Definition at line 49 of file s1937.c.

30.2612.2 Function Documentation

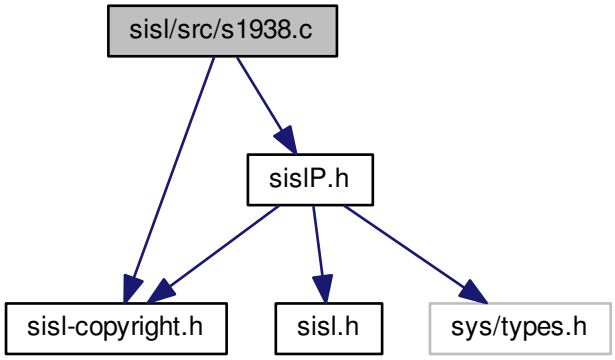
30.2612.2.1 void s1937 (et , int *iordr,* int *ref,* int *left,* alfa , etref)

Definition at line 59 of file s1937.c.

30.2613 sisl/src/s1938.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1938.c:



Macros

- #define S1938
- #define MAX_SIZE 50

Functions

- void s1938 (SISLSurf *srf, etr1, int inr1, etr2, int inr2, double **surfr, int *jstat)

30.2613.1 Macro Definition Documentation

30.2613.1.1 #define MAX_SIZE 50

Definition at line 52 of file s1938.c.

30.2613.1.2 #define S1938

Definition at line 49 of file s1938.c.

30.2613.2 Function Documentation

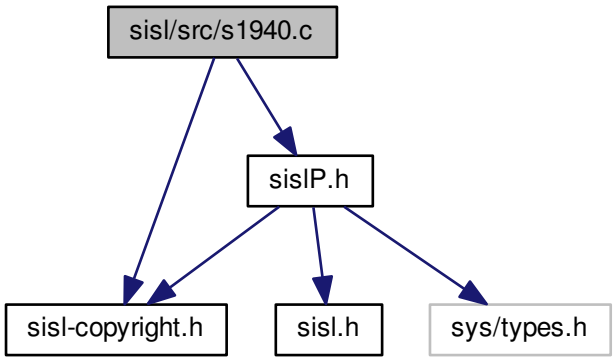
30.2613.2.1 void s1938 (SISLSurf * *srf*, etr1 , int *inr1*, etr2 , int *inr2*, double ** *surfr*, int * *jstat*)

Definition at line 61 of file s1938.c.

30.2614 sisl/src/s1940.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1940.c:



Macros

- #define S1940

Functions

- void s1940 (SISLCurve *oldcurve, eps, int startfix, int endfix, int iopen, int itmax, SISLCurve **newcurve, maxerr, int *stat)

30.2614.1 Macro Definition Documentation

30.2614.1.1 #define S1940

Definition at line 42 of file s1940.c.

30.2614.2 Function Documentation

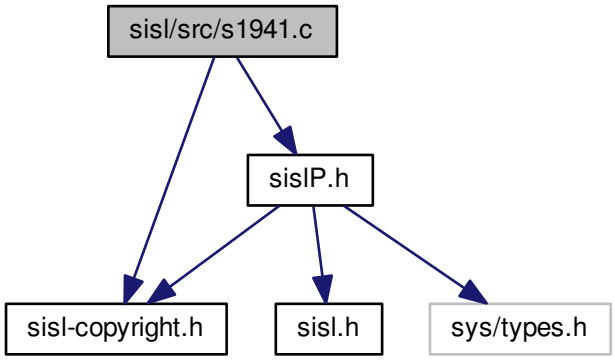
30.2614.2.1 void s1940 (SISLCurve * *oldcurve,* eps , int *startfix,* int *endfix,* int *iopen,* int *itmax,* SISLCurve ** *newcurve,* maxerr , int * *stat*)

Definition at line 53 of file s1940.c.

30.2615 sisl/src/s1941.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1941.c:



Macros

- #define S1941

Functions

- void s1941 (SISLCurve *pcurve, int icont, int *jstat)

30.2615.1 Macro Definition Documentation

30.2615.1.1 #define S1941

Definition at line 44 of file s1941.c.

30.2615.2 Function Documentation

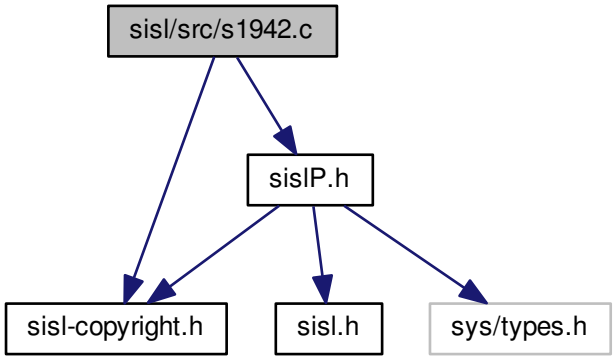
30.2615.2.1 void s1941 (SISLCurve * *pcurve*, int *icont*, int * *jstat*)

Definition at line 52 of file s1941.c.

30.2616 sisl/src/s1942.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1942.c:



Macros

- #define S1942

Functions

- void s1942 (SISLCurve *pc1, SISLCurve *pc2, int idim, ea, nstart, nstop, emxerr, el2err, int *jstat)

30.2616.1 Macro Definition Documentation

30.2616.1.1 #define S1942

Definition at line 42 of file s1942.c.

30.2616.2 Function Documentation

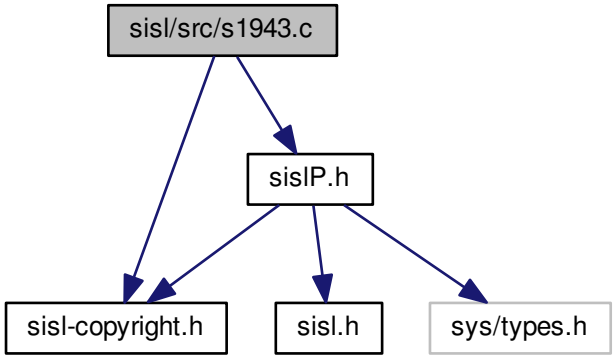
30.2616.2.1 void s1942 (SISLCurve * *pc1*, SISLCurve * *pc2*, int *idim*, ea , nstart , nstop , emxerr , el2err , int * *jstat*)

Definition at line 51 of file s1942.c.

30.2617 sisl/src/s1943.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1943.c:



Macros

- #define S1943

Functions

- void s1943 (SISLCurve *pcurve, etau, int ik, int in, int ileftfix, int irightfix, int incont, SISLCurve **rnewcurve, gmaxerr, gl2err, int *jstat)

30.2617.1 Macro Definition Documentation

30.2617.1.1 #define S1943

Definition at line 43 of file s1943.c.

30.2617.2 Function Documentation

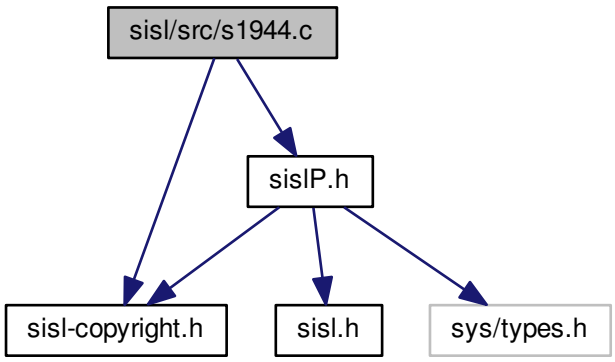
30.2617.2.1 void s1943 (SISLCurve * *pcurve*, etau , int *ik*, int *in*, int *ileftfix*, int *irightfix*, int *incont*, SISLCurve ** *rnewcurve*, gmaxerr , gl2err , int * *jstat*)

Definition at line 53 of file s1943.c.

30.2618 sisl/src/s1944.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1944.c:



Macros

- #define S1944

Functions

- void s1944 (etau, int ik, int in, int idim, et, ed, int im, int inlc, int inlr, int inorm, ea, ew1, nfirst, nlast, eb, ew2, n2sta, ec, int *jstat)

30.2618.1 Macro Definition Documentation

30.2618.1.1 #define S1944

Definition at line 43 of file s1944.c.

30.2618.2 Function Documentation

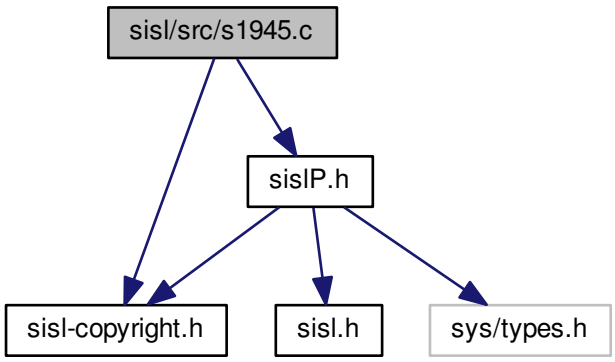
30.2618.2.1 void s1944 (etau , int *ik,* int *in,* int *idim,* et , ed , int *im,* int *inlc,* int *inlr,* int *inorm,* ea , ew1 , nfirst , nlast , eb , ew2 , n2sta , ec , int ∗ *jstat*)

Definition at line 54 of file s1944.c.

30.2619 sisl/src/s1945.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1945.c:



Macros

- #define S1945

Functions

- void s1945 (etau, int ik, int in, int idim, et, ed, int im, int ilend, int irend, int inlc, int inlr, int inorm, ea, ew1, int inh, nfirst, nlast, eb, ew2, ec, n2sta, int ∗jstat)

30.2619.1 Macro Definition Documentation

30.2619.1.1 #define S1945

Definition at line 42 of file s1945.c.

30.2619.2 Function Documentation

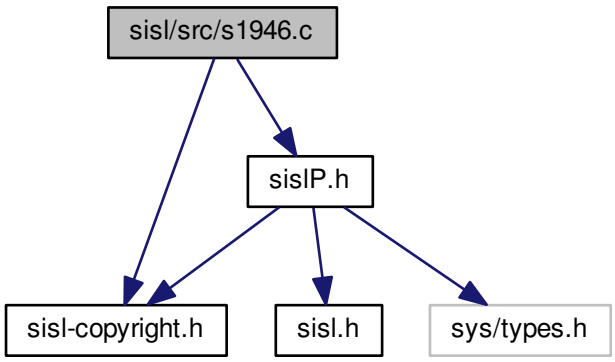
30.2619.2.1 void s1945 (etau , int *ik,* int *in,* int *idim,* et , ed , int *im,* int *ilend,* int *irend,* int *inlc,* int *inlr,* int *inorm,* ea , ew1 , int *inh,* nfirst , nlast , eb , ew2 , ec , n2sta , int * *jstat*)

Definition at line 54 of file s1945.c.

30.2620 sisl/src/s1946.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1946.c:



Macros

- #define S1946

Functions

- void s1946 (ea, ew1, nfirst, nlast, ed, ec, int ik, int in, int im, int idim, int ilend, int irend, int inlr, int inlc, int *jstat)

30.2620.1 Macro Definition Documentation

30.2620.1.1 #define S1946

Definition at line 43 of file s1946.c.

30.2620.2 Function Documentation

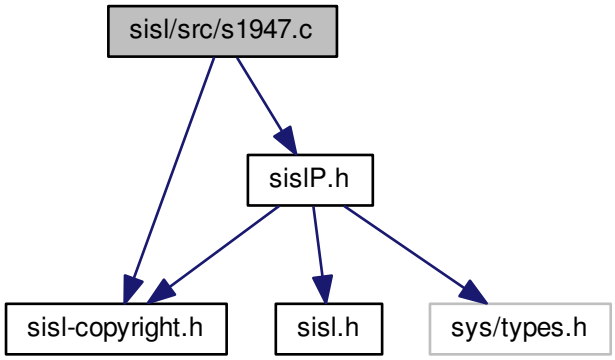
30.2620.2.1 void s1946 (ea , ew1 , nfirst , nlast , ed , ec , int *ik,* int *in,* int *im,* int *idim,* int *ilend,* int *irend,* int *inlr,* int *inlc,* int ∗ *jstat*)

Definition at line 53 of file s1946.c.

30.2621 sisl/src/s1947.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1947.c:



Macros

- #define S1947

Functions

- void s1947 (ea, nfirst, nlast, int ik, int im, etau, int in, int incont, ew, int inlr, int ∗jnred, efac, int ∗jstat)

30.2621.1 Macro Definition Documentation

30.2621.1.1 #define S1947

Definition at line 43 of file s1947.c.

30.2621.2 Function Documentation

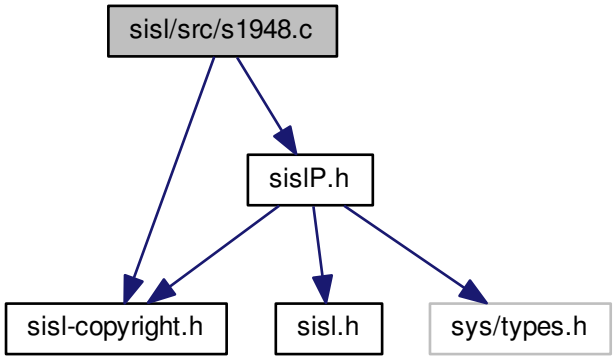
30.2621.2.1 void s1947 (ea , nfirst , nlast , int *ik,* int *im,* etau , int *in,* int *incont,* ew , int *inlr,* int * *jnred,* efac , int * *jstat*)

Definition at line 53 of file s1947.c.

30.2622 sisl/src/s1948.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1948.c:



Macros

- #define S1948

Functions

- void s1948 (double *ea, double *ew, int in, int ik, int inlr, int *nstart, int *jstat)

30.2622.1 Macro Definition Documentation

30.2622.1.1 #define S1948

Definition at line 43 of file s1948.c.

30.2622.2 Function Documentation

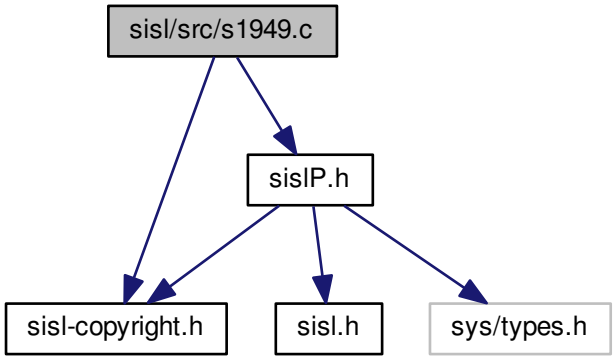
30.2622.2.1 void s1948 (double * *ea*, double * *ew*, int *in*, int *ik*, int *inlr*, int * *nstart*, int * *jstat*)

Definition at line 52 of file s1948.c.

30.2623 sisl/src/s1949.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1949.c:



Macros

- #define S1949

Functions

- void s1949 (double *ea, double *ew, double *eb, int in, int ik, int inlr, int idim, int *nstart, int *jstat)

30.2623.1 Macro Definition Documentation

30.2623.1.1 #define S1949

Definition at line 48 of file s1949.c.

30.2623.2 Function Documentation

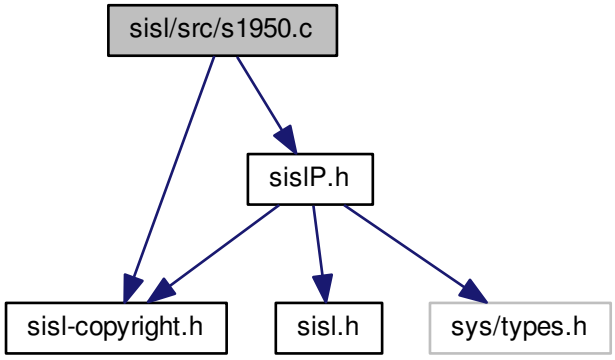
30.2623.2.1 void s1949 (double * *ea*, double * *ew*, double * *eb*, int *in*, int *ik*, int *inlr*, int *idim*, int * *nstart*, int * *jstat*)

Definition at line 57 of file s1949.c.

30.2624 sisl/src/s1950.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1950.c:



Macros

- #define S1950

Functions

- void s1950 (SISLCurve *oldcurve, SISLCurve *rankcurve, rank_info *ranking, eps, epsco, int startfix, int endfix, int *jncont, int mini, int maxi, SISLCurve **newcurve, maxerr, int *stat)

30.2624.1 Macro Definition Documentation

30.2624.1.1 #define S1950

Definition at line 43 of file s1950.c.

30.2624.2 Function Documentation

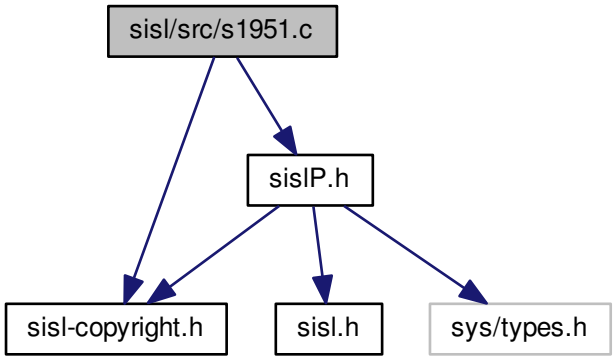
30.2624.2.1 void s1950 (SISLCurve * *oldcurve,* SISLCurve * *rankcurve,* rank_info * *ranking,* eps , epsco , int *startfix,* int *endfix,* int * *jncont,* int *mini,* int *maxi,* SISLCurve ** *newcurve,* maxerr , int * *stat*)

Definition at line 52 of file s1950.c.

30.2625 sisl/src/s1951.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1951.c:



Macros

- #define S1951

Functions

- void s1951 (etau, ecoef, int in, int ik, int idim, int ilend, int irend, int incont, efac)

30.2625.1 Macro Definition Documentation

30.2625.1.1 #define S1951

Definition at line 43 of file s1951.c.

30.2625.2 Function Documentation

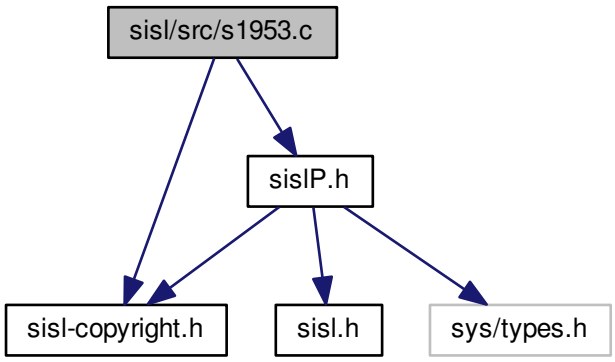
30.2625.2.1 void s1951 (etau , ecoef , int *in,* int *ik,* int *idim,* int *ilend,* int *irend,* int *incont,* efac)

Definition at line 52 of file s1951.c.

30.2626 sisl/src/s1953.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1953.c:



Macros

- #define S1953

Functions

- void s1953 (SISLCurve *pcurve, epoint, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2626.1 Macro Definition Documentation

30.2626.1.1 #define S1953

Definition at line 49 of file s1953.c.

30.2626.2 Function Documentation

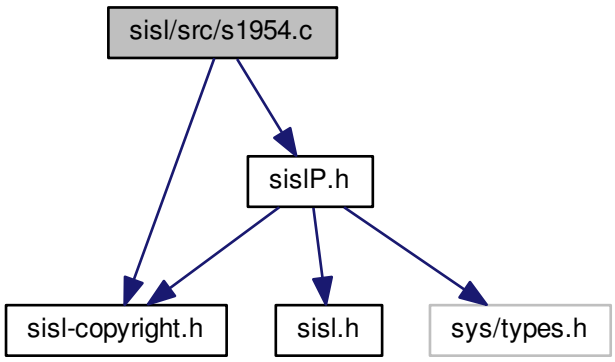
30.2626.2.1 void s1953 (SISLCurve * *pcurve*, epoint , int *idim*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1953.c.

30.2627 sisl/src/s1954.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1954.c:



Macros

- #define S1954

Functions

- void s1954 (SISLSurf *psurf, epoint, int idim, double aepsco, double aepsge, int *jpt, double **gpar, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2627.1 Macro Definition Documentation

30.2627.1.1 #define S1954

Definition at line 49 of file s1954.c.

30.2627.2 Function Documentation

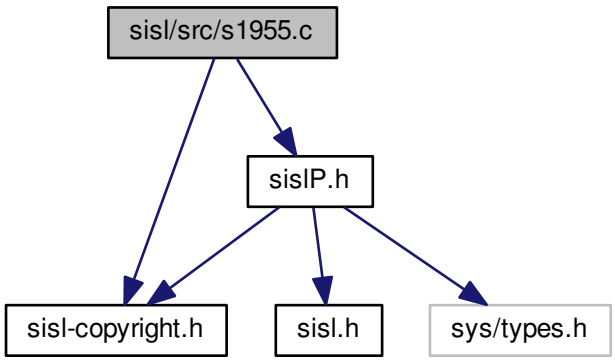
30.2627.2.1 void s1954 (SISLSurf * *psurf,* epoint , int *idim,* double *aepsco,* double *aepsge,* int * *jpt,* double ** *gpar,* int * *jcrv,* SISLIntcurve *** *wcurve,* int * *jstat*)

Definition at line 58 of file s1954.c.

30.2628 sisl/src/s1955.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1955.c:



Macros

- #define S1955

Functions

- void s1955 (SISLCurve *pc1, SISLCurve *pc2, double aepsco, double aepsge, int *jpt, double **gpar1, double **gpar2, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2628.1 Macro Definition Documentation

30.2628.1.1 #define S1955

Definition at line 49 of file s1955.c.

30.2628.2 Function Documentation

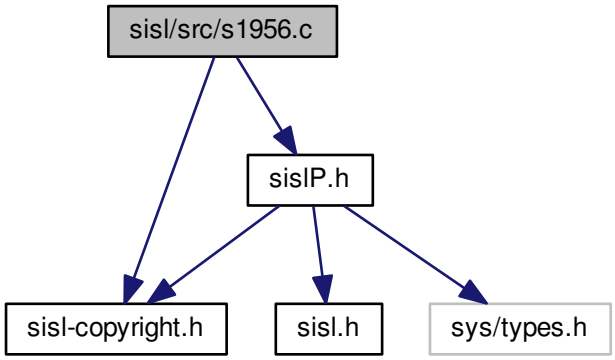
30.2628.2.1 void s1955 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsco*, double *aepsge*, int * *jpt*, double ** *gpar1*, double ** *gpar2*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 58 of file s1955.c.

30.2629 sisl/src/s1956.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1956.c:



Macros

- #define S1956

Functions

- void s1956 (SISLCurve *pc1, SISLCurve *pc2, SISLSurf **rsurf, int *jstat)

30.2629.1 Macro Definition Documentation

30.2629.1.1 #define S1956

Definition at line 49 of file s1956.c.

30.2629.2 Function Documentation

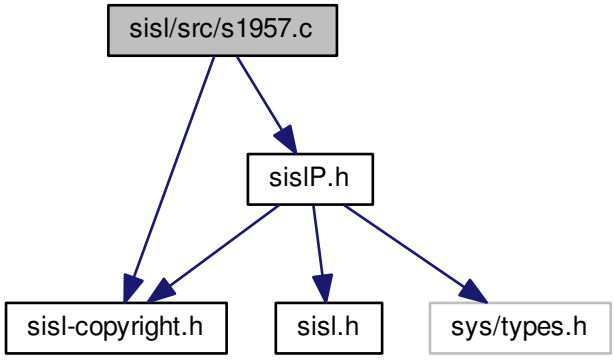
30.2629.1 void s1956 (SISLCurve * *pc1*, SISLCurve * *pc2*, SISLSurf ** *rsurf*, int * *jstat*)

Definition at line 57 of file s1956.c.

30.2630 sisl/src/s1957.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1957.c:



Macros

- #define S1957

Functions

- void s1957 (SISLCurve *pcurve, epoint, int idim, double aepsco, double aepsge, double *gpar, double *dist, int *jstat)

30.2630.1 Macro Definition Documentation

30.2630.1.1 #define S1957

Definition at line 49 of file s1957.c.

30.2630.2 Function Documentation

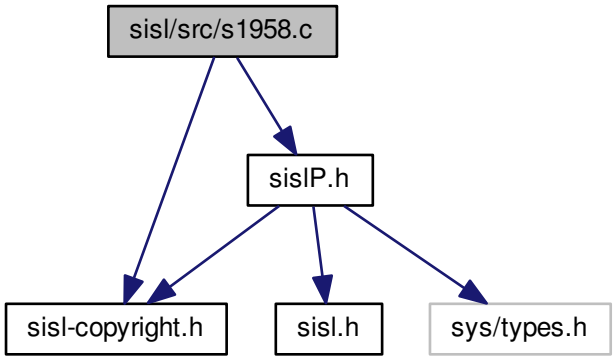
30.2630.2.1 void s1957 (SISLCurve * *pcurve*, epoint , int *idim*, double *aepsco*, double *aepsge*, double * *gpar*, double * *dist*, int * *jstat*)

Definition at line 58 of file s1957.c.

30.2631 sisl/src/s1958.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1958.c:



Macros

- #define S1958

Functions

- void s1958 (SISLSurf *psurf, epoint, int idim, double aepsco, double aepsge, gpar, double *dist, int *jstat)

30.2631.1 Macro Definition Documentation

30.2631.1.1 #define S1958

Definition at line 49 of file s1958.c.

30.2631.2 Function Documentation

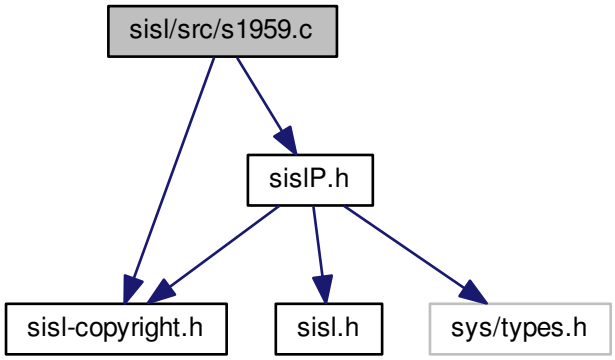
30.2631.2.1 void s1958 (SISLSurf * *psurf,* epoint *,* int *idim,* double *aepsco,* double *aepsge,* gpar *,* double * *dist,* int * *jstat*)

Definition at line 58 of file s1958.c.

30.2632 sisl/src/s1959.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1959.c:



Macros

- #define S1959

Functions

- void s1959 (SISLPoint *ppoint, SISLCurve *pcurve, double *gpos, int *jstat)

30.2632.1 Macro Definition Documentation

30.2632.1.1 #define S1959

Definition at line 47 of file s1959.c.

30.2632.2 Function Documentation

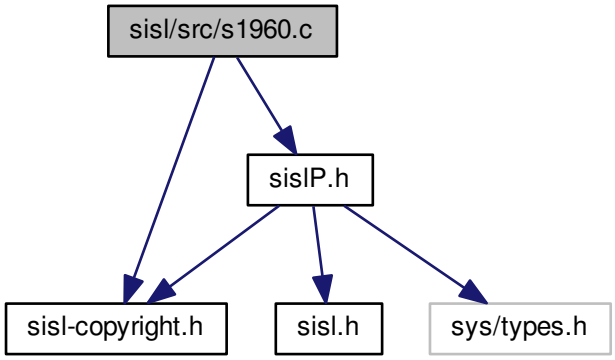
30.2632.2.1 void s1959 (SISLPoint * *ppoint,* SISLCurve * *pcurve,* double * *gpos,* int * *jstat*)

Definition at line 55 of file s1959.c.

30.2633 sisl/src/s1960.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1960.c:



Macros

- #define S1960

Functions

- void s1960 (SISLPoint *ppoint, SISLSurf *psurf, gpos, int *jstat)

30.2633.1 Macro Definition Documentation

30.2633.1.1 #define S1960

Definition at line 47 of file s1960.c.

30.2633.2 Function Documentation

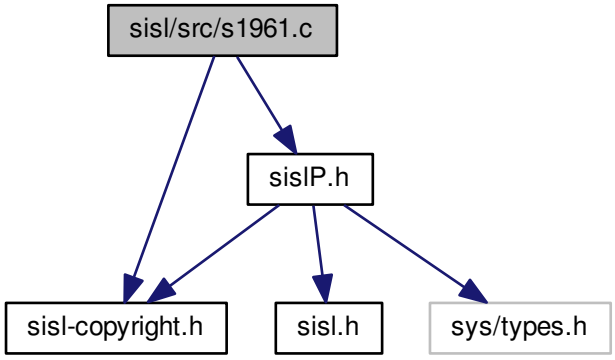
30.2633.2.1 void s1960 (SISLPoint * *ppoint*, SISLSurf * *psurf*, gpos , int * *jstat*)

Definition at line 55 of file s1960.c.

30.2634 sisl/src/s1961.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1961.c:



Macros

- #define S1961

Functions

- void s1961 (ep, int im, int idim, int ipar, epar, eeps, int ilend, int irend, int iopen, double afctol, int itmax, int ik, SISLCurve **rc, emxerr, int *jstat)

30.2634.1 Macro Definition Documentation

30.2634.1.1 #define S1961

Definition at line 42 of file s1961.c.

30.2634.2 Function Documentation

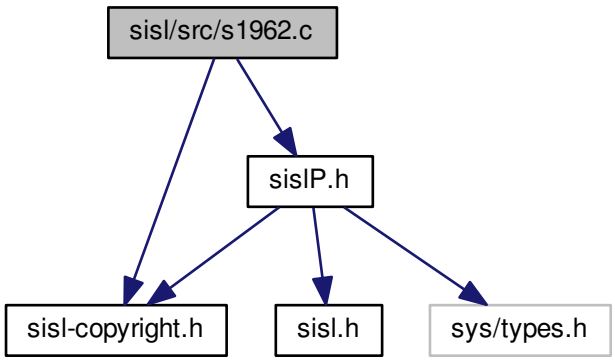
30.2634.2.1 void s1961 (ep , int *im,* int *idim,* int *ipar,* epar , eeps , int *ilend,* int *irend,* int *iopen,* double *afctol,* int *itmax,* int *ik,* SISLCurve ** *rc,* emxerr , int * *jstat*)

Definition at line 52 of file s1961.c.

30.2635 sisl/src/s1962.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1962.c:



Macros

- #define S1962

Functions

- void s1962 (ep, ev, int im, int idim, int ipar, epar, eeps, int ilend, int irend, int iopen, int itmax, SISLCurve **rc, emxerr, int *jstat)

30.2635.1 Macro Definition Documentation

30.2635.1.1 #define S1962

Definition at line 43 of file s1962.c.

30.2635.2 Function Documentation

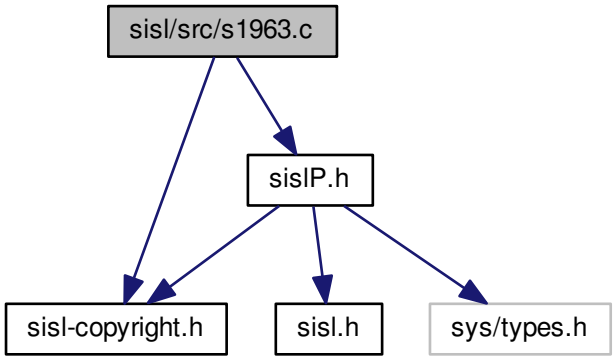
30.2635.2.1 void s1962 (ep , ev , int *im,* int *idim,* int *ipar,* epar , eeps , int *ilend,* int *irend,* int *iopen,* int *itmax,* SISLCurve ** *rc,* emxerr , int * *jstat*)

Definition at line 52 of file s1962.c.

30.2636 sisl/src/s1963.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1963.c:



Macros

- #define S1963

Functions

- void s1963 (SISLCurve *pc, eeps, int ilend, int irend, int iopen, int itmax, SISLCurve **rc, int *jstat)

30.2636.1 Macro Definition Documentation

30.2636.1.1 #define S1963

Definition at line 42 of file s1963.c.

30.2636.2 Function Documentation

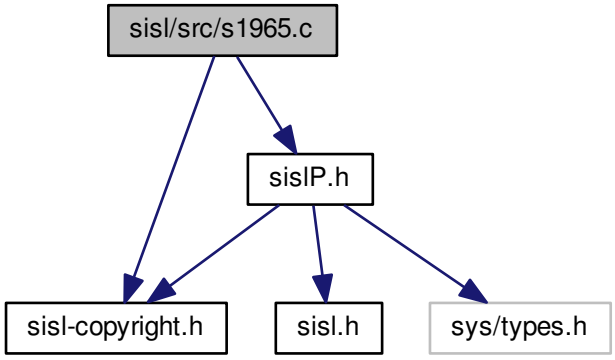
30.2636.2.1 void s1963 (SISLCurve * *pc*, eeps , int *ilend*, int *irend*, int *iopen*, int *itmax*, SISLCurve ** *rc*, int * *jstat*)

Definition at line 50 of file s1963.c.

30.2637 sisl/src/s1965.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1965.c:



Macros

- #define S1965

Functions

- void s1965 (SISLSurf *oldsurf, eps, edgefix, int iopen1, int iopen2, edgeps, int opt, int itmax, SISLSurf **newsurf, maxerr, int *stat)

30.2637.1 Macro Definition Documentation

30.2637.1.1 #define S1965

Definition at line 43 of file s1965.c.

30.2637.2 Function Documentation

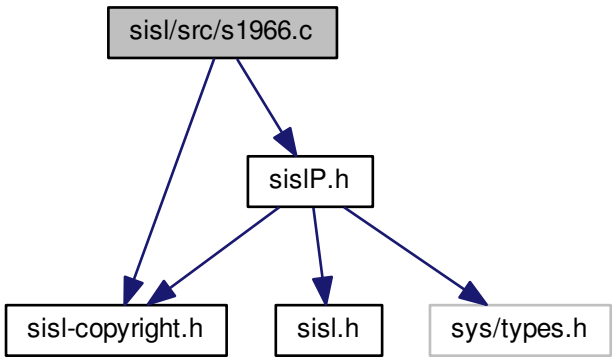
30.2637.2.1 void s1965 (SISLSurf * *oldsurf,* eps , edgefix , int *iopen1,* int *iopen2,* edgeps , int *opt,* int *itmax,* SISLSurf ** *newsurf,* maxerr , int * *stat*)

Definition at line 53 of file s1965.c.

30.2638 sisl/src/s1966.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1966.c:



Macros

- #define S1966

Functions

- void s1966 (ep, int im1, int im2, int idim, int ipar, epar1, epar2, eeps, nend, int iopen1, int iopen2, edgeps, double afctol, int iopt, int itmax, int ik1, int ik2, SISLSurf **rs, emxerr, int *jstat)

30.2638.1 Macro Definition Documentation

30.2638.1.1 #define S1966

Definition at line 43 of file s1966.c.

30.2638.2 Function Documentation

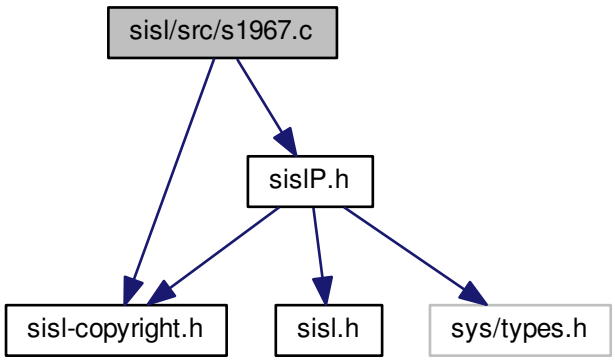
30.2638.2.1 void s1966 (ep , int *im1,* int *im2,* int *idim,* int *ipar,* epar1 , epar2 , eeps , nend , int *iopen1,* int *iopen2,* edgeps , double *afctol,* int *iopt,* int *itmax,* int *ik1,* int *ik2,* SISLSurf ∗∗ *rs,* emxerr , int ∗ *jstat*)

Definition at line 53 of file s1966.c.

30.2639 sisl/src/s1967.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1967.c:



Macros

- #define S1967

Functions

- void s1967 (ep, etang1, etang2, eder11, int im1, int im2, int idim, int ipar, epar1, epar2, eeps, nend, int iopen1, int iopen2, edgeps, int iopt, int itmax, SISLSurf ∗∗rs, emxerr, int ∗jstat)

30.2639.1 Macro Definition Documentation

30.2639.1.1 #define S1967

Definition at line 42 of file s1967.c.

30.2639.2 Function Documentation

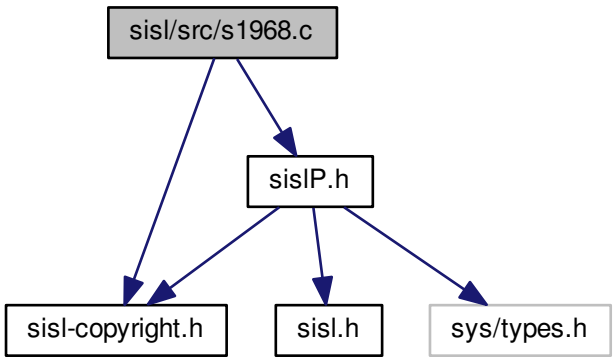
30.2639.2.1 void s1967 (ep , etang1 , etang2 , eder11 , int *im1,* int *im2,* int *idim,* int *ipar,* epar1 , epar2 , eeps , nend , int *iopen1,* int *iopen2,* edgeps , int *iopt,* int *itmax,* SISLSurf ** *rs,* emxerr , int * *jstat*)

Definition at line 53 of file s1967.c.

30.2640 sisl/src/s1968.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1968.c:



Macros

- #define S1968

Functions

- void s1968 (SISLSurf *ps, eeps, nend, int iopen1, int iopen2, edgeps, int iopt, int itmax, SISLSurf **rs, int *jstat)

30.2640.1 Macro Definition Documentation

30.2640.1.1 #define S1968

Definition at line 43 of file s1968.c.

30.2640.2 Function Documentation

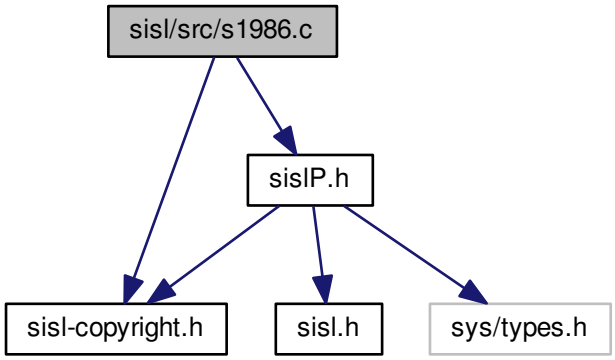
30.2640.2.1 void s1968 (SISLSurf * *ps*, eeps , nend , int *iopen1*, int *iopen2*, edgeps , int *iopt*, int *itmax*, SISLSurf ** *rs*, int * *jstat*)

Definition at line 52 of file s1968.c.

30.2641 sisl/src/s1986.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1986.c:



Macros

- #define S1986

Functions

- void s1986 (SISLCurve *pc, double aepsge, int *jgtpi, double **gaxis, double *cang, int *jstat)

30.2641.1 Macro Definition Documentation

30.2641.1.1 #define S1986

Definition at line 42 of file s1986.c.

30.2641.2 Function Documentation

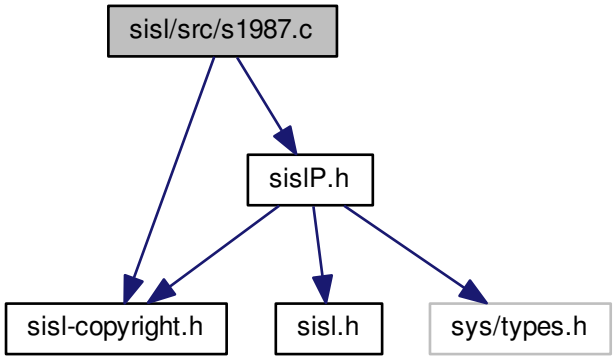
30.2641.2.1 void s1986 (SISLCurve * *pc*, double *aepsge*, int * *jgtpi*, double ** *gaxis*, double * *cang*, int * *jstat*)

Definition at line 51 of file s1986.c.

30.2642 sisl/src/s1987.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1987.c:



Macros

- #define S1987

Functions

- void s1987 (SISLSurf *ps, double aepsge, int *jgtpi, double **gaxis, double *cang, int *jstat)

30.2642.1 Macro Definition Documentation

30.2642.1.1 #define S1987

Definition at line 42 of file s1987.c.

30.2642.2 Function Documentation

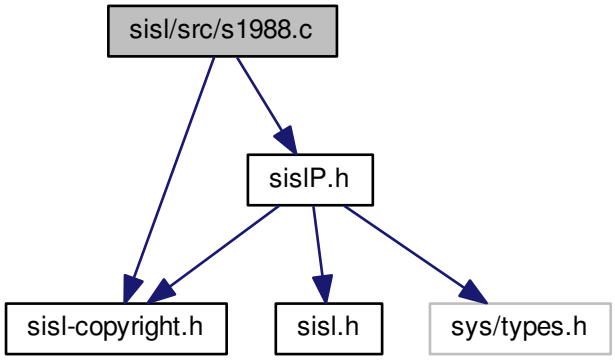
30.2642.2.1 void s1987 (SISLSurf * *ps*, double *aepsge*, int * *jgtpi*, double ** *gaxis*, double * *cang*, int * *jstat*)

Definition at line 51 of file s1987.c.

30.2643 sisl/src/s1988.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1988.c:



Macros

- #define S1988

Functions

- void s1988 (SISLCurve *pc, double **emax, double **emin, int *jstat)

30.2643.1 Macro Definition Documentation

30.2643.1.1 #define S1988

Definition at line 49 of file s1988.c.

30.2643.2 Function Documentation

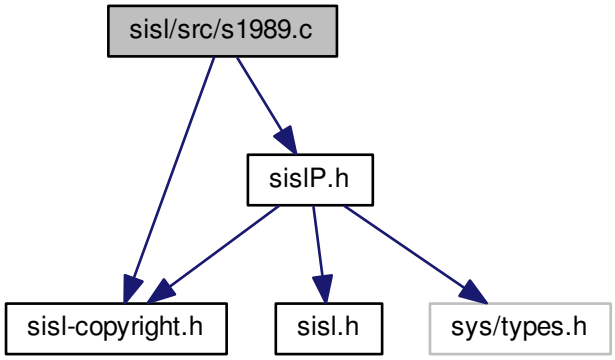
30.2643.2.1 void s1988 (SISLCurve * *pc*, double ** *emax*, double ** *emin*, int * *jstat*)

Definition at line 57 of file s1988.c.

30.2644 sisl/src/s1989.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1989.c:



Macros

- #define S1989

Functions

- void s1989 (SISLSurf *ps, double **emax, double **emin, int *jstat)

30.2644.1 Macro Definition Documentation

30.2644.1.1 #define S1989

Definition at line 49 of file s1989.c.

30.2644.2 Function Documentation

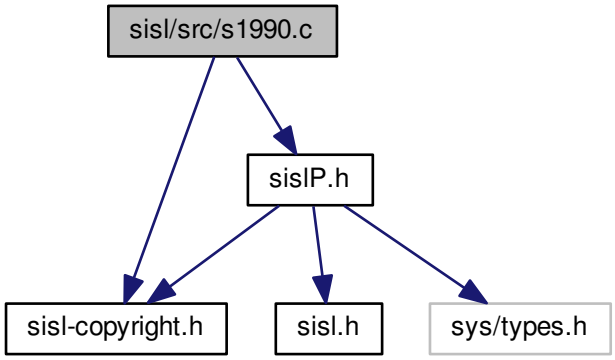
30.2644.2.1 void s1989 (SISLSurf * *ps*, double ** *emax*, double ** *emin*, int * *jstat*)

Definition at line 57 of file s1989.c.

30.2645 sisl/src/s1990.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1990.c:



Macros

- #define S1990

Functions

- void s1990 (SISLSurf *ps, double aepsge, int *jstat)

30.2645.1 Macro Definition Documentation

30.2645.1.1 #define S1990

Definition at line 49 of file s1990.c.

30.2645.2 Function Documentation

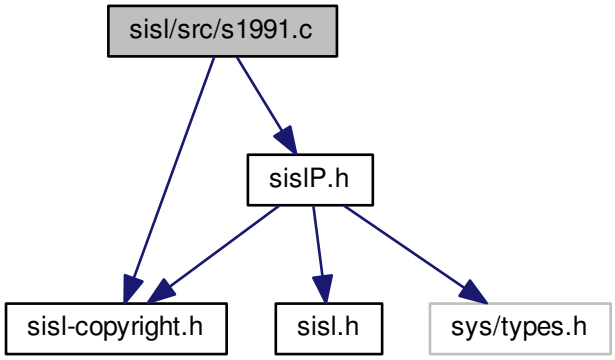
30.2645.2.1 void s1990 (SISLSurf * *ps*, double *aepsge*, int * *jstat*)

Definition at line 72 of file s1990.c.

30.2646 sisl/src/s1991.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1991.c:



Macros

- #define S1991

Functions

- void s1991 (SISLCurve *pc, double aepsge, int *jstat)

30.2646.1 Macro Definition Documentation

30.2646.1.1 #define S1991

Definition at line 49 of file s1991.c.

30.2646.2 Function Documentation

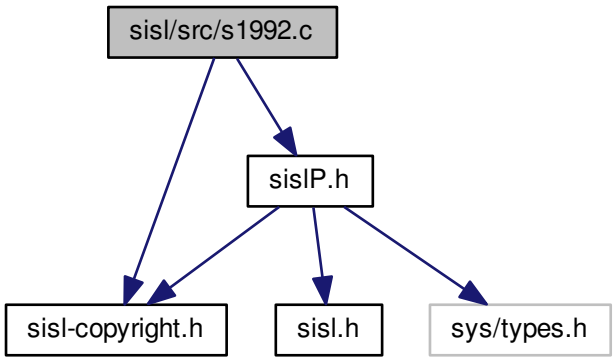
30.2646.2.1 void s1991 (SISLCurve * *pc*, double *aepsge*, int * *jstat*)

Definition at line 64 of file s1991.c.

30.2647 sisl/src/s1992.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1992.c:



Macros

- #define S1992

Functions

- void s1992 (SISLObject *po, int *jstat)
- void s1992cu (SISLCurve *pc, int *jstat)
- void s1992su (SISLSurf *ps, int *jstat)

30.2647.1 Macro Definition Documentation

30.2647.1.1 #define S1992

Definition at line 49 of file s1992.c.

30.2647.2 Function Documentation

30.2647.2.1 void s1992 (SISLObject * *po*, int * *jstat*)

Definition at line 75 of file s1992.c.

30.2647.2.2 void s1992cu (SISLCurve * *pc*, int * *jstat*)

Definition at line 193 of file s1992.c.

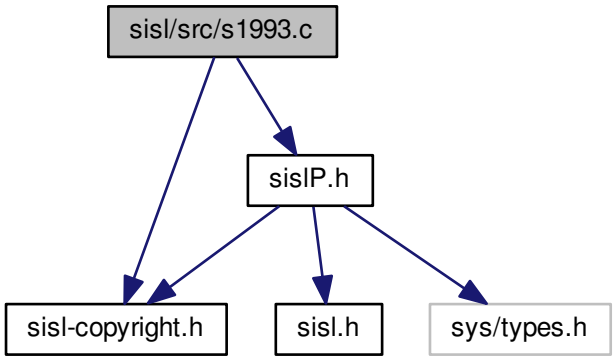
30.2647.2.3 void s1992su (SISLSurf * *ps*, int * *jstat*)

Definition at line 265 of file s1992.c.

30.2648 sisl/src/s1993.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1993.c:



Macros

- #define S1993

Functions

- void s1993 (SISLCurve *c1, int *jstat)

30.2648.1 Macro Definition Documentation

30.2648.1.1 #define S1993

Definition at line 49 of file s1993.c.

30.2648.2 Function Documentation

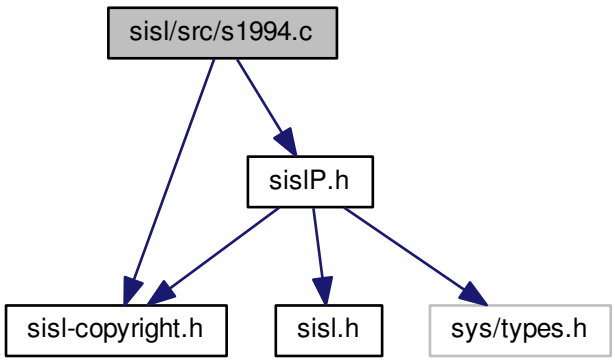
30.2648.2.1 void s1993 (SISLCurve * *c1*, int * *jstat*)

Definition at line 57 of file s1993.c.

30.2649 sisl/src/s1994.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s1994.c:



Macros

- #define S1994

Functions

- void s1994 (SISLSurf *s1, int *jstat)

30.2649.1 Macro Definition Documentation

30.2649.1.1 #define S1994

Definition at line 49 of file s1994.c.

30.2649.2 Function Documentation

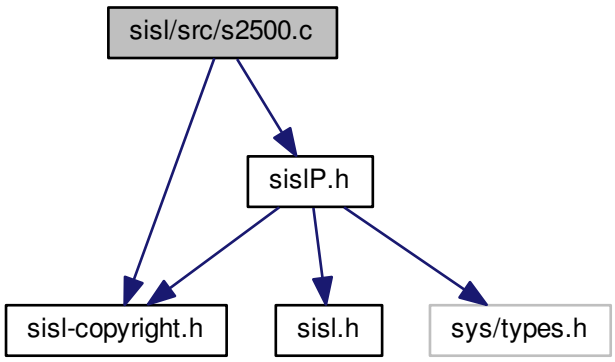
30.2649.2.1 void s1994 (SISLSurf * *s1*, int * *jstat*)

Definition at line 57 of file s1994.c.

30.2650 sisl/src/s2500.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2500.c:



Macros

- #define S2500

Functions

- void s2500 (SISLSurf *surf, int ider, int iside1, int iside2, parvalue, int *leftknot1, int *leftknot2, double *gaussian, int *jstat)

30.2650.1 Macro Definition Documentation

30.2650.1.1 #define S2500

Definition at line 49 of file s2500.c.

30.2650.2 Function Documentation

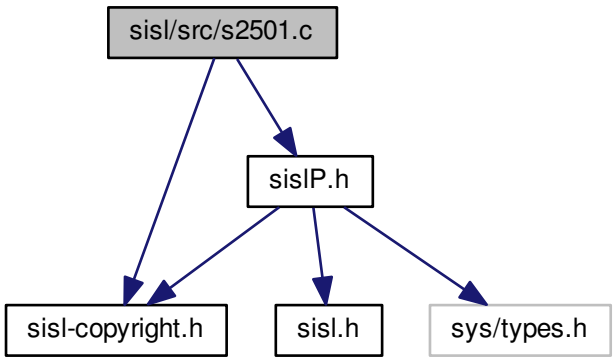
30.2650.2.1 void s2500 (SISLSurf * *surf,* int *ider,* int *iside1,* int *iside2,* parvalue , int * *leftknot1,* int * *leftknot2,* double * *gaussian,* int * *jstat*)

Definition at line 58 of file s2500.c.

30.2651 sisl/src/s2501.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2501.c:



Macros

- #define S2501

Functions

- void s2501 (SISLSurf *surf, int ider, derive, normal, double *gaussian, int *jstat)

30.2651.1 Macro Definition Documentation

30.2651.1.1 #define S2501

Definition at line 49 of file s2501.c.

30.2651.2 Function Documentation

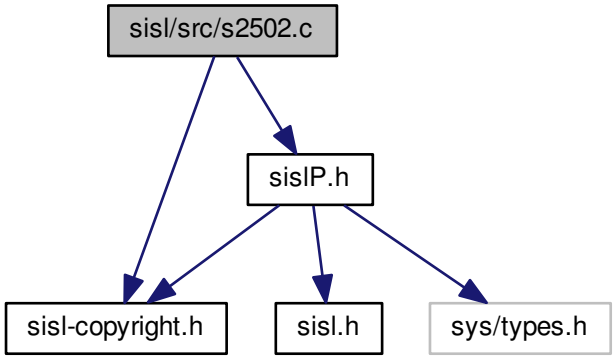
30.2651.2.1 void s2501 (SISLSurf * *surf,* int *ider,* derive , normal , double * *gaussian,* int * *jstat*)

Definition at line 58 of file s2501.c.

30.2652 sisl/src/s2502.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2502.c:



Macros

- #define S2502

Functions

- void s2502 (SISLSurf *surf, int ider, int iside1, int iside2, parvalue, int *leftknot1, int *leftknot2, double *meancurvature, int *jstat)

30.2652.1 Macro Definition Documentation

30.2652.1.1 #define S2502

Definition at line 49 of file s2502.c.

30.2652.2 Function Documentation

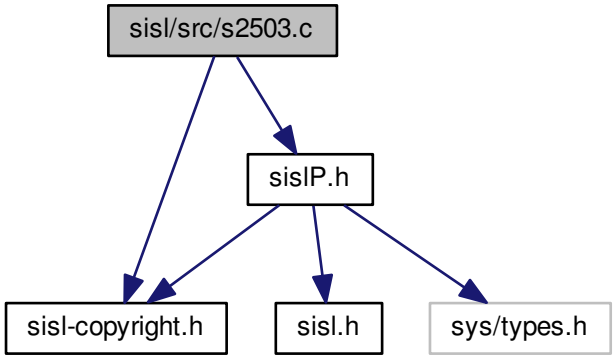
30.2652.2.1 void s2502 (SISLSurf * *surf,* int *ider,* int *iside1,* int *iside2,* parvalue , int * *leftknot1,* int * *leftknot2,* double * *meancurvature,* int * *jstat*)

Definition at line 58 of file s2502.c.

30.2653 sisl/src/s2503.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2503.c:



Macros

- #define S2503

Functions

- void s2503 (SISLSurf *surf, int ider, derive, normal, double *meancurvature, int *jstat)

30.2653.1 Macro Definition Documentation

30.2653.1.1 #define S2503

Definition at line 49 of file s2503.c.

30.2653.2 Function Documentation

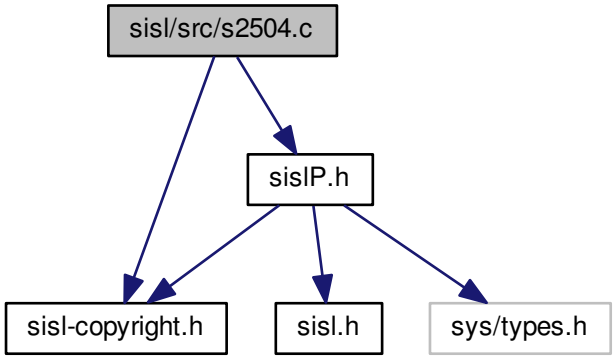
30.2653.2.1 void s2503 (SISLSurf * *surf,* int *ider,* derive , normal , double * *meancurvature,* int * *jstat*)

Definition at line 57 of file s2503.c.

30.2654 sisl/src/s2504.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2504.c:



Macros

- #define S2504

Functions

- void s2504 (SISLSurf *surf, int ider, int iside1, int iside2, parvalue, int *leftknot1, int *leftknot2, double *absCurvature, int *jstat)

30.2654.1 Macro Definition Documentation

30.2654.1.1 #define S2504

Definition at line 49 of file s2504.c.

30.2654.2 Function Documentation

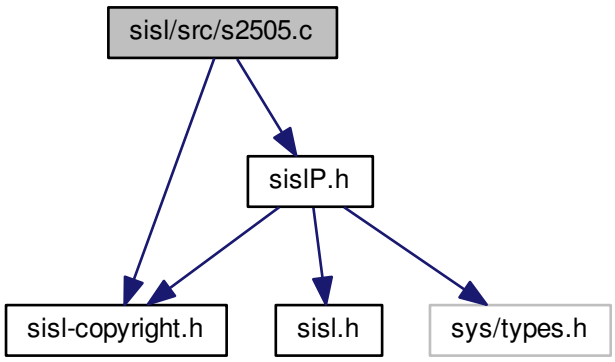
30.2654.2.1 void s2504 (SISLSurf * *surf,* int *ider,* int *iside1,* int *iside2,* parvalue , int * *leftknot1,* int * *leftknot2,* double * *absCurvature,* int * *jstat*)

Definition at line 58 of file s2504.c.

30.2655 sisl/src/s2505.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2505.c:



Macros

- #define S2505

Functions

- void s2505 (SISLSurf *surf, int der, derive, normal, double *absCurvature, int *jstat)

30.2655.1 Macro Definition Documentation

30.2655.1.1 #define S2505

Definition at line 49 of file s2505.c.

30.2655.2 Function Documentation

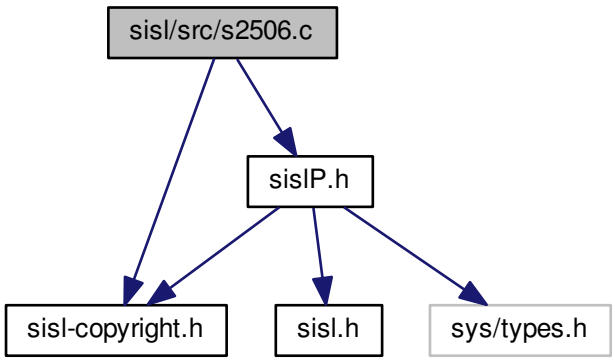
30.2655.2.1 void s2505 (SISLSurf * *surf,* int *der,* derive , normal , double * *absCurvature,* int * *jstat*)

Definition at line 58 of file s2505.c.

30.2656 sisl/src/s2506.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2506.c:



Macros

- #define S2506

Functions

- void s2506 (SISLSurf *surf, int ider, int iside1, int iside2, parvalue, int *leftknot1, int *leftknot2, double *total↩ Curvature, int *jstat)

30.2656.1 Macro Definition Documentation

30.2656.1.1 #define S2506

Definition at line 49 of file s2506.c.

30.2656.2 Function Documentation

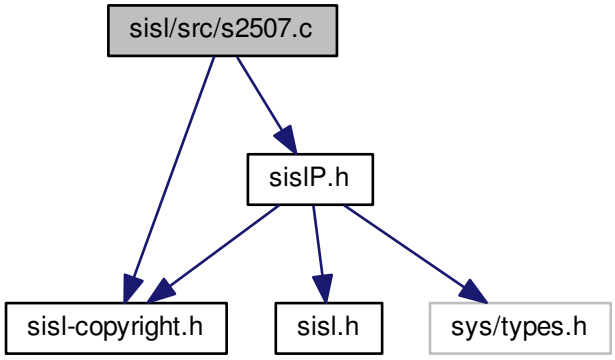
30.2656.2.1 void s2506 (SISLSurf * *surf,* int *ider,* int *iside1,* int *iside2,* parvalue , int * *leftknot1,* int * *leftknot2,* double * *totalCurvature,* int * *jstat*)

Definition at line 58 of file s2506.c.

30.2657 sisl/src/s2507.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2507.c:



Macros

- #define S2507

Functions

- void s2507 (SISLSurf *surf, int ider, derive, normal, double *totalCurvature, int *jstat)

30.2657.1 Macro Definition Documentation

30.2657.1.1 #define S2507

Definition at line 49 of file s2507.c.

30.2657.2 Function Documentation

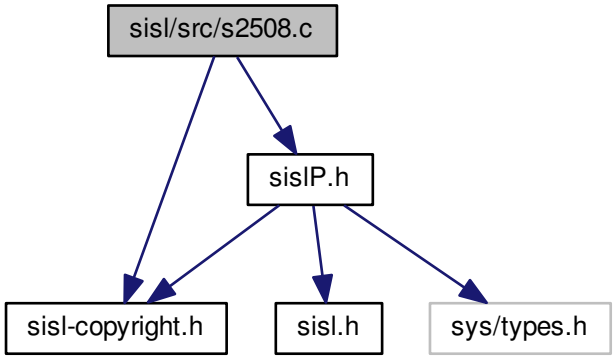
30.2657.2.1 void s2507 (SISLSurf * *surf,* int *ider,* derive , normal , double * *totalCurvature,* int * *jstat*)

Definition at line 58 of file s2507.c.

30.2658 sisl/src/s2508.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2508.c:



Macros

- #define S2508

Functions

- void s2508 (SISLSurf *surf, int ider, int iside1, int iside2, parvalue, int *leftknot1, int *leftknot2, double *mehlum, int *jstat)

30.2658.1 Macro Definition Documentation

30.2658.1.1 #define S2508

Definition at line 49 of file s2508.c.

30.2658.2 Function Documentation

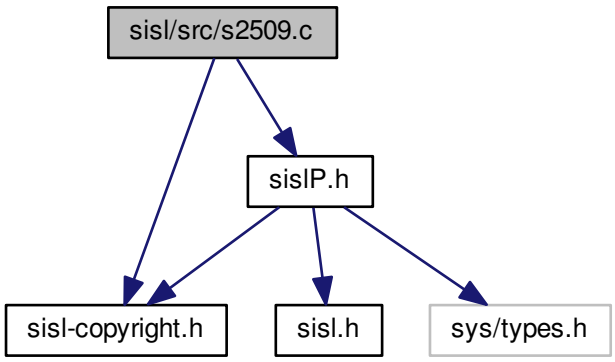
30.2658.2.1 void s2508 (SISLSurf * *surf,* int *ider,* int *iside1,* int *iside2,* parvalue , int * *leftknot1,* int * *leftknot2,* double * *mehlum,* int * *jstat*)

Definition at line 58 of file s2508.c.

30.2659 sisl/src/s2509.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2509.c:



Macros

- #define S2509

Functions

- void s2509 (SISLSurf *surf, int ider, derive, normal, double *mehlum, int *jstat)

30.2659.1 Macro Definition Documentation

30.2659.1.1 #define S2509

Definition at line 49 of file s2509.c.

30.2659.2 Function Documentation

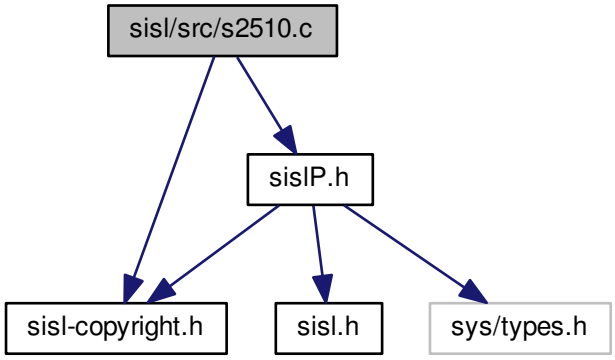
30.2659.2.1 void s2509 (SISLSurf * *surf,* int *ider,* derive , normal , double * *mehlum,* int * *jstat*)

Definition at line 58 of file s2509.c.

30.2660 sisl/src/s2510.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2510.c:



Macros

- #define S2510

Functions

- void s2510 (SISLSurf *surf, int ider, int iside1, int iside2, parvalue, int *leftknot1, int *leftknot2, double *mehlum, int *jstat)

30.2660.1 Macro Definition Documentation

30.2660.1.1 #define S2510

Definition at line 49 of file s2510.c.

30.2660.2 Function Documentation

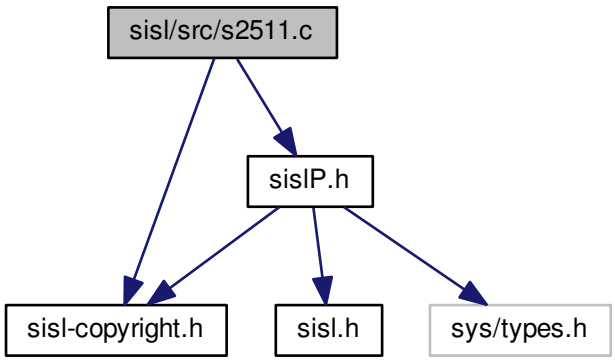
30.2660.2.1 void s2510 (SISLSurf * *surf,* int *ider,* int *iside1,* int *iside2,* parvalue , int * *leftknot1,* int * *leftknot2,* double * *mehlum,* int * *jstat*)

Definition at line 58 of file s2510.c.

30.2661 sisl/src/s2511.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2511.c:



Macros

- #define S2511

Functions

- void s2511 (SISLSurf *surf, int ider, derive, normal, double *mehlum, int *jstat)

30.2661.1 Macro Definition Documentation

30.2661.1.1 #define S2511

Definition at line 49 of file s2511.c.

30.2661.2 Function Documentation

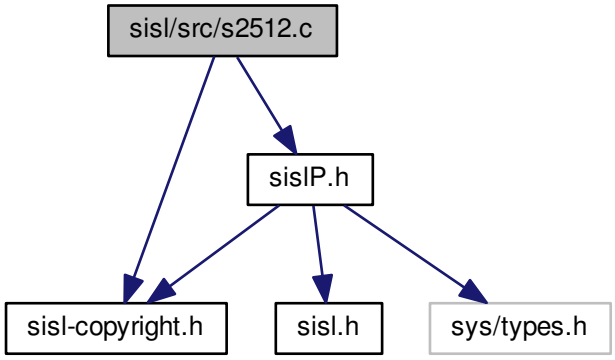
30.2661.2.1 void s2511 (SISLSurf * *surf,* int *ider,* derive , normal , double * *mehlum,* int * *jstat*)

Definition at line 58 of file s2511.c.

30.2662 sisl/src/s2512.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2512.c:



Macros

- #define S2512

Functions

- void s2512 (SISLSurf *surf, int ider, int iside1, int iside2, parvalue, int *leftknot1, int *leftknot2, gaussian, int *stat)

30.2662.1 Macro Definition Documentation

30.2662.1.1 #define S2512

Definition at line 49 of file s2512.c.

30.2662.2 Function Documentation

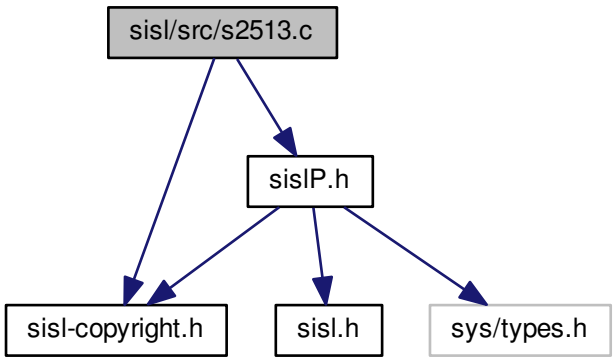
30.2662.2.1 void s2512 (SISLSurf * *surf,* int *ider,* int *iside1,* int *iside2,* parvalue , int * *leftknot1,* int * *leftknot2,* gaussian , int * *stat*)

Definition at line 58 of file s2512.c.

30.2663 sisl/src/s2513.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2513.c:



Macros

- #define S2513

Functions

- void s2513 (SISLSurf *surf, int ider, int type, int normalized, derive, normal, fundform, int *stat)

30.2663.1 Macro Definition Documentation

30.2663.1.1 #define S2513

Definition at line 49 of file s2513.c.

30.2663.2 Function Documentation

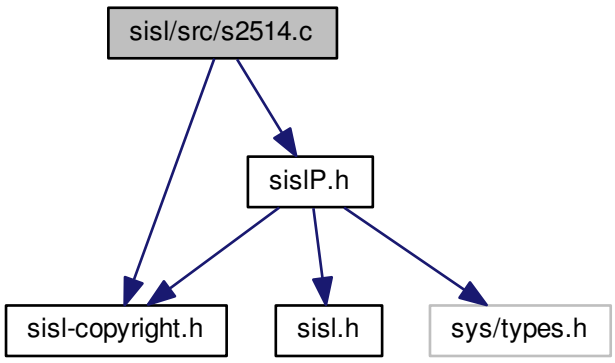
30.2663.2.1 void s2513 (SISLSurf * *surf,* int *ider,* int *type,* int *normalized,* derive , normal , fundform , int * *stat*)

Definition at line 58 of file s2513.c.

30.2664 sisl/src/s2514.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2514.c:



Macros

- #define S2514

Functions

- void s2514 (SISLSurf *surf, int ider, derive, normal, gaussian, int *stat)

30.2664.1 Macro Definition Documentation

30.2664.1.1 #define S2514

Definition at line 49 of file s2514.c.

30.2664.2 Function Documentation

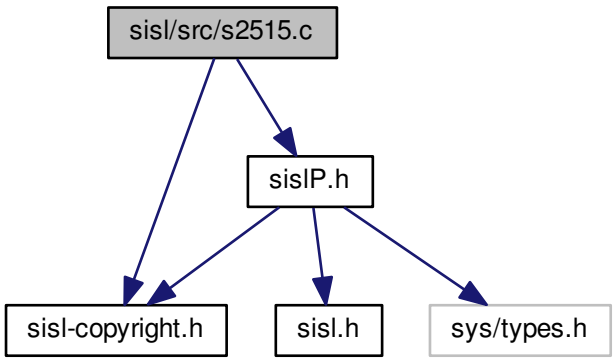
30.2664.2.1 void s2514 (SISLSurf * *surf,* int *ider,* derive , normal , gaussian , int * *stat*)

Definition at line 58 of file s2514.c.

30.2665 sisl/src/s2515.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2515.c:



Macros

- #define S2515

Functions

- void s2515 (SISLSurf *surf, int ider, int iside1, int iside2, parvalue, int *leftknot1, int *leftknot2, mehlum, int *stat)

30.2665.1 Macro Definition Documentation

30.2665.1.1 #define S2515

Definition at line 49 of file s2515.c.

30.2665.2 Function Documentation

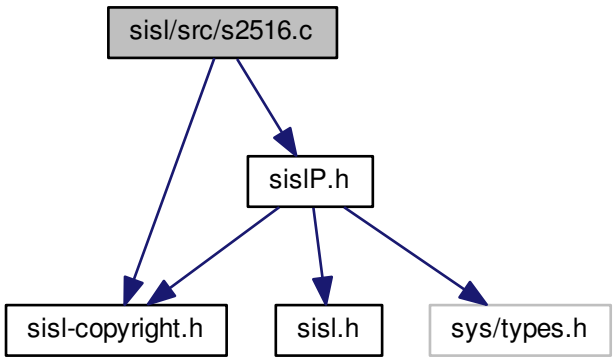
30.2665.2.1 void s2515 (SISLSurf * *surf,* int *ider,* int *iside1,* int *iside2,* parvalue , int * *leftknot1,* int * *leftknot2,* mehlum , int * *stat*)

Definition at line 58 of file s2515.c.

30.2666 sisl/src/s2516.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2516.c:



Macros

- #define S2516

Functions

- void s2516 (SISLSurf *surf, int ider, derive, normal, mehlum, int *stat)

30.2666.1 Macro Definition Documentation

30.2666.1.1 #define S2516

Definition at line 49 of file s2516.c.

30.2666.2 Function Documentation

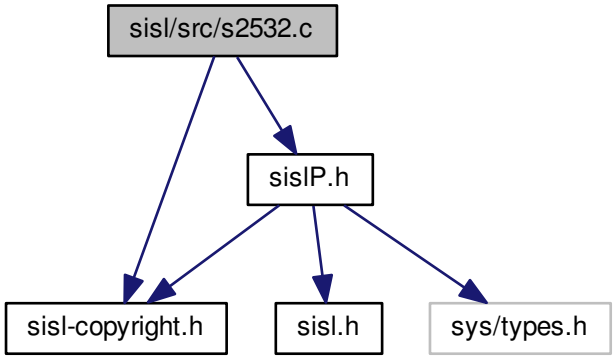
30.2666.2.1 void s2516 (SISLSurf * *surf,* int *ider,* derive , normal , mehlum , int * *stat*)

Definition at line 58 of file s2516.c.

30.2667 sisl/src/s2532.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2532.c:



Macros

- #define S2532

Functions

- void s2532 (SISLSurf *surf, int u_continuity, int v_continuity, int *u_surfnumb, int *v_surfnumb, SISLSurf ***gauss_surf, int *stat)

30.2667.1 Macro Definition Documentation

30.2667.1.1 #define S2532

Definition at line 48 of file s2532.c.

30.2667.2 Function Documentation

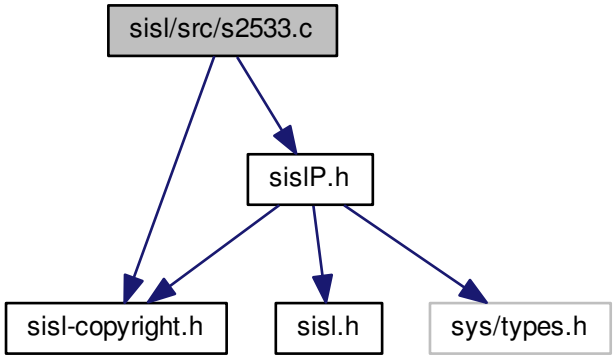
30.2667.2.1 void s2532 (SISLSurf * *surf*, int *u_continuity*, int *v_continuity*, int * *u_surfnumb*, int * *v_surfnumb*, SISLSurf *** *gauss_surf*, int * *stat*)

Definition at line 59 of file s2532.c.

30.2668 sisl/src/s2533.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2533.c:



Macros

- #define S2533

Functions

- void s2533 (double *et, int ik, int in, int multinc, int newik, int *newin, double **newet, int *stat)

30.2668.1 Macro Definition Documentation

30.2668.1.1 #define S2533

Definition at line 49 of file s2533.c.

30.2668.2 Function Documentation

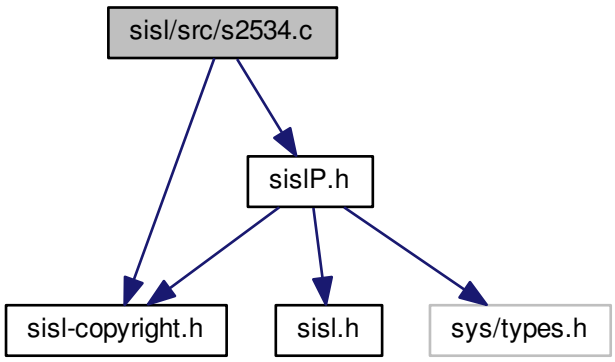
30.2668.2.1 void s2533 (double * *et*, int *ik*, int *in*, int *multinc*, int *newik*, int * *newin*, double ** *newet*, int * *stat*)

Definition at line 57 of file s2533.c.

30.2669 sisl/src/s2534.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2534.c:



Macros

- #define S2534

Functions

- void s2534 (SISLSurf *surf, int u_multinc, int v_multinc, int newik1, int newik2, evalp, int eval_dim, SISLSurf **rsurf, int *stat)

30.2669.1 Macro Definition Documentation

30.2669.1.1 #define S2534

Definition at line 49 of file s2534.c.

30.2669.2 Function Documentation

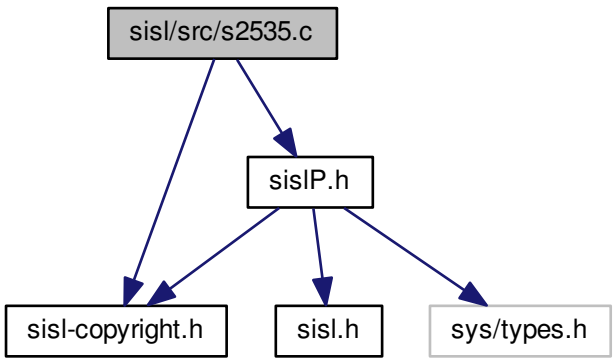
30.2669.2.1 void s2534 (SISLSurf * *surf*, int *u_multinc*, int *v_multinc*, int *newik1*, int *newik2*, evalp , int *eval_dim*, SISLSurf ** *rsurf*, int * *stat*)

Definition at line 68 of file s2534.c.

30.2670 sisl/src/s2535.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2535.c:



Macros

- #define S2535

Functions

- void s2535 (SISLSurf *surf, int u_continuity, int v_continuity, int *u_surfnumb, int *v_surfnumb, SISLSurf ***patches, int *stat)

30.2670.1 Macro Definition Documentation

30.2670.1.1 #define S2535

Definition at line 48 of file s2535.c.

30.2670.2 Function Documentation

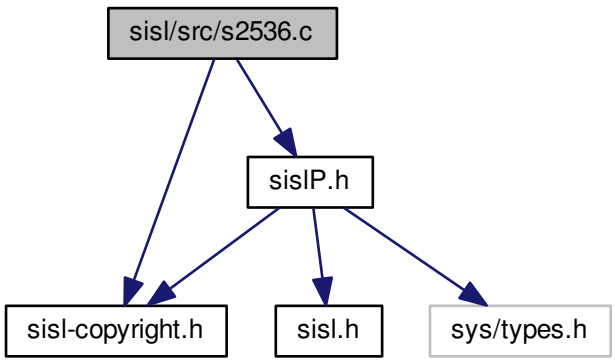
30.2670.2.1 void s2535 (SISLSurf * *surf,* int *u_continuity,* int *v_continuity,* int * *u_surfnumb,* int * *v_surfnumb,* SISLSurf *** *patches,* int * *stat*)

Definition at line 59 of file s2535.c.

30.2671 sisl/src/s2536.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2536.c:



Macros

- #define S2536

Functions

- void s2536 (SISLSurf *surf, int u_continuity, int v_continuity, int *u_surfnumb, int *v_surfnumb, SISLSurf ***mehlum_surf, int *stat)

30.2671.1 Macro Definition Documentation

30.2671.1.1 #define S2536

Definition at line 49 of file s2536.c.

30.2671.2 Function Documentation

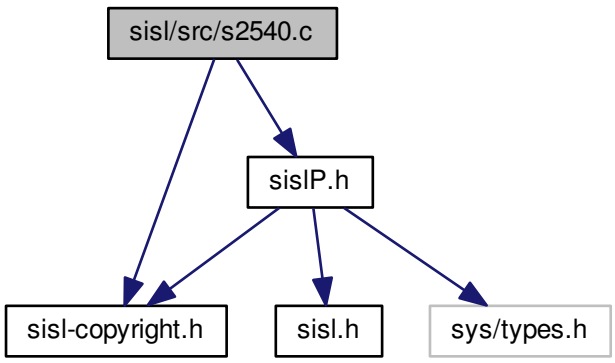
30.2671.2.1 void s2536 (SISLSurf * *surf*, int *u_continuity*, int *v_continuity*, int * *u_surfnumb*, int * *v_surfnumb*, SISLSurf *** *mehlum_surf*, int * *stat*)

Definition at line 60 of file s2536.c.

30.2672 sisl/src/s2540.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2540.c:



Macros

- #define S2540

Functions

- void s2540 (SISLSurf *surf, int curvature_type, int export_par_val, int pick_subpart, boundary, int n_u, int n_v, double **garr, int *stat)

30.2672.1 Macro Definition Documentation

30.2672.1.1 #define S2540

Definition at line 48 of file s2540.c.

30.2672.2 Function Documentation

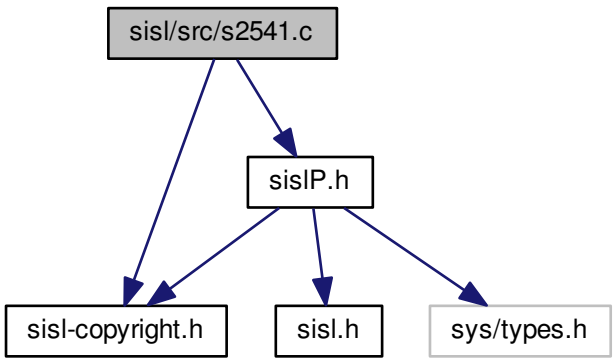
30.2672.2.1 void s2540 (SISLSurf * *surf,* int *curvature_type,* int *export_par_val,* int *pick_subpart,* boundary , int *n_u,* int *n_v,* double ** *garr,* int * *stat*)

Definition at line 61 of file s2540.c.

30.2673 sisl/src/s2541.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2541.c:



Macros

- #define S2541

Functions

- void s2541 (SISLSurf *surf, evalp, int dim, int export_par_val, int pick_subpart, boundary, int n_u, int n_v, double **garr, int *stat)

30.2673.1 Macro Definition Documentation

30.2673.1.1 #define S2541

Definition at line 48 of file s2541.c.

30.2673.2 Function Documentation

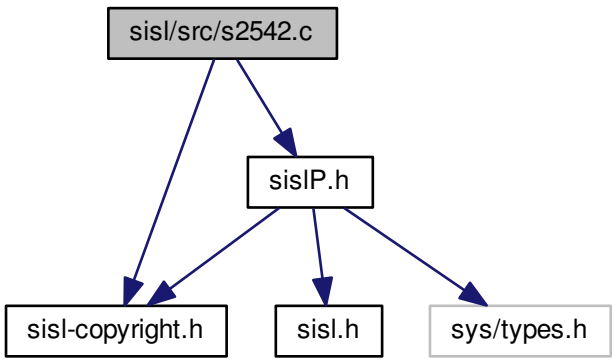
30.2673.2.1 void s2541 (SISLSurf * *surf,* evalp , int *dim,* int *export_par_val,* int *pick_subpart,* boundary , int *n_u,* int *n_v,* double ** *garr,* int * *stat*)

Definition at line 71 of file s2541.c.

30.2674 sisl/src/s2542.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2542.c:



Macros

- #define S2542

Functions

- void s2542 (SISLSurf *surf, int ider, int iside1, int iside2, parvalue, int *leftknot1, int *leftknot2, double *k1, double *k2, d1, d2, int *jstat)

30.2674.1 Macro Definition Documentation

30.2674.1.1 #define S2542

Definition at line 49 of file s2542.c.

30.2674.2 Function Documentation

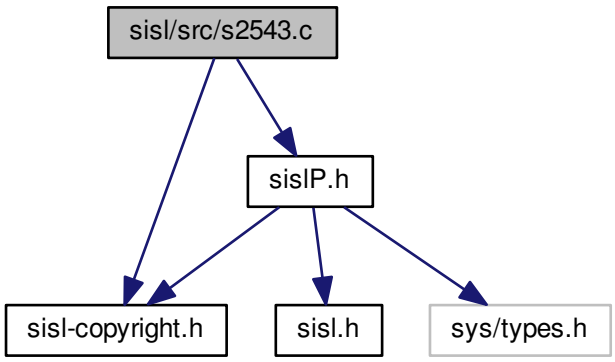
30.2674.2.1 void s2542 (SISLSurf * *surf,* int *ider,* int *iside1,* int *iside2,* parvalue , int * *leftknot1,* int * *leftknot2,* double * *k1,* double * *k2,* d1 , d2 , int * *jstat*)

Definition at line 59 of file s2542.c.

30.2675 sisl/src/s2543.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2543.c:



Macros

- #define S2543

Functions

- void s2543 (SISLSurf *surf, int ider, derive, normal, double *k1, double *k2, d1, d2, int *jstat)

30.2675.1 Macro Definition Documentation

30.2675.1.1 #define S2543

Definition at line 49 of file s2543.c.

30.2675.2 Function Documentation

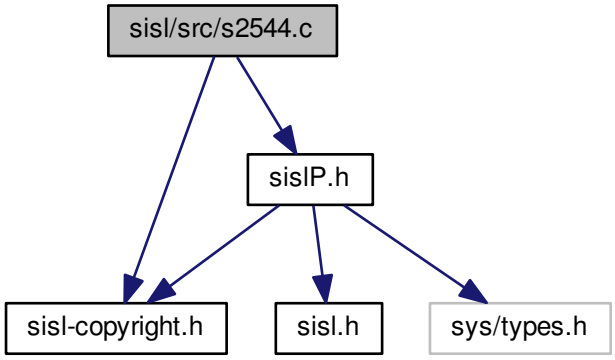
30.2675.2.1 void s2543 (SISLSurf * *surf,* int *ider,* derive , normal , double * *k1,* double * *k2,* d1 , d2 , int * *jstat*)

Definition at line 58 of file s2543.c.

30.2676 sisl/src/s2544.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2544.c:



Macros

- #define S2544

Functions

- void s2544 (SISLSurf *surf, int ider, int iside1, int iside2, parvalue, int *leftknot1, int *leftknot2, norcurv, int *jstat)

30.2676.1 Macro Definition Documentation

30.2676.1.1 #define S2544

Definition at line 49 of file s2544.c.

30.2676.2 Function Documentation

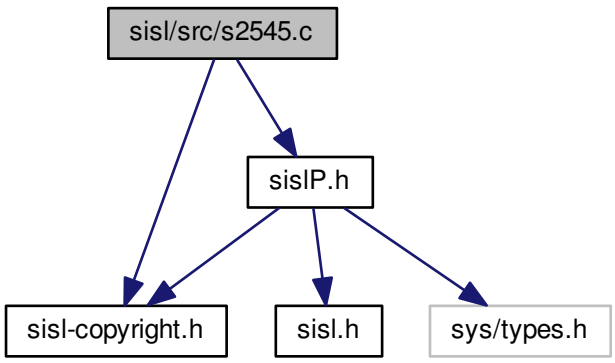
30.2676.2.1 void s2544 (SISLSurf * *surf,* int *ider,* int *iside1,* int *iside2,* parvalue , int * *leftknot1,* int * *leftknot2,* norcurv , int * *jstat*)

Definition at line 58 of file s2544.c.

30.2677 sisl/src/s2545.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2545.c:



Macros

- #define S2545

Functions

- void s2545 (SISLSurf *surf, int curvature_type, int export_par_val, int pick_subpart, boundary, int n_u, int n_v, double scale, double **garr, int *stat)

30.2677.1 Macro Definition Documentation

30.2677.1.1 #define S2545

Definition at line 48 of file s2545.c.

30.2677.2 Function Documentation

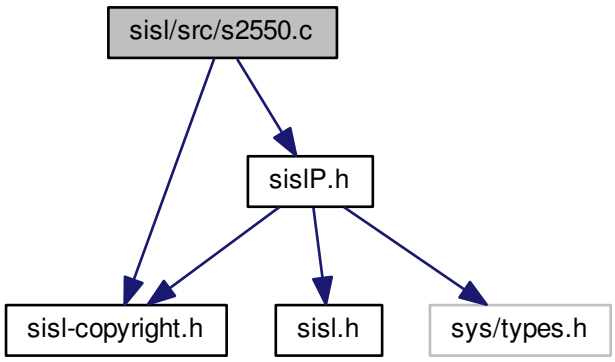
30.2677.2.1 void s2545 (SISLSurf * *surf,* int *curvature_type,* int *export_par_val,* int *pick_subpart,* boundary , int *n_u,* int *n_v,* double *scale,* double ** *garr,* int * *stat*)

Definition at line 61 of file s2545.c.

30.2678 sisl/src/s2550.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2550.c:



Macros

- #define S2550

Functions

- void s2550 (SISLCurve *curve, ax, int num_ax, curvature, int *jstat)

30.2678.1 Macro Definition Documentation

30.2678.1.1 #define S2550

Definition at line 48 of file s2550.c.

30.2678.2 Function Documentation

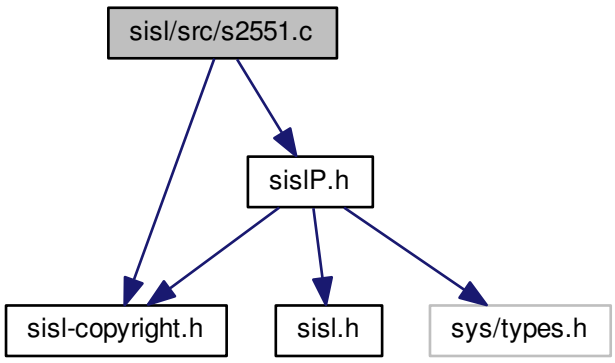
30.2678.2.1 void s2550 (SISLCurve * *curve,* ax , int *num_ax,* curvature , int * *jstat*)

Definition at line 60 of file s2550.c.

30.2679 sisl/src/s2551.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2551.c:



Macros

- #define S2551

Functions

- void s2551 (SISLCurve *curve, double parvalue, int *leftknot, derive, double *curvature, int *jstat)

30.2679.1 Macro Definition Documentation

30.2679.1.1 #define S2551

Definition at line 48 of file s2551.c.

30.2679.2 Function Documentation

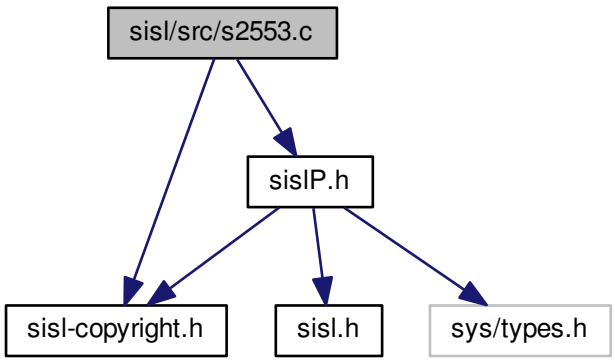
30.2679.2.1 void s2551 (SISLCurve * *curve,* double *parvalue,* int * *leftknot,* derive , double * *curvature,* int * *jstat*)

Definition at line 61 of file s2551.c.

30.2680 sisl/src/s2553.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2553.c:



Macros

- #define S2553

Functions

- void s2553 (SISLCurve *curve, ax, int num_ax, torsion, int *jstat)

30.2680.1 Macro Definition Documentation

30.2680.1.1 #define S2553

Definition at line 48 of file s2553.c.

30.2680.2 Function Documentation

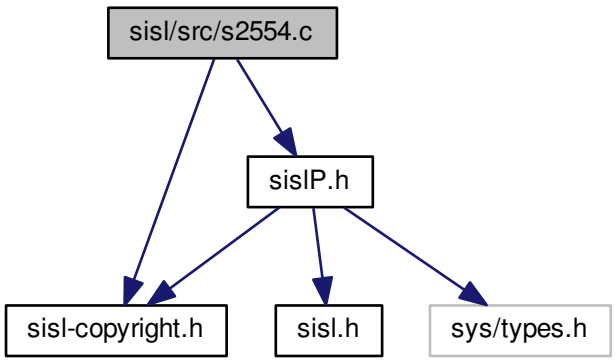
30.2680.2.1 void s2553 (SISLCurve * *curve,* ax , int *num_ax,* torsion , int * *jstat*)

Definition at line 60 of file s2553.c.

30.2681 sisl/src/s2554.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2554.c:



Macros

- #define S2554

Functions

- void s2554 (SISLCurve *curve, double parvalue, int *leftknot, derive, double *torsion, int *jstat)

30.2681.1 Macro Definition Documentation

30.2681.1.1 #define S2554

Definition at line 48 of file s2554.c.

30.2681.2 Function Documentation

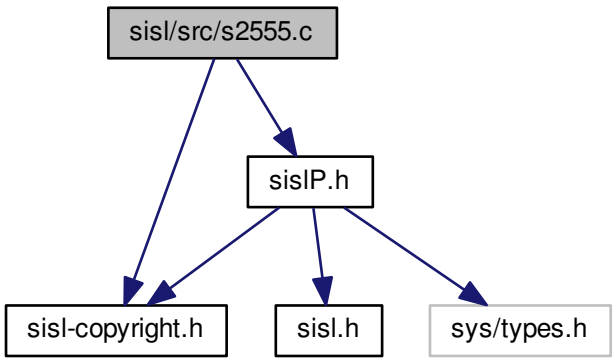
30.2681.2.1 void s2554 (SISLCurve * *curve,* double *parvalue,* int * *leftknot,* derive , double * *torsion,* int * *jstat*)

Definition at line 61 of file s2554.c.

30.2682 sisl/src/s2555.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2555.c:



Macros

- #define S2555

Functions

- void s2555 (derive, double *torsion, int *jstat)

30.2682.1 Macro Definition Documentation

30.2682.1.1 #define S2555

Definition at line 49 of file s2555.c.

30.2682.2 Function Documentation

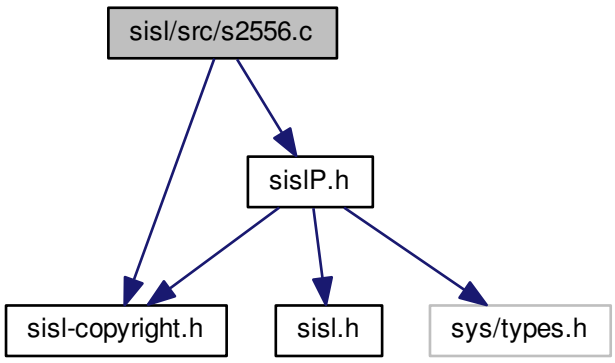
30.2682.2.1 void s2555 (derive , double * *torsion,* int * *jstat*)

Definition at line 59 of file s2555.c.

30.2683 sisl/src/s2556.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2556.c:



Macros

- #define S2556

Functions

- void s2556 (SISLCurve *curve, ax, int num_ax, VoC, int *jstat)

30.2683.1 Macro Definition Documentation

30.2683.1.1 #define S2556

Definition at line 48 of file s2556.c.

30.2683.2 Function Documentation

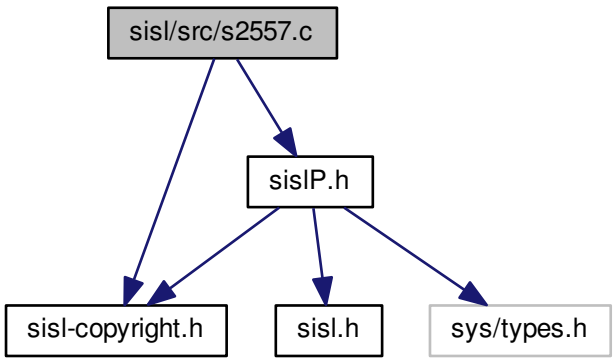
30.2683.2.1 void s2556 (SISLCurve * *curve,* ax , int *num_ax,* VoC , int * *jstat*)

Definition at line 60 of file s2556.c.

30.2684 sisl/src/s2557.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2557.c:



Macros

- #define S2557

Functions

- void s2557 (SISLCurve *curve, double parvalue, int *leftknot, derive, double *VoC, int *jstat)

30.2684.1 Macro Definition Documentation

30.2684.1.1 #define S2557

Definition at line 48 of file s2557.c.

30.2684.2 Function Documentation

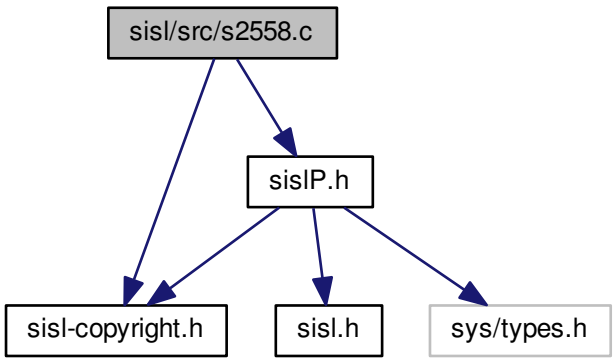
30.2684.2.1 void s2557 (SISLCurve * *curve,* double *parvalue,* int * *leftknot,* derive , double * *VoC,* int * *jstat*)

Definition at line 61 of file s2557.c.

30.2685 sisl/src/s2558.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2558.c:



Macros

- #define S2558

Functions

- void s2558 (derive, int idim, double *VoC, int *jstat)

30.2685.1 Macro Definition Documentation

30.2685.1.1 #define S2558

Definition at line 49 of file s2558.c.

30.2685.2 Function Documentation

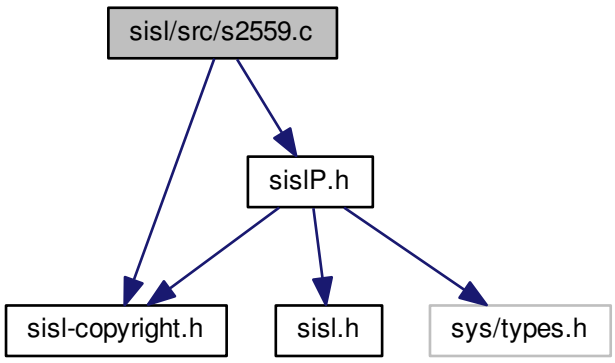
30.2685.2.1 void s2558 (derive , int *idim,* double * *VoC,* int * *jstat*)

Definition at line 60 of file s2558.c.

30.2686 sisl/src/s2559.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2559.c:



Macros

- #define S2559

Functions

- void s2559 (SISLCurve *curve, ax, int num_ax, p, t, n, b, int *jstat)

30.2686.1 Macro Definition Documentation

30.2686.1.1 #define S2559

Definition at line 48 of file s2559.c.

30.2686.2 Function Documentation

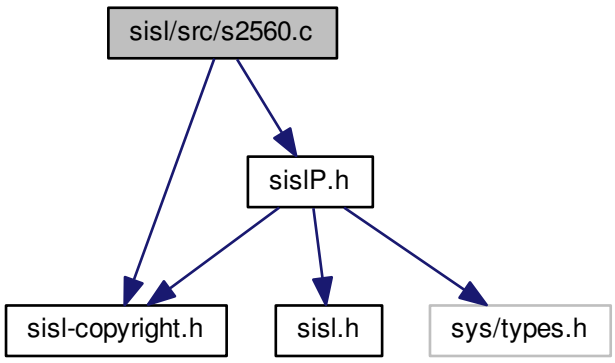
30.2686.2.1 void s2559 (SISLCurve * *curve,* ax , int *num_ax,* p , t , n , b , int * *jstat*)

Definition at line 63 of file s2559.c.

30.2687 sisl/src/s2560.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2560.c:



Macros

- #define S2560

Functions

- void s2560 (SISLCurve *curve, double parvalue, int *leftknot, derive, p, t, n, b, int *jstat)

30.2687.1 Macro Definition Documentation

30.2687.1.1 #define S2560

Definition at line 48 of file s2560.c.

30.2687.2 Function Documentation

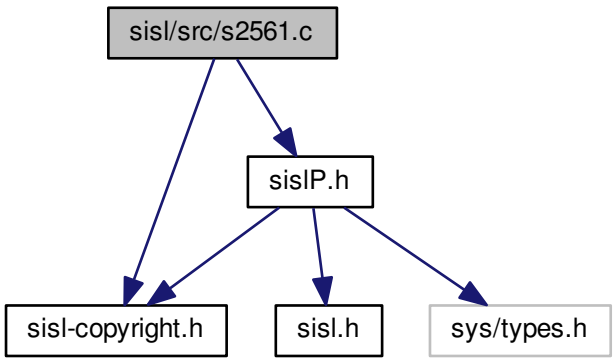
30.2687.2.1 void s2560 (SISLCurve * *curve,* double *parvalue,* int * *leftknot,* derive , p , t , n , b , int * *jstat*)

Definition at line 64 of file s2560.c.

30.2688 sisl/src/s2561.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2561.c:



Macros

- #define S2561

Functions

- void s2561 (derive, int idim, p, t, n, b, int *jstat)

30.2688.1 Macro Definition Documentation

30.2688.1.1 #define S2561

Definition at line 49 of file s2561.c.

30.2688.2 Function Documentation

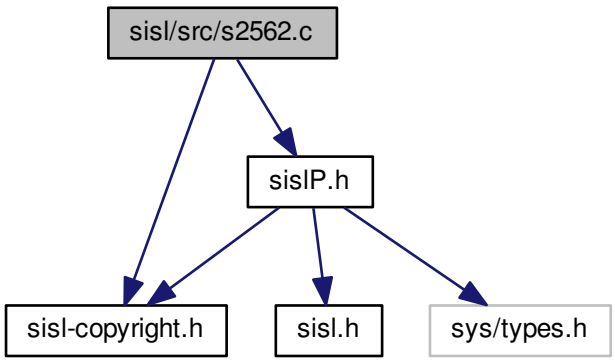
30.2688.2.1 void s2561 (derive , int *idim,* p , t , n , b , int * *jstat*)

Definition at line 63 of file s2561.c.

30.2689 sisl/src/s2562.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s2562.c:



Macros

- #define S2562

Functions

- void s2562 (SISLCurve *curve, ax, int num_ax, int val_flag, p, t, n, b, val, int *jstat)

30.2689.1 Macro Definition Documentation

30.2689.1.1 #define S2562

Definition at line 48 of file s2562.c.

30.2689.2 Function Documentation

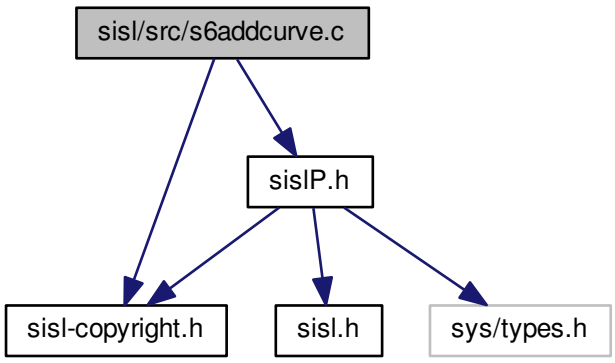
30.2689.2.1 void s2562 (SISLCurve * *curve,* ax , int *num_ax,* int *val_flag,* p , t , n , b , val , int * *jstat*)

Definition at line 65 of file s2562.c.

30.2690 sisl/src/s6addcurve.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6addcurve.c:



Macros

- #define S6ADDCURVE

Functions

- void s6addcurve (SISLCurve *pc1, SISLCurve *pc2, int isign, SISLCurve **rcurve, int *jstat)

30.2690.1 Macro Definition Documentation

30.2690.1.1 #define S6ADDCURVE

Definition at line 49 of file s6addcurve.c.

30.2690.2 Function Documentation

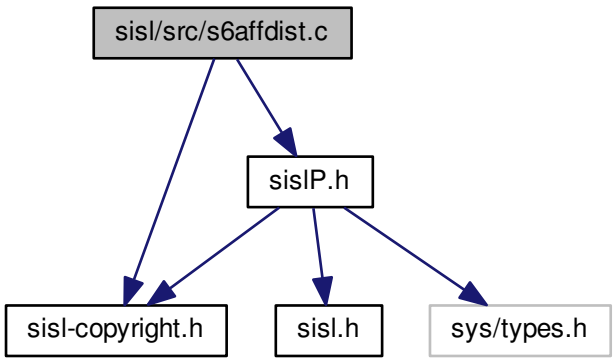
30.2690.2.1 void s6addcurve (SISLCurve * *pc1,* SISLCurve * *pc2,* int *isign,* SISLCurve ** *rcurve,* int * *jstat*)

Definition at line 64 of file s6addcurve.c.

30.2691 sisl/src/s6affdist.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6affdist.c:



Macros

- #define S6AFFDIST

Functions

- double s6affdist (e1, e2, emat, int idim)

30.2691.1 Macro Definition Documentation

30.2691.1.1 #define S6AFFDIST

Definition at line 49 of file s6affdist.c.

30.2691.2 Function Documentation

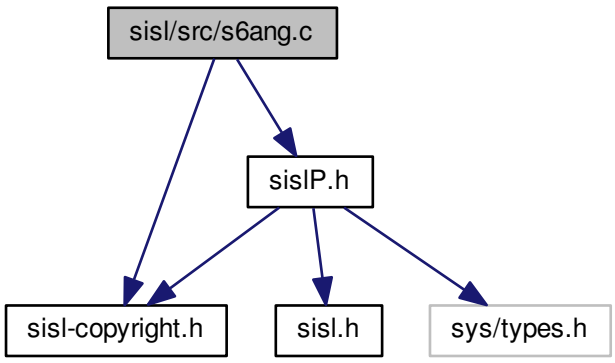
30.2691.2.1 double s6affdist (e1 , e2 , emat , int *idim*)

Definition at line 57 of file s6affdist.c.

30.2692 sisl/src/s6ang.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6ang.c:



Macros

- #define S6ANG

Functions

- double s6ang (evec1, evec2, int idim)

30.2692.1 Macro Definition Documentation

30.2692.1.1 #define S6ANG

Definition at line 49 of file s6ang.c.

30.2692.2 Function Documentation

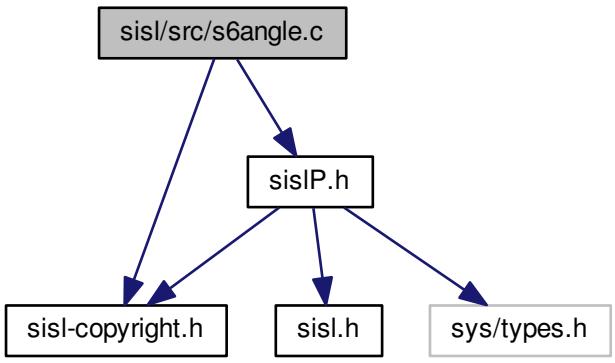
30.2692.2.1 double s6ang (evec1 , evec2 , int *idim*)

Definition at line 57 of file s6ang.c.

30.2693 sisl/src/s6angle.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6angle.c:



Macros

- #define S6ANGLE

Functions

- double s6angle (evec1, evec2, enorm, int idim, int ∗jstat)

30.2693.1 Macro Definition Documentation

30.2693.1.1 #define S6ANGLE

Definition at line 49 of file s6angle.c.

30.2693.2 Function Documentation

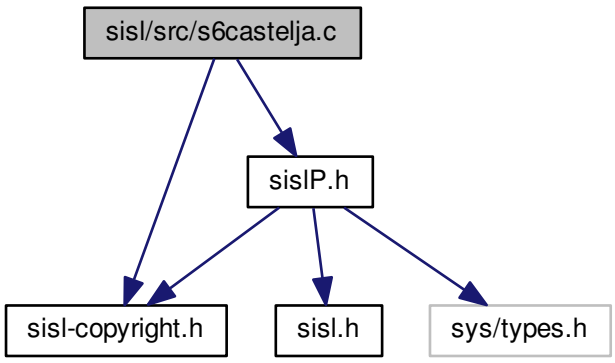
30.2693.2.1 double s6angle (evec1 , evec2 , enorm , int *idim*, int * *jstat*)

Definition at line 57 of file s6angle.c.

30.2694 sisl/src/s6castelja.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6castelja.c:



Macros

- #define S6DECASTELJAU

Functions

- void s6deCasteljau (C, double a, double b, double t, int k, D, int *jstat)

30.2694.1 Macro Definition Documentation

30.2694.1.1 #define S6DECASTELJAU

Definition at line 49 of file s6castelja.c.

30.2694.2 Function Documentation

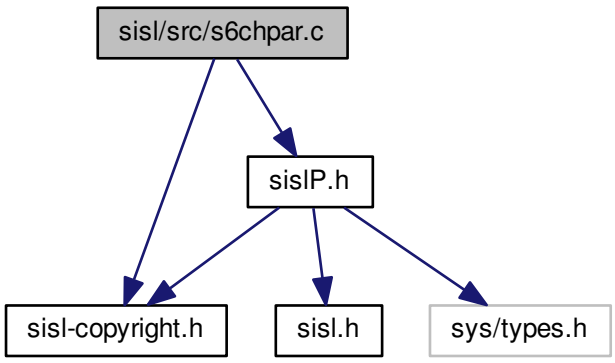
30.2694.2.1 void s6deCasteljau (C , double *a*, double *b*, double *t*, int *k*, D , int* *jstat*)

Definition at line 58 of file s6castelja.c.

30.2695 sisl/src/s6chpar.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6chpar.c:



Macros

- #define S6CHPAR

Functions

- void s6chpar (ecoef1, int in1, int in2, int idim, ecoef2)

30.2695.1 Macro Definition Documentation

30.2695.1.1 #define S6CHPAR

Definition at line 49 of file s6chpar.c.

30.2695.2 Function Documentation

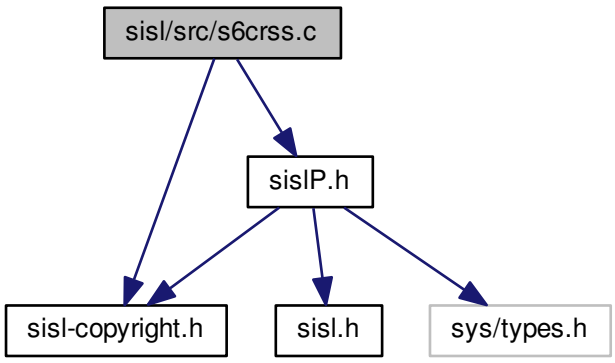
30.2695.2.1 void s6chpar (ecoef1 , int *in1,* int *in2,* int *idim,* ecoef2)

Definition at line 57 of file s6chpar.c.

30.2696 sisl/src/s6crss.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6crss.c:



Macros

- #define S6CRSS

Functions

- void s6crss (e1, e2, e3)

30.2696.1 Macro Definition Documentation

30.2696.1.1 #define S6CRSS

Definition at line 49 of file s6crss.c.

30.2696.2 Function Documentation

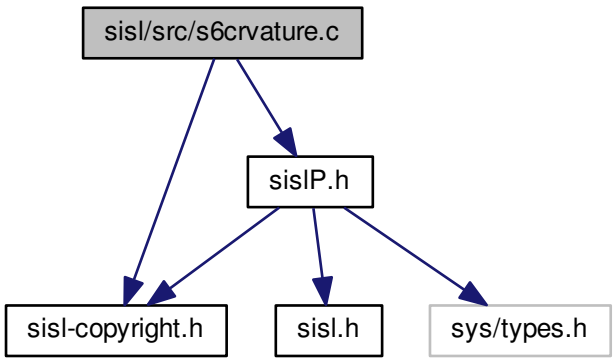
30.2696.2.1 void s6crss (e1 , e2 , e3)

Definition at line 57 of file s6crss.c.

30.2697 sisl/src/s6crvature.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6crvature.c:



Macros

- #define S6CURVATURE

Functions

- void s6curvature (eder, int idim, ecurv, int ∗jstat)

30.2697.1 Macro Definition Documentation

30.2697.1.1 #define S6CURVATURE

Definition at line 49 of file s6crvature.c.

30.2697.2 Function Documentation

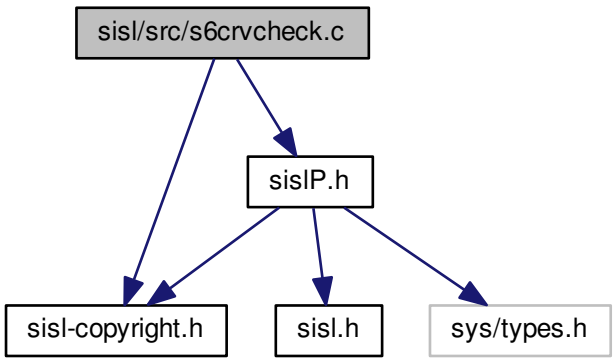
30.2697.2.1 void s6curvature (eder , int *idim*, ecurv , int* *jstat*)

Definition at line 57 of file s6crvature.c.

30.2698 sisl/src/s6crvcheck.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6crvcheck.c:



Macros

- #define S6CRVCHECK

Functions

- void s6crvcheck (SISLCurve *pc, int *jstat)

30.2698.1 Macro Definition Documentation

30.2698.1.1 #define S6CRVCHECK

Definition at line 49 of file s6crvcheck.c.

30.2698.2 Function Documentation

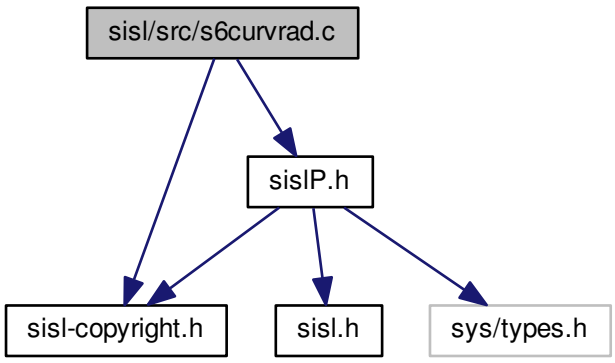
30.2698.2.1 void s6crvcheck (SISLCurve * *pc*, int * *jstat*)

Definition at line 57 of file s6crvcheck.c.

30.2699 sisl/src/s6curvrad.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6curvrad.c:



Macros

- #define S6CURVRAD

Functions

- void s6curvrad (epnt1, epnt2, etang, int idim,*crad, int *jstat)

30.2699.1 Macro Definition Documentation

30.2699.1.1 #define S6CURVRAD

Definition at line 49 of file s6curvrad.c.

30.2699.2 Function Documentation

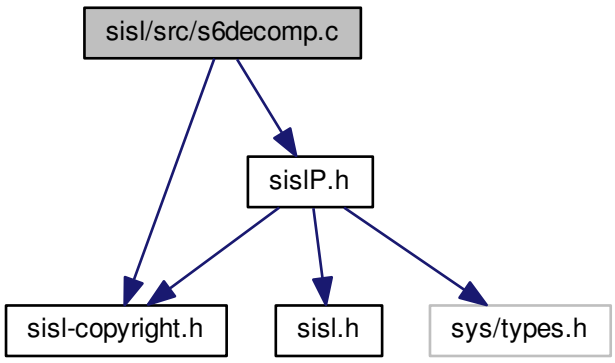
30.2699.2.1 void s6curvrad (epnt1 , epnt2 , etang , int *idim,* ∗ *crad,* int∗ *jstat*)

Definition at line 58 of file s6curvrad.c.

30.2700 sisl/src/s6decomp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6decomp.c:



Macros

- #define S6DECOMP

Functions

- void s6decomp (ea, gx, eb1, eb2, eb3, int ∗jstat)

30.2700.1 Macro Definition Documentation

30.2700.1.1 #define S6DECOMP

Definition at line 49 of file s6decomp.c.

30.2700.2 Function Documentation

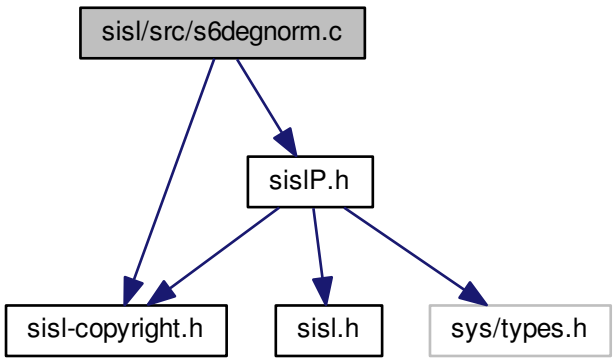
30.2700.2.1 void s6decomp (ea , gx , eb1 , eb2 , eb3 , int * *jstat*)

Definition at line 57 of file s6decomp.c.

30.2701 sisl/src/s6degnorm.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6degnorm.c:



Macros

- #define S6DEGNORM

Functions

- void s6degnorm (SISLSurf *ps1, int ider, epar, eder, utang, vtang, enorm, int *jstat)

30.2701.1 Macro Definition Documentation

30.2701.1.1 #define S6DEGNORM

Definition at line 49 of file s6degnorm.c.

30.2701.2 Function Documentation

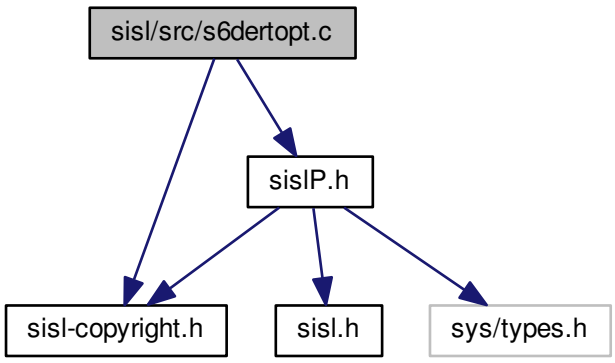
30.2701.2.1 void s6degnorm (SISLSurf * *ps1,* int *ider,* epar , eder , utang , vtang , enorm , int * *jstat*)

Definition at line 58 of file s6degnorm.c.

30.2702 sisl/src/s6dertopt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6dertopt.c:



Macros

- #define S6DERTOPT

Functions

- void s6dertopt (eder, ntype, int inpt, int idim, epoint, int *jstat)

30.2702.1 Macro Definition Documentation

30.2702.1.1 #define S6DERTOPT

Definition at line 49 of file s6dertopt.c.

30.2702.2 Function Documentation

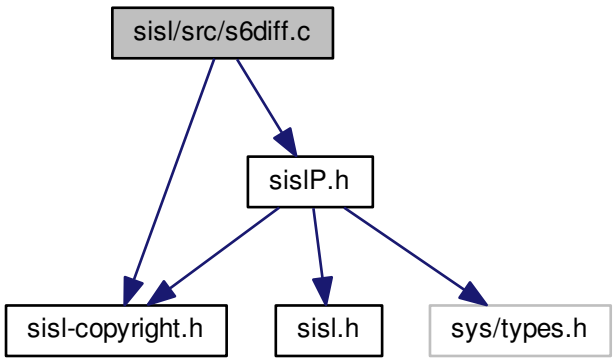
30.2702.2.1 void s6dertopt (eder , ntype , int *inpt*, int *idim*, epoint , int * *jstat*)

Definition at line 58 of file s6dertopt.c.

30.2703 sisl/src/s6diff.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6diff.c:



Macros

- #define S6DIFF

Functions

- void s6diff (e1, e2, int idim, e3)

30.2703.1 Macro Definition Documentation

30.2703.1.1 #define S6DIFF

Definition at line 49 of file s6diff.c.

30.2703.2 Function Documentation

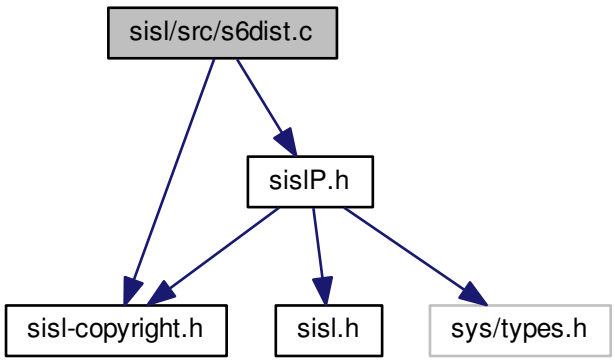
30.2703.2.1 void s6diff (e1 , e2 , int *idim,* e3)

Definition at line 57 of file s6diff.c.

30.2704 sisl/src/s6dist.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6dist.c:



Macros

- #define S6DIST

Functions

- double s6dist (epoint1, epoint2, int idim)

30.2704.1 Macro Definition Documentation

30.2704.1.1 #define S6DIST

Definition at line 49 of file s6dist.c.

30.2704.2 Function Documentation

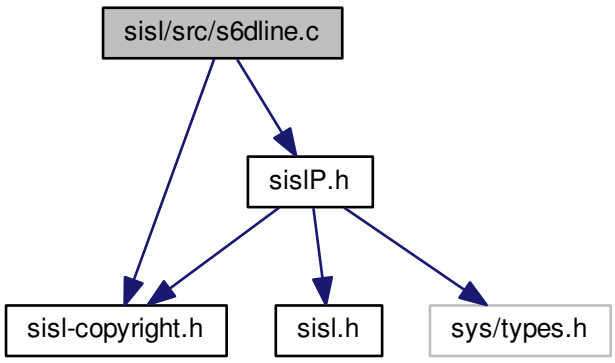
30.2704.2.1 double s6dist (epoint1 , epoint2 , int *idim*)

Definition at line 57 of file s6dist.c.

30.2705 sisl/src/s6dline.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6dline.c:



Macros

- #define S6DLINE

Functions

- double s6dline (estart, eend, epoint, int idim, int *jstat)

30.2705.1 Macro Definition Documentation

30.2705.1.1 #define S6DLINE

Definition at line 49 of file s6dline.c.

30.2705.2 Function Documentation

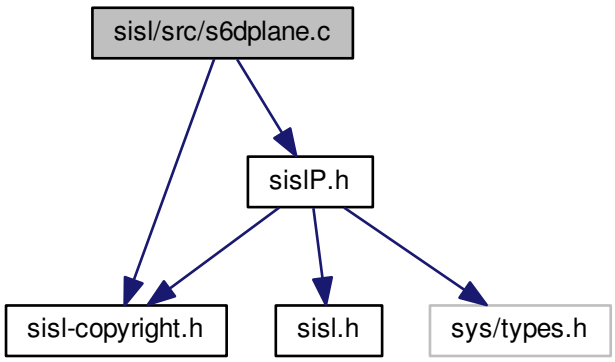
30.2705.2.1 double s6dline (estart , eend , epoint , int *idim*, int * *jstat*)

Definition at line 58 of file s6dline.c.

30.2706 sisl/src/s6dplane.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6dplane.c:



Macros

- #define S6DPLANE

Functions

- double s6dplane (eq1, eq2, eq3, epoint, int idim, int *jstat)

30.2706.1 Macro Definition Documentation

30.2706.1.1 #define S6DPLANE

Definition at line 49 of file s6dplane.c.

30.2706.2 Function Documentation

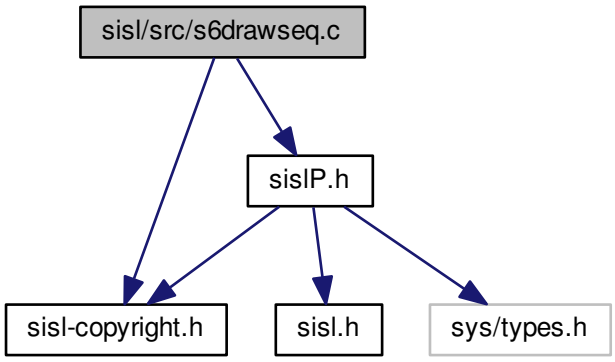
30.2706.2.1 double s6dplane (eq1 , eq2 , eq3 , epoint , int *idim*, int * *jstat*)

Definition at line 58 of file s6dplane.c.

30.2707 sisl/src/s6drawseq.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6drawseq.c:



Macros

- #define S6DRAWSEQ

Functions

- void s6move ()
- void s6line ()
- void s6drawseq (epoint, int ipoint)

30.2707.1 Macro Definition Documentation

30.2707.1.1 #define S6DRAWSEQ

Definition at line 49 of file s6drawseq.c.

30.2707.2 Function Documentation

30.2707.2.1 void s6drawseq (epoint , int *ipoint*)

Definition at line 65 of file s6drawseq.c.

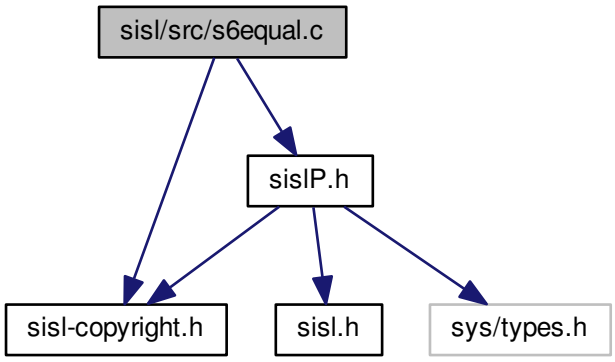
30.2707.2.2 void s6line ( )

30.2707.2.3 void s6move ( )

30.2708 sisl/src/s6equal.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6equal.c:



Macros

- #define S6EQUAL

Functions

- int s6equal (double a1, double a2, double aref)

30.2708.1 Macro Definition Documentation

30.2708.1.1 #define S6EQUAL

Definition at line 49 of file s6equal.c.

30.2708.2 Function Documentation

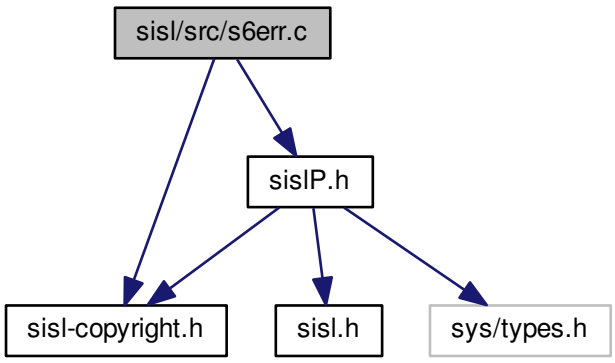
30.2708.2.1 int s6equal (double *a1*, double *a2*, double *aref*)

Definition at line 57 of file s6equal.c.

30.2709 sisl/src/s6err.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6err.c:



Macros

- #define S6ERR

Functions

- void s6err (char *rut, int jstat, int ipos)

30.2709.1 Macro Definition Documentation

30.2709.1.1 #define S6ERR

Definition at line 49 of file s6err.c.

30.2709.2 Function Documentation

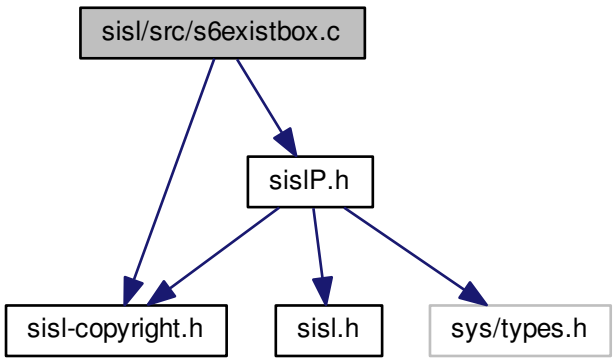
30.2709.2.1 void s6err (char * *rut,* int *jstat,* int *ipos*)

Definition at line 56 of file s6err.c.

30.2710 sisl/src/s6existbox.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6existbox.c:



Macros

- #define S6EXISTBOX

Functions

- int s6existbox (SISLbox *pbox, int itype, double aepsge)

30.2710.1 Macro Definition Documentation

30.2710.1.1 #define S6EXISTBOX

Definition at line 49 of file s6existbox.c.

30.2710.2 Function Documentation

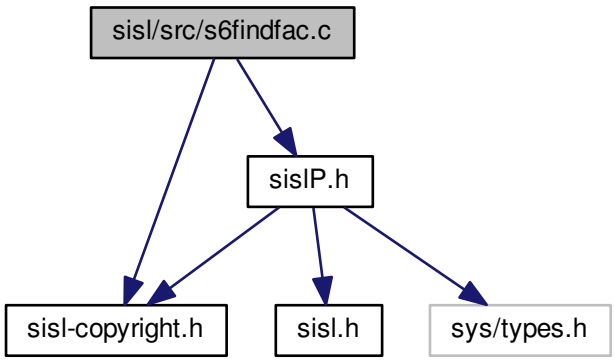
30.2710.2.1 int s6existbox (SISLbox * *pbox,* int *itype,* double *aepsge*)

Definition at line 56 of file s6existbox.c.

30.2711 sisl/src/s6findfac.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6findfac.c:



Macros

- #define S6FINDFAC

Functions

- void s6findfac (evecu, evecv, evecw, etang, int idim, int isign, double *coef1, double *coef2, double *coef3, int *jstat)

30.2711.1 Macro Definition Documentation

30.2711.1.1 #define S6FINDFAC

Definition at line 49 of file s6findfac.c.

30.2711.2 Function Documentation

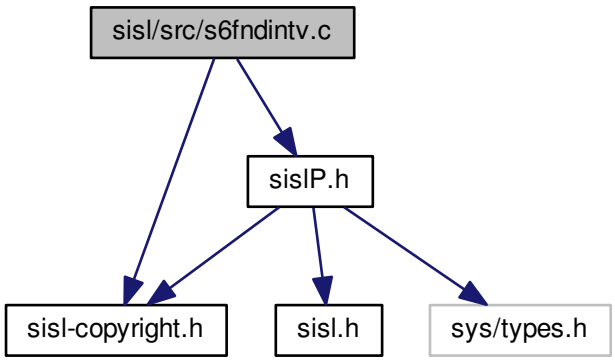
30.2711.2.1 void s6findfac (evecu , evecv , evecw , etang , int *idim,* int *isign,* double * *coef1,* double * *coef2,* double * *coef3,* int * *jstat*)

Definition at line 59 of file s6findfac.c.

30.2712 sisl/src/s6fndintv.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6fndintv.c:



Macros

- #define SFNDINTVL

Functions

- void s6fndintvl (double *et, int ik, int in, int *ileft, double ax1, double ax2, int mu_max, int *jstat)

30.2712.1 Macro Definition Documentation

30.2712.1.1 #define SFNDINTVL

Definition at line 42 of file s6fndintv.c.

30.2712.2 Function Documentation

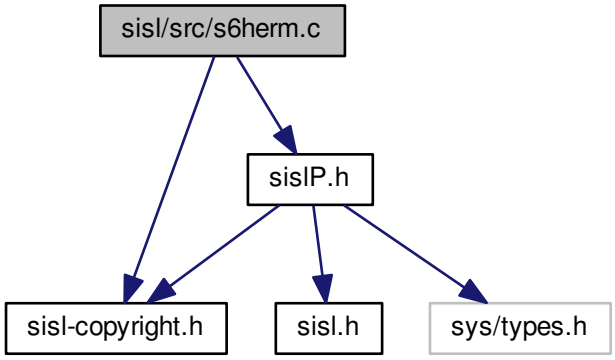
30.2712.2.1 void s6fndintvl (double * *et,* int *ik,* int *in,* int * *ileft,* double *ax1,* double *ax2,* int *mu_max,* int * *jstat*)

Definition at line 51 of file s6fndintv.c.

30.2713 sisl/src/s6herm.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6herm.c:



Macros

- #define S6HERM

Functions

- void s6herm (double *pt, double *uknots, double *vknots, int unum, int vnum, int dim, int uindex, int vindex, herminfo, int *jstat)

30.2713.1 Macro Definition Documentation

30.2713.1.1 #define S6HERM

Definition at line 49 of file s6herm.c.

30.2713.2 Function Documentation

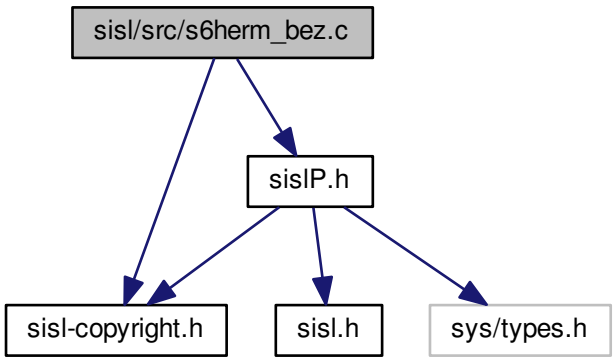
30.2713.2.1 void s6herm (double * *pt*, double * *uknots*, double * *vknots*, int *unum*, int *vnum*, int *dim*, int *uindex*, int *vindex*, herminfo , int * *jstat*)

Definition at line 59 of file s6herm.c.

30.2714 sisl/src/s6herm_bez.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6herm_bez.c:



Macros

- #define S6HERMITE_BEZIER

Functions

- void s6hermite_bezier (SISLSurf *s, a, b, int idim, c, int *jstat)

30.2714.1 Macro Definition Documentation

30.2714.1.1 #define S6HERMITE_BEZIER

Definition at line 49 of file s6herm_bez.c.

30.2714.2 Function Documentation

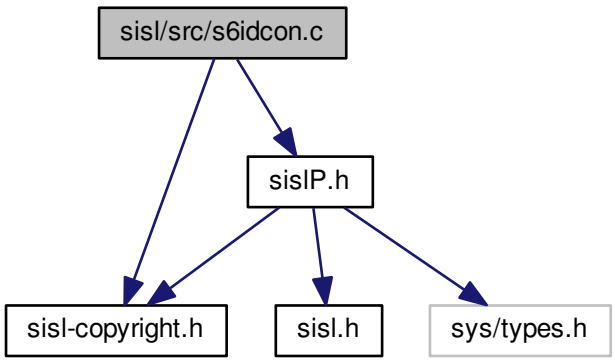
30.2714.2.1 void s6hermite_bezier (SISLSurf * *s*, a , b , int *idim*, c , int * *jstat*)

Definition at line 58 of file s6herm_bez.c.

30.2715 sisl/src/s6idcon.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6idcon.c:



Macros

- #define S6IDCON

Functions

- void s6idcon (SISLIntdat **pintdat, SISLIntpt **pintpt1, SISLIntpt **pintpt2, int *jstat)

30.2715.1 Macro Definition Documentation

30.2715.1.1 #define S6IDCON

Definition at line 49 of file s6idcon.c.

30.2715.2 Function Documentation

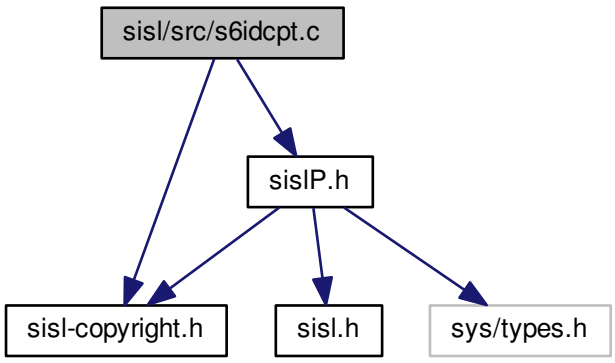
30.2715.2.1 void s6idcon (SISLIntdat ** *pintdat,* SISLIntpt ** *pintpt1,* SISLIntpt ** *pintpt2,* int * *jstat*)

Definition at line 72 of file s6idcon.c.

30.2716 sisl/src/s6idcpt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6idcpt.c:



Macros

- #define S6IDCPT

Functions

- void s6idcpt (SISLIntdat *pintdat, SISLIntpt *pintpt, SISLIntpt **rintpt)

30.2716.1 Macro Definition Documentation

30.2716.1.1 #define S6IDCPT

Definition at line 49 of file s6idcpt.c.

30.2716.2 Function Documentation

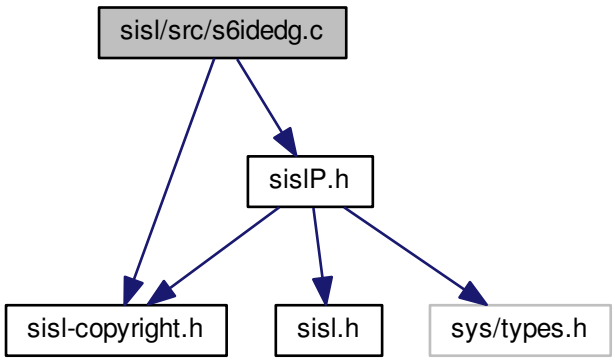
30.2716.2.1 void s6idcpt (SISLIntdat * *pintdat,* SISLIntpt * *pintpt,* SISLIntpt ** *rintpt*)

Definition at line 57 of file s6idcpt.c.

30.2717 sisl/src/s6idedg.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6idedg.c:



Macros

- #define S6IDEDG

Functions

- void s6idedg (SISLObject *po1, SISLObject *po2, int iobj, int ipar, double apar, SISLIntdat *pintdat, SISLPtedge **rptedge, int *jnum, int *jstat)

30.2717.1 Macro Definition Documentation

30.2717.1.1 #define S6IDEDG

Definition at line 49 of file s6idedg.c.

30.2717.2 Function Documentation

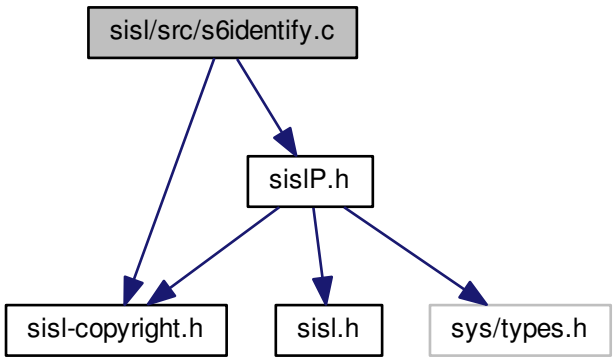
30.2717.2.1 void s6idedg (SISLObject * *po1*, SISLObject * *po2*, int *iobj*, int *ipar*, double *apar*, SISLIntdat * *pintdat*, SISLPtedge ** *rptedge*, int * *jnum*, int * *jstat*)

Definition at line 58 of file s6idedg.c.

30.2718 sisl/src/s6identify.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6identify.c:



Macros

- #define S6IDENTIFY

Functions

- void s6identify (SISLSurf *s, a, b, double level_val, double eps1, double eps2, int *jstat)

30.2718.1 Macro Definition Documentation

30.2718.1.1 #define S6IDENTIFY

Definition at line 49 of file s6identify.c.

30.2718.2 Function Documentation

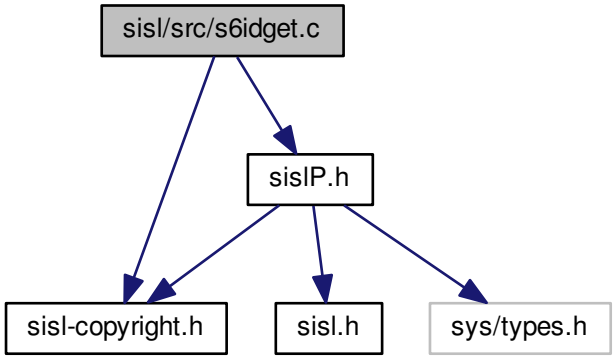
30.2718.2.1 void s6identify (SISLSurf* *s*, a , b , double *level_val*, double *eps1*, double *eps2*, int* *jstat*)

Definition at line 58 of file s6identify.c.

30.2719 sisl/src/s6idget.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6idget.c:



Macros

- #define S6IDGET

Functions

- void s6idget (SISLObject *po1, SISLObject *po2, int ipar, double apar, SISLIntdat *pintdat, SISLIntdat **rintdat, int *jstat)

30.2719.1 Macro Definition Documentation

30.2719.1.1 #define S6IDGET

Definition at line 49 of file s6idget.c.

30.2719.2 Function Documentation

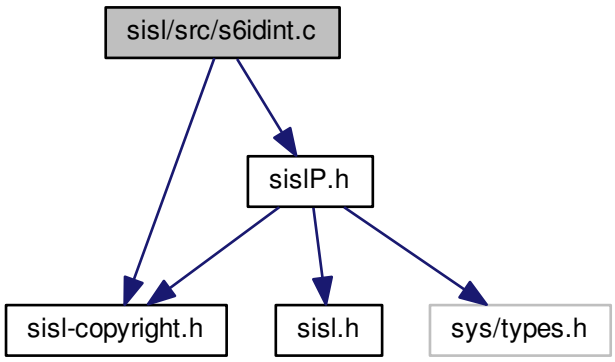
30.2719.2.1 void s6idget (SISLObject * *po1*, SISLObject * *po2*, int *ipar*, double *apar*, SISLIntdat * *pintdat*, SISLIntdat ** *rintdat*, int * *jstat*)

Definition at line 58 of file s6idget.c.

30.2720 sisl/src/s6idint.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6idint.c:



Macros

- #define S6IDINT

Functions

- void s6idint (SISLObject *po1, SISLObject *po2, SISLIntdat *pintdat, SISLIntpt **rpt, int iob)

30.2720.1 Macro Definition Documentation

30.2720.1.1 #define S6IDINT

Definition at line 49 of file s6idint.c.

30.2720.2 Function Documentation

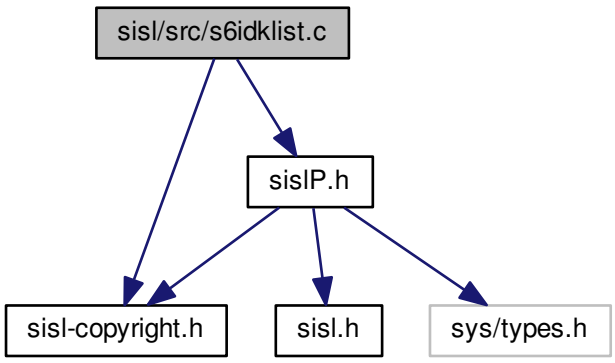
30.2720.2.1 void s6idint (SISLObject * *po1,* SISLObject * *po2,* SISLIntdat * *pintdat,* SISLIntpt ** *rpt,* int *iob*)

Definition at line 57 of file s6idint.c.

30.2721 sisl/src/s6idklist.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6idklist.c:



Macros

- #define S6IDKLIST

Functions

- void s6idklist (SISLIntdat **pintdat, SISLIntlist *pintlist, int *jstat)

30.2721.1 Macro Definition Documentation

30.2721.1.1 #define S6IDKLIST

Definition at line 49 of file s6idklist.c.

30.2721.2 Function Documentation

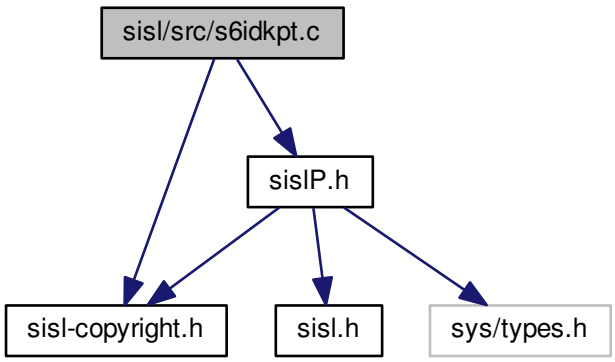
30.2721.2.1 void s6idklist (SISLIntdat ** *pintdat,* SISLIntlist * *pintlist,* int * *jstat*)

Definition at line 57 of file s6idklist.c.

30.2722 sisl/src/s6idkpt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6idkpt.c:



Macros

- #define S6IDKPT

Functions

- void s6idkpt (SISLIntdat **pintdat, SISLIntpt **pintpt, SISLIntpt **rtpt, SISLIntpt **rfpt, int *jstat)

30.2722.1 Macro Definition Documentation

30.2722.1.1 #define S6IDKPT

Definition at line 49 of file s6idkpt.c.

30.2722.2 Function Documentation

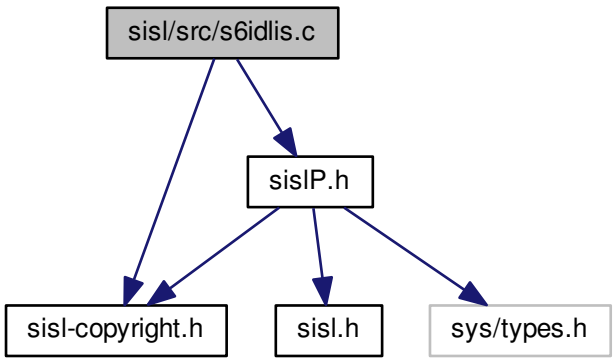
30.2722.2.1 void s6idkpt (SISLIntdat ** *pintdat,* SISLIntpt ** *pintpt,* SISLIntpt ** *rtpt,* SISLIntpt ** *rfpt,* int * *jstat*)

Definition at line 57 of file s6idkpt.c.

30.2723 sisl/src/s6idlis.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6idlis.c:



Macros

- #define S6IDLIS

Functions

- void s6idlis (SISLObject *po1, SISLObject *po2, SISLIntdat **pintdat, int *jstat)

30.2723.1 Macro Definition Documentation

30.2723.1.1 #define S6IDLIS

Definition at line 47 of file s6idlis.c.

30.2723.2 Function Documentation

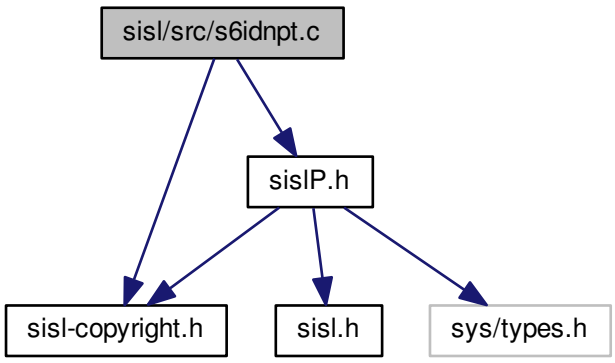
30.2723.2.1 void s6idlis (SISLObject * *po1*, SISLObject * *po2*, SISLIntdat ** *pintdat*, int * *jstat*)

Definition at line 68 of file s6idlis.c.

30.2724 sisl/src/s6idnpt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6idnpt.c:



Macros

- #define S6IDNPT

Functions

- void s6idnpt (SISLIntdat **pintdat, SISLIntpt **pintpt, int itest, int *jstat)

30.2724.1 Macro Definition Documentation

30.2724.1.1 #define S6IDNPT

Definition at line 49 of file s6idnpt.c.

30.2724.2 Function Documentation

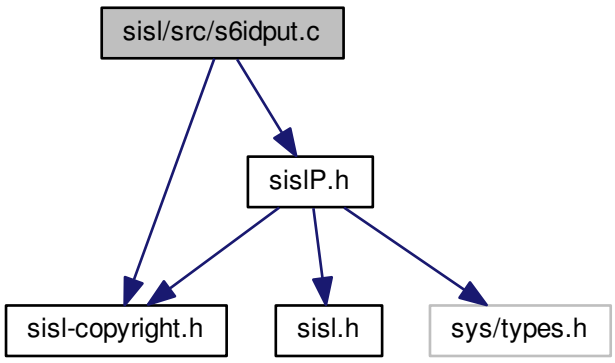
30.2724.2.1 void s6idnpt (SISLIntdat ** *pintdat,* SISLIntpt ** *pintpt,* int *itest,* int * *jstat*)

Definition at line 57 of file s6idnpt.c.

30.2725 sisl/src/s6idput.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6idput.c:



Macros

- #define S6IDPUT

Functions

- void s6idput (SISLIntdat **rintdat, SISLIntdat *pintdat, int inr, double apar, int *jstat)

30.2725.1 Macro Definition Documentation

30.2725.1.1 #define S6IDPUT

Definition at line 49 of file s6idput.c.

30.2725.2 Function Documentation

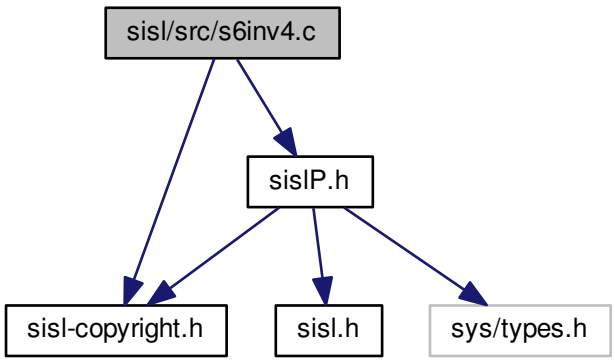
30.2725.2.1 void s6idput (SISLIntdat ** *rintdat,* SISLIntdat * *pintdat,* int *inr,* double *apar,* int * *jstat*)

Definition at line 57 of file s6idput.c.

30.2726 sisl/src/s6inv4.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6inv4.c:



Macros

- #define S6INV4

Functions

- void s6inv4 (em, einv, int *jstat)

30.2726.1 Macro Definition Documentation

30.2726.1.1 #define S6INV4

Definition at line 50 of file s6inv4.c.

30.2726.2 Function Documentation

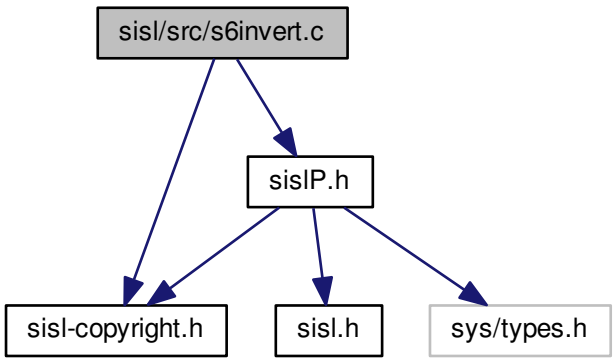
30.2726.2.1 void s6inv4 (em , einv , int * *jstat*)

Definition at line 59 of file s6inv4.c.

30.2727 sisl/src/s6invert.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6invert.c:



Macros

- #define S6INVERT

Functions

- void s6invert (emat, int im, einvertmat, int *jstat)

30.2727.1 Macro Definition Documentation

30.2727.1.1 #define S6INVERT

Definition at line 49 of file s6invert.c.

30.2727.2 Function Documentation

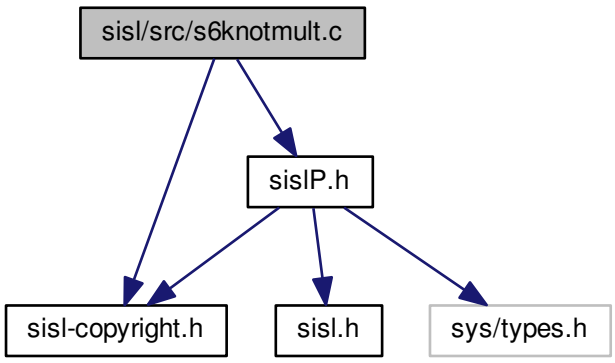
30.2727.2.1 void s6invert (emat , int *im*, einvertmat , int * *jstat*)

Definition at line 57 of file s6invert.c.

30.2728 sisl/src/s6knotmult.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6knotmult.c:



Macros

- #define S6KNOTMULT

Functions

- int s6knotmult (et, int ik, int in, int *ileft, double ax, int *jstat)

30.2728.1 Macro Definition Documentation

30.2728.1.1 #define S6KNOTMULT

Definition at line 49 of file s6knotmult.c.

30.2728.2 Function Documentation

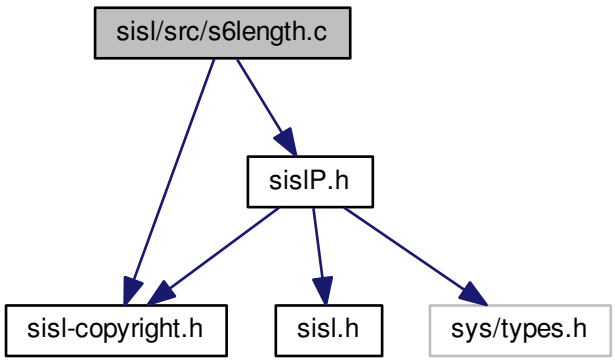
30.2728.2.1 int s6knotmult (et , int *ik,* int *in,* int * *ileft,* double *ax,* int * *jstat*)

Definition at line 57 of file s6knotmult.c.

30.2729 sisl/src/s6length.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6length.c:



Macros

- #define S6LENGTH

Functions

- double s6length (e1, int idim, int *jstat)

30.2729.1 Macro Definition Documentation

30.2729.1.1 #define S6LENGTH

Definition at line 47 of file s6length.c.

30.2729.2 Function Documentation

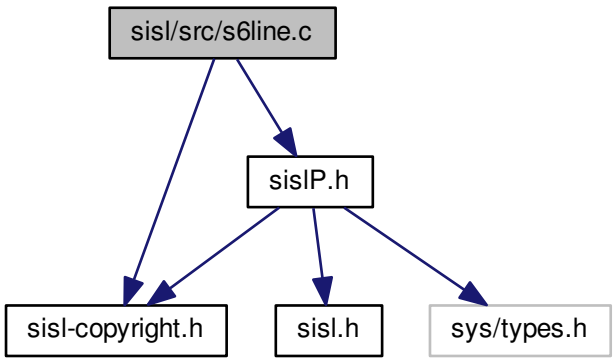
30.2729.2.1 double s6length (e1 , int *idim*, int * *jstat*)

Definition at line 55 of file s6length.c.

30.2730 sisl/src/s6line.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6line.c:



Macros

- #define S6LINE

Functions

- void s6line (epoint)

30.2730.1 Macro Definition Documentation

30.2730.1.1 #define S6LINE

Definition at line 49 of file s6line.c.

30.2730.2 Function Documentation

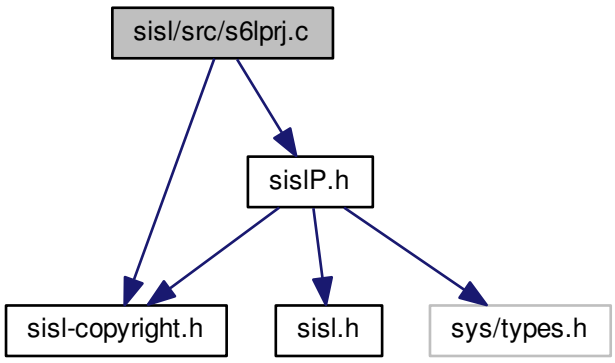
30.2730.2.1 void s6line (epoint)

Definition at line 57 of file s6line.c.

30.2731 sisl/src/s6lprj.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6lprj.c:



Macros

- #define S6LPRJ

Functions

- double s6lprj (e1, e2, int idim)

30.2731.1 Macro Definition Documentation

30.2731.1.1 #define S6LPRJ

Definition at line 47 of file s6lprj.c.

30.2731.2 Function Documentation

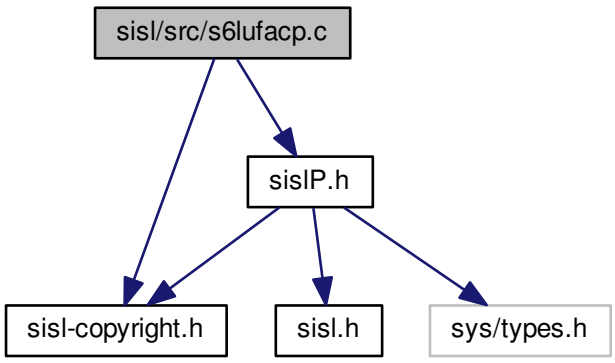
30.2731.2.1 double s6lprj (e1 , e2 , int *idim*)

Definition at line 55 of file s6lprj.c.

30.2732 sisl/src/s6lufacp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6lufacp.c:



Macros

- #define S6LUFACP

Functions

- void s6lufacp (ea, nl, int im, int *jstat)

30.2732.1 Macro Definition Documentation

30.2732.1.1 #define S6LUFACP

Definition at line 49 of file s6lufacp.c.

30.2732.2 Function Documentation

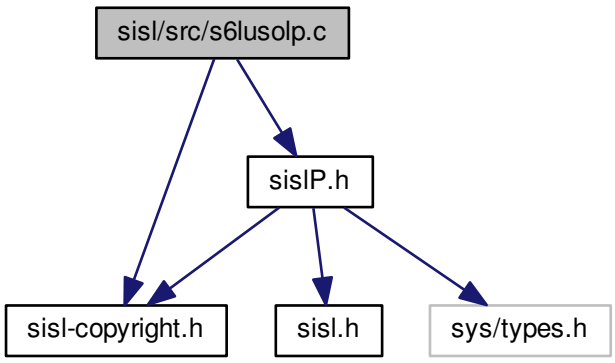
30.2732.2.1 void s6lufacp (ea , nl , int *im,* int * *jstat*)

Definition at line 57 of file s6lufacp.c.

30.2733 sisl/src/s6lusolp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6lusolp.c:



Macros

- #define S6LUSOLP

Functions

- void s6lusolp (ea, eb, nl, int im, int *jstat)

30.2733.1 Macro Definition Documentation

30.2733.1.1 #define S6LUSOLP

Definition at line 49 of file s6lusolp.c.

30.2733.2 Function Documentation

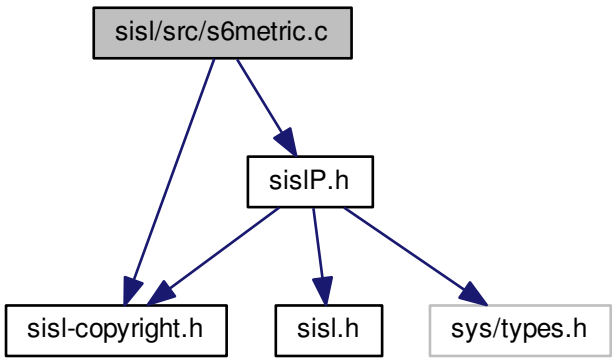
30.2733.2.1 void s6lusolp (ea , eb , nl , int *im*, int * *jstat*)

Definition at line 57 of file s6lusolp.c.

30.2734 sisl/src/s6metric.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6metric.c:



Macros

- #define S6METRIC

Functions

- void s6metric (epoint, int in, int idim, emat, int *jstat)

30.2734.1 Macro Definition Documentation

30.2734.1.1 #define S6METRIC

Definition at line 49 of file s6metric.c.

30.2734.2 Function Documentation

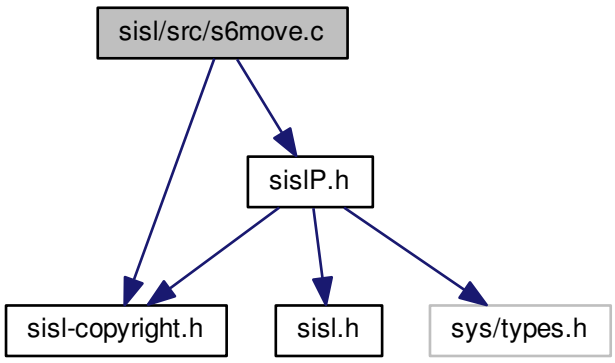
30.2734.2.1 void s6metric (epoint , int *in,* int *idim,* emat , int * *jstat*)

Definition at line 57 of file s6metric.c.

30.2735 sisl/src/s6move.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6move.c:



Macros

- #define S6MOVE

Functions

- void s6move (epoint)

30.2735.1 Macro Definition Documentation

30.2735.1.1 #define S6MOVE

Definition at line 49 of file s6move.c.

30.2735.2 Function Documentation

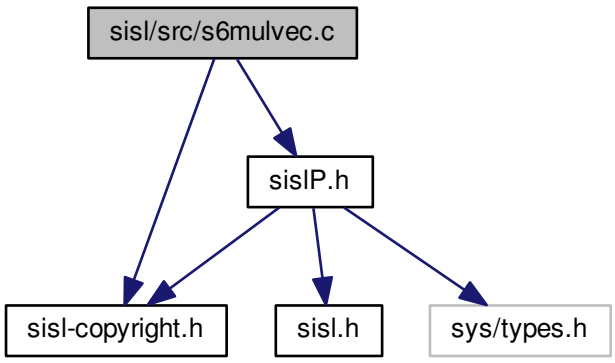
30.2735.2.1 void s6move (epoint)

Definition at line 57 of file s6move.c.

30.2736 sisl/src/s6mulvec.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6mulvec.c:



Macros

- #define S6MULVEC

Functions

- void s6mulvec (ematrix, evect, eright)

30.2736.1 Macro Definition Documentation

30.2736.1.1 #define S6MULVEC

Definition at line 49 of file s6mulvec.c.

30.2736.2 Function Documentation

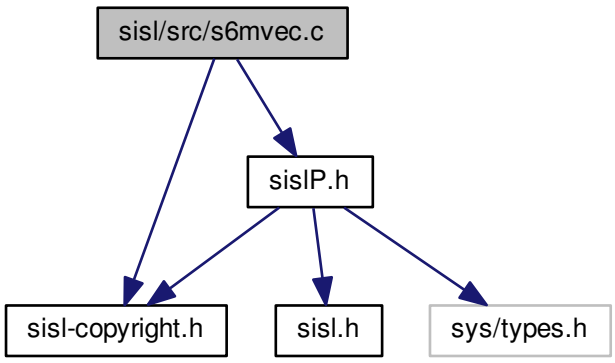
30.2736.2.1 void s6mulvec (ematrix , evect , eright)

Definition at line 58 of file s6mulvec.c.

30.2737 sisl/src/s6mvec.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6mvec.c:



Macros

- #define S6MVEC

Functions

- void s6mvec (emat, evec1, int inbvec, evec2)

30.2737.1 Macro Definition Documentation

30.2737.1.1 #define S6MVEC

Definition at line 49 of file s6mvec.c.

30.2737.2 Function Documentation

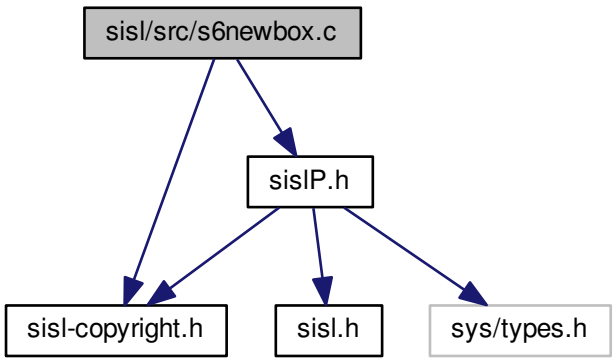
30.2737.2.1 void s6mvec (emat , evec1 , int *inbvec,* evec2)

Definition at line 57 of file s6mvec.c.

30.2738 sisl/src/s6newbox.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6newbox.c:



Macros

- #define S6NEWBOX

Functions

- void s6newbox (SISLbox *pbox, int inum, int itype, double aepsge, int *jstat)

30.2738.1 Macro Definition Documentation

30.2738.1.1 #define S6NEWBOX

Definition at line 49 of file s6newbox.c.

30.2738.2 Function Documentation

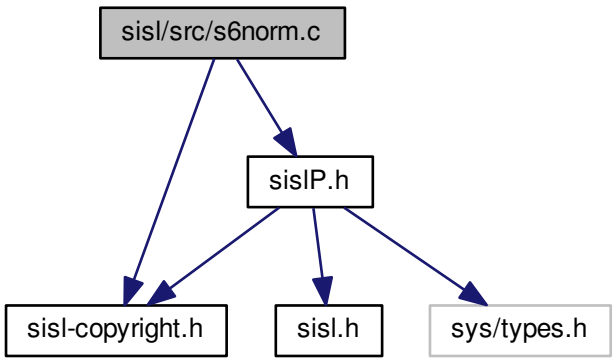
30.2738.2.1 void s6newbox (SISLbox * *pbox*, int *inum*, int *itype*, double *aepsge*, int * *jstat*)

Definition at line 57 of file s6newbox.c.

30.2739 sisl/src/s6norm.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6norm.c:



Macros

- #define S6NORM

Functions

- double s6norm (e1, int idim, e2, int *jstat)

30.2739.1 Macro Definition Documentation

30.2739.1.1 #define S6NORM

Definition at line 47 of file s6norm.c.

30.2739.2 Function Documentation

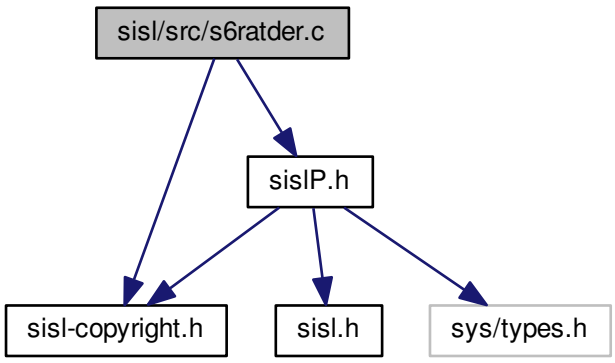
30.2739.2.1 double s6norm (e1 , int *idim*, e2 , int * *jstat*)

Definition at line 55 of file s6norm.c.

30.2740 sisl/src/s6ratder.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6ratder.c:



Macros

- #define S6RATDER

Functions

- void s6ratder (eder, int idim, int ider, gder, int *jstat)

30.2740.1 Macro Definition Documentation

30.2740.1.1 #define S6RATDER

Definition at line 49 of file s6ratder.c.

30.2740.2 Function Documentation

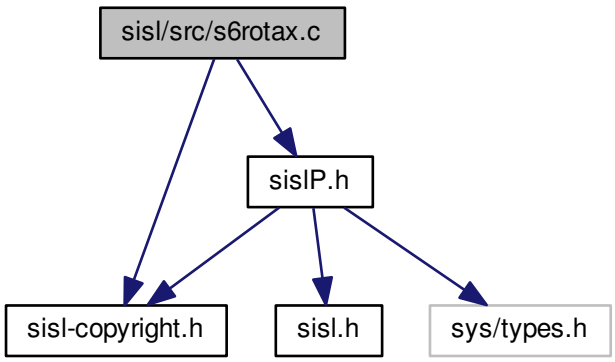
30.2740.2.1 void s6ratder (eder , int *idim,* int *ider,* gder , int * *jstat*)

Definition at line 57 of file s6ratder.c.

30.2741 sisl/src/s6rotax.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6rotax.c:



Macros

- #define S6ROTAX

Functions

- void s6rotax (ep, eaxis, expnt, emat, int *jstat)

30.2741.1 Macro Definition Documentation

30.2741.1.1 #define S6ROTAX

Definition at line 49 of file s6rotax.c.

30.2741.2 Function Documentation

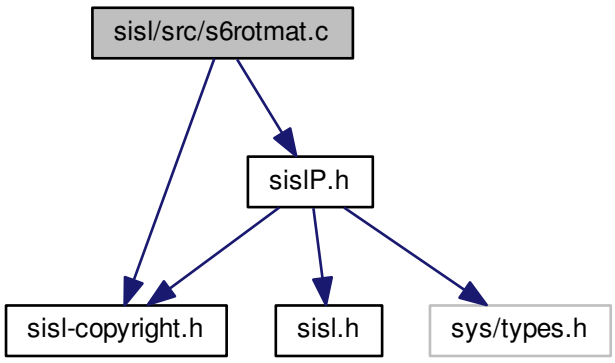
30.2741.2.1 void s6rotax (ep , eaxis , expnt , emat , int * *jstat*)

Definition at line 57 of file s6rotax.c.

30.2742 sisl/src/s6rotmat.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6rotmat.c:



Macros

- #define S6ROTMAT

Functions

- void s6rotmat (eorigo, exaxis, enorm, ematrix, int *jstat)

30.2742.1 Macro Definition Documentation

30.2742.1.1 #define S6ROTMAT

Definition at line 49 of file s6rotmat.c.

30.2742.2 Function Documentation

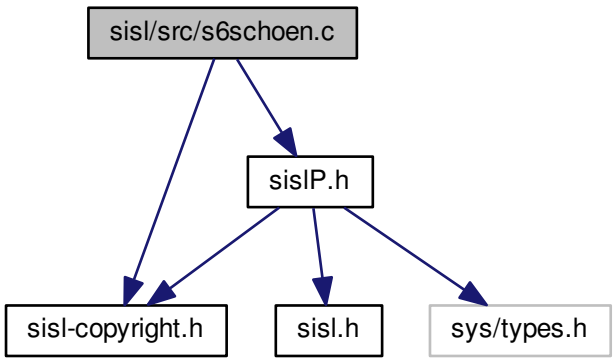
30.2742.2.1 void s6rotmat (eorigo , exaxis , enorm , ematrix , int * *jstat*)

Definition at line 59 of file s6rotmat.c.

30.2743 sisl/src/s6schoen.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6schoen.c:



Macros

- #define S6SCHOEN

Functions

- double s6schoen (et, int ik, int index)

30.2743.1 Macro Definition Documentation

30.2743.1.1 #define S6SCHOEN

Definition at line 50 of file s6schoen.c.

30.2743.2 Function Documentation

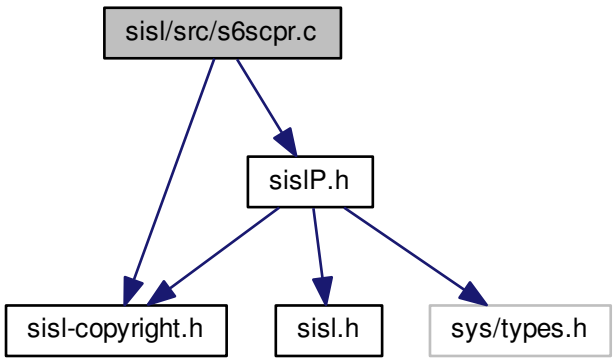
30.2743.2.1 double s6schoen (et , int *ik*, int *index*)

Definition at line 57 of file s6schoen.c.

30.2744 sisl/src/s6scpr.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6scpr.c:



Macros

- #define S6SCPR

Functions

- double s6scpr (e1, e2, int idim)

30.2744.1 Macro Definition Documentation

30.2744.1.1 #define S6SCPR

Definition at line 49 of file s6scpr.c.

30.2744.2 Function Documentation

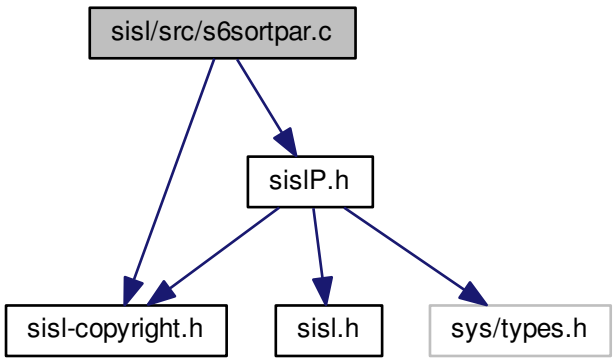
30.2744.2.1 double s6scpr (e1 , e2 , int *idim*)

Definition at line 57 of file s6scpr.c.

30.2745 sisl/src/s6sortpar.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6sortpar.c:



Macros

- #define S6SORTPAR

Functions

- void s6sortpar (evec1, epar1, int ipar, int idim, evec2, epar2, int ∗jstat)

30.2745.1 Macro Definition Documentation

30.2745.1.1 #define S6SORTPAR

Definition at line 49 of file s6sortpar.c.

30.2745.2 Function Documentation

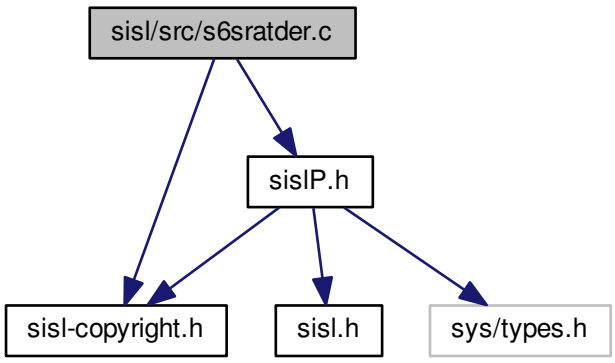
30.2745.2.1 void s6sortpar (evec1 , epar1 , int *ipar,* int *idim,* evec2 , epar2 , int * *jstat*)

Definition at line 58 of file s6sortpar.c.

30.2746 sisl/src/s6sratder.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6sratder.c:



Macros

- #define S6SRATDER

Functions

- void s6sratder (eder, int idim, int ider1, int ider2, gder, int *jstat)

30.2746.1 Macro Definition Documentation

30.2746.1.1 #define S6SRATDER

Definition at line 49 of file s6sratder.c.

30.2746.2 Function Documentation

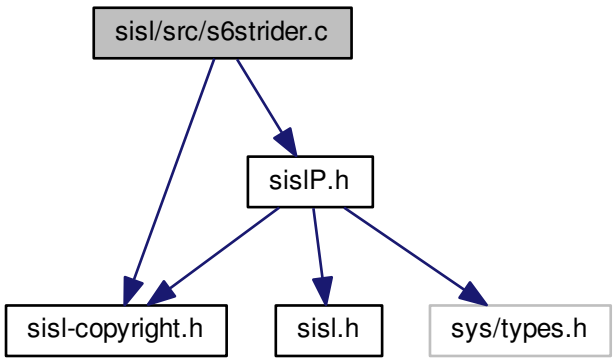
30.2746.2.1 void s6sratder (eder , int *idim,* int *ider1,* int *ider2,* gder , int * *jstat*)

Definition at line 57 of file s6sratder.c.

30.2747 sisl/src/s6strider.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6strider.c:



Macros

- #define S6STRIDER

Functions

- void s6strider (eder, int idim, int ider, gder, int *jstat)

30.2747.1 Macro Definition Documentation

30.2747.1.1 #define S6STRIDER

Definition at line 49 of file s6strider.c.

30.2747.2 Function Documentation

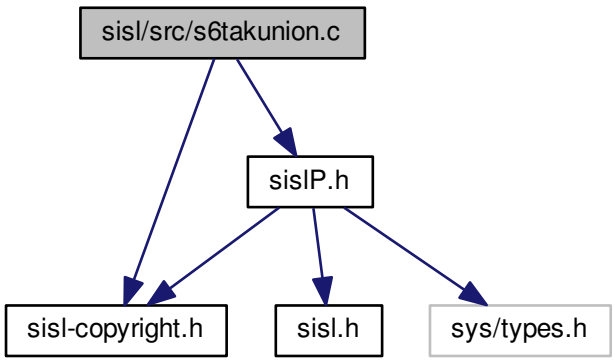
30.2747.2.1 void s6strider (eder , int *idim,* int *ider,* gder , int * *jstat*)

Definition at line 57 of file s6strider.c.

30.2748 sisl/src/s6takunion.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6takunion.c:



Macros

- #define S6TAKEUNION

Functions

- void s6takeunion (evec1, int ielem1, evec2, int ielem2,**gunion, int *jnmbelem, int *jstat)

30.2748.1 Macro Definition Documentation

30.2748.1.1 #define S6TAKEUNION

Definition at line 49 of file s6takunion.c.

30.2748.2 Function Documentation

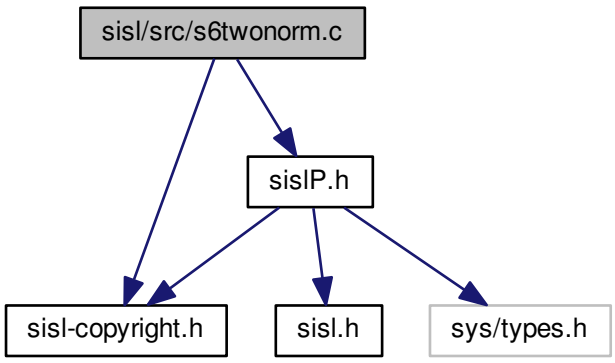
30.2748.2.1 void s6takeunion (evec1 , int *ielem1,* evec2 , int *ielem2,* ** *gunion,* int* *jnmbelem,* int* *jstat*)

Definition at line 57 of file s6takunion.c.

30.2749 sisl/src/s6twonorm.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s6twonorm.c:



Macros

- #define S6TWONORM

Functions

- void s6twonorm (evec, enorm1, enorm2, int *jstat)

30.2749.1 Macro Definition Documentation

30.2749.1.1 #define S6TWONORM

Definition at line 49 of file s6twonorm.c.

30.2749.2 Function Documentation

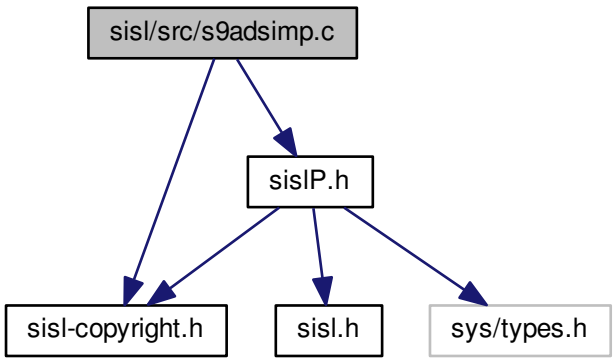
30.2749.2.1 void s6twonorm (evec , enorm1 , enorm2 , int * *jstat*)

Definition at line 57 of file s6twonorm.c.

30.2750 sisl/src/s9adsimp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9adsimp.c:



Macros

- #define S9ADSIMP

Functions

- double s9adsimp (epnt1, epar1, eimpli, int ideg, egd1, epgd1, etang, eptan, double astep, int *jstat)

30.2750.1 Macro Definition Documentation

30.2750.1.1 #define S9ADSIMP

Definition at line 49 of file s9adsimp.c.

30.2750.2 Function Documentation

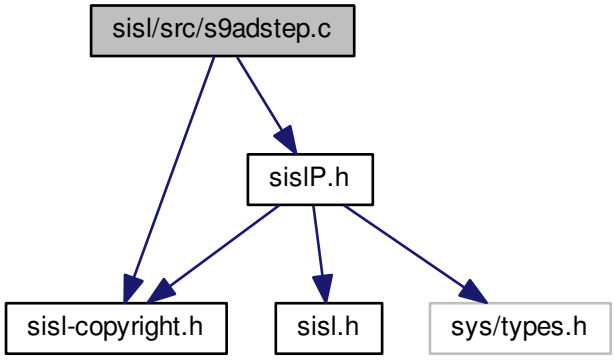
30.2750.2.1 double s9adsimp (epnt1 , epar1 , eimpli , int *ideg,* egd1 , epgd1 , etang , eptan , double *astep,* int * *jstat*)

Definition at line 58 of file s9adsimp.c.

30.2751 sisl/src/s9adstep.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9adstep.c:



Macros

- #define S9ADSTEP

Functions

- double s9adstep (epnt1, epar1, epnt2, epar2, egd1, epgd1, egd2, epgd2, etang, eptan1, eptan2, double astep, int *jstat)

30.2751.1 Macro Definition Documentation

30.2751.1.1 #define S9ADSTEP

Definition at line 49 of file s9adstep.c.

30.2751.2 Function Documentation

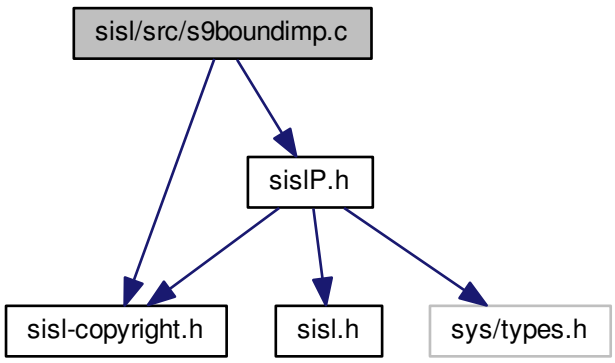
30.2751.2.1 double s9adstep (epnt1 , epar1 , epnt2 , epar2 , egd1 , epgd1 , egd2 , epgd2 , etang , eptan1 , eptan2 , double *astep*, int * *jstat*)

Definition at line 59 of file s9adstep.c.

30.2752 sisl/src/s9boundimp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9boundimp.c:



Macros

- #define S9BOUNDIMP

Functions

- void s9boundimp (epnt1, epar1, SISLSurf *psurf1, eimpli, int ideg, double apar, int idir, double aepsge, gpnt1, gpar1, int *jstat)

30.2752.1 Macro Definition Documentation

30.2752.1.1 #define S9BOUNDIMP

Definition at line 49 of file s9boundimp.c.

30.2752.2 Function Documentation

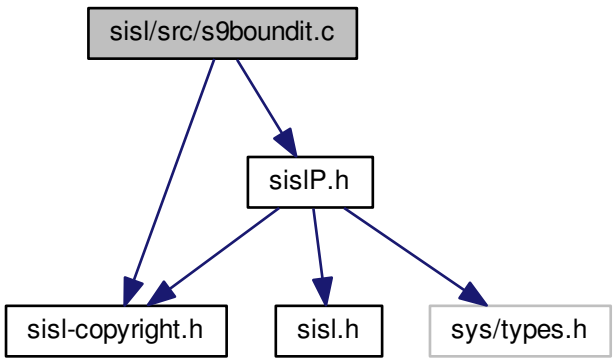
30.2752.2.1 void s9boundimp (epnt1 , epar1 , SISLSurf * *psurf1,* eimpli , int *ideg,* double *apar,* int *idir,* double *aepsge,* gpnt1 , gpar1 , int * *jstat*)

Definition at line 59 of file s9boundimp.c.

30.2753 sisl/src/s9boundit.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9boundit.c:



Macros

- #define S9BOUNDIT

Functions

- void s9boundit (epnt1, epnt2, epar1, epar2, SISLSurf *psurf1, SISLSurf *psurf2, double apar, int idir, double aepsge, gpnt1, gpnt2, gpar1, gpar2, int *jstat)

30.2753.1 Macro Definition Documentation

30.2753.1.1 #define S9BOUNDIT

Definition at line 49 of file s9boundit.c.

30.2753.2 Function Documentation

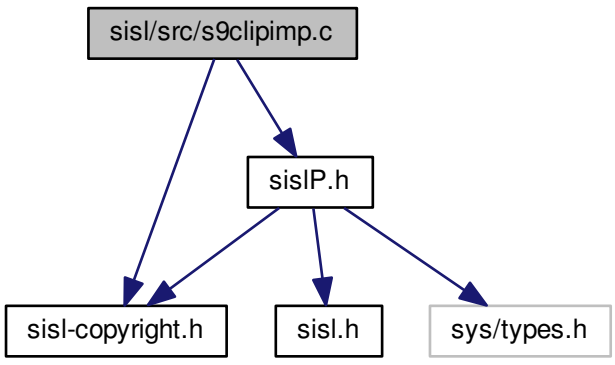
30.2753.2.1 void s9boundit (epnt1 , epnt2 , epar1 , epar2 , SISLSurf * *psurf1,* SISLSurf * *psurf2,* double *apar,* int *idir,* double *aepsge,* gpnt1 , gpnt2 , gpar1 , gpar2 , int * *jstat*)

Definition at line 59 of file s9boundit.c.

30.2754 sisl/src/s9clipimp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9clipimp.c:



Macros

- #define S9CLIPIMP

Functions

- void s9clipimp (epar1, epar2, SISLSurf *psurf1, eimpli, int ideg, euval, evval, double aepsge, gpnt1, gpar1, int *jstat)

30.2754.1 Macro Definition Documentation

30.2754.1.1 #define S9CLIPIMP

Definition at line 49 of file s9clipimp.c.

30.2754.2 Function Documentation

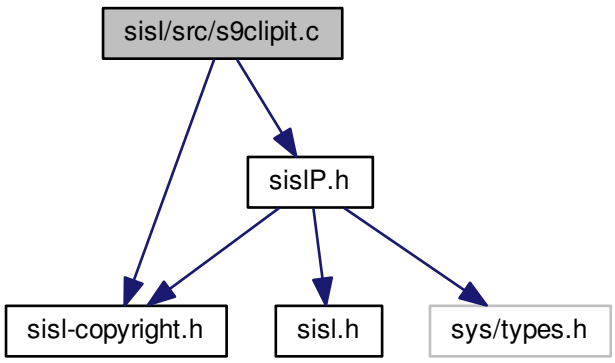
30.2754.2.1 void s9clipimp (epar1 , epar2 , SISLSurf ∗ *psurf1,* eimpli , int *ideg,* euval , evval , double *aepsge,* gpnt1 , gpar1 , int ∗ *jstat*)

Definition at line 59 of file s9clipimp.c.

30.2755 sisl/src/s9clipit.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9clipit.c:



Macros

- #define S9CLIPIT

Functions

- void s9clipit (epar11, epar12, epar21, epar22, SISLSurf ∗psurf1, SISLSurf ∗psurf2, euval, evval, esval, etval, double aepsge, gpnt1, gpnt2, gpar1, gpar2, int ∗jstat)

30.2755.1 Macro Definition Documentation

30.2755.1.1 #define S9CLIPIT

Definition at line 49 of file s9clipit.c.

30.2755.2 Function Documentation

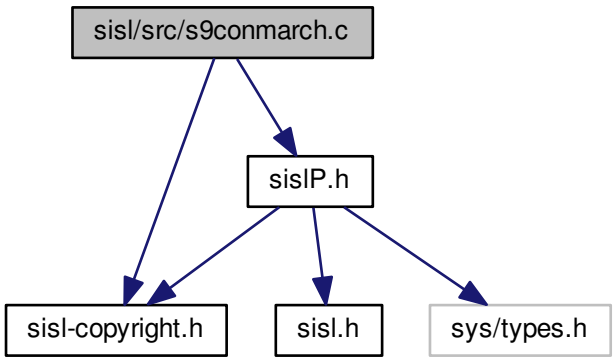
30.2755.2.1 void s9clipit (epar11 , epar12 , epar21 , epar22 , SISLSurf * *psurf1,* SISLSurf * *psurf2,* euval , evval , esval , etval , double *aepsge,* gpnt1 , gpnt2 , gpar1 , gpar2 , int * *jstat*)

Definition at line 60 of file s9clipit.c.

30.2756 sisl/src/s9conmarch.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9conmarch.c:



Macros

- #define S9CONMARCH

Functions

- void s9conmarch (SISLSurf *ps, double alevel, epar, ndir, int ipoint, gpar, mpar, int *jpoint, int *jstat)

30.2756.1 Macro Definition Documentation

30.2756.1.1 #define S9CONMARCH

Definition at line 49 of file s9conmarch.c.

30.2756.2 Function Documentation

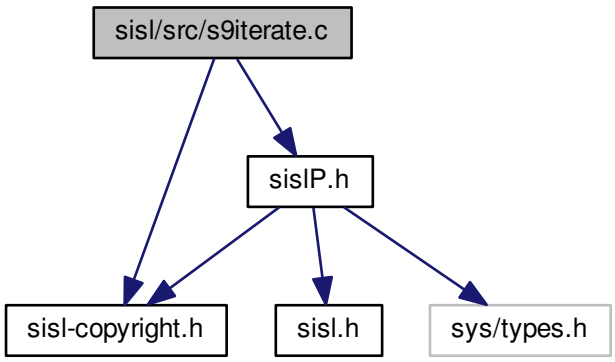
30.2756.2.1 void s9conmarch (SISLSurf * *ps*, double *alevel*, epar , ndir , int *ipoint*, gpar , mpar , int * *jpoint*, int * *jstat*)

Definition at line 58 of file s9conmarch.c.

30.2757 sisl/src/s9iterate.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9iterate.c:



Macros

- #define S9ITERATE

Functions

- void s9iterate (epoint, epnt1, epnt2, epar1, epar2, SISLSurf *psurf1, SISLSurf *psurf2, double astep, double aepsge, gpnt1, gpnt2, gpar1, gpar2, int *jstat)

30.2757.1 Macro Definition Documentation

30.2757.1.1 #define S9ITERATE

Definition at line 47 of file s9iterate.c.

30.2757.2 Function Documentation

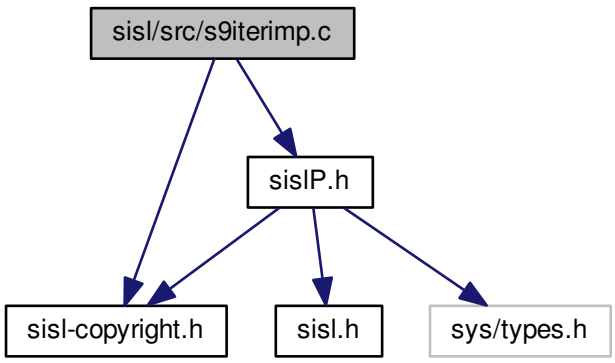
30.2757.2.1 void s9iterate (epoint , epnt1 , epnt2 , epar1 , epar2 , SISLSurf * *psurf1,* SISLSurf * *psurf2,* double *astep,* double *aepsge,* gpnt1 , gpnt2 , gpar1 , gpar2 , int * *jstat*)

Definition at line 58 of file s9iterate.c.

30.2758 sisl/src/s9iterimp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9iterimp.c:



Macros

- #define S9ITERIMP

Functions

- void s9iterimp (epoint, epnt1, epar1, SISLSurf *psurf1, eimpli, int ideg, double astep, double aepsge, gpnt1, gpar1, int *jstat)

30.2758.1 Macro Definition Documentation

30.2758.1.1 #define S9ITERIMP

Definition at line 47 of file s9iterimp.c.

30.2758.2 Function Documentation

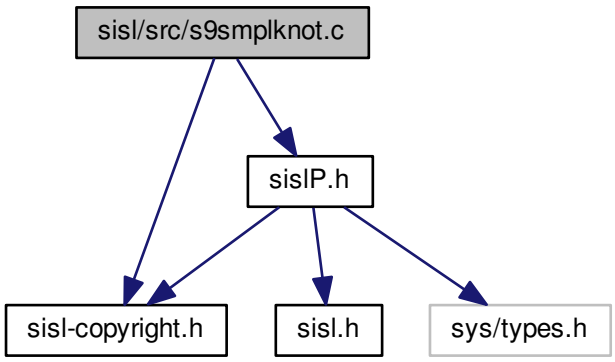
30.2758.2.1 void s9iterimp (epoint , epnt1 , epar1 , SISLSurf * *psurf1,* eimpli , int *ideg,* double *astep,* double *aepsge,* gpnt1 , gpar1 , int * *jstat*)

Definition at line 57 of file s9iterimp.c.

30.2759 sisl/src/s9smplknot.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9smplknot.c:



Macros

- #define S9SIMPLE_KNOT

Functions

- void s9simple_knot (SISLSurf *surf, int idiv, epar, int *fixflag, int *jstat)

30.2759.1 Macro Definition Documentation

30.2759.1.1 #define S9SIMPLE_KNOT

Definition at line 49 of file s9smplknot.c.

30.2759.2 Function Documentation

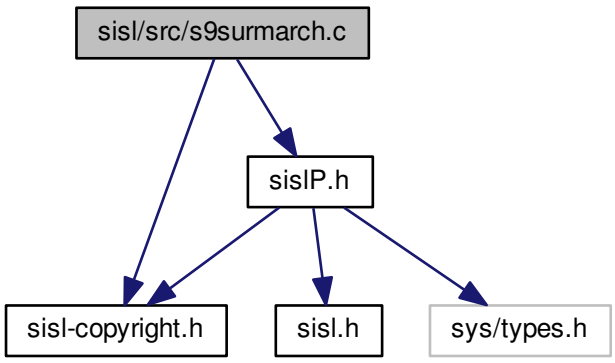
30.2759.2.1 void s9simple_knot (SISLSurf* *surf*, int *idiv*, epar , int * *fixflag*, int * *jstat*)

Definition at line 58 of file s9smplknot.c.

30.2760 sisl/src/s9surmarch.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for s9surmarch.c:



Macros

- #define S9SURMARCH

Functions

- void s9surmarch (SISLSurf *ps1, SISLSurf *ps2, epar, ndir, int ipoint, gpar, mpar, int *jpoint, int *jstat)

30.2760.1 Macro Definition Documentation

30.2760.1.1 #define S9SURMARCH

Definition at line 49 of file s9surmarch.c.

30.2760.2 Function Documentation

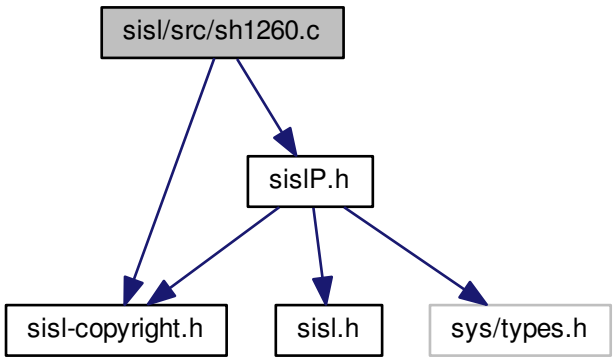
30.2760.2.1 void s9surmarch (SISLSurf * *ps1*, SISLSurf * *ps2*, epar , ndir , int *ipoint*, gpar , mpar , int * *jpoint*, int * *jstat*)

Definition at line 58 of file s9surmarch.c.

30.2761 sisl/src/sh1260.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1260.c:



Macros

- #define SH1260

Functions

- void sh1260 (double aconst, vcurve, int icurve, int *jstat)

30.2761.1 Macro Definition Documentation

30.2761.1.1 #define SH1260

Definition at line 42 of file sh1260.c.

30.2761.2 Function Documentation

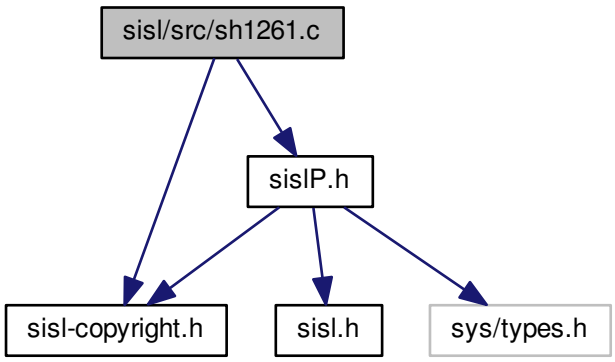
30.2761.2.1 void sh1260 (double *aconst,* vcurve , int *icurve,* int * *jstat*)

Definition at line 50 of file sh1260.c.

30.2762 sisl/src/sh1261.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1261.c:



Macros

- #define SH1261

Functions

- void sh1261 (SISLCurve *pcurve1, SISLCurve *pcurve2, ecoef1, int ik1, ecoef2, int ik2, SISLCurve **rcrtanc, int *jstat)

30.2762.1 Macro Definition Documentation

30.2762.1.1 #define SH1261

Definition at line 42 of file sh1261.c.

30.2762.2 Function Documentation

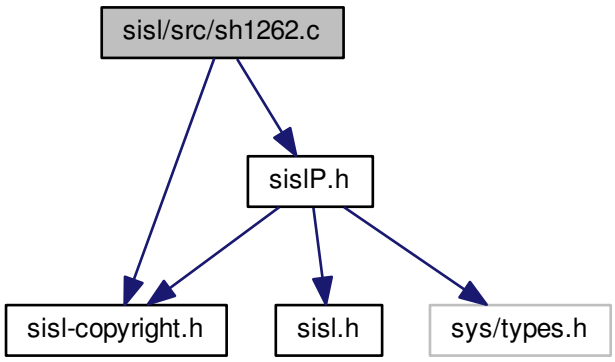
30.2762.2.1 void sh1261 (SISLCurve * *pcurve1,* SISLCurve* *pcurve2,* ecoef1 , int *ik1,* ecoef2 , int *ik2,* SISLCurve** *rcrtanc,* int* *jstat*)

Definition at line 58 of file sh1261.c.

30.2763 sisl/src/sh1262.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1262.c:



Macros

- #define SH1262

Functions

- void sh1262 (vcurve, int iedge, int inmbx, ecoef, int *jstat)

30.2763.1 Macro Definition Documentation

30.2763.1.1 #define SH1262

Definition at line 42 of file sh1262.c.

30.2763.2 Function Documentation

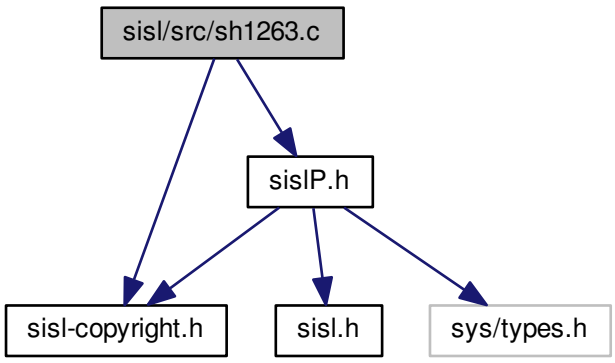
30.2763.2.1 void sh1262 (vcurve , int *iedge,* int *inmbx,* ecoef , int* *jstat*)

Definition at line 63 of file sh1262.c.

30.2764 sisl/src/sh1263.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1263.c:



Macros

- #define SH1263

Functions

- void sh1263 (vcurve, int iedge, vboundc, int *jstat)

30.2764.1 Macro Definition Documentation

30.2764.1.1 #define SH1263

Definition at line 42 of file sh1263.c.

30.2764.2 Function Documentation

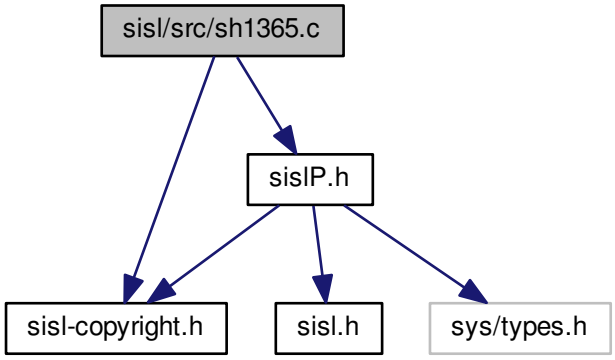
30.2764.2.1 void sh1263 (vcurve , int *iedge,* vboundc , int * *jstat*)

Definition at line 58 of file sh1263.c.

30.2765 sisl/src/sh1365.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1365.c:



Macros

- #define SH1365

Functions

- void sh1365 (SISLCurve *pcurve, etau, int ik, int in, int ileftfix, int irightfix, SISLCurve **rnewcurve, double **gmaxerr, double **gl2err, int *jstat)

30.2765.1 Macro Definition Documentation

30.2765.1.1 #define SH1365

Definition at line 48 of file sh1365.c.

30.2765.2 Function Documentation

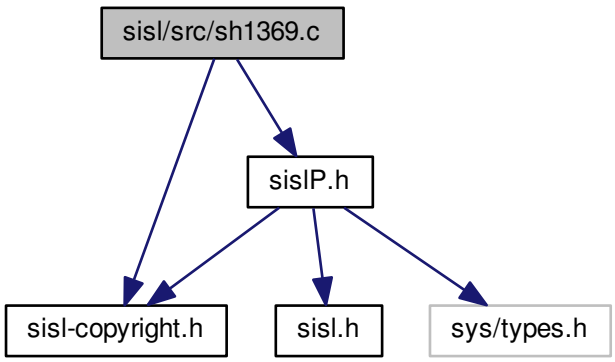
30.2765.2.1 void sh1365 (SISLCurve * *pcurve,* etau , int *ik,* int *in,* int *ileftfix,* int *irightfix,* SISLCurve ** *rnewcurve,* double ** *gmaxerr,* double ** *gl2err,* int * *jstat*)

Definition at line 58 of file sh1365.c.

30.2766 sisl/src/sh1369.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1369.c:



Macros

- #define SH1369

Functions

- void sh1369 (SISLSurf *ps, ecentr, enorm, double abigr, double asmalr, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2766.1 Macro Definition Documentation

30.2766.1.1 #define SH1369

Definition at line 49 of file sh1369.c.

30.2766.2 Function Documentation

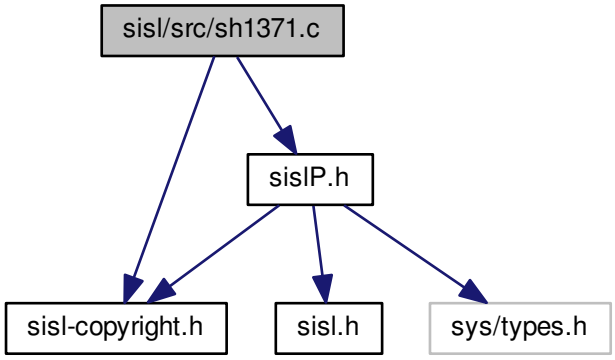
30.2766.2.1 void sh1369 (SISLSurf * *ps*, ecentr , enorm , double *abigr*, double *asmalr*, int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jsurf*, SISLIntsurf *** *wsurf*, int * *jstat*)

Definition at line 60 of file sh1369.c.

30.2767 sisl/src/sh1371.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1371.c:



Macros

- #define SH1371

Functions

- void sh1371 (SISLCurve *pc1, ecentr, double aradiu, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2767.1 Macro Definition Documentation

30.2767.1.1 #define SH1371

Definition at line 49 of file sh1371.c.

30.2767.2 Function Documentation

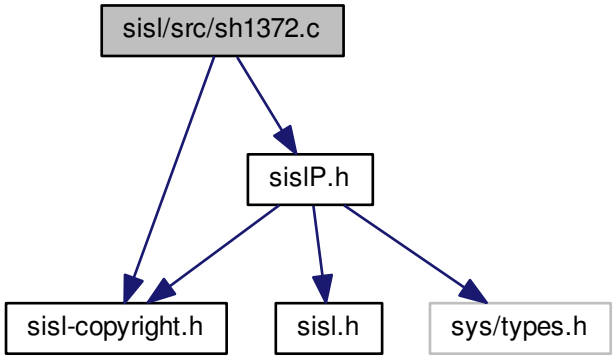
30.2767.2.1 void sh1371 (SISLCurve * *pc1*, ecentr , double *aradiu*, int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 61 of file sh1371.c.

30.2768 sisl/src/sh1372.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1372.c:



Macros

- #define SH1372

Functions

- void sh1372 (SISLCurve *pc1, epoint, edirec, double aradiu, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2768.1 Macro Definition Documentation

30.2768.1.1 #define SH1372

Definition at line 49 of file sh1372.c.

30.2768.2 Function Documentation

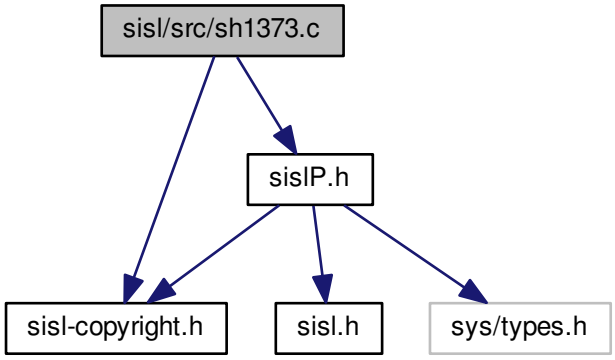
30.2768.2.1 void sh1372 (SISLCurve * *pc1*, epoint , edirec , double *aradiu*, int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 60 of file sh1372.c.

30.2769 sisl/src/sh1373.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1373.c:



Macros

- #define SH1373

Functions

- void sh1373 (SISLCurve *pc1, etop, eaxis, econe, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2769.1 Macro Definition Documentation

30.2769.1.1 #define SH1373

Definition at line 49 of file sh1373.c.

30.2769.2 Function Documentation

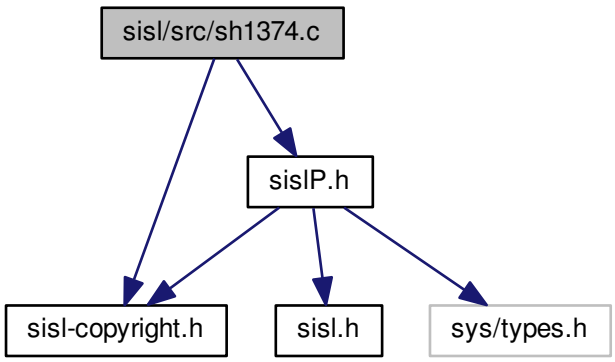
30.2769.2.1 void sh1373 (SISLCurve * *pc1*, etop , eaxis , econe , int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 60 of file sh1373.c.

30.2770 sisl/src/sh1374.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1374.c:



Macros

- #define SH1374

Functions

- void sh1374 (SISLCurve *pc1, earray, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2770.1 Macro Definition Documentation

30.2770.1.1 #define SH1374

Definition at line 49 of file sh1374.c.

30.2770.2 Function Documentation

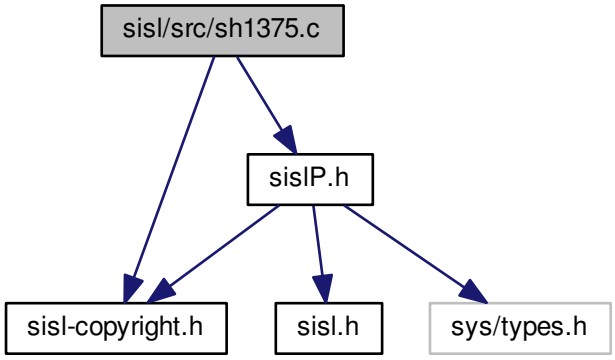
30.2770.2.1 void sh1374 (SISLCurve * *pc1*, earray , int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 60 of file sh1374.c.

30.2771 sisl/src/sh1375.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1375.c:



Macros

- #define SH1375

Functions

- void sh1375 (SISLCurve *pc1, ecentr, enorm, double abigr, double asmalr, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISL↩ Intcurve ***wcurve, int *jstat)

30.2771.1 Macro Definition Documentation

30.2771.1.1 #define SH1375

Definition at line 49 of file sh1375.c.

30.2771.2 Function Documentation

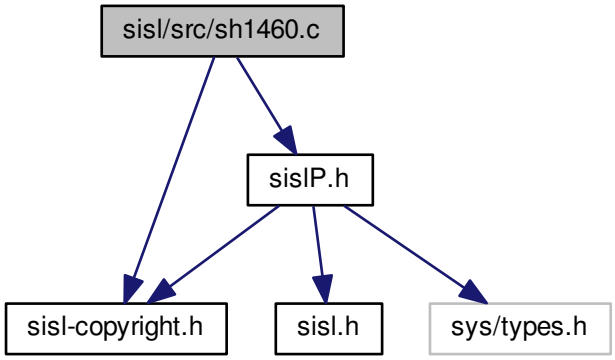
30.2771.2.1 void sh1375 (SISLCurve * *pc1*, ecentr , enorm , double *abigr*, double *asmalr*, int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 60 of file sh1375.c.

30.2772 sisl/src/sh1460.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1460.c:



Macros

- #define SH1460

Typedefs

- typedef void(* fshapeProc) ()
- typedef void(* fevalmidProc) ()

Functions

- void sh1460 (fshapeProc fshape, vboundc, int icurv, SISLSurf ***wsurf, int *jstat)

30.2772.1 Macro Definition Documentation

30.2772.1.1 #define SH1460

Definition at line 49 of file sh1460.c.

30.2772.2 Typedef Documentation

30.2772.2.1 typedef void(* fevalmidProc) ()

Definition at line 64 of file sh1460.c.

30.2772.2.2 typedef void(* fshapeProc) ()

Definition at line 54 of file sh1460.c.

30.2772.3 Function Documentation

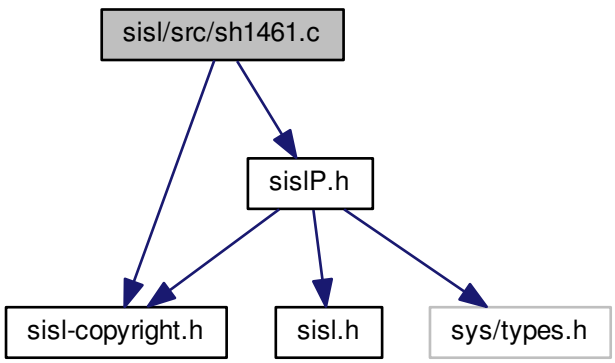
30.2772.3.1 void sh1460 (fshapeProc *fshape,* vboundc , int *icurv,* SISLSurf *** *wsurf,* int * *jstat*)

Definition at line 80 of file sh1460.c.

30.2773 sisl/src/sh1461.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1461.c:



Macros

- #define SH1461

Typedefs

- typedef void(∗ fshapeProc) ()
- typedef void(∗ initProc) ()

Functions

- void sh1461 (fshapeProc fshape, initProc f_initmid, vboundc, int icurv, vsurf, int ∗jstat)

30.2773.1 Macro Definition Documentation

30.2773.1.1 #define SH1461

Definition at line 49 of file sh1461.c.

30.2773.2 Typedef Documentation

30.2773.2.1 typedef void(∗ fshapeProc) ()

Definition at line 58 of file sh1461.c.

30.2773.2.2 typedef void(∗ initProc) ()

Definition at line 59 of file sh1461.c.

30.2773.3 Function Documentation

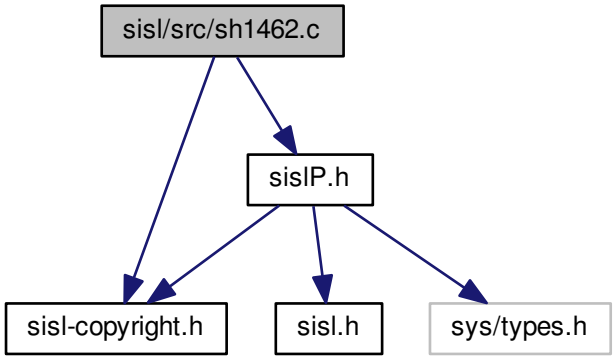
30.2773.3.1 void sh1461 (fshapeProc *fshape,* initProc *f_initmid,* vboundc , int *icurv,* vsurf , int ∗ *jstat*)

Definition at line 87 of file sh1461.c.

30.2774 sisl/src/sh1462.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1462.c:



Macros

- #define SH1462

Typedefs

- typedef void(∗ fshapeProc) ()

Functions

- void sh1462 (fshapeProc fshape, vboundc, int icurv, etwist, etang, eder, int ∗jstat)

30.2774.1 Macro Definition Documentation

30.2774.1.1 #define SH1462

Definition at line 49 of file sh1462.c.

30.2774.2 Typedef Documentation

30.2774.2.1 typedef void(∗ fshapeProc) ()

Definition at line 56 of file sh1462.c.

30.2774.3 Function Documentation

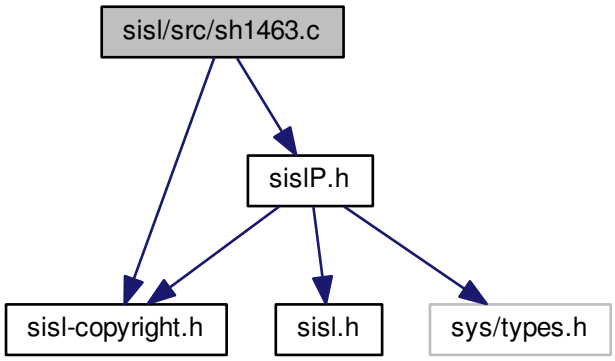
30.2774.3.1 void sh1462 (fshapeProc *fshape,* vboundc , int *icurv,* etwist , etang , eder , int* *jstat*)

Definition at line 64 of file sh1462.c.

30.2775 sisl/src/sh1463.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1463.c:



Macros

- #define SH1463

Typedefs

- typedef void(* fshapeProc) ()

Functions

- void sh1463 (fshapeProc fshape, vboundc, int icurv, etwist, etang, eder, int *jstat)

30.2775.1 Macro Definition Documentation

30.2775.1.1 #define SH1463

Definition at line 49 of file sh1463.c.

30.2775.2 Typedef Documentation

30.2775.2.1 typedef void(∗ fshapeProc) ()

Definition at line 56 of file sh1463.c.

30.2775.3 Function Documentation

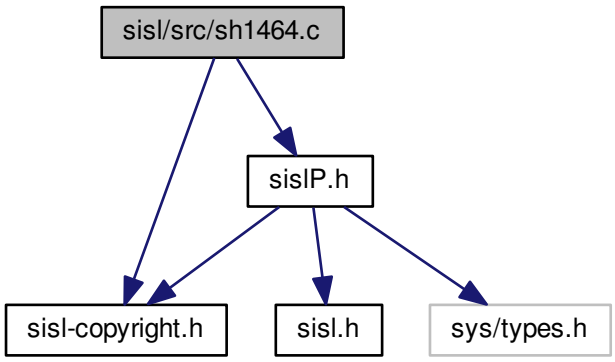
30.2775.3.1 void sh1463 (fshapeProc *fshape,* vboundc , int *icurv,* etwist , etang , eder , int∗ *jstat*)

Definition at line 65 of file sh1463.c.

30.2776 sisl/src/sh1464.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1464.c:



Macros

- #define SH1464

Typedefs

- typedef void(∗ fshapeProc) ()

Functions

- void sh1464 (fshapeProc fshape, vboundc, int icurv, etwist, etang, eder, int ∗jstat)

30.2776.1 Macro Definition Documentation

30.2776.1.1 #define SH1464

Definition at line 49 of file sh1464.c.

30.2776.2 Typedef Documentation

30.2776.2.1 typedef void(* fshapeProc) ()

Definition at line 56 of file sh1464.c.

30.2776.3 Function Documentation

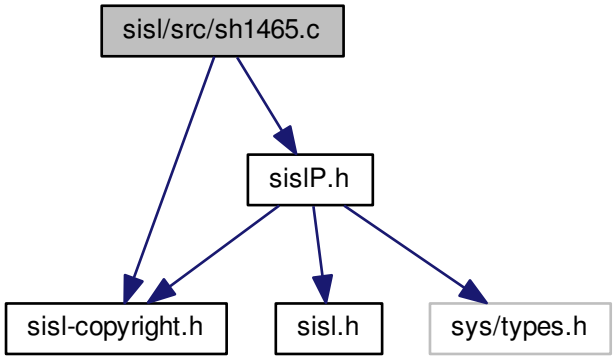
30.2776.3.1 void sh1464 (fshapeProc *fshape,* vboundc , int *icurv,* etwist , etang , eder , int* *jstat*)

Definition at line 64 of file sh1464.c.

30.2777 sisl/src/sh1465.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1465.c:



Macros

- #define SH1465

Typedefs

- typedef void(∗ fshapeProc) ()

Functions

- void sh1465 (fshapeProc fshape, vboundc, int icurv, etwist, etang, eder, int ∗jstat)

30.2777.1 Macro Definition Documentation

30.2777.1.1 #define SH1465

Definition at line 49 of file sh1465.c.

30.2777.2 Typedef Documentation

30.2777.2.1 typedef void(∗ fshapeProc) ()

Definition at line 59 of file sh1465.c.

30.2777.3 Function Documentation

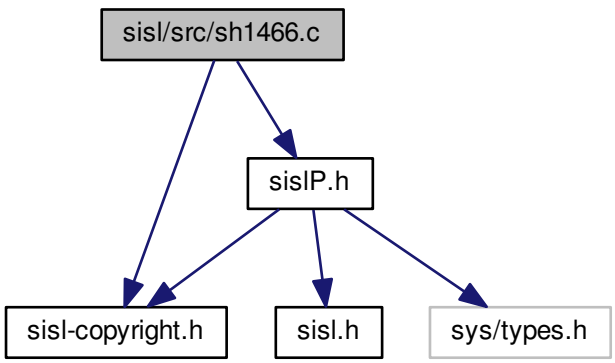
30.2777.3.1 void sh1465 (fshapeProc *fshape,* vboundc , int *icurv,* etwist , etang , eder , int∗ *jstat*)

Definition at line 67 of file sh1465.c.

30.2778 sisl/src/sh1466.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1466.c:



Macros

- #define SH1466

Functions

- void sh1466 (ecurve, etwist, int ider, ebar, eval, int *jstat)

30.2778.1 Macro Definition Documentation

30.2778.1.1 #define SH1466

Definition at line 49 of file sh1466.c.

30.2778.2 Function Documentation

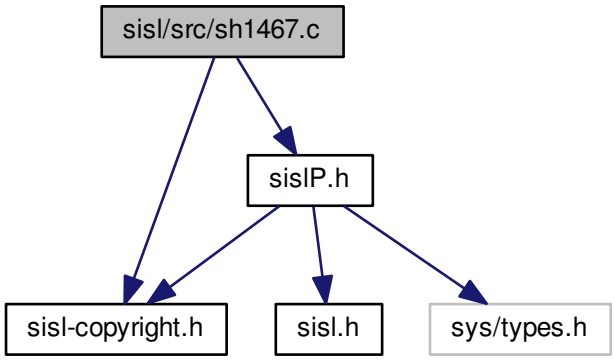
30.2778.2.1 void sh1466 (ecurve , etwist , int *ider,* ebar , eval , int* *jstat*)

Definition at line 58 of file sh1466.c.

30.2779 sisl/src/sh1467.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1467.c:



Macros

- #define SH1467

Functions

- void sh1467 (ecurve, etwist, int ider, ebar, eval, int ∗jstat)

30.2779.1 Macro Definition Documentation

30.2779.1.1 #define SH1467

Definition at line 49 of file sh1467.c.

30.2779.2 Function Documentation

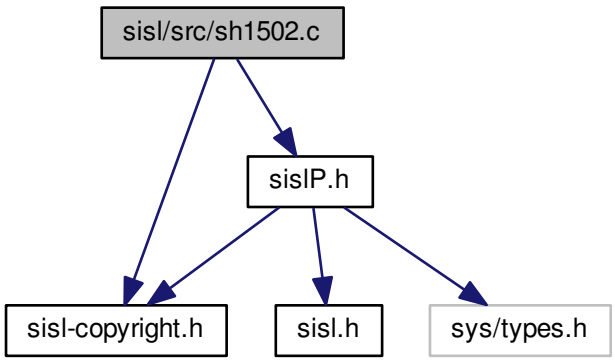
30.2779.2.1 void sh1467 (ecurve , etwist , int *ider,* ebar , eval , int∗ *jstat*)

Definition at line 68 of file sh1467.c.

30.2780 sisl/src/sh1502.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1502.c:



Macros

- #define SH1502

Functions

- void sh1502 (SISLCurve *pc1, base, norm, axisA, alpha, ratio, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2780.1 Macro Definition Documentation

30.2780.1.1 #define SH1502

Definition at line 49 of file sh1502.c.

30.2780.2 Function Documentation

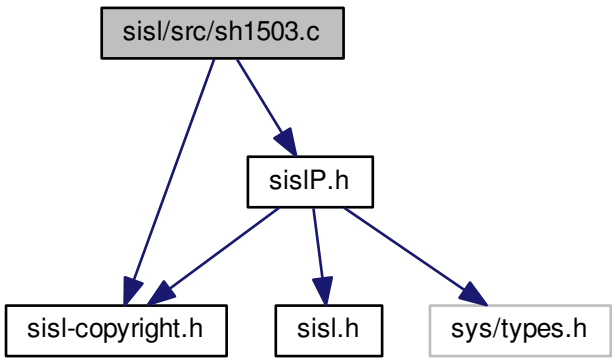
30.2780.2.1 void sh1502 (SISLCurve * *pc1*, base , norm , axisA , alpha , ratio , int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 60 of file sh1502.c.

30.2781 sisl/src/sh1503.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1503.c:



Macros

- #define SH1503

Functions

- void sh1503 (SISLSurf *ps1, base, norm, axisA, double alpha, double ratio, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2781.1 Macro Definition Documentation

30.2781.1.1 #define SH1503

Definition at line 49 of file sh1503.c.

30.2781.2 Function Documentation

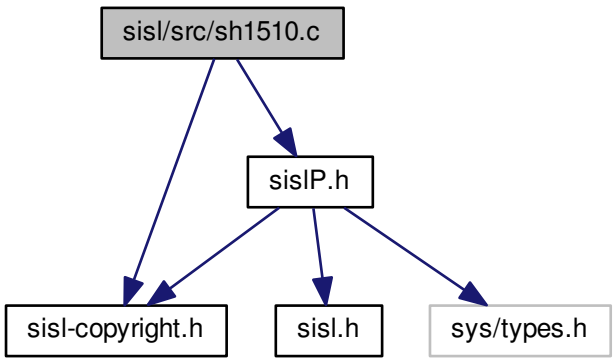
30.2781.2.1 void sh1503 (SISLSurf * *ps1*, base , norm , axisA , double *alpha*, double *ratio*, int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jsurf*, SISLIntsurf *** *wsurf*, int * *jstat*)

Definition at line 61 of file sh1503.c.

30.2782 sisl/src/sh1510.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1510.c:



Macros

- #define SH1510

Functions

- void sh1510 (SISLSurf *ps, eyepoint, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2782.1 Macro Definition Documentation

30.2782.1.1 #define SH1510

Definition at line 49 of file sh1510.c.

30.2782.2 Function Documentation

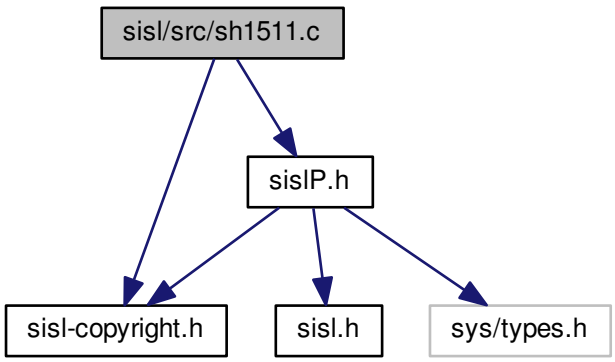
30.2782.2.1 void sh1510 (SISLSurf * *ps,* eyepoint , int *idim,* double *aepsco,* double *aepsge,* int *trackflag,* int * *jtrack,* SISLTrack *** *wtrack,* int * *jpt,* double ** *gpar,* int ** *pretop,* int * *jcrv,* SISLIntcurve *** *wcurve,* int * *jsurf,* SISLIntsurf *** *wsurf,* int * *jstat*)

Definition at line 59 of file sh1510.c.

30.2783 sisl/src/sh1511.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1511.c:



Macros

- #define SH1511

Functions

- void sh1511 (SISLSurf *ps, qpoint, bvec, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2783.1 Macro Definition Documentation

30.2783.1.1 #define SH1511

Definition at line 49 of file sh1511.c.

30.2783.2 Function Documentation

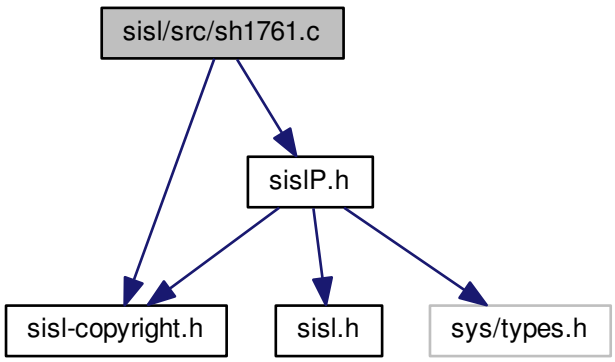
30.2783.2.1 void sh1511 (SISLSurf * *ps,* qpoint , bvec , int *idim,* double *aepsco,* double *aepsge,* int *trackflag,* int * *jtrack,* SISLTrack *** *wtrack,* int * *jpt,* double ** *gpar,* int ** *pretop,* int * *jcrv,* SISLIntcurve *** *wcurve,* int * *jsurf,* SISLIntsurf *** *wsurf,* int * *jstat*)

Definition at line 59 of file sh1511.c.

30.2784 sisl/src/sh1761.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1761.c:



Macros

- #define SH1761

Functions

- void sh1761 (SISLObject *po1, SISLObject *po2, double aepsge, SISLIntdat **pintdat, int *jstat)

30.2784.1 Macro Definition Documentation

30.2784.1.1 #define SH1761

Definition at line 49 of file sh1761.c.

30.2784.2 Function Documentation

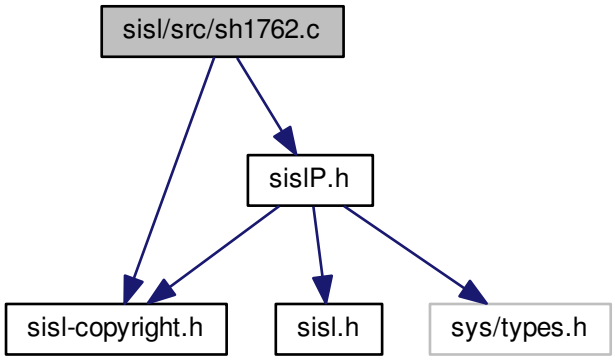
30.2784.2.1 void sh1761 (SISLObject * *po1,* SISLObject * *po2,* double *aepsge,* SISLIntdat ** *pintdat,* int * *jstat*)

Definition at line 59 of file sh1761.c.

30.2785 sisl/src/sh1762.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1762.c:



Macros

- #define SH1762

Functions

- void sh1762 (SISLObject *po1, SISLObject *po2, double aepsge, SISLIntdat **pintdat, vedge, int *jstat)

30.2785.1 Macro Definition Documentation

30.2785.1.1 #define SH1762

Definition at line 49 of file sh1762.c.

30.2785.2 Function Documentation

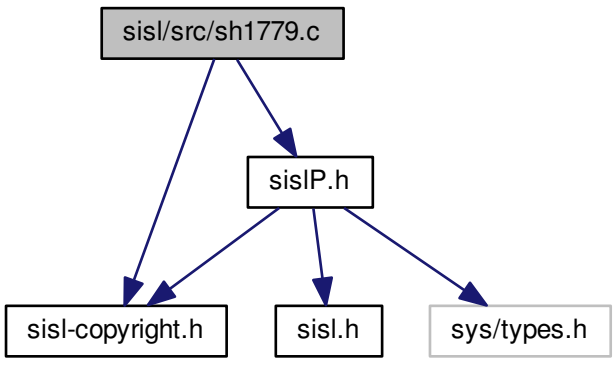
30.2785.2.1 void sh1762 (SISLObject * *po1,* SISLObject * *po2,* double *aepsge,* SISLIntdat ** *pintdat,* vedge , int * *jstat*)

Definition at line 118 of file sh1762.c.

30.2786 sisl/src/sh1779.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1779.c:



Macros

- #define SH1779

Functions

- void sh1779 (SISLObject *po1, SISLObject *po2, double aepsge, SISLIntdat **rintdat, SISLIntpt *pintpt, int *jnewpt, int *jstat)

30.2786.1 Macro Definition Documentation

30.2786.1.1 #define SH1779

Definition at line 49 of file sh1779.c.

30.2786.2 Function Documentation

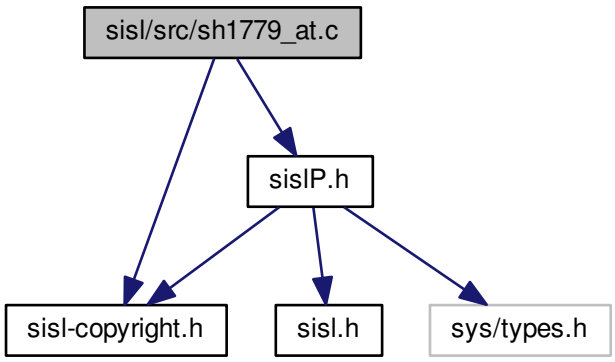
30.2786.2.1 void sh1779 (SISLObject * *po1,* SISLObject * *po2,* double *aepsge,* SISLIntdat ** *rintdat,* SISLIntpt * *pintpt,* int * *jnewpt,* int * *jstat*)

Definition at line 61 of file sh1779.c.

30.2787 sisl/src/sh1779_at.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1779_at.c:



Macros

- #define SH1779_AT

Functions

- void sh1779_at (SISLObject *po1, SISLObject *po2, SISLIntpt *pintpt, int *jstat)

30.2787.1 Macro Definition Documentation

30.2787.1.1 #define SH1779_AT

Definition at line 49 of file sh1779_at.c.

30.2787.2 Function Documentation

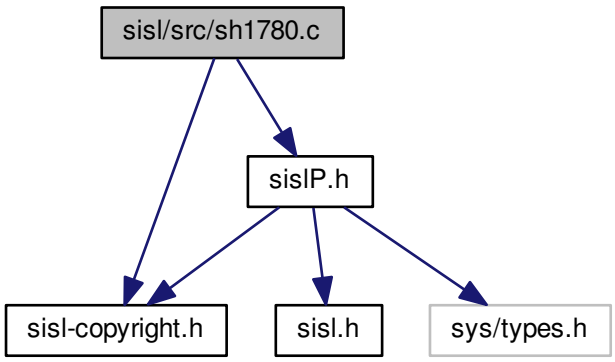
30.2787.2.1 void sh1779_at (SISLObject * *po1,* SISLObject * *po2,* SISLIntpt * *pintpt,* int * *jstat*)

Definition at line 60 of file sh1779_at.c.

30.2788 sisl/src/sh1780.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1780.c:



Macros

- #define SH1780

Functions

- void sh1780 (SISLObject *po1, SISLObject *po2, double aepsge, SISLIntdat **rintdat, SISLIntpt *pintpt, int *jnewpt, int *jstat)

30.2788.1 Macro Definition Documentation

30.2788.1.1 #define SH1780

Definition at line 49 of file sh1780.c.

30.2788.2 Function Documentation

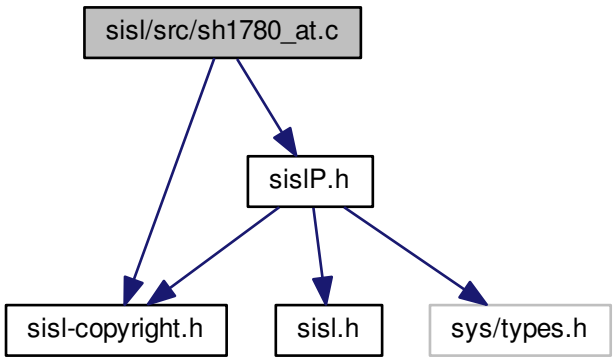
30.2788.2.1 void sh1780 (SISLObject * *po1,* SISLObject * *po2,* double *aepsge,* SISLIntdat ** *rintdat,* SISLIntpt * *pintpt,* int * *jnewpt,* int * *jstat*)

Definition at line 59 of file sh1780.c.

30.2789 sisl/src/sh1780_at.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1780_at.c:



Macros

- #define SH1780_AT

Functions

- void sh1780_at (SISLObject *po1, SISLObject *po2, SISLIntpt *pintpt, int *jstat)

30.2789.1 Macro Definition Documentation

30.2789.1.1 #define SH1780_AT

Definition at line 49 of file sh1780_at.c.

30.2789.2 Function Documentation

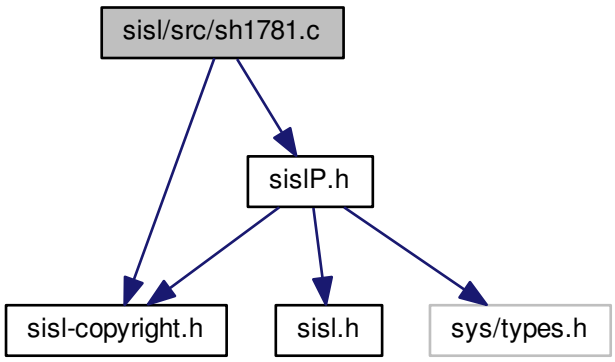
30.2789.2.1 void sh1780_at (SISLObject * *po1,* SISLObject * *po2,* SISLIntpt * *pintpt,* int * *jstat*)

Definition at line 60 of file sh1780_at.c.

30.2790 sisl/src/sh1781.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1781.c:



Macros

- #define SH1781

Functions

- void sh1781 (SISLObject *po1, SISLObject *po2, double aepsge, SISLIntdat **rintdat, SISLIntpt *pintpt, int *jnewpt, int *jstat)

30.2790.1 Macro Definition Documentation

30.2790.1.1 #define SH1781

Definition at line 49 of file sh1781.c.

30.2790.2 Function Documentation

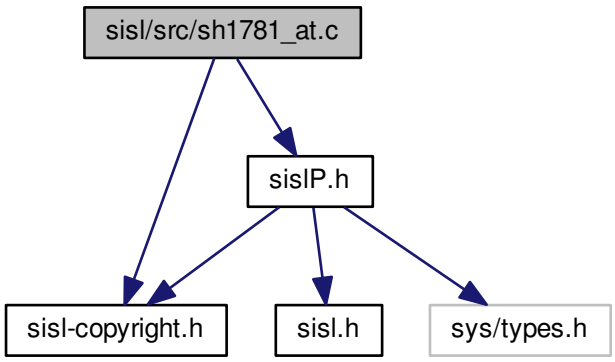
30.2790.2.1 void sh1781 (SISLObject * *po1,* SISLObject * *po2,* double *aepsge,* SISLIntdat ** *rintdat,* SISLIntpt * *pintpt,* int * *jnewpt,* int * *jstat*)

Definition at line 61 of file sh1781.c.

30.2791 sisl/src/sh1781_at.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1781_at.c:



Macros

- #define SH1781_AT

Functions

- void sh1781_at (SISLObject *po1, SISLObject *po2, SISLIntpt *pintpt, int *jstat)

30.2791.1 Macro Definition Documentation

30.2791.1.1 #define SH1781_AT

Definition at line 49 of file sh1781_at.c.

30.2791.2 Function Documentation

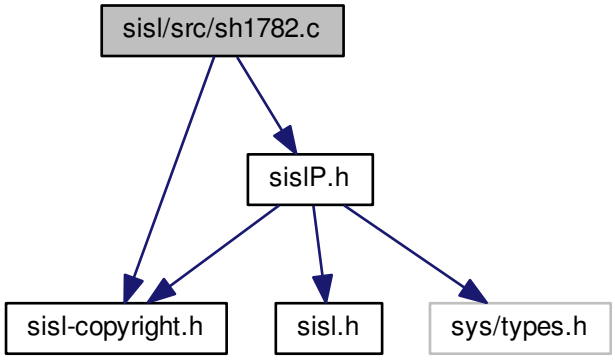
30.2791.2.1 void sh1781_at (SISLObject * *po1,* SISLObject * *po2,* SISLIntpt * *pintpt,* int * *jstat*)

Definition at line 62 of file sh1781_at.c.

30.2792 sisl/src/sh1782.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1782.c:



Macros

- #define SH1782

Functions

- void sh1782 (SISLObject *po1, SISLObject *po2, double aepsge, SISLIntdat *pintdat, int ipar, double apar, SISLIntdat **rintdat, int *jnewpt, int *jstat)

30.2792.1 Macro Definition Documentation

30.2792.1.1 #define SH1782

Definition at line 49 of file sh1782.c.

30.2792.2 Function Documentation

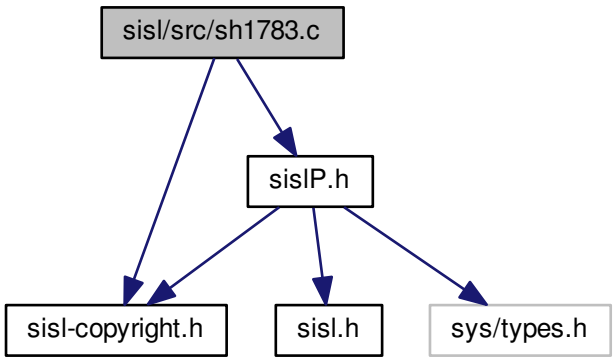
30.2792.2.1 void sh1782 (SISLObject * *po1*, SISLObject * *po2*, double *aepsge*, SISLIntdat * *pintdat*, int *ipar*, double *apar*, SISLIntdat ** *rintdat*, int * *jnewpt*, int * *jstat*)

Definition at line 78 of file sh1782.c.

30.2793 sisl/src/sh1783.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1783.c:



Macros

- #define SH1783

Typedefs

- typedef void(* fevalProc) ()

Functions

- void sh1783 (SISLCurve *pc1, SISLCurve *pc2, double aepsge, epar, int idir1, int idir2, elast, enext, int *jstat)

30.2793.1 Macro Definition Documentation

30.2793.1.1 #define SH1783

Definition at line 49 of file sh1783.c.

30.2793.2 Typedef Documentation

30.2793.2.1 typedef void(* fevalProc) ()

Definition at line 56 of file sh1783.c.

30.2793.3 Function Documentation

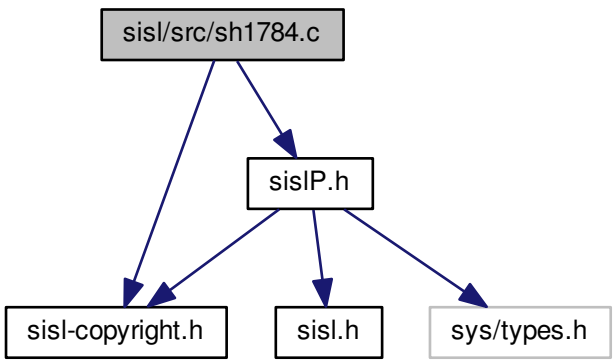
30.2793.3.1 void sh1783 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsge*, epar , int *idir1*, int *idir2*, elast , enext , int * *jstat*)

Definition at line 73 of file sh1783.c.

30.2794 sisl/src/sh1784.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1784.c:



Macros

- #define SH1784

Typedefs

- typedef void(∗ fevalcProc) ()

Functions

- void sh1784 (SISLCurve ∗pcurve, SISLSurf ∗psurf, double aepsge, epar, int icur, int idirc, elast, enext, int ∗jstat)

30.2794.1 Macro Definition Documentation

30.2794.1.1 #define SH1784

Definition at line 49 of file sh1784.c.

30.2794.2 Typedef Documentation

30.2794.2.1 typedef void(∗ fevalcProc) ()

Definition at line 54 of file sh1784.c.

30.2794.3 Function Documentation

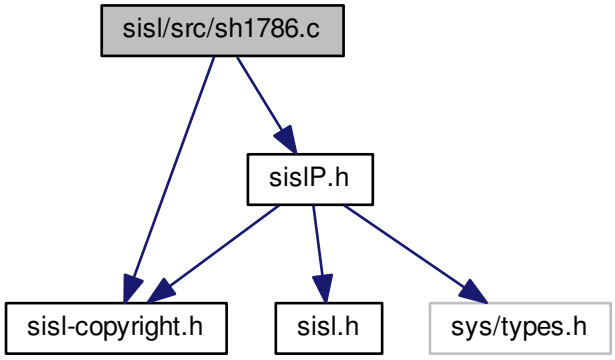
30.2794.3.1 void sh1784 (SISLCurve ∗ *pcurve,* SISLSurf ∗ *psurf,* double *aepsge,* epar , int *icur,* int *idirc,* elast , enext , int ∗ *jstat*)

Definition at line 73 of file sh1784.c.

30.2795 sisl/src/sh1786.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1786.c:



Macros

- #define SH1786

Functions

- void sh1786 (SISLObject *po1, SISLObject *po2, double aepsge, SISLIntdat **rintdat, SISLIntpt *pintpt, int *jnewpt, int *jstat)

30.2795.1 Macro Definition Documentation

30.2795.1.1 #define SH1786

Definition at line 49 of file sh1786.c.

30.2795.2 Function Documentation

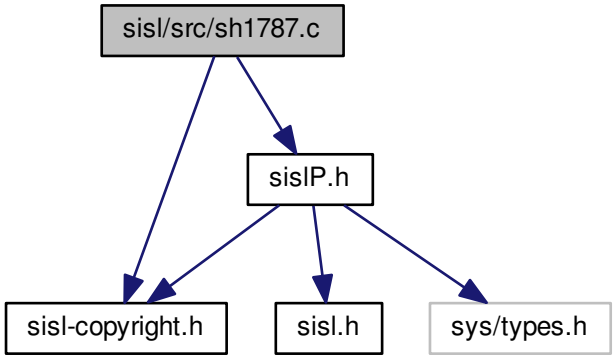
30.2795.2.1 void sh1786 (SISLObject * *po1*, SISLObject * *po2*, double *aepsge*, SISLIntdat ** *rintdat*, SISLIntpt * *pintpt*, int * *jnewpt*, int * *jstat*)

Definition at line 61 of file sh1786.c.

30.2796 sisl/src/sh1787.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1787.c:



Macros

- #define SH1787

Functions

- void sh1787 (SISLObject *po1, SISLObject *po2, double aepsge, SISLIntdat **rintdat, SISLIntpt *pintpt, int *jnewpt, int *jstat)

30.2796.1 Macro Definition Documentation

30.2796.1.1 #define SH1787

Definition at line 49 of file sh1787.c.

30.2796.2 Function Documentation

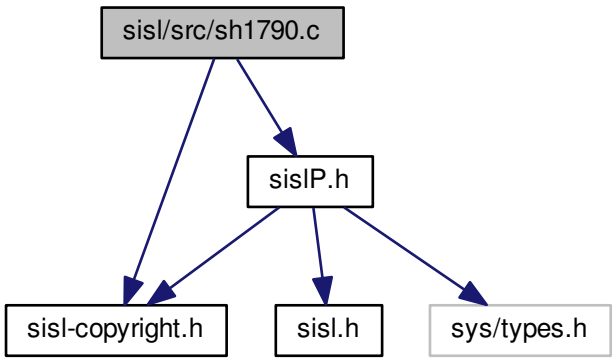
30.2796.2.1 void sh1787 (SISLObject * *po1*, SISLObject * *po2*, double *aepsge*, SISLIntdat ** *rintdat*, SISLIntpt * *pintpt*, int * *jnewpt*, int * *jstat*)

Definition at line 62 of file sh1787.c.

30.2797 sisl/src/sh1790.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1790.c:



Macros

- #define SH1790

Functions

- void sh1790 (SISLObject *po1, SISLObject *po2, int itype, double aepsge, int *jstat)

30.2797.1 Macro Definition Documentation

30.2797.1.1 #define SH1790

Definition at line 49 of file sh1790.c.

30.2797.2 Function Documentation

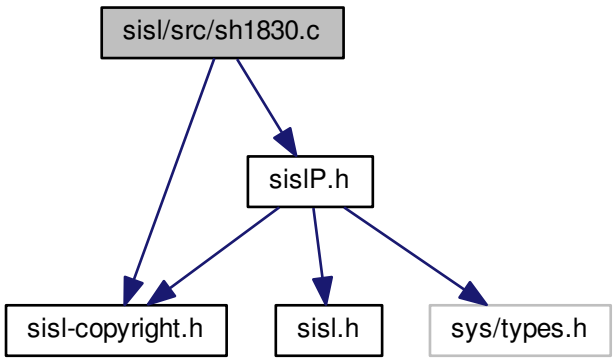
30.2797.2.1 void sh1790 (SISLObject * *po1,* SISLObject * *po2,* int *itype,* double *aepsge,* int * *jstat*)

Definition at line 57 of file sh1790.c.

30.2798 sisl/src/sh1830.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1830.c:



Macros

- #define SH1830

Functions

- void sh1830 (SISLObject *po1, SISLObject *po2, double aepsge, int *jstat)

30.2798.1 Macro Definition Documentation

30.2798.1.1 #define SH1830

Definition at line 49 of file sh1830.c.

30.2798.2 Function Documentation

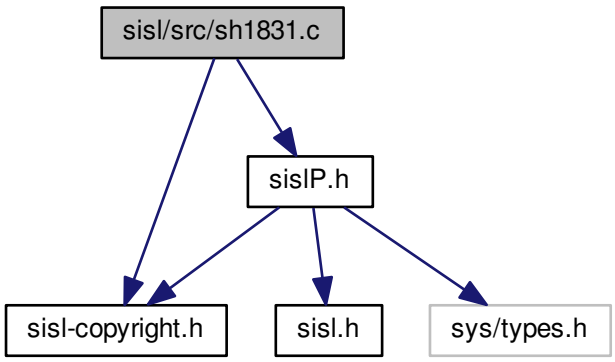
30.2798.2.1 void sh1830 (SISLObject * *po1,* SISLObject * *po2,* double *aepsge,* int * *jstat*)

Definition at line 57 of file sh1830.c.

30.2799 sisl/src/sh1831.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1831.c:



Macros

- #define SH1831

Functions

- void sh1831 (SISLCurve *pc1, SISLCurve *pc2, int isign, epoint, enorm, double aepsge, int *jstat)

30.2799.1 Macro Definition Documentation

30.2799.1.1 #define SH1831

Definition at line 42 of file sh1831.c.

30.2799.2 Function Documentation

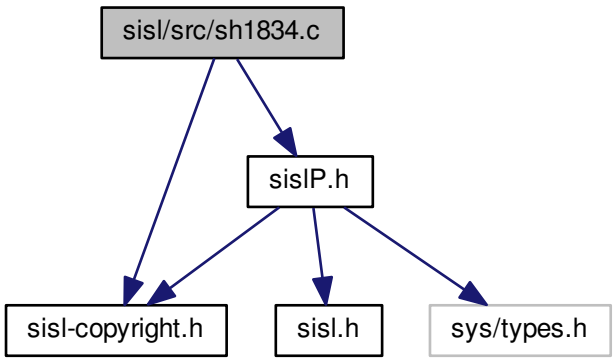
30.2799.2.1 void sh1831 (SISLCurve * *pc1*, SISLCurve * *pc2*, int *isign*, epoint , enorm , double *aepsge*, int * *jstat*)

Definition at line 51 of file sh1831.c.

30.2800 sisl/src/sh1834.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1834.c:



Macros

- #define SH1834

Functions

- void sh1834 (SISLObject *po1, SISLObject *po2, double aepsge, int idim, edir1, edir2, int *jstat)

30.2800.1 Macro Definition Documentation

30.2800.1.1 #define SH1834

Definition at line 49 of file sh1834.c.

30.2800.2 Function Documentation

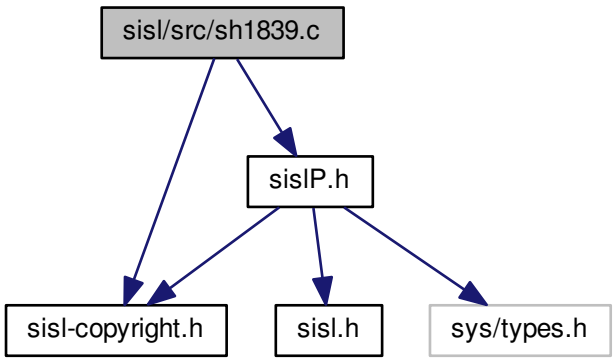
30.2800.2.1 void sh1834 (SISLObject * *po1,* SISLObject * *po2,* double *aepsge,* int *idim,* edir1 , edir2 , int * *jstat*)

Definition at line 70 of file sh1834.c.

30.2801 sisl/src/sh1839.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1839.c:



Macros

- #define SH1839

Functions

- void sh1839 (SISLObject *po1, SISLObject *po2, double aepsge, int *jstat)

30.2801.1 Macro Definition Documentation

30.2801.1.1 #define SH1839

Definition at line 49 of file sh1839.c.

30.2801.2 Function Documentation

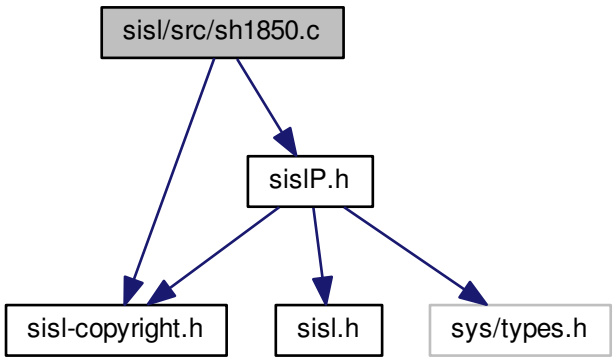
30.2801.2.1 void sh1839 (SISLObject * *po1,* SISLObject * *po2,* double *aepsge,* int * *jstat*)

Definition at line 56 of file sh1839.c.

30.2802 sisl/src/sh1850.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1850.c:



Macros

- #define SH1850

Functions

- void sh1850 (SISLCurve *pc1, epoint, enorm, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2802.1 Macro Definition Documentation

30.2802.1.1 #define SH1850

Definition at line 49 of file sh1850.c.

30.2802.2 Function Documentation

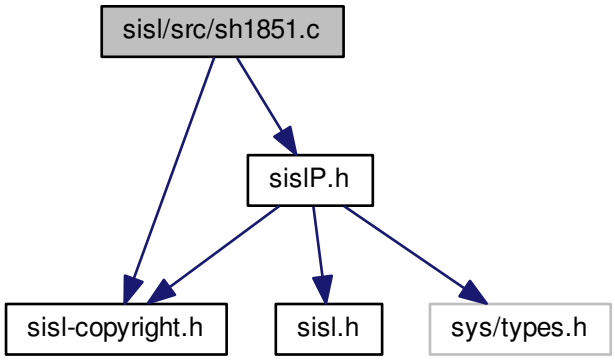
30.2802.2.1 void sh1850 (SISLCurve * *pc1*, epoint , enorm , int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 60 of file sh1850.c.

30.2803 sisl/src/sh1851.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1851.c:



Macros

- #define SH1851

Functions

- void sh1851 (SISLSurf *ps1, epoint, enorm, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2803.1 Macro Definition Documentation

30.2803.1.1 #define SH1851

Definition at line 49 of file sh1851.c.

30.2803.2 Function Documentation

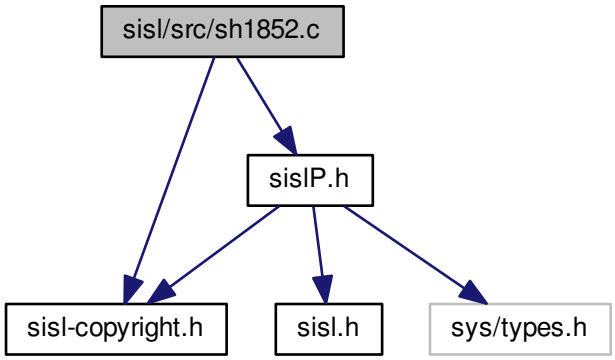
30.2803.2.1 void sh1851 (SISLSurf * *ps1*, epoint , enorm , int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jsurf*, SISLIntsurf *** *wsurf*, int * *jstat*)

Definition at line 60 of file sh1851.c.

30.2804 sisl/src/sh1852.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1852.c:



Macros

- #define SH1852

Functions

- void sh1852 (SISLSurf *ps1, ecenter, double aradius, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2804.1 Macro Definition Documentation

30.2804.1.1 #define SH1852

Definition at line 49 of file sh1852.c.

30.2804.2 Function Documentation

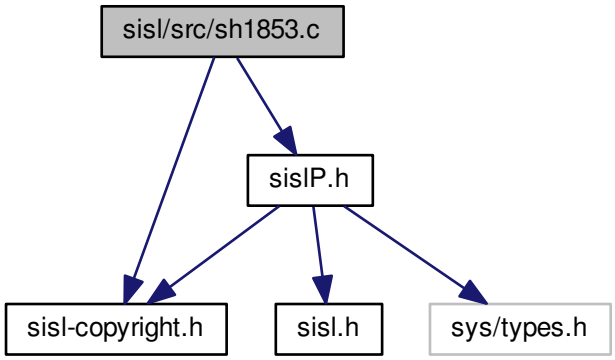
30.2804.2.1 void sh1852 (SISLSurf * *ps1*, ecenter , double *aradius*, int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jsurf*, SISLIntsurf *** *wsurf*, int * *jstat*)

Definition at line 61 of file sh1852.c.

30.2805 sisl/src/sh1853.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1853.c:



Macros

- #define SH1853

Functions

- void sh1853 (SISLSurf *ps1, epoint, edirec, double aradius, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2805.1 Macro Definition Documentation

30.2805.1.1 #define SH1853

Definition at line 49 of file sh1853.c.

30.2805.2 Function Documentation

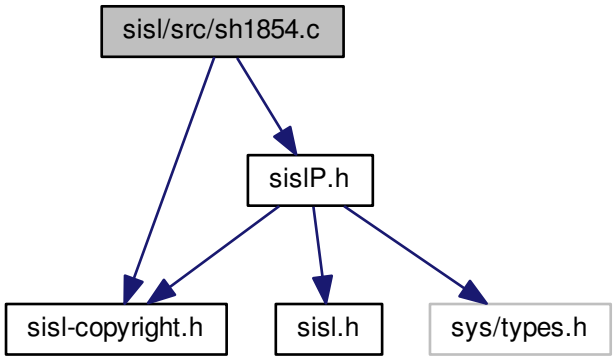
30.2805.2.1 void sh1853 (SISLSurf * *ps1*, epoint , edirec , double *aradius*, int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jsurf*, SISLIntsurf *** *wsurf*, int * *jstat*)

Definition at line 61 of file sh1853.c.

30.2806 sisl/src/sh1854.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1854.c:



Macros

- #define SH1854

Functions

- void sh1854 (SISLSurf *ps1, etop, eaxis, econe, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2806.1 Macro Definition Documentation

30.2806.1.1 #define SH1854

Definition at line 49 of file sh1854.c.

30.2806.2 Function Documentation

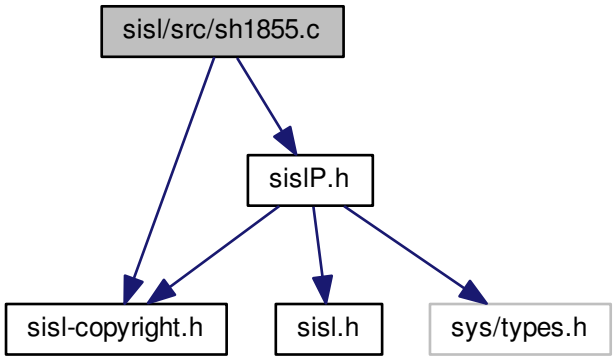
30.2806.2.1 void sh1854 (SISLSurf * *ps1*, etop , eaxis , econe , int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jsurf*, SISLIntsurf *** *wsurf*, int * *jstat*)

Definition at line 61 of file sh1854.c.

30.2807 sisl/src/sh1855.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1855.c:



Macros

- #define SH1855

Functions

- void sh1855 (SISLSurf *ps1, ecentr, double aradius, enorm, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2807.1 Macro Definition Documentation

30.2807.1.1 #define SH1855

Definition at line 49 of file sh1855.c.

30.2807.2 Function Documentation

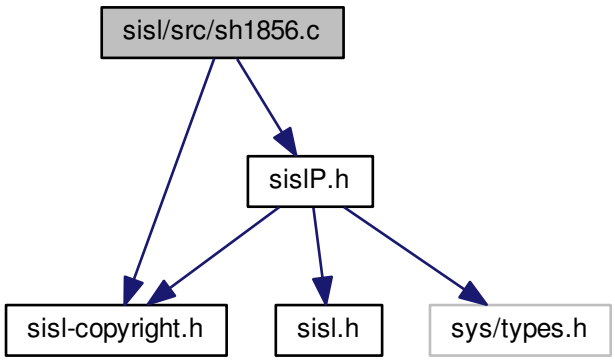
30.2807.2.1 void sh1855 (SISLSurf * *ps1*, ecentr , double *aradius*, enorm , int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 60 of file sh1855.c.

30.2808 sisl/src/sh1856.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1856.c:



Macros

- #define SH1856

Functions

- void sh1856 (SISLSurf *ps1, epoint, edir, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2808.1 Macro Definition Documentation

30.2808.1.1 #define SH1856

Definition at line 49 of file sh1856.c.

30.2808.2 Function Documentation

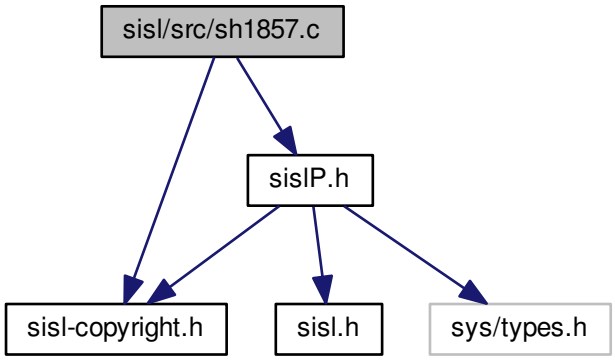
30.2808.2.1 void sh1856 (SISLSurf * *ps1*, epoint , edir , int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 60 of file sh1856.c.

30.2809 sisl/src/sh1857.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1857.c:



Macros

- #define SH1857

Functions

- void sh1857 (SISLCurve *pc1, SISLCurve *pc2, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar1, double **gpar2, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2809.1 Macro Definition Documentation

30.2809.1.1 #define SH1857

Definition at line 49 of file sh1857.c.

30.2809.2 Function Documentation

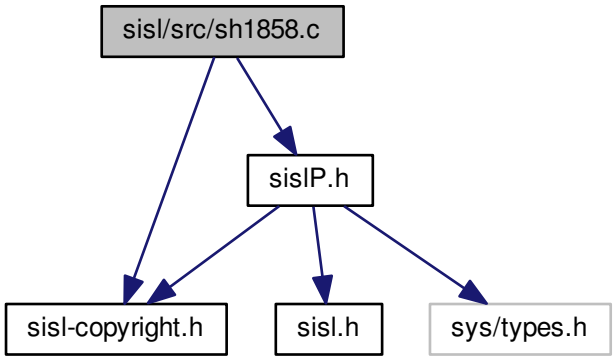
30.2809.2.1 void sh1857 (SISLCurve * *pc1*, SISLCurve * *pc2*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar1*, double ** *gpar2*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 59 of file sh1857.c.

30.2810 sisl/src/sh1858.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1858.c:



Macros

- #define SH1858

Functions

- void sh1858 (SISLSurf *ps1, SISLCurve *pc1, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar1, double **gpar2, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2810.1 Macro Definition Documentation

30.2810.1.1 #define SH1858

Definition at line 49 of file sh1858.c.

30.2810.2 Function Documentation

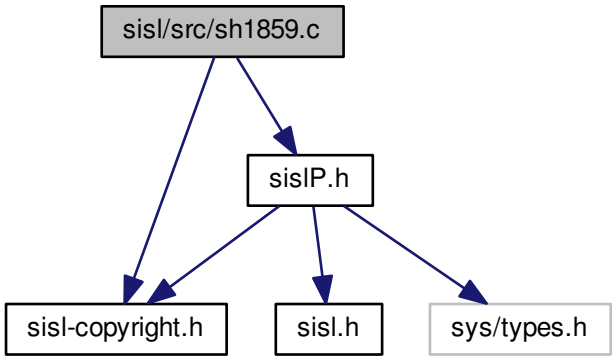
30.2810.2.1 void sh1858 (SISLSurf * *ps1*, SISLCurve * *pc1*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar1*, double ** *gpar2*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 59 of file sh1858.c.

30.2811 sisl/src/sh1859.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1859.c:



Macros

- #define SH1859

Functions

- void sh1859 (SISLSurf *ps1, SISLSurf *ps2, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar1, double **gpar2, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2811.1 Macro Definition Documentation

30.2811.1.1 #define SH1859

Definition at line 49 of file sh1859.c.

30.2811.2 Function Documentation

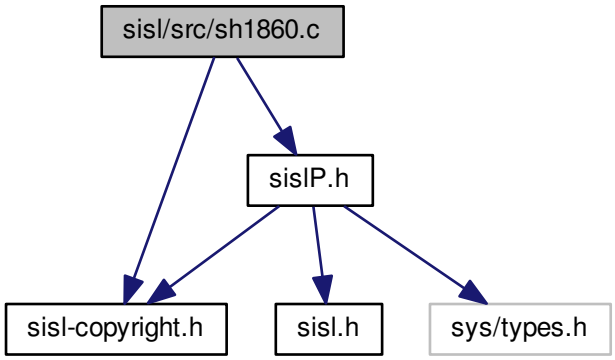
30.2811.2.1 void sh1859 (SISLSurf * *ps1*, SISLSurf * *ps2*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar1*, double ** *gpar2*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jsurf*, SISLIntsurf *** *wsurf*, int * *jstat*)

Definition at line 60 of file sh1859.c.

30.2812 sisl/src/sh1860.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1860.c:



Macros

- #define SH1860

Functions

- void sh1860 (SISLSurf *ps, eview, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jsurf, SISLIntsurf ***wsurf, int *jstat)

30.2812.1 Macro Definition Documentation

30.2812.1.1 #define SH1860

Definition at line 49 of file sh1860.c.

30.2812.2 Function Documentation

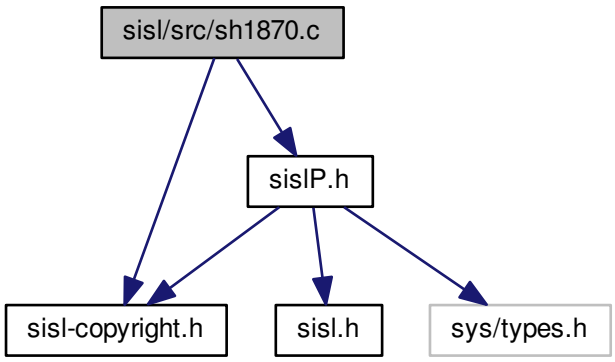
30.2812.2.1 void sh1860 (SISLSurf * *ps*, eview , int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jsurf*, SISLIntsurf *** *wsurf*, int * *jstat*)

Definition at line 59 of file sh1860.c.

30.2813 sisl/src/sh1870.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1870.c:



Macros

- #define SH1870

Functions

- void sh1870 (SISLSurf *ps1, double *pt1, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar1, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2813.1 Macro Definition Documentation

30.2813.1.1 #define SH1870

Definition at line 49 of file sh1870.c.

30.2813.2 Function Documentation

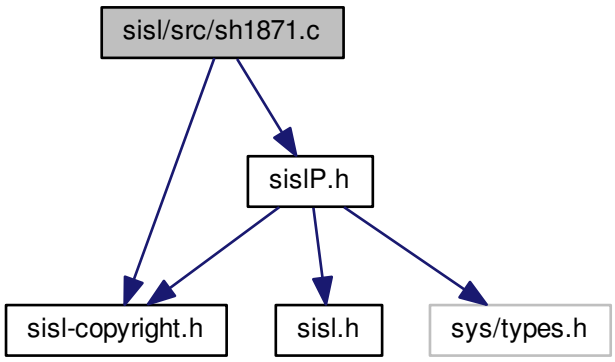
30.2813.2.1 void sh1870 (SISLSurf * *ps1*, double * *pt1*, int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar1*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 59 of file sh1870.c.

30.2814 sisl/src/sh1871.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1871.c:



Macros

- #define SH1871

Functions

- void sh1871 (SISLCurve *pc1, double *pt1, int idim, double aepsco, double aepsge, int trackflag, int *jtrack, SISLTrack ***wtrack, int *jpt, double **gpar1, int **pretop, int *jcrv, SISLIntcurve ***wcurve, int *jstat)

30.2814.1 Macro Definition Documentation

30.2814.1.1 #define SH1871

Definition at line 49 of file sh1871.c.

30.2814.2 Function Documentation

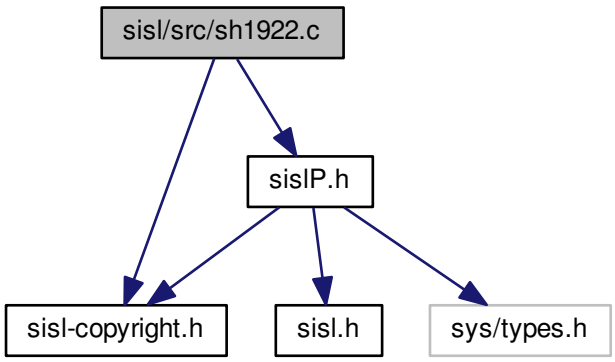
30.2814.2.1 void sh1871 (SISLCurve * *pc1*, double * *pt1*, int *idim*, double *aepsco*, double *aepsge*, int *trackflag*, int * *jtrack*, SISLTrack *** *wtrack*, int * *jpt*, double ** *gpar1*, int ** *pretop*, int * *jcrv*, SISLIntcurve *** *wcurve*, int * *jstat*)

Definition at line 59 of file sh1871.c.

30.2815 sisl/src/sh1922.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1922.c:



Macros

- #define SH1922

Functions

- void sh1922 (et, int im, int ik, etau, int in, ea, nfirst, nlast, int ∗jstat)

30.2815.1 Macro Definition Documentation

30.2815.1.1 #define SH1922

Definition at line 48 of file sh1922.c.

30.2815.2 Function Documentation

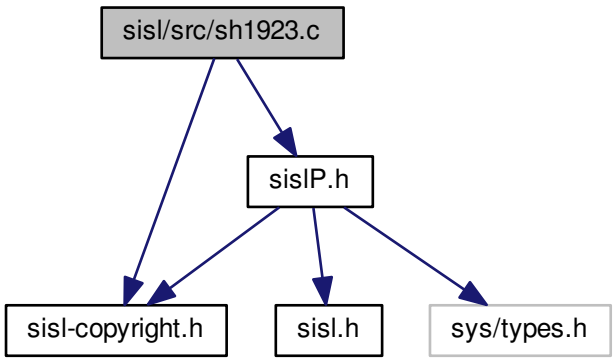
30.2815.2.1 void sh1922 (et , int *im,* int *ik,* etau , int *in,* ea , nfirst , nlast , int ∗ *jstat*)

Definition at line 57 of file sh1922.c.

30.2816 sisl/src/sh1923.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1923.c:



Macros

- #define SH1923

Functions

- void sh1923 (double *ea, int in, int ik, int *nstart, int *jstat)

30.2816.1 Macro Definition Documentation

30.2816.1.1 #define SH1923

Definition at line 48 of file sh1923.c.

30.2816.2 Function Documentation

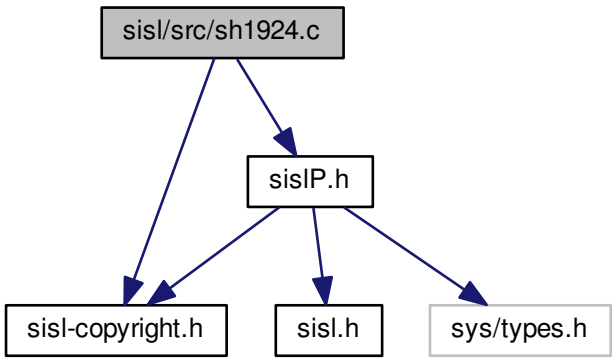
30.2816.2.1 void sh1923 (double * *ea*, int *in*, int *ik*, int * *nstart*, int * *jstat*)

Definition at line 56 of file sh1923.c.

30.2817 sisl/src/sh1924.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1924.c:



Macros

- #define SH1924

Functions

- void sh1924 (double *ea, double *eb, int in, int ik, int idim, int *nstart, int *jstat)

30.2817.1 Macro Definition Documentation

30.2817.1.1 #define SH1924

Definition at line 48 of file sh1924.c.

30.2817.2 Function Documentation

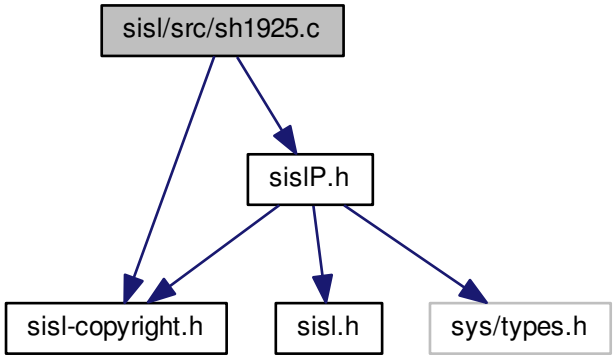
30.2817.2.1 void sh1924 (double * *ea*, double * *eb*, int *in*, int *ik*, int *idim*, int * *nstart*, int * *jstat*)

Definition at line 57 of file sh1924.c.

30.2818 sisl/src/sh1925.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1925.c:



Macros

- #define SH1925

Functions

- void sh1925 (SISLCurve *pc1, SISLCurve *pc2, int idim, ea, nstart, nstop, emxerr, el2err, int ilend, int irend, int *jstat)

30.2818.1 Macro Definition Documentation

30.2818.1.1 #define SH1925

Definition at line 48 of file sh1925.c.

30.2818.2 Function Documentation

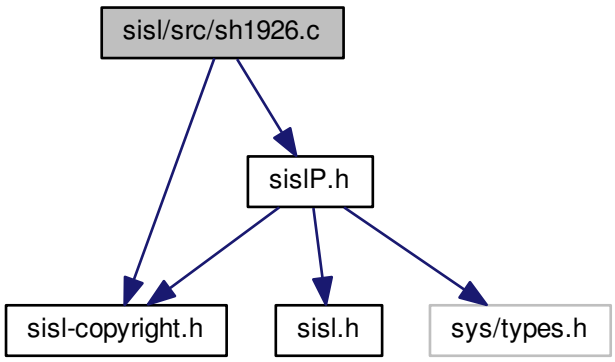
30.2818.2.1 void sh1925 (SISLCurve * *pc1*, SISLCurve * *pc2*, int *idim*, ea , nstart , nstop , emxerr , el2err , int *ilend*, int *irend*, int * *jstat*)

Definition at line 58 of file sh1925.c.

30.2819 sisl/src/sh1926.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1926.c:



Macros

- #define SH1926

Functions

- void sh1926 (etau, int ik, int in, int idim, et, ed, int im, ea, nfirst, nlast, eb, n2sta, ec, int ∗jstat)

30.2819.1 Macro Definition Documentation

30.2819.1.1 #define SH1926

Definition at line 48 of file sh1926.c.

30.2819.2 Function Documentation

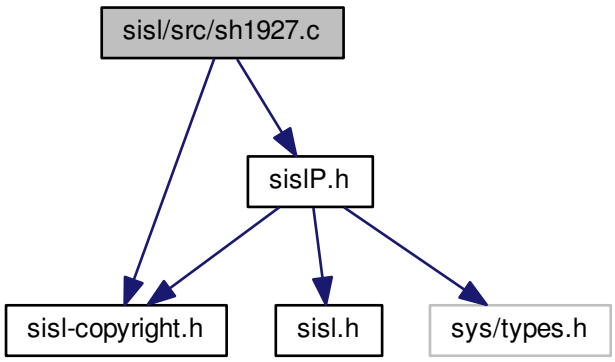
30.2819.2.1 void sh1926 (etau , int *ik,* int *in,* int *idim,* et , ed , int *im,* ea , nfirst , nlast , eb , n2sta , ec , int ∗ *jstat*)

Definition at line 58 of file sh1926.c.

30.2820 sisl/src/sh1927.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1927.c:



Macros

- #define SH1927

Functions

- void sh1927 (etau, int ik, int in, int idim, SISLCurve *pcurve, int ilend, int irend, ec, int *jstat)

30.2820.1 Macro Definition Documentation

30.2820.1.1 #define SH1927

Definition at line 48 of file sh1927.c.

30.2820.2 Function Documentation

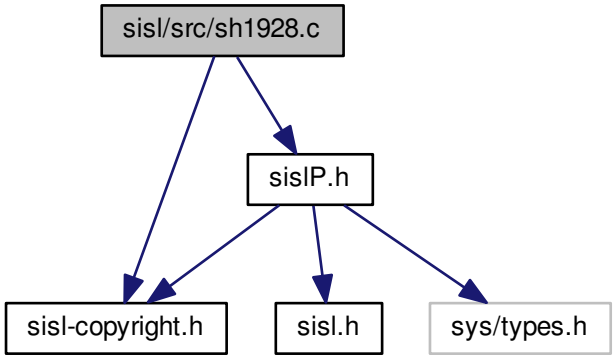
30.2820.2.1 void sh1927 (etau , int *ik,* int *in,* int *idim,* SISLCurve * *pcurve,* int *ilend,* int *irend,* ec , int * *jstat*)

Definition at line 57 of file sh1927.c.

30.2821 sisl/src/sh1928.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1928.c:



Macros

- #define SH1928

Functions

- void sh1928 (etau, int ik, int in, int idim, et, ed, int im, int ilend, int irend, ea, int inh, nfirst, nlast, eb, ec, n2sta, int ∗jstat)

30.2821.1 Macro Definition Documentation

30.2821.1.1 #define SH1928

Definition at line 48 of file sh1928.c.

30.2821.2 Function Documentation

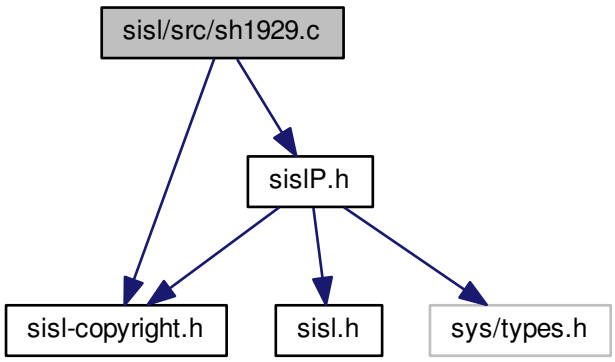
30.2821.2.1 void sh1928 (etau , int *ik,* int *in,* int *idim,* et , ed , int *im,* int *ilend,* int *irend,* ea , int *inh,* nfirst , nlast , eb , ec , n2sta , int ∗ *jstat*)

Definition at line 59 of file sh1928.c.

30.2822 sisl/src/sh1929.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1929.c:



Macros

- #define SH1929

Functions

- void sh1929 (etau, int in, int ik, int imu, et, int im, int ij, eah, int ∗jmuprm, int ∗jnu, int ∗jstat)

30.2822.1 Macro Definition Documentation

30.2822.1.1 #define SH1929

Definition at line 48 of file sh1929.c.

30.2822.2 Function Documentation

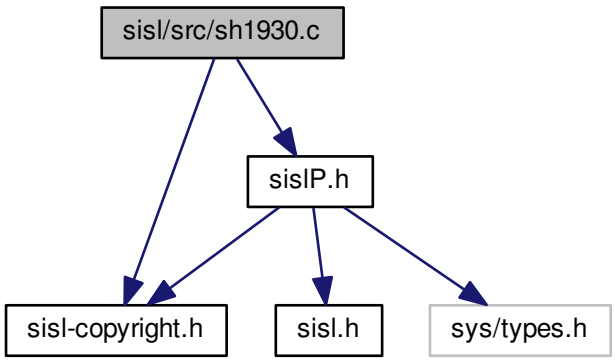
30.2822.2.1 void sh1929 (etau , int *in,* int *ik,* int *imu,* et , int *im,* int *ij,* eah , int ∗ *jmuprm,* int ∗ *jnu,* int ∗ *jstat*)

Definition at line 57 of file sh1929.c.

30.2823 sisl/src/sh1930.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1930.c:



Macros

- #define SH1930

Functions

- void sh1930 (ea, nfirst, nlast, ed, ec, int ik, int in, int im, int idim, int ilend, int irend, int *jstat)

30.2823.1 Macro Definition Documentation

30.2823.1.1 #define SH1930

Definition at line 48 of file sh1930.c.

30.2823.2 Function Documentation

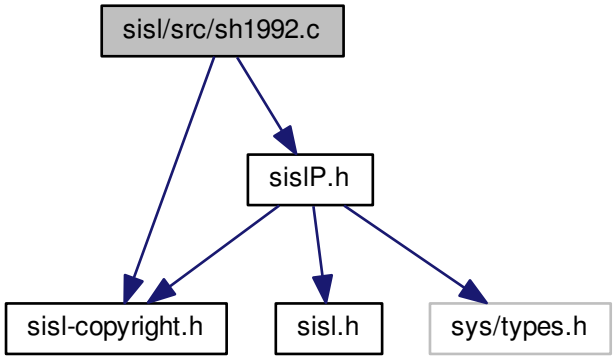
30.2823.2.1 void sh1930 (ea , nfirst , nlast , ed , ec , int *ik*, int *in*, int *im*, int *idim*, int *ilend*, int *irend*, int * *jstat*)

Definition at line 57 of file sh1930.c.

30.2824 sisl/src/sh1992.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1992.c:



Macros

- #define SH1992

Functions

- void sh1992 (SISLObject *po, int itype, double aepsge, int *jstat)
- void sh1992cu (SISLCurve *pc, int itype, double aepsge, int *jstat)
- void sh1992su (SISLSurf *ps, int itype, double aepsge, int *jstat)

30.2824.1 Macro Definition Documentation

30.2824.1.1 #define SH1992

Definition at line 49 of file sh1992.c.

30.2824.2 Function Documentation

30.2824.2.1 void sh1992 (SISLObject * *po*, int *itype*, double *aepsge*, int * *jstat*)

Definition at line 71 of file sh1992.c.

30.2824.2.2 void sh1992cu (SISLCurve * *pc,* int *itype,* double *aepsge,* int * *jstat*)

Definition at line 301 of file sh1992.c.

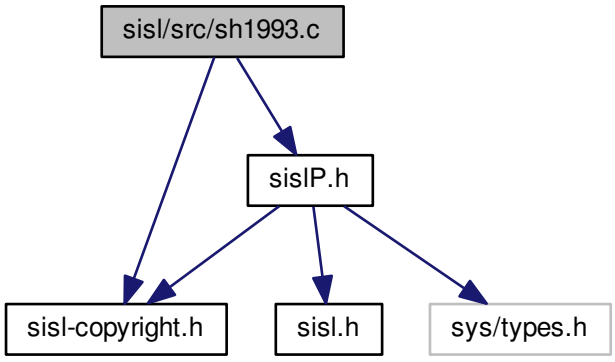
30.2824.2.3 void sh1992su (SISLSurf * *ps,* int *itype,* double *aepsge,* int * *jstat*)

Definition at line 429 of file sh1992.c.

30.2825 sisl/src/sh1993.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1993.c:



Macros

- #define SH1993

Functions

- void sh1993 (SISLCurve *c1, double aepsge, int *jstat)

30.2825.1 Macro Definition Documentation

30.2825.1.1 #define SH1993

Definition at line 48 of file sh1993.c.

30.2825.2 Function Documentation

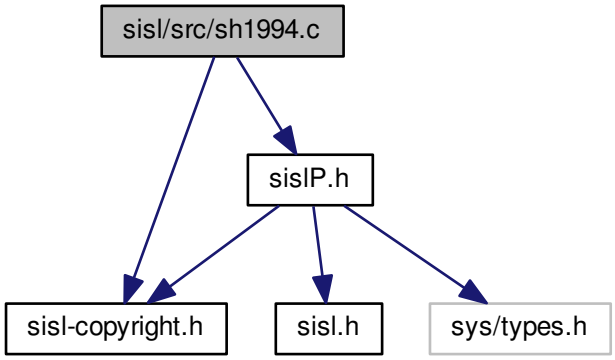
30.2825.2.1 void sh1993 (SISLCurve * *c1*, double *aepsge*, int * *jstat*)

Definition at line 55 of file sh1993.c.

30.2826 sisl/src/sh1994.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh1994.c:



Macros

- #define SH1994

Functions

- void sh1994 (SISLSurf *s1, double aepsge, int *jstat)

30.2826.1 Macro Definition Documentation

30.2826.1.1 #define SH1994

Definition at line 49 of file sh1994.c.

30.2826.2 Function Documentation

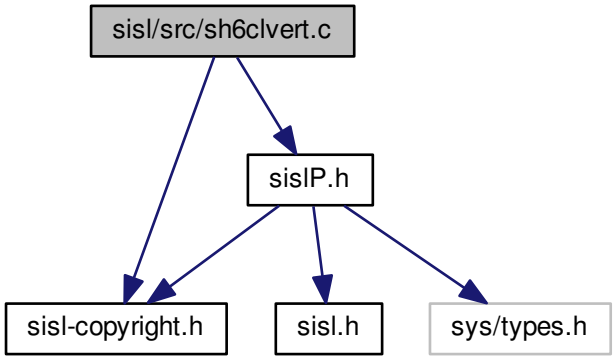
30.2826.2.1 void sh1994 (SISLSurf * *s1*, double *aepsge*, int * *jstat*)

Definition at line 56 of file sh1994.c.

30.2827 sisl/src/sh6clvert.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6clvert.c:



Macros

- #define SH6CLOSEVERT

Functions

- void sh6closevert (SISLCurve *pcurve, SISLSurf *psurf, double *cpar1, epar2)

30.2827.1 Macro Definition Documentation

30.2827.1.1 #define SH6CLOSEVERT

Definition at line 47 of file sh6clvert.c.

30.2827.2 Function Documentation

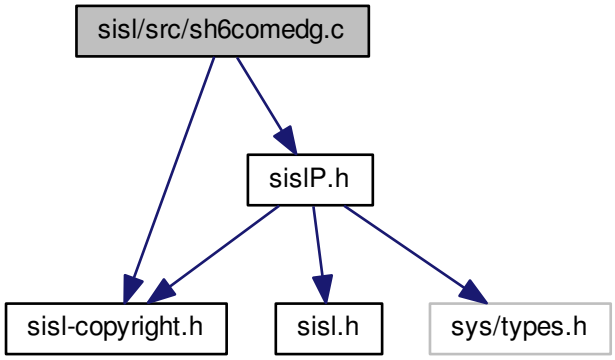
30.2827.2.1 void sh6closevert (SISLCurve * *pcurve,* SISLSurf * *psurf,* double * *cpar1,* epar2)

Definition at line 57 of file sh6clvert.c.

30.2828 sisl/src/sh6comedg.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6comedg.c:



Macros

- #define SH6COMEDG

Functions

- void sh6comedg (SISLObject *po1, SISLObject *po2, SISLIntpt *pt1, SISLIntpt *pt2, int *jstat)

30.2828.1 Macro Definition Documentation

30.2828.1.1 #define SH6COMEDG

Definition at line 49 of file sh6comedg.c.

30.2828.2 Function Documentation

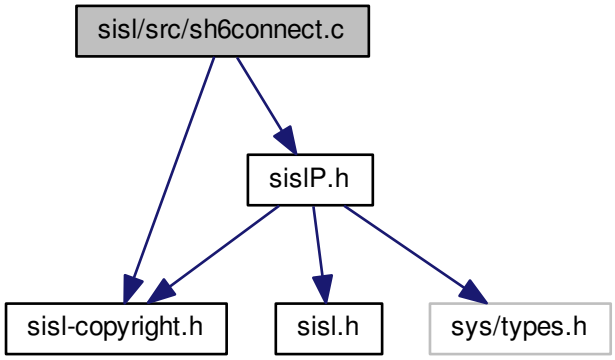
30.2828.2.1 void sh6comedg (SISLObject * *po1,* SISLObject * *po2,* SISLIntpt * *pt1,* SISLIntpt * *pt2,* int * *jstat*)

Definition at line 59 of file sh6comedg.c.

30.2829 sisl/src/sh6connect.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6connect.c:



Macros

- #define SH6CONNECT

Functions

- void sh6connect (SISLIntpt *pt1, SISLIntpt *pt2, int *jstat)

30.2829.1 Macro Definition Documentation

30.2829.1.1 #define SH6CONNECT

Definition at line 49 of file sh6connect.c.

30.2829.2 Function Documentation

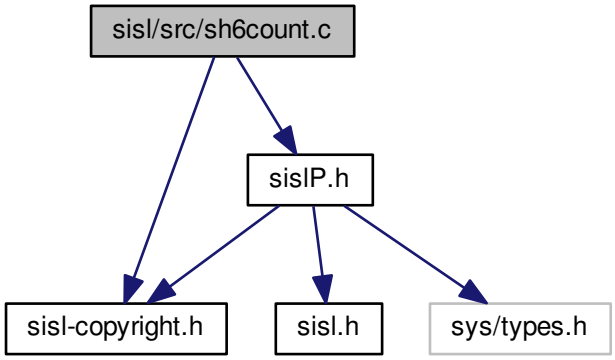
30.2829.2.1 void sh6connect (SISLIntpt * *pt1*, SISLIntpt * *pt2*, int * *jstat*)

Definition at line 59 of file sh6connect.c.

30.2830 sisl/src/sh6count.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6count.c:



Macros

- #define SH6COUNT

Functions

- int sh6count (SISLIntpt *pt, int *jstat)

30.2830.1 Macro Definition Documentation

30.2830.1.1 #define SH6COUNT

Definition at line 49 of file sh6count.c.

30.2830.2 Function Documentation

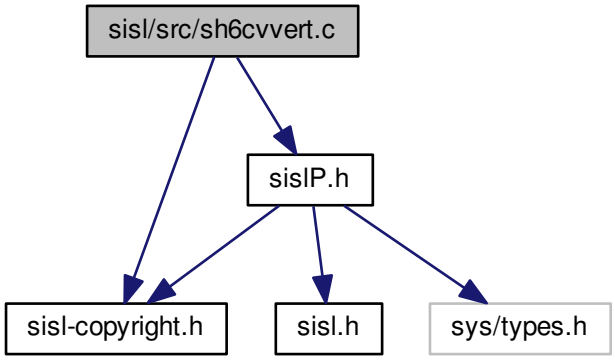
30.2830.2.1 int sh6count (SISLIntpt * *pt*, int * *jstat*)

Definition at line 58 of file sh6count.c.

30.2831 sisl/src/sh6cvvert.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6cvvert.c:



Macros

- #define SH6CVVERT

Functions

- void sh6cvvert (SISLCurve *pc1, SISLCurve *pc2, double *cpar1, double *cpar2)

30.2831.1 Macro Definition Documentation

30.2831.1.1 #define SH6CVVERT

Definition at line 41 of file sh6cvvert.c.

30.2831.2 Function Documentation

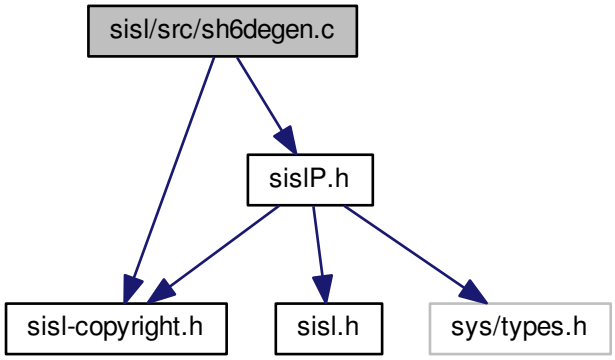
30.2831.2.1 void sh6cvvert (SISLCurve * *pc1*, SISLCurve * *pc2*, double * *cpar1*, double * *cpar2*)

Definition at line 50 of file sh6cvvert.c.

30.2832 sisl/src/sh6degen.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6degen.c:



Macros

- #define SH6DEGEN

Functions

- void sh6degen (SISLObject *po1, SISLObject *po2, SISLIntdat **pintdat, double aepsge, int *jstat)

30.2832.1 Macro Definition Documentation

30.2832.1.1 #define SH6DEGEN

Definition at line 49 of file sh6degen.c.

30.2832.2 Function Documentation

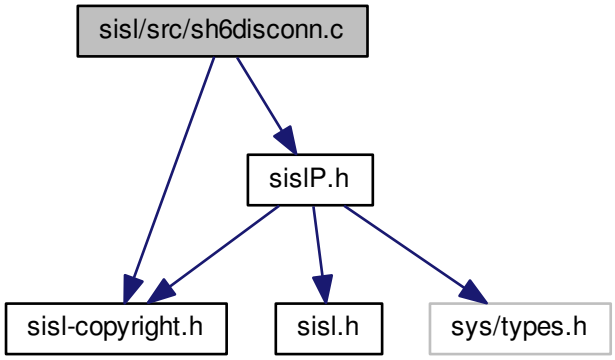
30.2832.2.1 void sh6degen (SISLObject * *po1,* SISLObject * *po2,* SISLIntdat ** *pintdat,* double *aepsge,* int * *jstat*)

Definition at line 65 of file sh6degen.c.

30.2833 sisl/src/sh6disconn.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6disconn.c:



Macros

- #define SH6DISCONNECT

Functions

- void sh6disconnect (SISLIntpt *pt1, SISLIntpt *pt2, int *jstat)

30.2833.1 Macro Definition Documentation

30.2833.1.1 #define SH6DISCONNECT

Definition at line 49 of file sh6disconn.c.

30.2833.2 Function Documentation

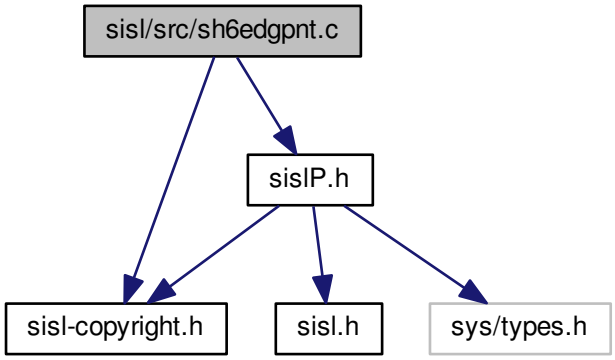
30.2833.2.1 void sh6disconnect (SISLIntpt * *pt1,* SISLIntpt * *pt2,* int * *jstat*)

Definition at line 57 of file sh6disconn.c.

30.2834 sisl/src/sh6edgpnt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6edgpnt.c:



Macros

- #define SH6EDGPOINT

Functions

- void sh6edgpoint (vedge, SISLIntpt ***wintpt, int *jnum, int *jstat)

30.2834.1 Macro Definition Documentation

30.2834.1.1 #define SH6EDGPOINT

Definition at line 49 of file sh6edgpnt.c.

30.2834.2 Function Documentation

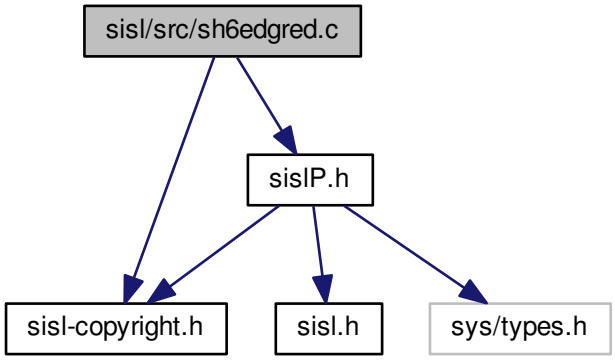
30.2834.2.1 void sh6edgpoint (vedge , SISLIntpt *** *wintpt,* int * *jnum,* int * *jstat*)

Definition at line 57 of file sh6edgpnt.c.

30.2835 sisl/src/sh6edgred.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6edgred.c:



Macros

- #define SH6EDGRED

Functions

- void sh6edgred (SISLObject *po1, SISLObject *po2, SISLIntdat *pintdat, int *jstat)

30.2835.1 Macro Definition Documentation

30.2835.1.1 #define SH6EDGRED

Definition at line 49 of file sh6edgred.c.

30.2835.2 Function Documentation

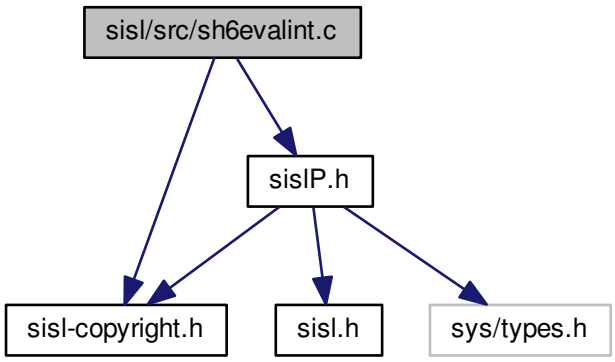
30.2835.2.1 void sh6edgred (SISLObject * *po1,* SISLObject * *po2,* SISLIntdat * *pintdat,* int * *jstat*)

Definition at line 63 of file sh6edgred.c.

30.2836 sisl/src/sh6evalint.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6evalint.c:



Macros

- #define SH6EVALINT

Functions

- void sh6evalint (SISLObject *ob1, SISLObject *ob2, eimpli, int ideg, SISLIntpt *pt, double aepsge, curve_3d, curve_2d_1, curve_2d_2, int *jstat)

30.2836.1 Macro Definition Documentation

30.2836.1.1 #define SH6EVALINT

Definition at line 49 of file sh6evalint.c.

30.2836.2 Function Documentation

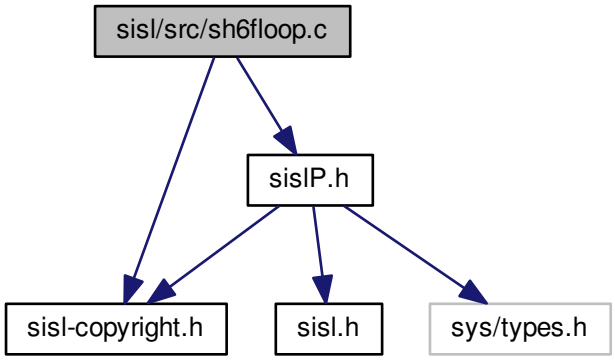
30.2836.2.1 void sh6evalint (SISLObject * *ob1*, SISLObject * *ob2*, eimpli , int *ideg*, SISLIntpt * *pt*, double *aepsge*, curve_3d , curve_2d_1 , curve_2d_2 , int * *jstat*)

Definition at line 61 of file sh6evalint.c.

30.2837 sisl/src/sh6floop.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6floop.c:



Macros

- #define SH6FLOOP

Functions

- void sh6floop (vedgept, int inum, int *jpt, int *jstat)

30.2837.1 Macro Definition Documentation

30.2837.1.1 #define SH6FLOOP

Definition at line 49 of file sh6floop.c.

30.2837.2 Function Documentation

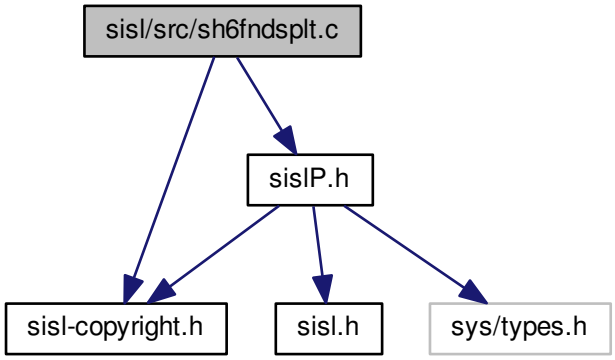
30.2837.2.1 void sh6floop (vedgept , int *inum,* int * *jpt,* int * *jstat*)

Definition at line 58 of file sh6floop.c.

30.2838 sisl/src/sh6fndsplt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6fndsplt.c:



Macros

- #define SH6FINDSPLIT

Functions

- void sh6findsplit (SISLSurf *ps1, SISLSurf *ps2, double aepsge, int *jstat)

30.2838.1 Macro Definition Documentation

30.2838.1.1 #define SH6FINDSPLIT

Definition at line 49 of file sh6fndsplt.c.

30.2838.2 Function Documentation

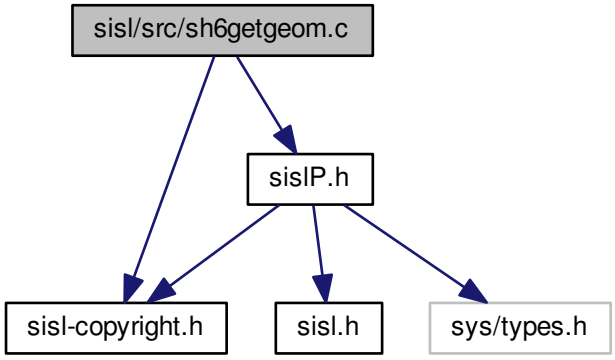
30.2838.2.1 void sh6findsplit (SISLSurf * *ps1*, SISLSurf * *ps2*, double *aepsge*, int * *jstat*)

Definition at line 68 of file sh6fndsplt.c.

30.2839 sisl/src/sh6getgeom.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6getgeom.c:



Macros

- #define SH6GETGEOM

Functions

- void sh6getgeom (SISLObject *ob, int obnr, SISLIntpt *pt, double **geom, double **norm, double aepsge, int *jstat)

30.2839.1 Macro Definition Documentation

30.2839.1.1 #define SH6GETGEOM

Definition at line 49 of file sh6getgeom.c.

30.2839.2 Function Documentation

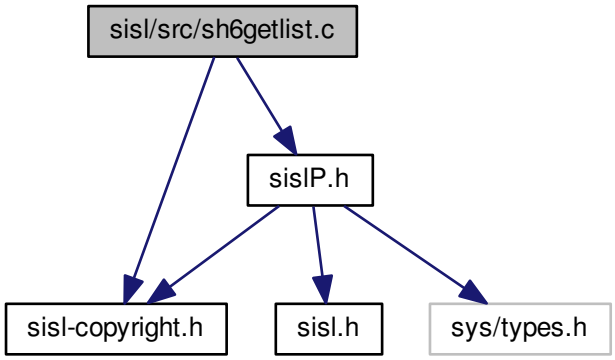
30.2839.2.1 void sh6getgeom (SISLObject * *ob,* int *obnr,* SISLIntpt * *pt,* double ** *geom,* double ** *norm,* double *aepsge,* int * *jstat*)

Definition at line 58 of file sh6getgeom.c.

30.2840 sisl/src/sh6getlist.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6getlist.c:



Macros

- #define SH6GETLIST

Functions

- void sh6getlist (SISLIntpt *pt1, SISLIntpt *pt2, int *index1, int *index2, int *jstat)

30.2840.1 Macro Definition Documentation

30.2840.1.1 #define SH6GETLIST

Definition at line 49 of file sh6getlist.c.

30.2840.2 Function Documentation

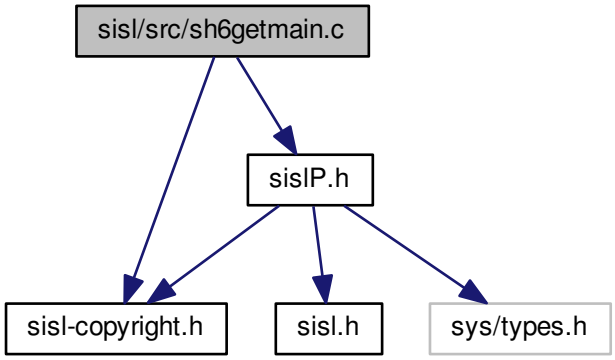
30.2840.2.1 void sh6getlist (SISLIntpt * *pt1*, SISLIntpt * *pt2*, int * *index1*, int * *index2*, int * *jstat*)

Definition at line 57 of file sh6getlist.c.

30.2841 sisl/src/sh6getmain.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6getmain.c:



Macros

- #define SH6GETMAIN

Functions

- SISLIntpt * sh6getmain (SISLIntpt *pt)

30.2841.1 Macro Definition Documentation

30.2841.1.1 #define SH6GETMAIN

Definition at line 49 of file sh6getmain.c.

30.2841.2 Function Documentation

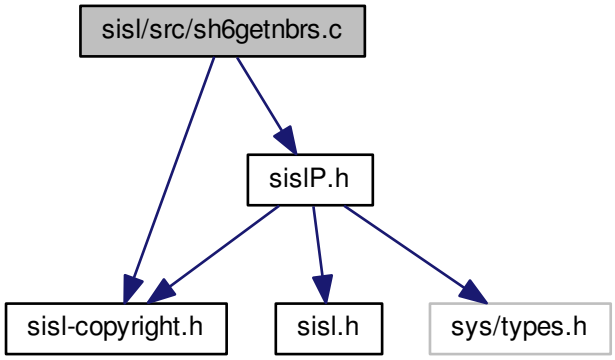
30.2841.2.1 SISLIntpt* sh6getmain (SISLIntpt * *pt*)

Definition at line 58 of file sh6getmain.c.

30.2842 sisl/src/sh6getnbrs.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6getnbrs.c:



Macros

- #define SH6GETNHBRS

Functions

- void sh6getnhbrs (SISLIntpt *pt, SISLIntpt **pt1, SISLIntpt **pt2, int *jstat)

30.2842.1 Macro Definition Documentation

30.2842.1.1 #define SH6GETNHBRS

Definition at line 49 of file sh6getnbrs.c.

30.2842.2 Function Documentation

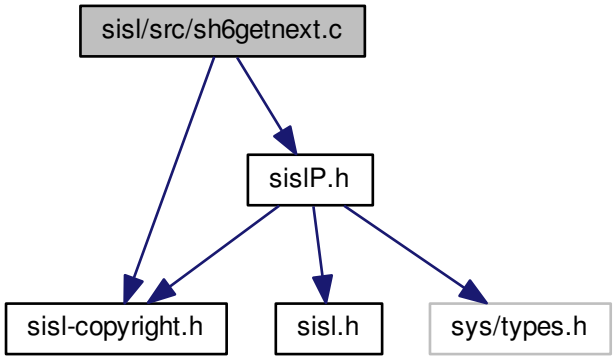
30.2842.2.1 void sh6getnhbrs (SISLIntpt * *pt*, SISLIntpt ** *pt1*, SISLIntpt ** *pt2*, int * *jstat*)

Definition at line 57 of file sh6getnbrs.c.

30.2843 sisl/src/sh6getnext.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6getnext.c:



Macros

- #define SH6GETNEXT

Functions

- SISLIntpt * sh6getnext (SISLIntpt *pt, int index)

30.2843.1 Macro Definition Documentation

30.2843.1.1 #define SH6GETNEXT

Definition at line 49 of file sh6getnext.c.

30.2843.2 Function Documentation

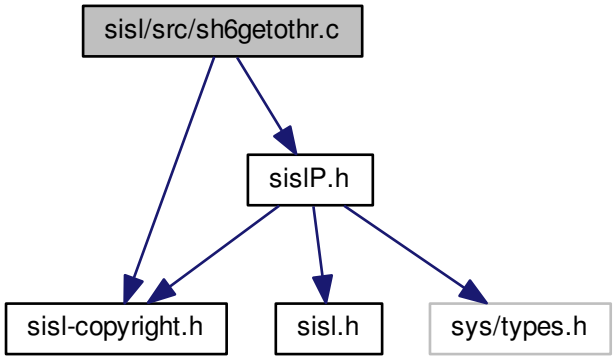
30.2843.2.1 SISLIntpt* sh6getnext (SISLIntpt * *pt,* int *index*)

Definition at line 57 of file sh6getnext.c.

30.2844 sisl/src/sh6getothr.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6getothr.c:



Macros

- #define SH6GETOTHER

Functions

- void sh6getother (SISLIntpt *pt, SISLIntpt *pt1, SISLIntpt **pt2, int *jstat)

30.2844.1 Macro Definition Documentation

30.2844.1.1 #define SH6GETOTHER

Definition at line 49 of file sh6getothr.c.

30.2844.2 Function Documentation

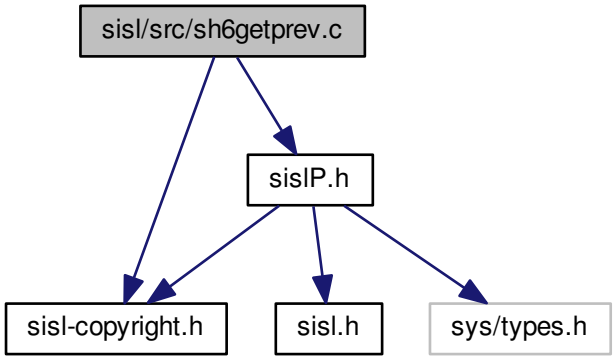
30.2844.2.1 void sh6getother (SISLIntpt * *pt*, SISLIntpt * *pt1*, SISLIntpt ** *pt2*, int * *jstat*)

Definition at line 57 of file sh6getothr.c.

30.2845 sisl/src/sh6getprev.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6getprev.c:



Macros

- #define SH6GETPREV

Functions

- int sh6getprev (SISLIntpt *pt1, SISLIntpt *pt2)

30.2845.1 Macro Definition Documentation

30.2845.1.1 #define SH6GETPREV

Definition at line 49 of file sh6getprev.c.

30.2845.2 Function Documentation

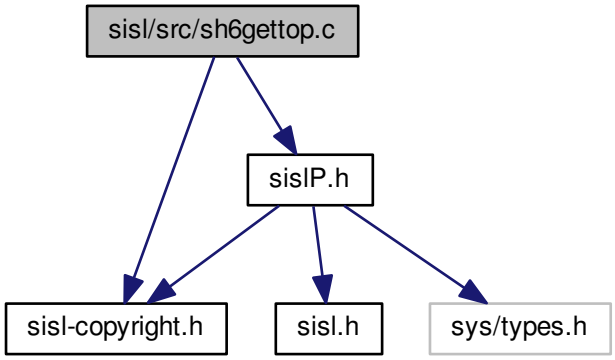
30.2845.2.1 int sh6getprev (SISLIntpt * *pt1*, SISLIntpt * *pt2*)

Definition at line 57 of file sh6getprev.c.

30.2846 sisl/src/sh6gettop.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6gettop.c:



Macros

- #define SH6GETTOP

Functions

- void sh6gettop (SISLIntpt *pt, int ilist, int *left1, int *right1, int *left2, int *right2, int *jstat)

30.2846.1 Macro Definition Documentation

30.2846.1.1 #define SH6GETTOP

Definition at line 49 of file sh6gettop.c.

30.2846.2 Function Documentation

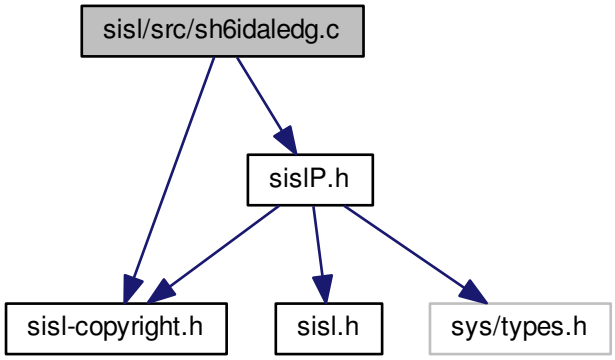
30.2846.2.1 void sh6gettop (SISLIntpt * *pt*, int *ilist*, int * *left1*, int * *right1*, int * *left2*, int * *right2*, int * *jstat*)

Definition at line 57 of file sh6gettop.c.

30.2847 sisl/src/sh6idaledg.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idaledg.c:



Macros

- #define SH6ALLEDG

Functions

- void sh6idalledg (SISLObject *pob1, SISLObject *pob2, SISLIntdat *pintdat, wedge, int *jstat)

30.2847.1 Macro Definition Documentation

30.2847.1.1 #define SH6ALLEDG

Definition at line 49 of file sh6idaledg.c.

30.2847.2 Function Documentation

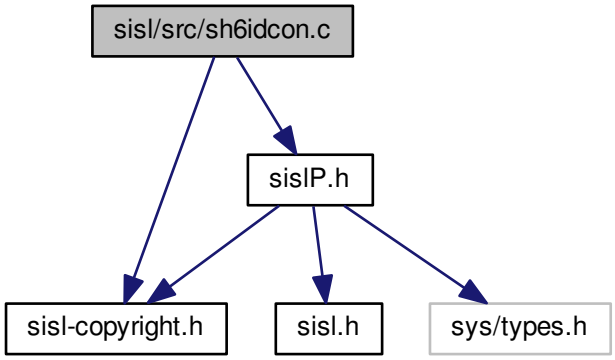
30.2847.2.1 void sh6idalledg (SISLObject * *pob1,* SISLObject * *pob2,* SISLIntdat * *pintdat,* wedge , int * *jstat*)

Definition at line 57 of file sh6idaledg.c.

30.2848 sisl/src/sh6idcon.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idcon.c:



Macros

- #define SH6IDCON

Functions

- void sh6idcon (SISLIntdat **pintdat, SISLIntpt **pintpt1, SISLIntpt **pintpt2, int *jstat)

30.2848.1 Macro Definition Documentation

30.2848.1.1 #define SH6IDCON

Definition at line 49 of file sh6idcon.c.

30.2848.2 Function Documentation

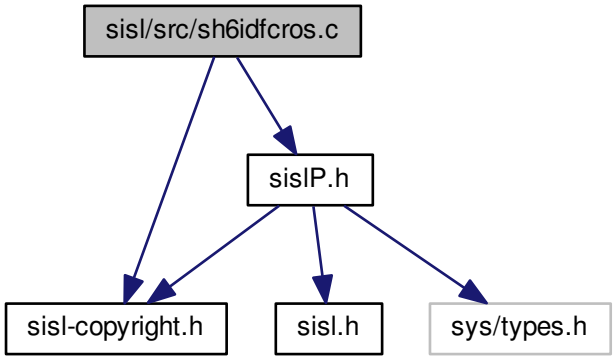
30.2848.2.1 void sh6idcon (SISLIntdat ** *pintdat,* SISLIntpt ** *pintpt1,* SISLIntpt ** *pintpt2,* int * *jstat*)

Definition at line 63 of file sh6idcon.c.

30.2849 sisl/src/sh6idfcros.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idfcros.c:



Macros

- #define SH6IDFCROSS

Functions

- void sh6idfcross (SISLIntdat *pintdat, vcross, int *jncross, int ipar1, int ipar2, int *jstat)

30.2849.1 Macro Definition Documentation

30.2849.1.1 #define SH6IDFCROSS

Definition at line 49 of file sh6idfcros.c.

30.2849.2 Function Documentation

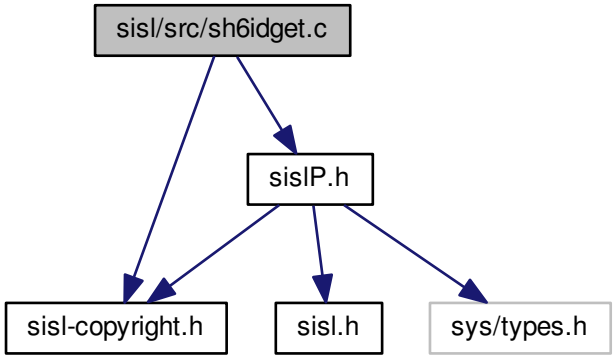
30.2849.2.1 void sh6idfcross (SISLIntdat * *pintdat*, vcross , int * *jncross*, int *ipar1*, int *ipar2*, int * *jstat*)

Definition at line 59 of file sh6idfcros.c.

30.2850 sisl/src/sh6idget.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idget.c:



Macros

- #define SH6IDGET

Functions

- void sh6idget (SISLObject *po1, SISLObject *po2, int ipar, double apar, SISLIntdat *pintdat, SISLIntdat **rintdat, double aepsge, int *jstat)

30.2850.1 Macro Definition Documentation

30.2850.1.1 #define SH6IDGET

Definition at line 49 of file sh6idget.c.

30.2850.2 Function Documentation

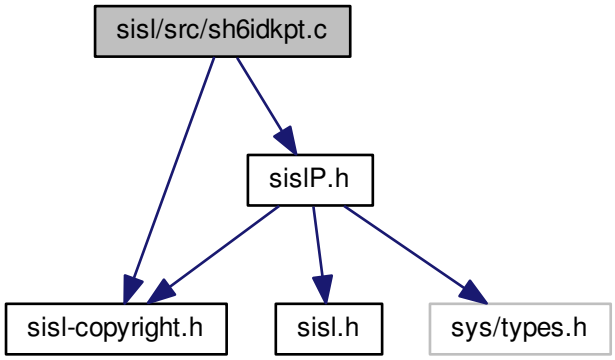
30.2850.2.1 void sh6idget (SISLObject * *po1*, SISLObject * *po2*, int *ipar*, double *apar*, SISLIntdat * *pintdat*, SISLIntdat ** *rintdat*, double *aepsge*, int * *jstat*)

Definition at line 60 of file sh6idget.c.

30.2851 sisl/src/sh6idkpt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idkpt.c:



Macros

- #define S6IDKPT

Functions

- void sh6idkpt (SISLIntdat **pintdat, SISLIntpt **pintpt, int join, int *jstat)

30.2851.1 Macro Definition Documentation

30.2851.1.1 #define S6IDKPT

Definition at line 49 of file sh6idkpt.c.

30.2851.2 Function Documentation

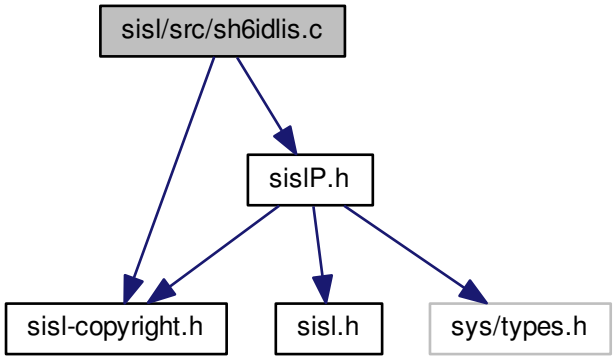
30.2851.2.1 void sh6idkpt (SISLIntdat ** *pintdat,* SISLIntpt ** *pintpt,* int *join,* int * *jstat*)

Definition at line 59 of file sh6idkpt.c.

30.2852 sisl/src/sh6idlis.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idlis.c:



Macros

- #define SH6IDLIS

Functions

- void sh6idlis (SISLObject *po1, SISLObject *po2, SISLIntdat **pintdat, double aepsge, int *jstat)

30.2852.1 Macro Definition Documentation

30.2852.1.1 #define SH6IDLIS

Definition at line 49 of file sh6idlis.c.

30.2852.2 Function Documentation

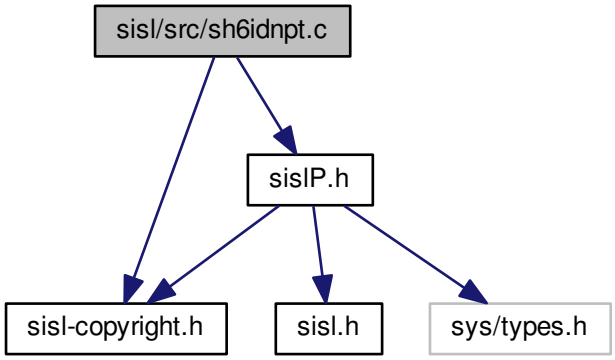
30.2852.2.1 void sh6idlis (SISLObject * *po1*, SISLObject * *po2*, SISLIntdat ** *pintdat*, double *aepsge*, int * *jstat*)

Definition at line 59 of file sh6idlis.c.

30.2853 sisl/src/sh6idnpt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idnpt.c:



Macros

- #define SH6IDNPT

Functions

- void sh6idnpt (SISLIntdat **pintdat, SISLIntpt **pintpt, int itest, int *jstat)

30.2853.1 Macro Definition Documentation

30.2853.1.1 #define SH6IDNPT

Definition at line 49 of file sh6idnpt.c.

30.2853.2 Function Documentation

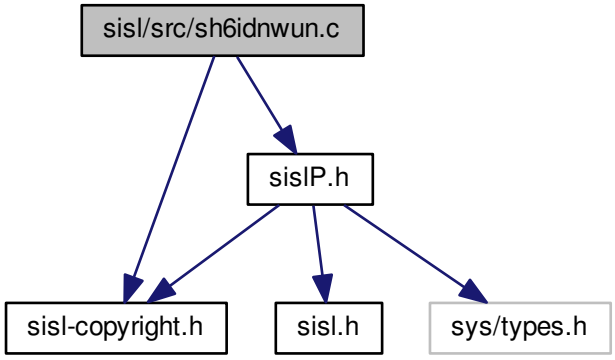
30.2853.2.1 void sh6idnpt (SISLIntdat ** *pintdat,* SISLIntpt ** *pintpt,* int *itest,* int * *jstat*)

Definition at line 58 of file sh6idnpt.c.

30.2854 sisl/src/sh6idnwun.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idnwun.c:



Macros

- #define SH6IDNEWUNITE

Functions

- void sh6idnewunite (SISLObject *po1, SISLObject *po2, SISLIntdat **intdat, SISLIntpt **pt1, SISLIntpt **pt2, double weight, double aepsge, int *jstat)

30.2854.1 Macro Definition Documentation

30.2854.1.1 #define SH6IDNEWUNITE

Definition at line 49 of file sh6idnwun.c.

30.2854.2 Function Documentation

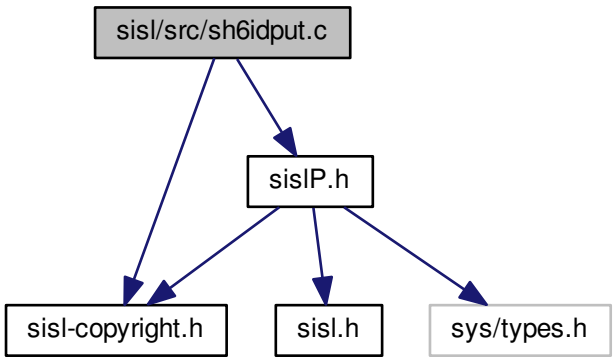
30.2854.2.1 void sh6idnewunite (SISLObject * *po1,* SISLObject * *po2,* SISLIntdat ** *intdat,* SISLIntpt ** *pt1,* SISLIntpt ** *pt2,* double *weight,* double *aepsge,* int * *jstat*)

Definition at line 61 of file sh6idnwun.c.

30.2855 sisl/src/sh6idput.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idput.c:



Macros

- #define SH6IDPUT

Functions

- void sh6idput (SISLObject *po1, SISLObject *po2, SISLIntdat **rintdat, SISLIntdat *pintdat, int inr, double apar, SISLIntpt ***outintpt, int *npoint, int *jstat)

30.2855.1 Macro Definition Documentation

30.2855.1.1 #define SH6IDPUT

Definition at line 49 of file sh6idput.c.

30.2855.2 Function Documentation

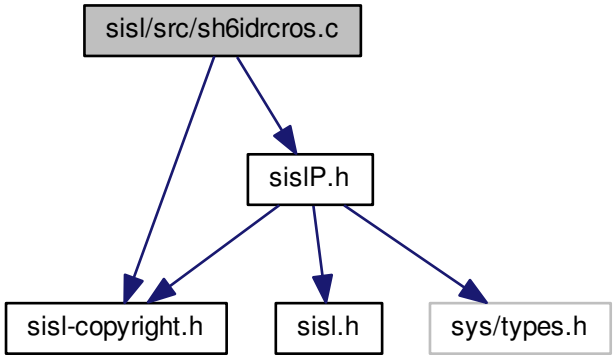
30.2855.2.1 void sh6idput (SISLObject * *po1,* SISLObject * *po2,* SISLIntdat ** *rintdat,* SISLIntdat * *pintdat,* int *inr,* double *apar,* SISLIntpt *** *outintpt,* int * *npoint,* int * *jstat*)

Definition at line 61 of file sh6idput.c.

30.2856 sisl/src/sh6idrcros.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idrcros.c:



Macros

- #define SH6IDRMCROSS

Functions

- void sh6idrmcross (SISLObject *po1, SISLObject *po2, SISLIntdat **pintdat, vcross, int incross, vpt, int inpt, int *jstat)

30.2856.1 Macro Definition Documentation

30.2856.1.1 #define SH6IDRMCROSS

Definition at line 49 of file sh6idrcros.c.

30.2856.2 Function Documentation

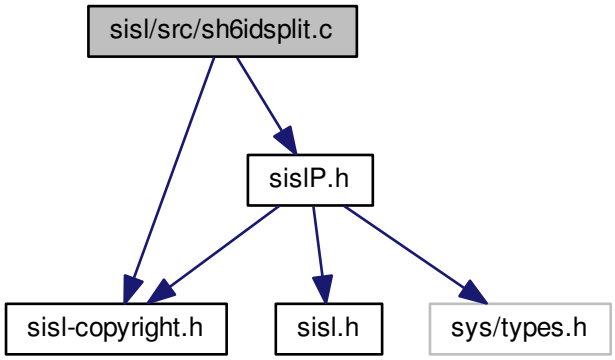
30.2856.2.1 void sh6idrmcross (SISLObject * *po1,* SISLObject * *po2,* SISLIntdat ** *pintdat,* vcross , int *incross,* vpt , int *inpt,* int * *jstat*)

Definition at line 60 of file sh6idrcros.c.

30.2857 sisl/src/sh6idsplit.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idsplit.c:



Macros

- #define S6IDSPLIT

Functions

- void sh6idsplit (SISLIntdat **pintdat, SISLIntpt *psource, int *jstat)

30.2857.1 Macro Definition Documentation

30.2857.1.1 #define S6IDSPLIT

Definition at line 49 of file sh6idsplit.c.

30.2857.2 Function Documentation

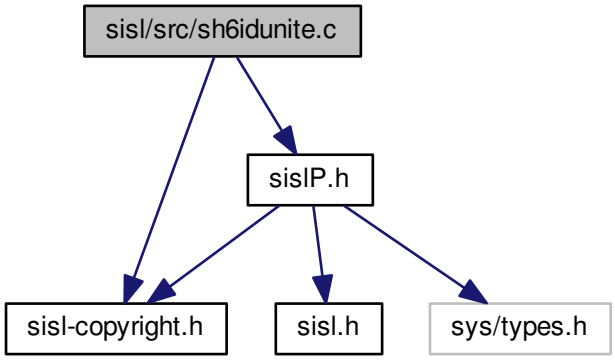
30.2857.2.1 void sh6idsplit (SISLIntdat ** *pintdat,* SISLIntpt * *psource,* int * *jstat*)

Definition at line 59 of file sh6idsplit.c.

30.2858 sisl/src/sh6idunite.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6idunite.c:



Macros

- #define SH6IDUNITE

Functions

- void sh6idunite (SISLIntdat **intdat, SISLIntpt **pt1, SISLIntpt **pt2, double weight, int *jstat)

30.2858.1 Macro Definition Documentation

30.2858.1.1 #define SH6IDUNITE

Definition at line 49 of file sh6idunite.c.

30.2858.2 Function Documentation

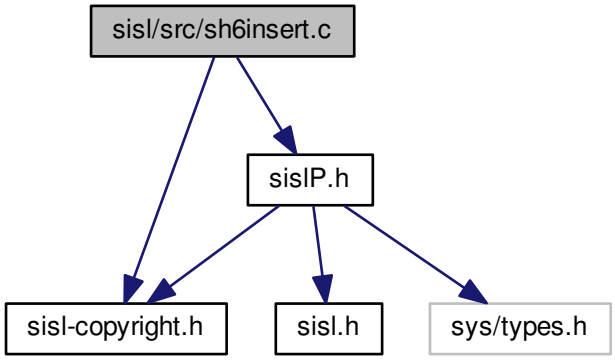
30.2858.2.1 void sh6idunite (SISLIntdat ** *intdat,* SISLIntpt ** *pt1,* SISLIntpt ** *pt2,* double *weight,* int * *jstat*)

Definition at line 60 of file sh6idunite.c.

30.2859 sisl/src/sh6insert.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6insert.c:



Macros

- #define SH6INSERT

Functions

- void sh6insert (SISLIntdat **pintdat, SISLIntpt *pt1, SISLIntpt *pt2, SISLIntpt **ptnew, int *jstat)

30.2859.1 Macro Definition Documentation

30.2859.1.1 #define SH6INSERT

Definition at line 49 of file sh6insert.c.

30.2859.2 Function Documentation

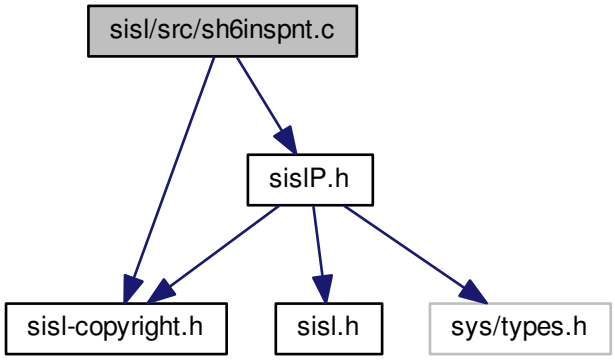
30.2859.2.1 void sh6insert (SISLIntdat ** *pintdat,* SISLIntpt * *pt1,* SISLIntpt * *pt2,* SISLIntpt ** *ptnew,* int * *jstat*)

Definition at line 58 of file sh6insert.c.

30.2860 sisl/src/sh6inspnt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6inspnt.c:



Macros

- #define SH6INSERTPT

Functions

- void sh6insertpt (SISLIntpt *pt1, SISLIntpt *pt2, SISLIntpt *ptnew, int *jstat)

30.2860.1 Macro Definition Documentation

30.2860.1.1 #define SH6INSERTPT

Definition at line 49 of file sh6inspnt.c.

30.2860.2 Function Documentation

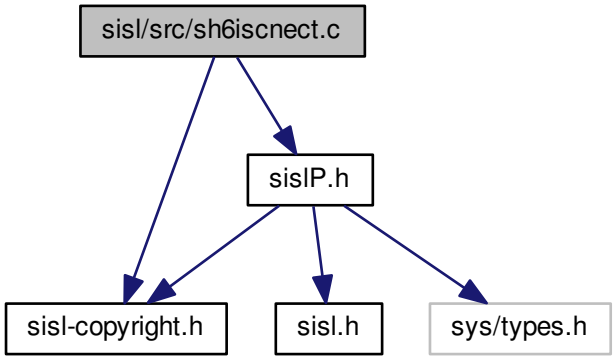
30.2860.2.1 void sh6insertpt (SISLIntpt * *pt1,* SISLIntpt * *pt2,* SISLIntpt * *ptnew,* int * *jstat*)

Definition at line 59 of file sh6inspnt.c.

30.2861 sisl/src/sh6iscnect.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6iscnect.c:



Macros

- #define SH6ISCONNECT

Functions

- int sh6isconnect (SISLIntpt *pt0, SISLIntpt *pt1, SISLIntpt *pt2)

30.2861.1 Macro Definition Documentation

30.2861.1.1 #define SH6ISCONNECT

Definition at line 49 of file sh6iscnect.c.

30.2861.2 Function Documentation

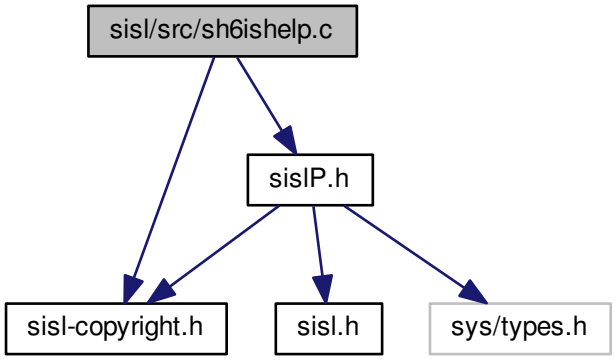
30.2861.2.1 int sh6isconnect (SISLIntpt * *pt0*, SISLIntpt * *pt1*, SISLIntpt * *pt2*)

Definition at line 57 of file sh6iscnect.c.

30.2862 sisl/src/sh6ishelp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6ishelp.c:



Macros

- #define SH6ISHELP

Functions

- int sh6ishelp (SISLIntpt *pt)

30.2862.1 Macro Definition Documentation

30.2862.1.1 #define SH6ISHELP

Definition at line 49 of file sh6ishelp.c.

30.2862.2 Function Documentation

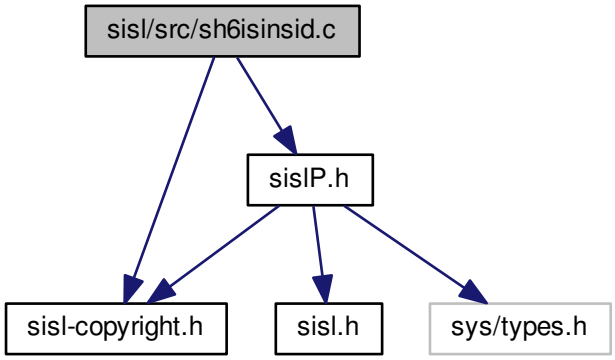
30.2862.2.1 int sh6ishelp (SISLIntpt * *pt*)

Definition at line 57 of file sh6ishelp.c.

30.2863 sisl/src/sh6isinsid.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6isinsid.c:



Macros

- #define SH6ISINSIDE

Functions

- void sh6isinside (SISLObject *po1, SISLObject *po2, SISLIntpt *intpt, int *jstat)

30.2863.1 Macro Definition Documentation

30.2863.1.1 #define SH6ISINSIDE

Definition at line 49 of file sh6isinsid.c.

30.2863.2 Function Documentation

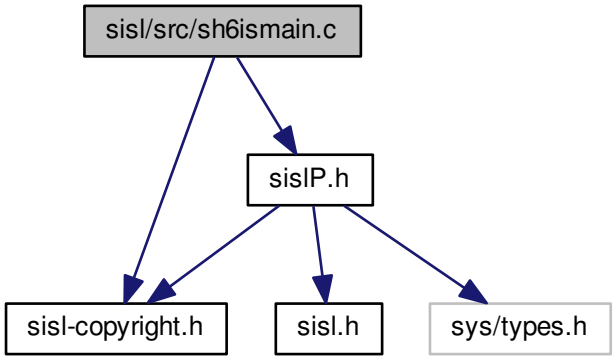
30.2863.2.1 void sh6isinside (SISLObject * *po1,* SISLObject * *po2,* SISLIntpt * *intpt,* int * *jstat*)

Definition at line 59 of file sh6isinsid.c.

30.2864 sisl/src/sh6ismain.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6ismain.c:



Macros

- #define SH6ISMAIN

Functions

- int sh6ismain (SISLIntpt *pt)

30.2864.1 Macro Definition Documentation

30.2864.1.1 #define SH6ISMAIN

Definition at line 49 of file sh6ismain.c.

30.2864.2 Function Documentation

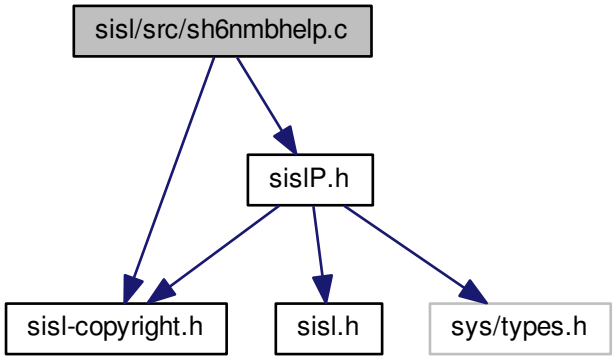
30.2864.2.1 int sh6ismain (SISLIntpt * *pt*)

Definition at line 57 of file sh6ismain.c.

30.2865 sisl/src/sh6nmbhelp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6nmbhelp.c:



Macros

- #define SH6NMBHELP

Functions

- int sh6nmbhelp (SISLIntpt *pt, int *jstat)

30.2865.1 Macro Definition Documentation

30.2865.1.1 #define SH6NMBHELP

Definition at line 49 of file sh6nmbhelp.c.

30.2865.2 Function Documentation

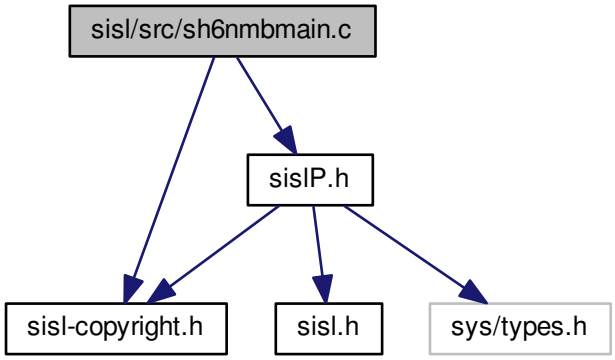
30.2865.2.1 int sh6nmbhelp (SISLIntpt * *pt*, int * *jstat*)

Definition at line 57 of file sh6nmbhelp.c.

30.2866 sisl/src/sh6nmbmain.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6nmbmain.c:



Macros

- #define SH6NMBMAIN

Functions

- int sh6nmbmain (SISLIntpt *pt, int *jstat)

30.2866.1 Macro Definition Documentation

30.2866.1.1 #define SH6NMBMAIN

Definition at line 49 of file sh6nmbmain.c.

30.2866.2 Function Documentation

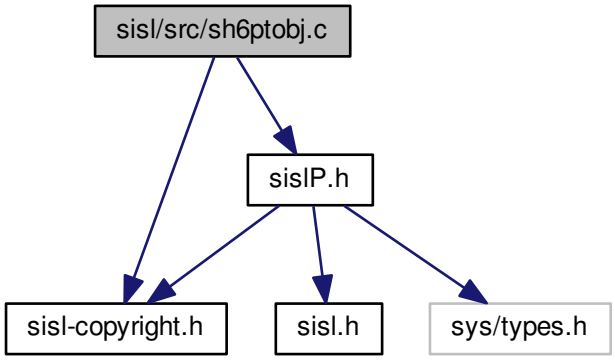
30.2866.2.1 int sh6nmbmain (SISLIntpt * *pt*, int * *jstat*)

Definition at line 57 of file sh6nmbmain.c.

30.2867 sisl/src/sh6ptobj.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6ptobj.c:



Macros

- #define SH6PTOBJ

Functions

- void sh6ptobj (double *point, SISLObject *obj, double aepsge, start, result, int *jstat)

30.2867.1 Macro Definition Documentation

30.2867.1.1 #define SH6PTOBJ

Definition at line 49 of file sh6ptobj.c.

30.2867.2 Function Documentation

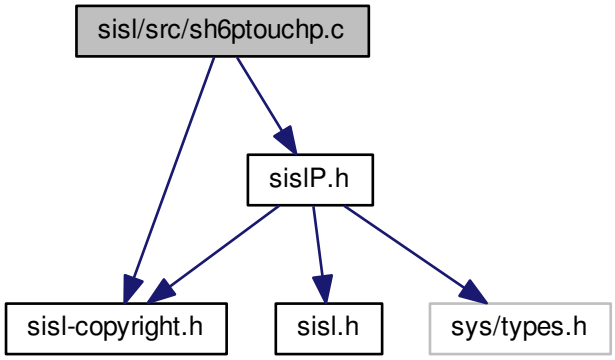
30.2867.2.1 void sh6ptobj (double * *point*, SISLObject * *obj*, double *aepsge*, start , result , int * *jstat*)

Definition at line 59 of file sh6ptobj.c.

30.2868 sisl/src/sh6ptouchp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6ptouchp.c:



Macros

- #define SH6PUTTOUCH

Functions

- void sh6puttouch (SISLIntpt *psource, SISLIntpt *pdest, int seq)

30.2868.1 Macro Definition Documentation

30.2868.1.1 #define SH6PUTTOUCH

Definition at line 49 of file sh6ptouchp.c.

30.2868.2 Function Documentation

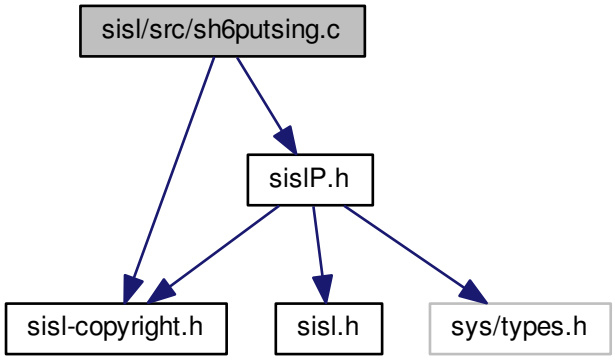
30.2868.2.1 void sh6puttouch (SISLIntpt * *psource,* SISLIntpt* *pdest,* int *seq*)

Definition at line 57 of file sh6ptouchp.c.

30.2869 sisl/src/sh6putsing.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6putsing.c:



Macros

- #define SH6PUTSING

Functions

- void sh6putsing (SISLIntpt *psource, SISLIntpt *pdest)

30.2869.1 Macro Definition Documentation

30.2869.1.1 #define SH6PUTSING

Definition at line 49 of file sh6putsing.c.

30.2869.2 Function Documentation

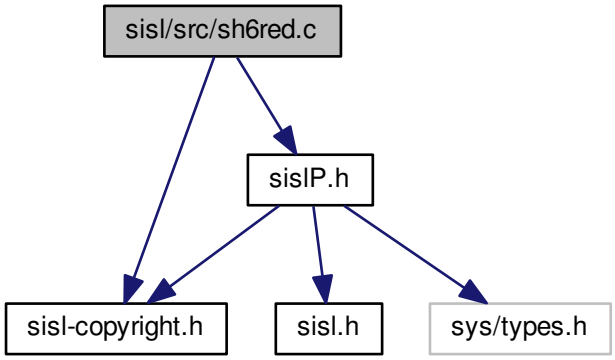
30.2869.2.1 void sh6putsing (SISLIntpt * *psource,* SISLIntpt* *pdest*)

Definition at line 57 of file sh6putsing.c.

30.2870 sisl/src/sh6red.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6red.c:



Macros

- #define SH6RED

Functions

- void sh6red (SISLObject *po1, SISLObject *po2, SISLIntdat *pintdat, int *jstat)

30.2870.1 Macro Definition Documentation

30.2870.1.1 #define SH6RED

Definition at line 49 of file sh6red.c.

30.2870.2 Function Documentation

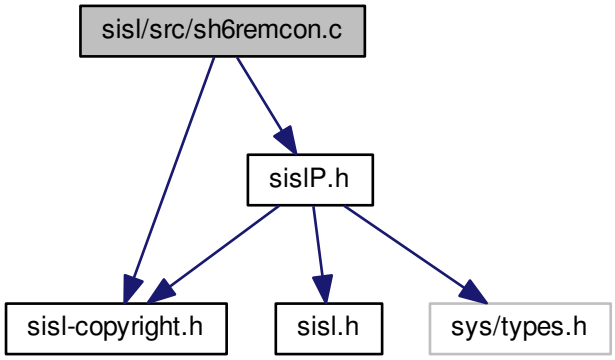
30.2870.2.1 void sh6red (SISLObject * *po1*, SISLObject * *po2*, SISLIntdat * *pintdat*, int * *jstat*)

Definition at line 59 of file sh6red.c.

30.2871 sisl/src/sh6remcon.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6remcon.c:



Macros

- #define SH6REMCON

Functions

- void sh6remcon (SISLIntdat **pintdat, SISLIntpt *pt1, SISLIntpt *pt2, int *jstat)

30.2871.1 Macro Definition Documentation

30.2871.1.1 #define SH6REMCON

Definition at line 49 of file sh6remcon.c.

30.2871.2 Function Documentation

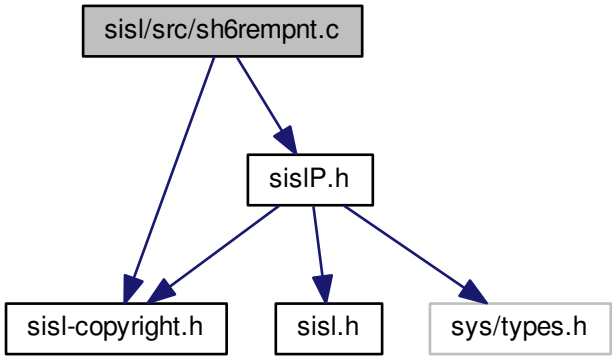
30.2871.2.1 void sh6remcon (SISLIntdat ** *pintdat,* SISLIntpt * *pt1,* SISLIntpt * *pt2,* int * *jstat*)

Definition at line 57 of file sh6remcon.c.

30.2872 sisl/src/sh6rempnt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6rempnt.c:



Macros

- #define SH6REMOVEPT

Functions

- void sh6removept (SISLIntpt *pt1, SISLIntpt *pt2, SISLIntpt *ptold, int *jstat)

30.2872.1 Macro Definition Documentation

30.2872.1.1 #define SH6REMOVEPT

Definition at line 49 of file sh6rempnt.c.

30.2872.2 Function Documentation

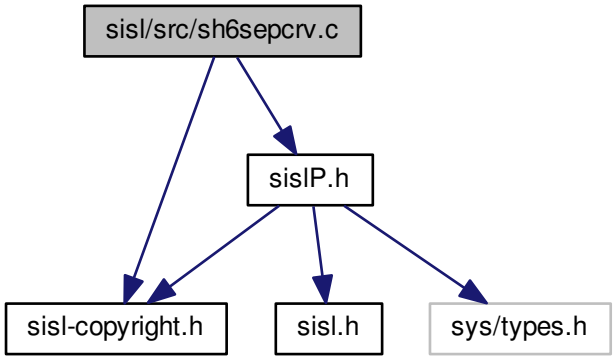
30.2872.2.1 void sh6removept (SISLIntpt * *pt1,* SISLIntpt * *pt2,* SISLIntpt * *ptold,* int * *jstat*)

Definition at line 57 of file sh6rempnt.c.

30.2873 sisl/src/sh6sepcrv.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6sepcrv.c:



Macros

- #define SH6SEPCRV

Functions

- void sh6sepcrv (SISLCurve *pc1, SISLCurve *pc2, double aepsge, ecentre, double *crad, int *jstat)

30.2873.1 Macro Definition Documentation

30.2873.1.1 #define SH6SEPCRV

Definition at line 49 of file sh6sepcrv.c.

30.2873.2 Function Documentation

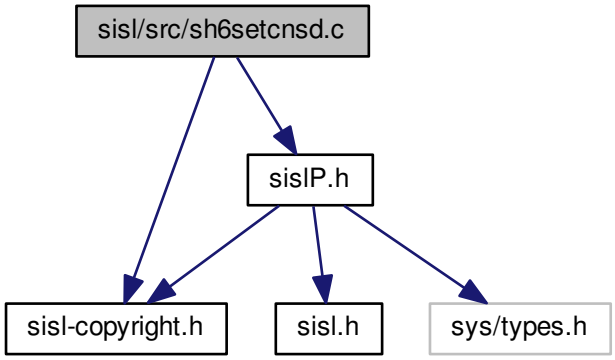
30.2873.2.1 void sh6sepcrv (SISLCurve * *pc1,* SISLCurve * *pc2,* double *aepsge,* ecentre , double * *crad,* int * *jstat*)

Definition at line 66 of file sh6sepcrv.c.

30.2874 sisl/src/sh6setcnsd.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6setcnsd.c:



Macros

- #define SH6SETCNSDIR

Functions

- void sh6setcnsdir (SISLIntpt *pt1, SISLIntpt *pt2, int ipar, int *jstat)

30.2874.1 Macro Definition Documentation

30.2874.1.1 #define SH6SETCNSDIR

Definition at line 49 of file sh6setcnsd.c.

30.2874.2 Function Documentation

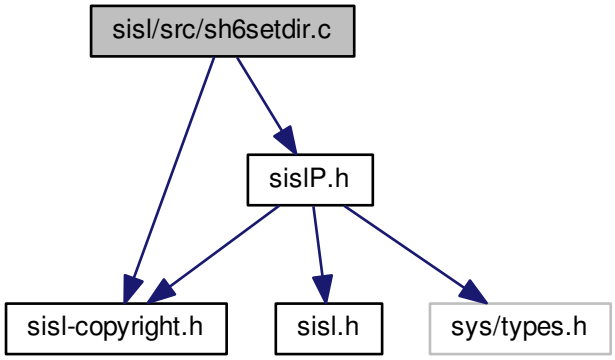
30.2874.2.1 void sh6setcnsdir (SISLIntpt * *pt1,* SISLIntpt * *pt2,* int *ipar,* int * *jstat*)

Definition at line 57 of file sh6setcnsd.c.

30.2875 sisl/src/sh6setdir.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6setdir.c:



Macros

- #define SH6SETDIR

Functions

- void sh6setdir (SISLIntpt *pt1, SISLIntpt *pt2, int *jstat)

30.2875.1 Macro Definition Documentation

30.2875.1.1 #define SH6SETDIR

Definition at line 49 of file sh6setdir.c.

30.2875.2 Function Documentation

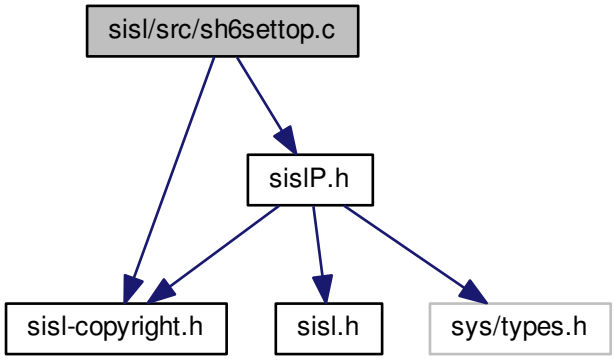
30.2875.2.1 void sh6setdir (SISLIntpt * *pt1,* SISLIntpt * *pt2,* int * *jstat*)

Definition at line 57 of file sh6setdir.c.

30.2876 sisl/src/sh6settop.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6settop.c:



Macros

- #define SH6SETTOP

Functions

- void sh6settop (SISLIntpt *pt, int ilist, int left1, int right1, int left2, int right2, int *jstat)

30.2876.1 Macro Definition Documentation

30.2876.1.1 #define SH6SETTOP

Definition at line 49 of file sh6settop.c.

30.2876.2 Function Documentation

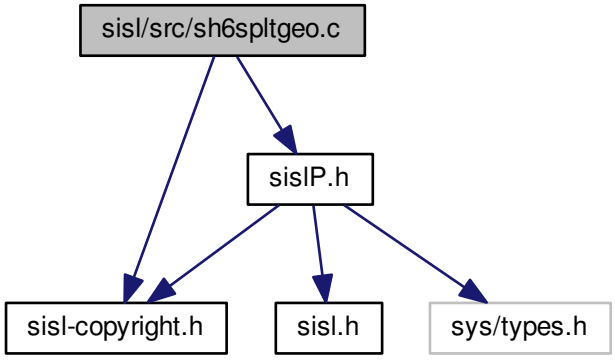
30.2876.2.1 void sh6settop (SISLIntpt * *pt*, int *ilist*, int *left1*, int *right1*, int *left2*, int *right2*, int * *jstat*)

Definition at line 57 of file sh6settop.c.

30.2877 sisl/src/sh6spltgeo.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6spltgeo.c:



Macros

- #define SH6SPLITGEOM

Functions

- void sh6splitgeom (SISLSurf *ps1, SISLSurf *ps2, double aepsge, ecentre, eaxis, double *cdist, double *crad, int *jstat)

30.2877.1 Macro Definition Documentation

30.2877.1.1 #define SH6SPLITGEOM

Definition at line 49 of file sh6spltgeo.c.

30.2877.2 Function Documentation

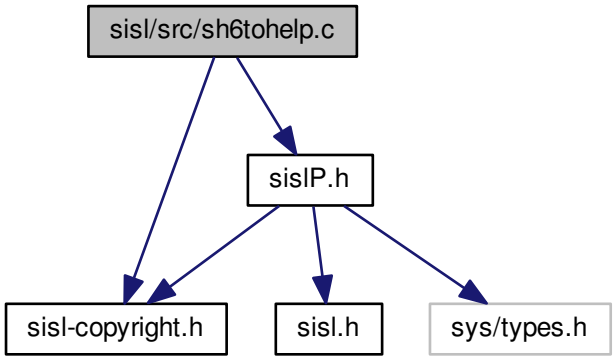
30.2877.2.1 void sh6splitgeom (SISLSurf * *ps1*, SISLSurf * *ps2*, double *aepsge*, ecentre , eaxis , double * *cdist*, double * *crad*, int * *jstat*)

Definition at line 66 of file sh6spltgeo.c.

30.2878 sisl/src/sh6tohelp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6tohelp.c:



Macros

- #define SH6TOHELP

Functions

- void sh6tohelp (SISLIntpt *pt, int *jstat)

30.2878.1 Macro Definition Documentation

30.2878.1.1 #define SH6TOHELP

Definition at line 49 of file sh6tohelp.c.

30.2878.2 Function Documentation

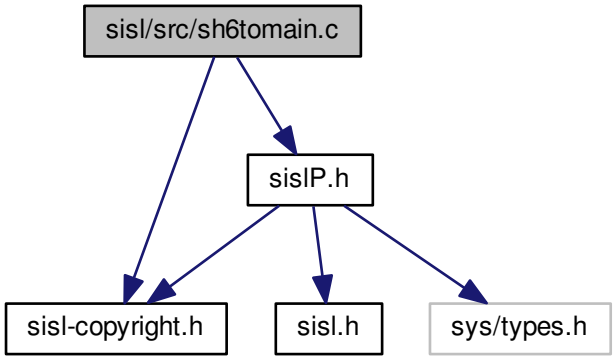
30.2878.2.1 void sh6tohelp (SISLIntpt * *pt*, int * *jstat*)

Definition at line 58 of file sh6tohelp.c.

30.2879 sisl/src/sh6tomain.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6tomain.c:



Macros

- #define SH6TOMAIN

Functions

- void sh6tomain (SISLIntpt *pt, int *jstat)

30.2879.1 Macro Definition Documentation

30.2879.1.1 #define SH6TOMAIN

Definition at line 49 of file sh6tomain.c.

30.2879.2 Function Documentation

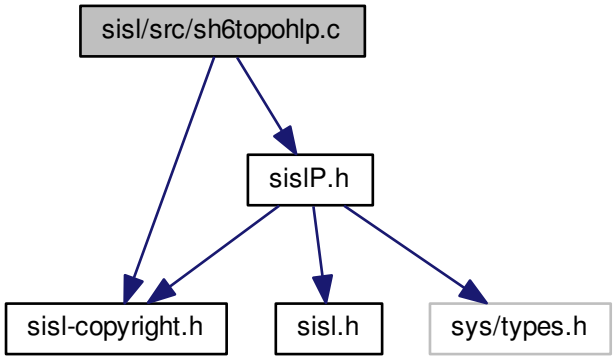
30.2879.2.1 void sh6tomain (SISLIntpt * *pt*, int * *jstat*)

Definition at line 58 of file sh6tomain.c.

30.2880 sisl/src/sh6topohlp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6topohlp.c:



Macros

- #define SH6GETTOPHLP

Functions

- void sh6gettophlp (SISLIntpt *pt, pretop, int case_2d, int *jstat)

30.2880.1 Macro Definition Documentation

30.2880.1.1 #define SH6GETTOPHLP

Definition at line 49 of file sh6topohlp.c.

30.2880.2 Function Documentation

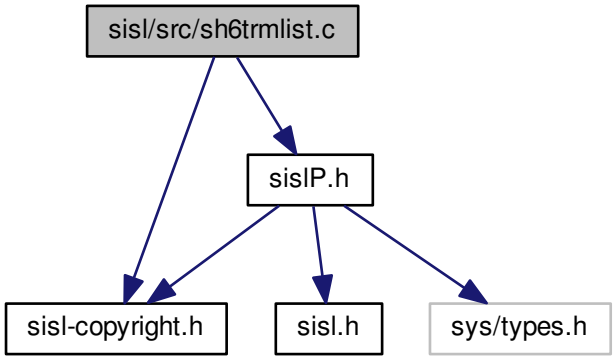
30.2880.2.1 void sh6gettophlp (SISLIntpt * *pt*, pretop , int *case_2d*, int * *jstat*)

Definition at line 59 of file sh6topohlp.c.

30.2881 sisl/src/sh6trmlist.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh6trmlist.c:



Macros

- #define SH6TRIMLIST

Functions

- void sh6trimlist (SISLIntpt *pt, SISLIntpt ***ptlist, int *no_of_points, int *no_alloc)

30.2881.1 Macro Definition Documentation

30.2881.1.1 #define SH6TRIMLIST

Definition at line 49 of file sh6trmlist.c.

30.2881.2 Function Documentation

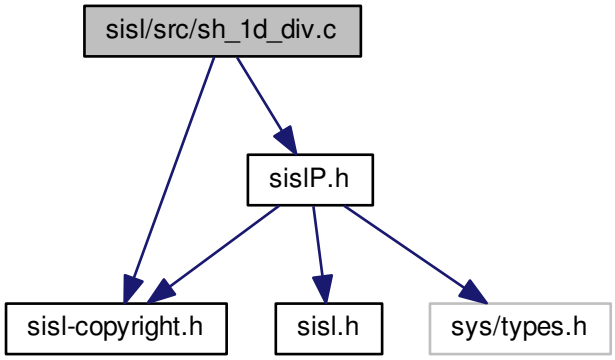
30.2881.2.1 void sh6trimlist (SISLIntpt * *pt*, SISLIntpt *** *ptlist*, int * *no_of_points*, int * *no_alloc*)

Definition at line 60 of file sh6trmlist.c.

30.2882 sisl/src/sh_1d_div.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh_1d_div.c:



Macros

- #define SH_1D_DIV

Functions

- void sh_1d_div (SISLObject *po1, SISLObject *po2, double aepsge, SISLIntdat **pintdat, vedge, int *jstat)

30.2882.1 Macro Definition Documentation

30.2882.1.1 #define SH_1D_DIV

Definition at line 49 of file sh_1d_div.c.

30.2882.2 Function Documentation

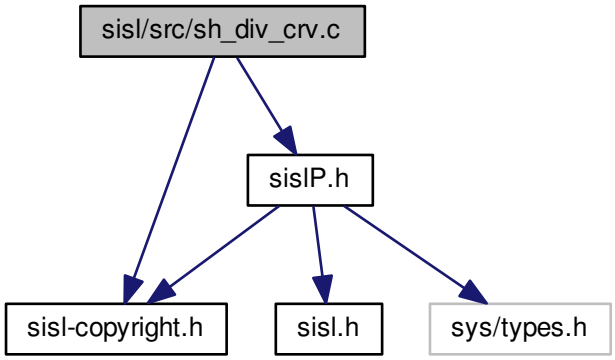
30.2882.2.1 void sh_1d_div (SISLObject * *po1*, SISLObject * *po2*, double *aepsge*, SISLIntdat ** *pintdat*, vedge , int * *jstat*)

Definition at line 73 of file sh_1d_div.c.

30.2883 sisl/src/sh_div_crv.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh_div_crv.c:



Macros

- #define SH_DIV_CRV

Functions

- void sh_div_crv (SISLCurve *pc, int which_end, double aepsge, SISLCurve **rcnew, int *jstat)

30.2883.1 Macro Definition Documentation

30.2883.1.1 #define SH_DIV_CRV

Definition at line 49 of file sh_div_crv.c.

30.2883.2 Function Documentation

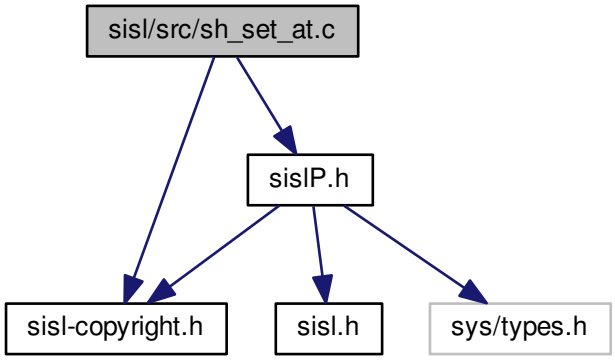
30.2883.2.1 void sh_div_crv (SISLCurve * *pc*, int *which_end*, double *aepsge*, SISLCurve ** *rcnew*, int * *jstat*)

Definition at line 58 of file sh_div_crv.c.

30.2884 sisl/src/sh_set_at.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for sh_set_at.c:



Macros

- #define SH_SET_AT

Functions

- void sh_set_at (SISLObject *po1, SISLObject *po2, SISLIntdat *pintdat, int *jstat)

30.2884.1 Macro Definition Documentation

30.2884.1.1 #define SH_SET_AT

Definition at line 49 of file sh_set_at.c.

30.2884.2 Function Documentation

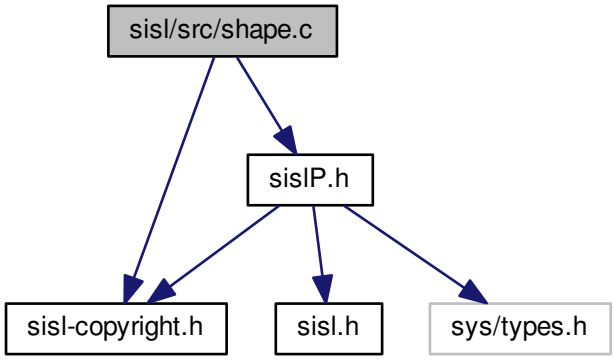
30.2884.2.1 void sh_set_at (SISLObject * *po1,* SISLObject * *po2,* SISLIntdat * *pintdat,* int * *jstat*)

Definition at line 62 of file sh_set_at.c.

30.2885 sisl/src/shape.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for shape.c:



Macros

- #define SHAPE

Functions

- void shape (emid, etang, int idim, int iedge, int *jstat)

30.2885.1 Macro Definition Documentation

30.2885.1.1 #define SHAPE

Definition at line 49 of file shape.c.

30.2885.2 Function Documentation

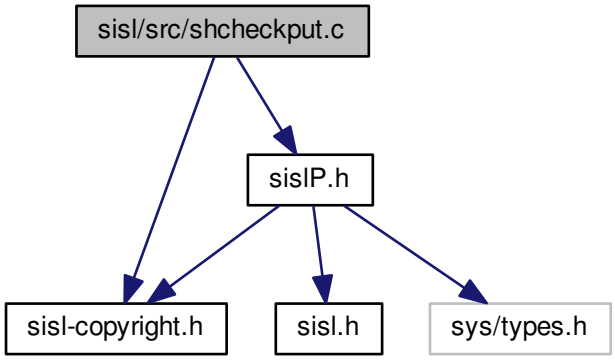
30.2885.2.1 void shape (emid , etang , int *idim,* int *iedge,* int* *jstat*)

Definition at line 57 of file shape.c.

30.2886 sisl/src/shcheckput.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for shcheckput.c:



Macros

- #define SHCHECKPUT

Functions

- void shcheckput (SISLObject *po1, SISLIntdat **rintdat, SISLIntdat *pintdat, int inr, double apar, int *jstat)

30.2886.1 Macro Definition Documentation

30.2886.1.1 #define SHCHECKPUT

Definition at line 49 of file shcheckput.c.

30.2886.2 Function Documentation

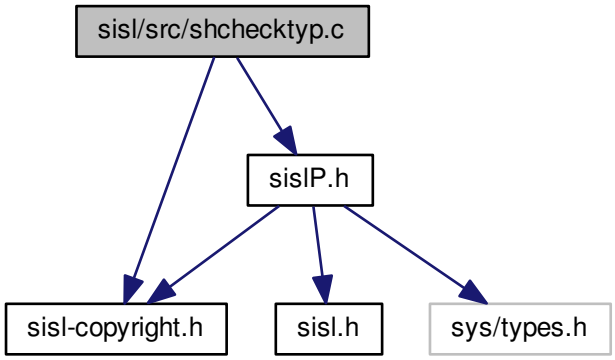
30.2886.2.1 void shcheckput (SISLObject * *po1*, SISLIntdat ** *rintdat*, SISLIntdat * *pintdat*, int *inr*, double *apar*, int * *jstat*)

Definition at line 59 of file shcheckput.c.

30.2887 sisl/src/shchecktyp.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for shchecktyp.c:



Macros

- #define SHCHECKTYPE

Functions

- int shchecktype (SISLObject *pobj, double *parval)

30.2887.1 Macro Definition Documentation

30.2887.1.1 #define SHCHECKTYPE

Definition at line 49 of file shchecktyp.c.

30.2887.2 Function Documentation

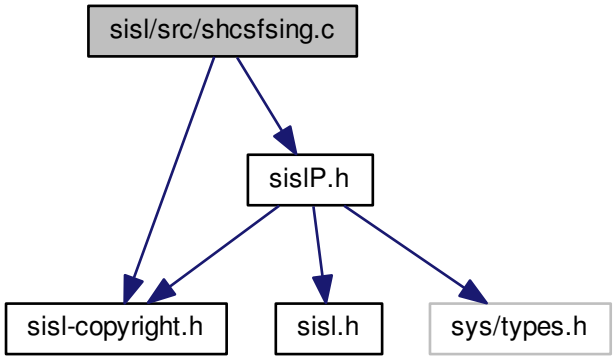
30.2887.2.1 int shchecktype (SISLObject * *pobj,* double * *parval*)

Definition at line 58 of file shchecktyp.c.

30.2888 sisl/src/shcsfsing.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for shcsfsing.c:



Macros

- #define SHCSFSING

Functions

- void shcsfsing (SISLCurve *pcurve, SISLSurf *psurf, limit, enext, gpos, int *jstat)

30.2888.1 Macro Definition Documentation

30.2888.1.1 #define SHCSFSING

Definition at line 48 of file shcsfsing.c.

30.2888.2 Function Documentation

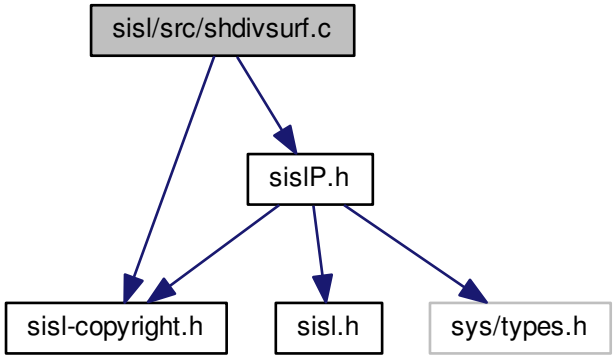
30.2888.2.1 void shcsfsing (SISLCurve * *pcurve,* SISLSurf * *psurf,* limit , enext , gpos , int * *jstat*)

Definition at line 69 of file shcsfsing.c.

30.2889 sisl/src/shdivsurf.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for shdivsurf.c:



Macros

- #define SH_DIV_SURF

Functions

- void sh_div_surf (SISLSurf *ps, int which_end_1, int which_end_2, double aepsge, SISLSurf **rsnew, int *jstat)

30.2889.1 Macro Definition Documentation

30.2889.1.1 #define SH_DIV_SURF

Definition at line 49 of file shdivsurf.c.

30.2889.2 Function Documentation

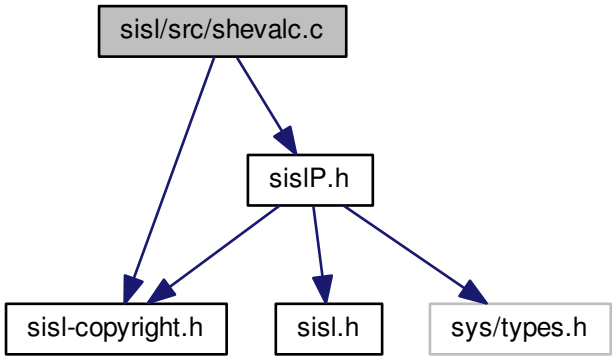
30.2889.2.1 void sh_div_surf (SISLSurf * *ps*, int *which_end_1*, int *which_end_2*, double *aepsge*, SISLSurf ** *rsnew*, int * *jstat*)

Definition at line 59 of file shdivsurf.c.

30.2890 sisl/src/shevalc.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for shevalc.c:



Macros

- #define SHEVALC

Functions

- void shevalc (SISLCurve *pc1, int ider, double ax, double aepsge, int *ileft, eder, int *jstat)

30.2890.1 Macro Definition Documentation

30.2890.1.1 #define SHEVALC

Definition at line 49 of file shevalc.c.

30.2890.2 Function Documentation

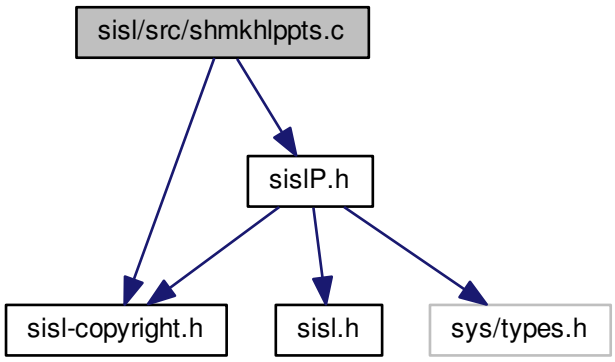
30.2890.2.1 void shevalc (SISLCurve * *pc1*, int *ider*, double *ax*, double *aepsge*, int * *ileft*, eder , int * *jstat*)

Definition at line 58 of file shevalc.c.

30.2891 sisl/src/shmkhlppts.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for shmkhlppts.c:



Macros

- #define SHMKHLPPTS

Functions

- void shmkhlppts (SISLObject *po1, SISLObject *po2, double aepsge, SISLIntdat **rintdat, vedge, int *jnewpt, int *jstat)

30.2891.1 Macro Definition Documentation

30.2891.1.1 #define SHMKHLPPTS

Definition at line 49 of file shmkhlppts.c.

30.2891.2 Function Documentation

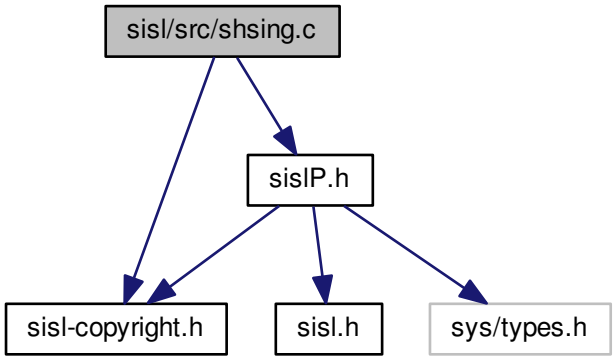
30.2891.2.1 void shmkhlppts (SISLObject * *po1,* SISLObject * *po2,* double *aepsge,* SISLIntdat ** *rintdat,* vedge , int * *jnewpt,* int * *jstat*)

Definition at line 58 of file shmkhlppts.c.

30.2892 sisl/src/shsing.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for shsing.c:



Macros

- #define SHSING

Functions

- void shsing (SISLSurf *psurf1, SISLSurf *psurf2, limit, enext, gpos, int *jstat)

30.2892.1 Macro Definition Documentation

30.2892.1.1 #define SHSING

Definition at line 48 of file shsing.c.

30.2892.2 Function Documentation

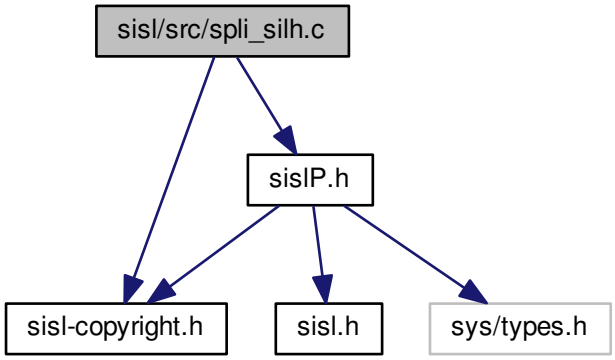
30.2892.2.1 void shsing (SISLSurf * *psurf1*, SISLSurf * *psurf2*, limit , enext , gpos , int * *jstat*)

Definition at line 69 of file shsing.c.

30.2893 sisl/src/spli_silh.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for spli_silh.c:



Macros

- #define SPLI_SILH

Functions

- void spli_silh (SISLIntdat **pintdat, SISLObject *po1, int *jstat)

30.2893.1 Macro Definition Documentation

30.2893.1.1 #define SPLI_SILH

Definition at line 49 of file spli_silh.c.

30.2893.2 Function Documentation

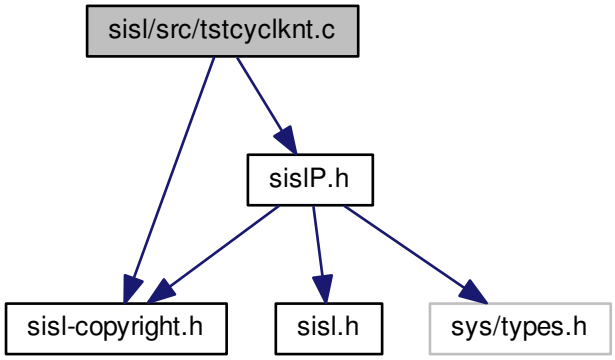
30.2893.2.1 void spli_silh (SISLIntdat ** *pintdat*, SISLObject * *po1*, int * *jstat*)

Definition at line 61 of file spli_silh.c.

30.2894 sisl/src/tstcyclknt.c File Reference

```
#include "sisl-copyright.h"
#include "sislP.h"
```

Include dependency graph for tstcyclknt.c:



Macros

- #define TEST_CYCLIC_KNOTS

Functions

- void test_cyclic_knots (et, int in, int ik, int *jstat)

30.2894.1 Macro Definition Documentation

30.2894.1.1 #define TEST_CYCLIC_KNOTS

Definition at line 49 of file tstcyclknt.c.

30.2894.2 Function Documentation

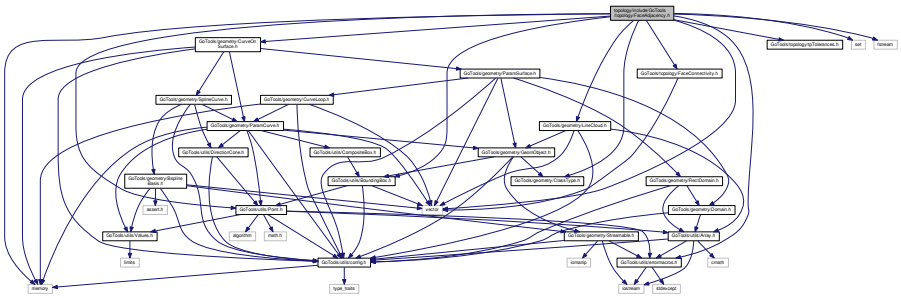
30.2894.2.1 void test_cyclic_knots (et , int *in,* int *ik,* int * *jstat*)

Definition at line 57 of file tstcyclknt.c.

30.2895 topology/include/GoTools/topology/FaceAdjacency.h File Reference

```
#include "GoTools/utils/Point.h"
#include "GoTools/utils/BoundingBox.h"
#include "GoTools/utils/errormacros.h"
#include "GoTools/geometry/ClassType.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include "GoTools/geometry/LineCloud.h"
#include "GoTools/topology/FaceConnectivity.h"
#include "GoTools/topology/tpTolerances.h"
#include <vector>
#include <set>
#include <memory>
#include <fstream>
```

Include dependency graph for FaceAdjacency.h:



Classes

- class Go::MarchPoint

  Helper class for marching.

- class Go::FaceAdjacency< edgeType, faceType >

  Compute adjacency information for a set of surfaces.

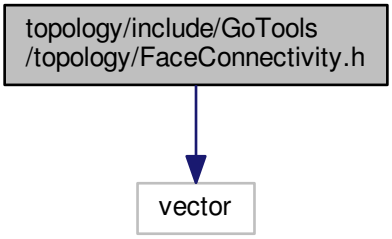
Namespaces

- Go

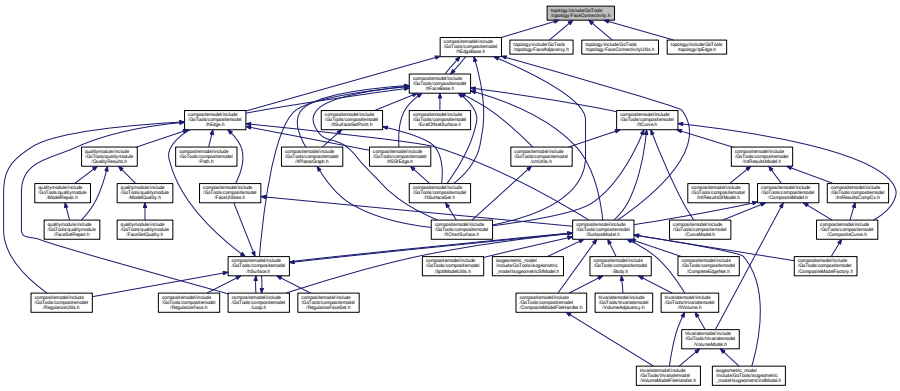
30.2896 topology/include/GoTools/topology/FaceConnectivity.h File Reference

```
#include <vector>
```

Include dependency graph for FaceConnectivity.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::FaceConnectivity< edgeType >

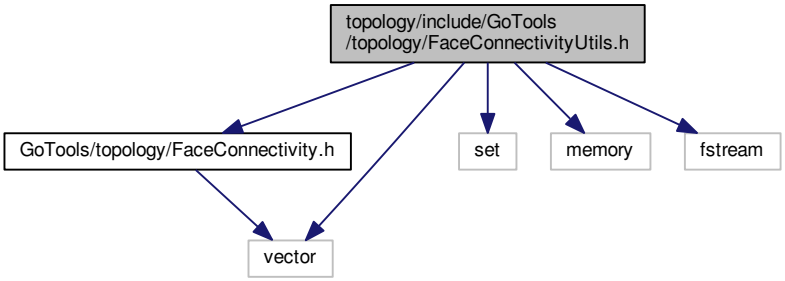
Namespaces

- Go

30.2897 topology/include/GoTools/topology/FaceConnectivityUtils.h File Reference

```
#include "GoTools/topology/FaceConnectivity.h"
#include <vector>
#include <set>
#include <memory>
#include <fstream>
```

Include dependency graph for FaceConnectivityUtils.h:



Classes

- class Go::FaceConnectivityUtils< edgeType, faceType >

  Utilities used in adjacency computations of face sets.

Namespaces

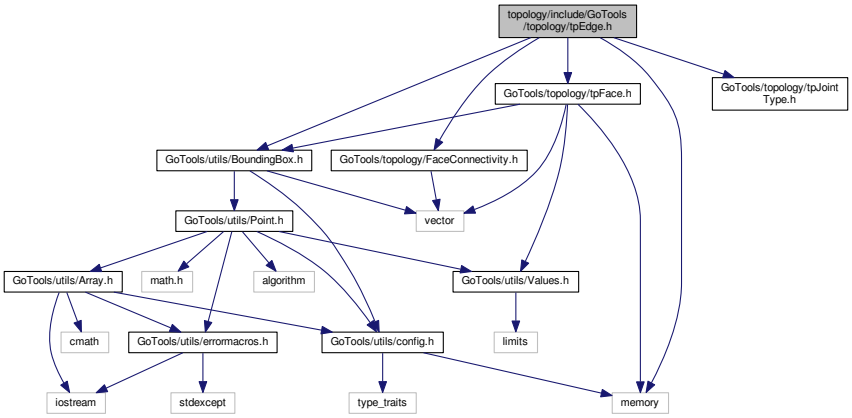
- Go

30.2898 topology/include/GoTools/topology/topology_doxymain.h File Reference

30.2899 topology/include/GoTools/topology/tpEdge.h File Reference

```
#include "GoTools/topology/tpFace.h"
#include "GoTools/utils/BoundingBox.h"
#include "GoTools/topology/tpJointType.h"
#include "GoTools/topology/FaceConnectivity.h"
#include <memory>
```

Include dependency graph for tpEdge.h:



Classes

- class Go::tpEdge

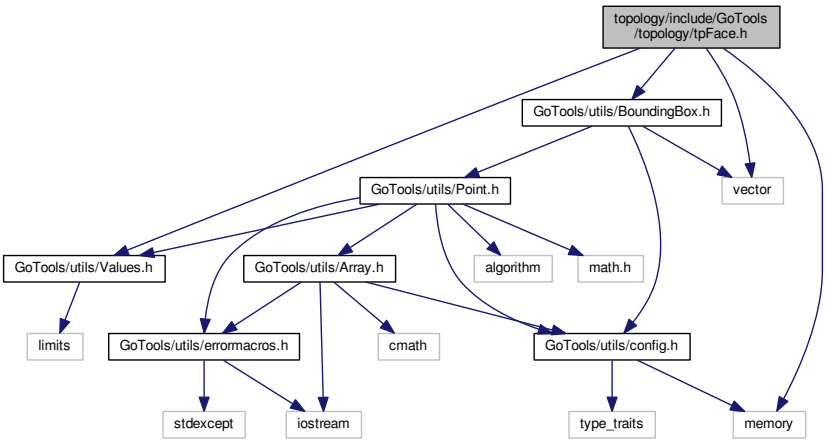
Namespaces

- Go

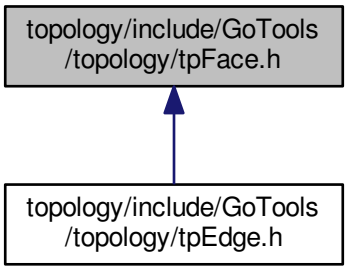
30.2900 topology/include/GoTools/topology/tpFace.h File Reference

```
#include "GoTools/utils/Values.h"
#include "GoTools/utils/BoundingBox.h"
#include <memory>
#include <vector>
```

Include dependency graph for tpFace.h:



This graph shows which files directly or indirectly include this file:



Classes

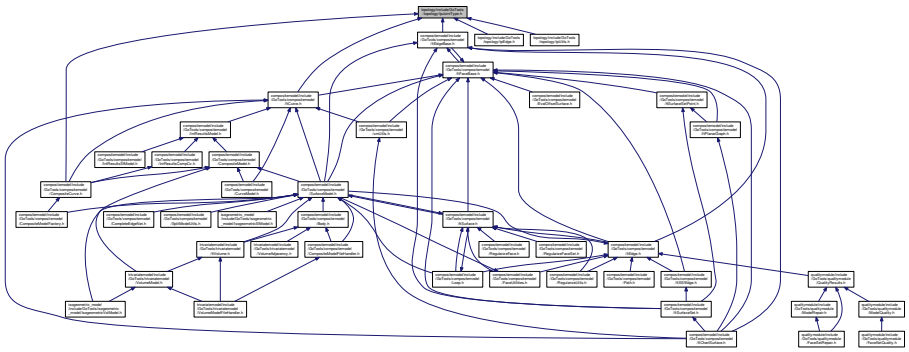
- class Go::tpFace

Namespaces

- Go

30.2901 topology/include/GoTools/topology/tpJointType.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

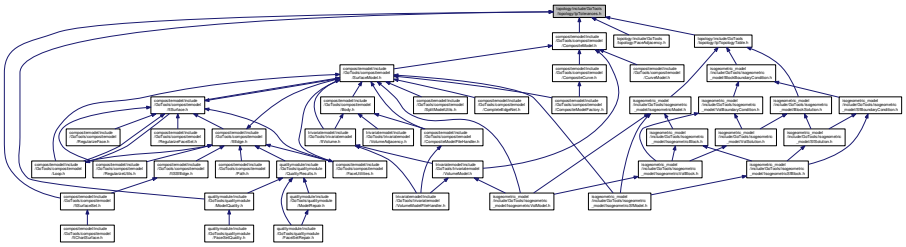
- Go

Enumerations

- enum Go::tpJointType {
  Go::JOINT_G1 = 0, Go::JOINT_KINK = 1, Go::JOINT_G0 = 2, Go::JOINT_GAP = 3,
  Go::JOINT_DISC = 4, Go::JOINT_NONE = 5 }

30.2902 topology/include/GoTools/topology/tpTolerances.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- struct Go::tpTolerances

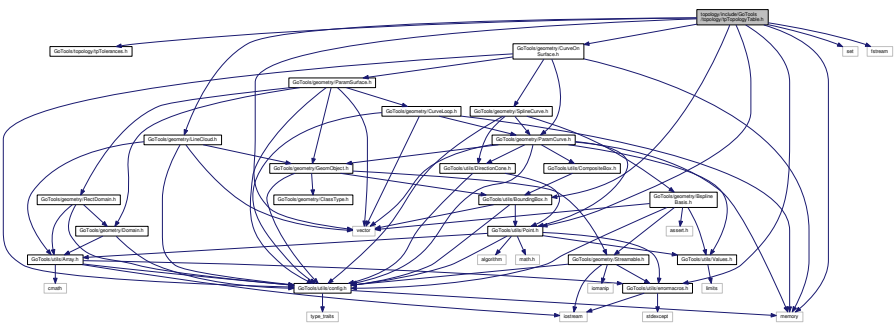
Namespaces

- Go

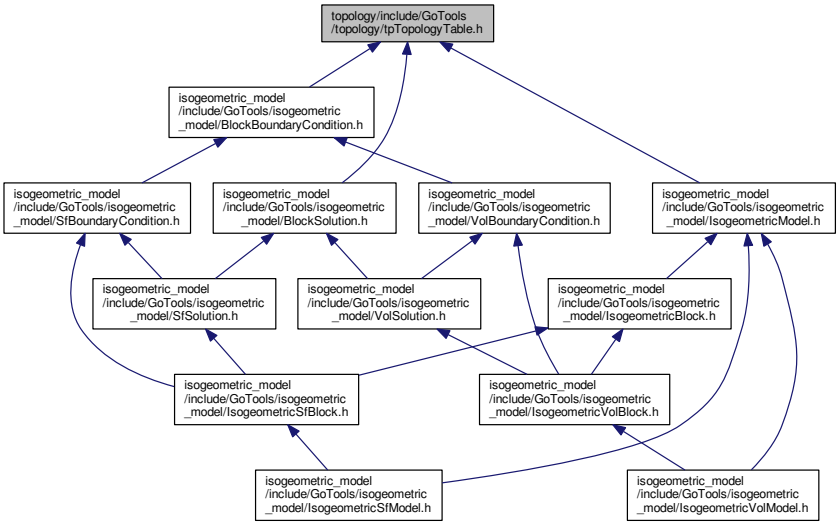
30.2903 topology/include/GoTools/topology/tpTopologyTable.h File Reference

```
#include "GoTools/topology/tpTolerances.h"
#include "GoTools/utils/Point.h"
#include "GoTools/utils/BoundingBox.h"
#include "GoTools/utils/errormacros.h"
#include "GoTools/geometry/LineCloud.h"
#include "GoTools/geometry/CurveOnSurface.h"
#include <vector>
#include <set>
#include <memory>
#include <fstream>
```

Include dependency graph for tpTopologyTable.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::tpTopologicalInfo
- class Go::tpTableEntry< edgeType >
- class Go::tpMarchPoint

  Helper class for marching.
- class Go::tpTopologyTable< edgeType, faceType >

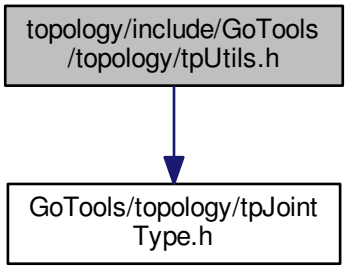
Namespaces

- Go

30.2904 topology/include/GoTools/topology/tpUtils.h File Reference

```
#include "GoTools/topology/tpJointType.h"
```

Include dependency graph for tpUtils.h:



Namespaces

- Go
- Go::tpUtils

Functions

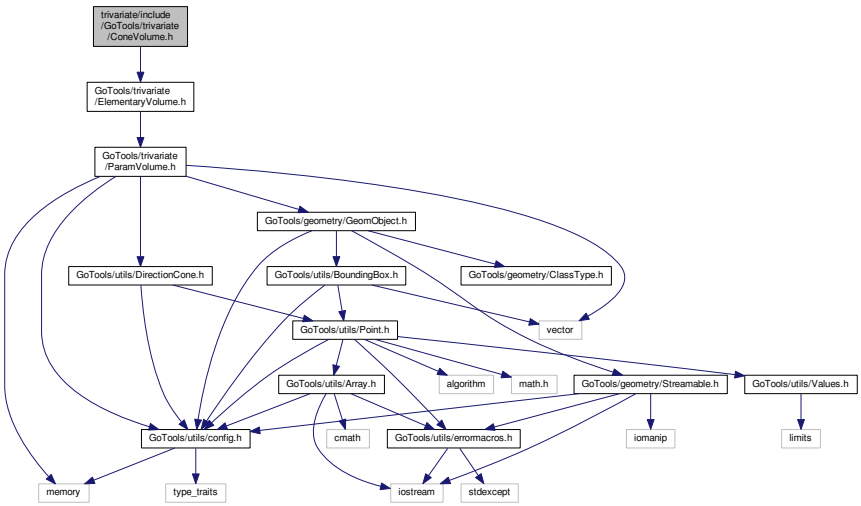
- template<class edgeType >
  void Go::tpUtils::adjacentEdges (edgeType *edge, bool at_start_of_edge, std::vector< edgeType * > &adjacent, std::vector< bool > &at_start)
- template<class edgeType >
  tpJointType Go::tpUtils::checkContinuity (const edgeType *edge1, const edgeType *edge2, double neighbour, double gap, double bend, double kink)

  Return continuity between end of edge1 and start of edge2.

30.2905 trivariate/include/GoTools/trivariate/ConeVolume.h File Reference

```
#include "GoTools/trivariate/ElementaryVolume.h"
```

Include dependency graph for ConeVolume.h:



Classes

- class Go::ConeVolume

  *Class that represents a solid cone. It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius u, an angle v, and distance w: **p**(u, v, w) = **C** + u (R + w tan α)((cos v) **x** + (sin v) **y**) + w **z**, where **C** is the cone apex, R is the radius when w = 0, α is the cone angle, and **x**, **y** and **z** are the (local) axes. The parametrization is bounded by: $0 \leq u \leq 1, 0 \leq v \leq 2\pi, -\infty < w < \infty$. The dimension is 3.*

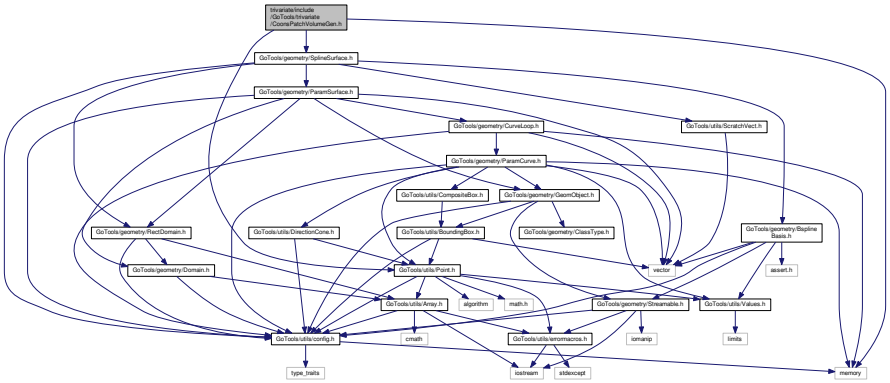
Namespaces

- Go

30.2906 trivariate/include/GoTools/trivariate/CoonsPatchVolumeGen.h File Reference

```
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/geometry/SplineSurface.h"
```

Include dependency graph for CoonsPatchVolumeGen.h:



Namespaces

- Go
- Go::CoonsPatchVolumeGen

  This namespace contains functions used to create a Coons Patch volume.

Functions

- void Go::CoonsPatchVolumeGen::get_corners (shared_ptr< Go::SplineSurface > surf, std::vector< Go::↩ Point > &pts)

  Used internally in the geometry construction.
- void Go::CoonsPatchVolumeGen::push_corners (std::vector< Go::Point > &pts_to, const std::vector< Go↩ ::Point > pts_from, int pos0, int pos1, int pos2, int pos3)

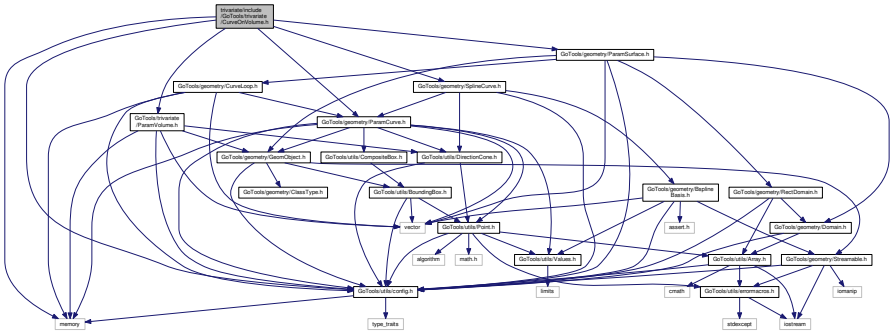
  Used internally in the geometry construction.
- bool Go::CoonsPatchVolumeGen::edge_curves_equal (shared_ptr< Go::SplineSurface > sf1, double par1, bool is_u_dir1, shared_ptr< Go::SplineSurface > sf2, double par2, bool is_u_dir2, double tol)

  Used internally in the geometry construction.
- SplineVolume * Go::CoonsPatchVolumeGen::createCoonsPatchDirectly (const Go::SplineSurface *surf_u↩ _min, const Go::SplineSurface *surf_u_max, const Go::SplineSurface *surf_v_min, const Go::SplineSurface *surf_v_max, const Go::SplineSurface *surf_w_min, const Go::SplineSurface *surf_w_max)
- SplineVolume * Go::CoonsPatchVolumeGen::createCoonsPatch (const Go::SplineSurface *surf_u_min, const Go::SplineSurface *surf_u_max, const Go::SplineSurface *surf_v_min, const Go::SplineSurface *surf_v_max, const Go::SplineSurface *surf_w_min, const Go::SplineSurface *surf_w_max, double tol=1.↩ 0e-05)

30.2907 trivariate/include/GoTools/trivariate/CurveOnVolume.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
#include <memory>
#include "GoTools/geometry/ParamCurve.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/trivariate/ParamVolume.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for CurveOnVolume.h:



Classes

- class Go::CurveOnVolume

  A curve living on a parametric volume. It either has got information about the curve in geometry space and in the parameter domain of the volume or the ability to compute the other representation given one.

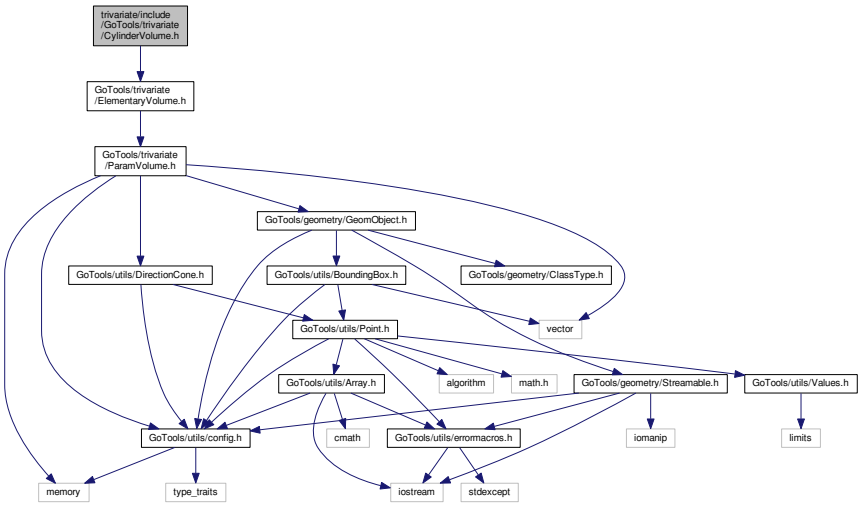
Namespaces

- Go

30.2908 trivariate/include/GoTools/trivariate/CylinderVolume.h File Reference

```
#include "GoTools/trivariate/ElementaryVolume.h"
```

Include dependency graph for CylinderVolume.h:



Classes

- class Go::CylinderVolume

  Class that represents a solid cylinder, maybe with empty interior like a straight tube. It is a subclass of Elementary↩ Volume, and has a natural parametrization in terms of a radius u, an angle v, and distance w: ***p****(u, v, w) =* ***C*** *+ u(cos(v)* ***x*** *+ sin(v)* ***y****) + w* ***z****, where* ***C*** *is a position vector, and* ***x****,* ***y*** *and* ***z*** *are the (local) axes. The parametrization is bounded by:* $R \leq u \leq S, 0 \leq v \leq 2\pi, -\infty < w < \infty$*, where* $Rand$ *S are the inner and outer radius. The dimension is 3.*

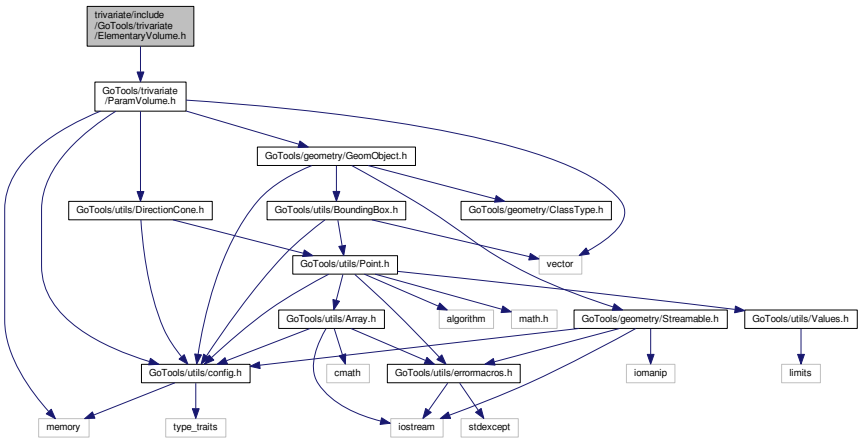
Namespaces

- Go

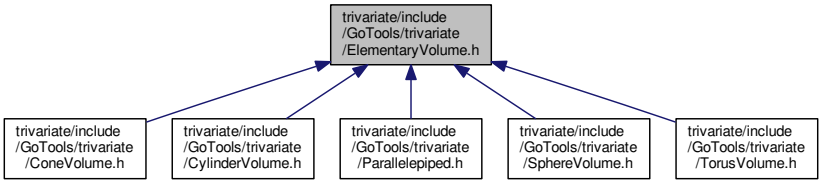
30.2909 trivariate/include/GoTools/trivariate/ElementaryVolume.h File Reference

```
#include "GoTools/trivariate/ParamVolume.h"
```

Include dependency graph for ElementaryVolume.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ElementaryVolume

  ElementaryVolume is a base class for elementary volumes like boxes and solid cylinders. Such volumes have natural parametrizations and ElementartVolume is therefore a subclass of ParamVolume. These volumes are non-self-intersecting.

Namespaces

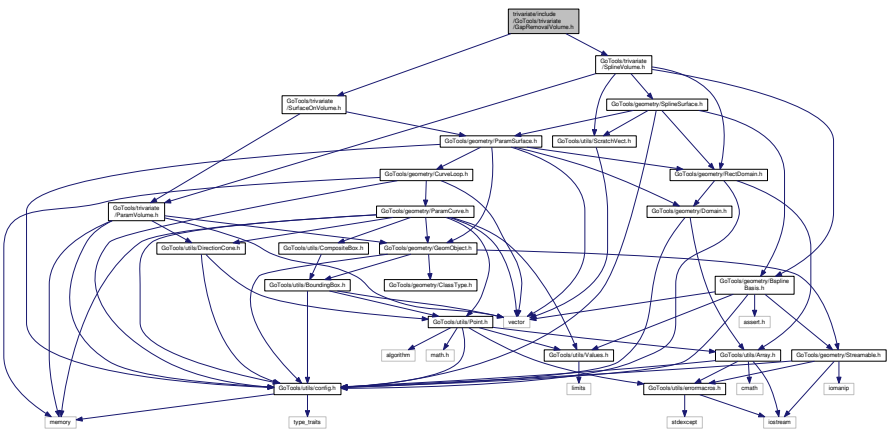
- Go

30.2910 trivariate/include/GoTools/trivariate/examples_trivariate_doxymain.h File Reference

30.2911 trivariate/include/GoTools/trivariate/GapRemovalVolume.h File Reference

```
#include "GoTools/trivariate/SplineVolume.h"
#include "GoTools/trivariate/SurfaceOnVolume.h"
```

Include dependency graph for GapRemovalVolume.h:



Namespaces

- Go
- Go::GapRemoval

  Functionality for removal of gaps between two adjacent surfaces of various types.

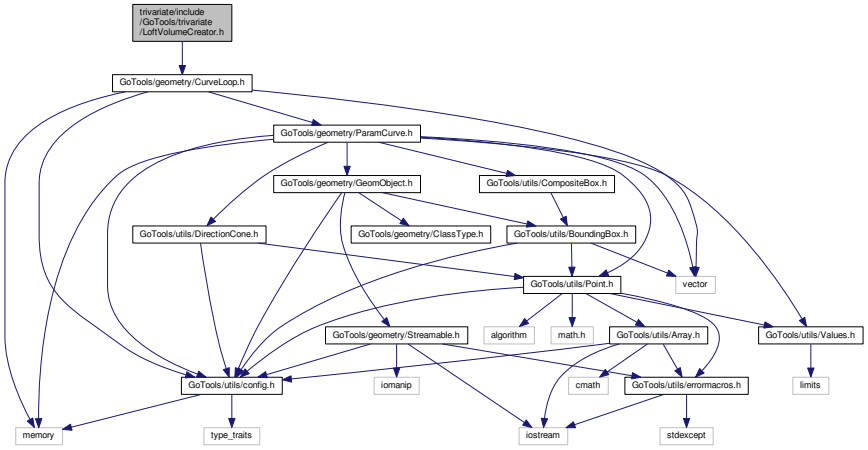
Functions

- void Go::GapRemoval::removeGapSpline (shared_ptr< SplineVolume > &vol1, shared_ptr< SurfaceOn↩ Volume > &bd_sf1, double sf1_start1, double sf1_end1, double sf1_start2, double sf1_end2, shared_ptr< SplineVolume > &vol2, shared_ptr< SurfaceOnVolume > &bd_sf2, double sf2_start1, double sf2_end1, double sf2_start2, double sf2_end2, Point vertex_ll, Point vertex_ur, double epsge, int orientation)

30.2912 trivariate/include/GoTools/trivariate/LoftVolumeCreator.h File Reference

```
#include "GoTools/geometry/CurveLoop.h"
```

Include dependency graph for LoftVolumeCreator.h:



Namespaces

- Go
- Go::LoftVolumeCreator

  This namespace contains functions used to create lofted volumes.

Functions

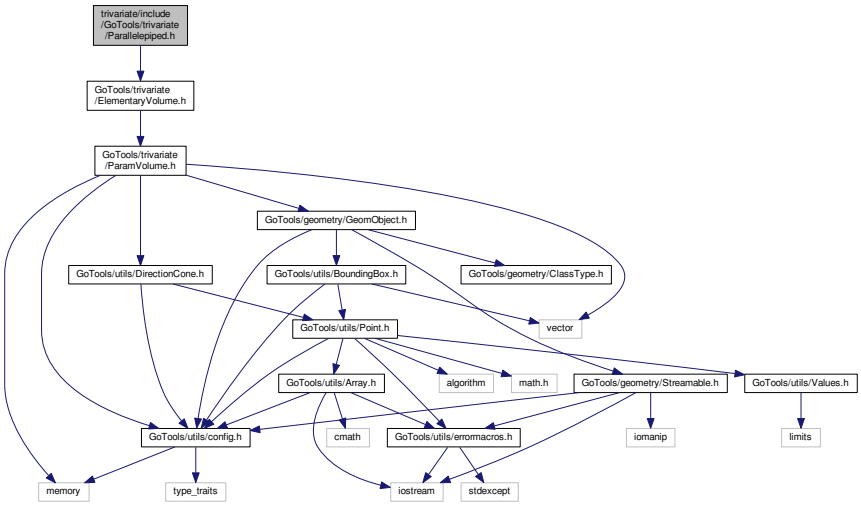
- SplineVolume * Go::LoftVolumeCreator::loftVolume (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, int nmb_srfs)
- SplineVolume * Go::LoftVolumeCreator::loftVolume (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, std::vector< double >::iterator first_param, int nmb_srfs)
- std::vector< shared_ptr< SplineSurface > > Go::LoftVolumeCreator::unifiedSurfacesCopy (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, int nmb_srfs)

- void Go::LoftVolumeCreator::makeLoftParams (std::vector< shared_ptr< SplineSurface > >::const_iterator first_surface, int nmb_crvs, double param_length, std::vector< double > &params)
- SplineVolume * Go::LoftVolumeCreator::loftVolumeFromUnifiedSurfaces (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, std::vector< double >::iterator first_param, int nmb_srfs)
- SplineVolume * Go::LoftVolumeCreator::loftNonrationalVolume (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, std::vector< double >::iterator first_param, int nmb_srfs)
- SplineVolume * Go::LoftVolumeCreator::loftRationalVolume (std::vector< shared_ptr< SplineSurface > >::iterator first_surface, std::vector< double >::iterator first_param, int nmb_srfs)

30.2913 trivariate/include/GoTools/trivariate/Parallelepiped.h File Reference

```
#include "GoTools/trivariate/ElementaryVolume.h"
```

Include dependency graph for Parallelepiped.h:



Classes

- class Go::Parallelepiped

  Class that represents a solid parallelepiped. It is a subclass of ElementaryVolume, and thus has a parametrization.

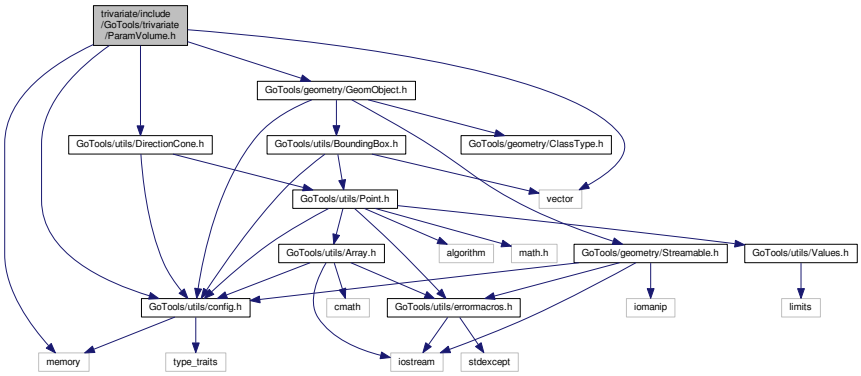
Namespaces

- Go

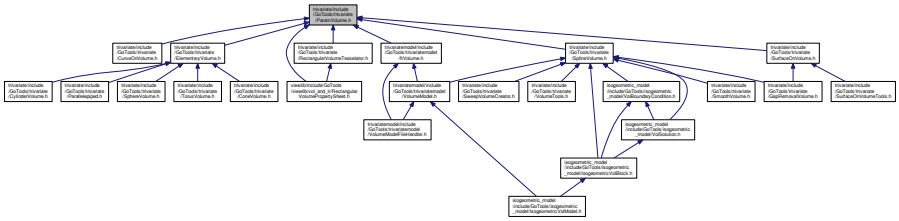
30.2914 trivariate/include/GoTools/trivariate/ParamVolume.h File Reference

```
#include "GoTools/utils/config.h"
#include "GoTools/utils/DirectionCone.h"
#include "GoTools/geometry/GeomObject.h"
#include <memory>
#include <vector>
```

Include dependency graph for ParamVolume.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::ParamVolume

Namespaces

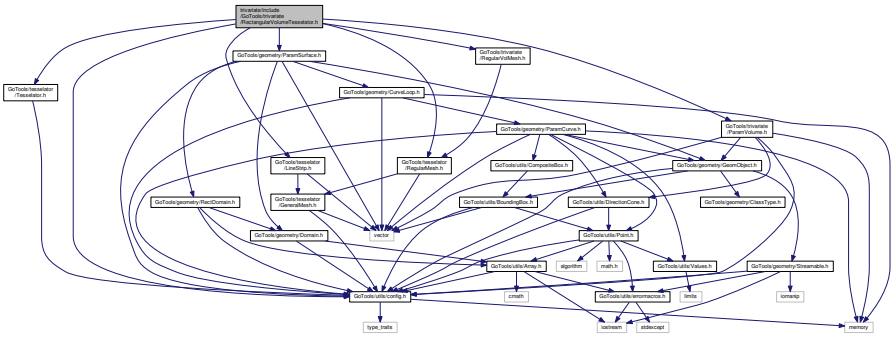
- Go

30.2915 trivariate/include/GoTools/trivariate/RectangularVolumeTesselator.h File Reference

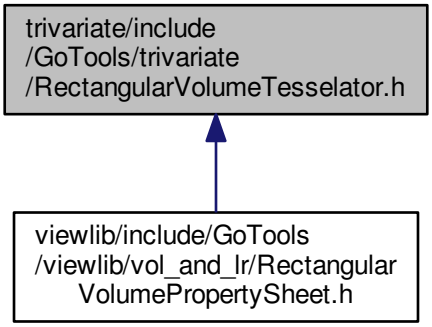
```
#include "GoTools/tesselator/Tesselator.h"
```

```
#include "GoTools/tesselator/RegularMesh.h"
#include "GoTools/tesselator/LineStrip.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/trivariate/ParamVolume.h"
#include "GoTools/trivariate/RegularVolMesh.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for RectangularVolumeTesselator.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::RectangularVolumeTesselator

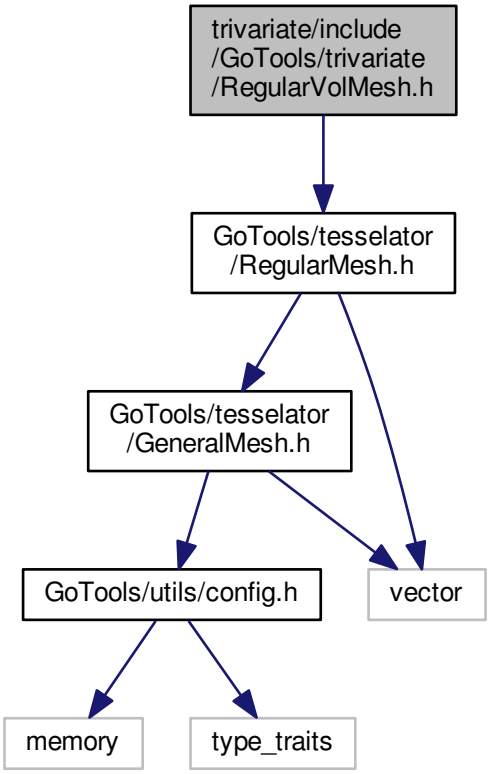
Namespaces

- Go

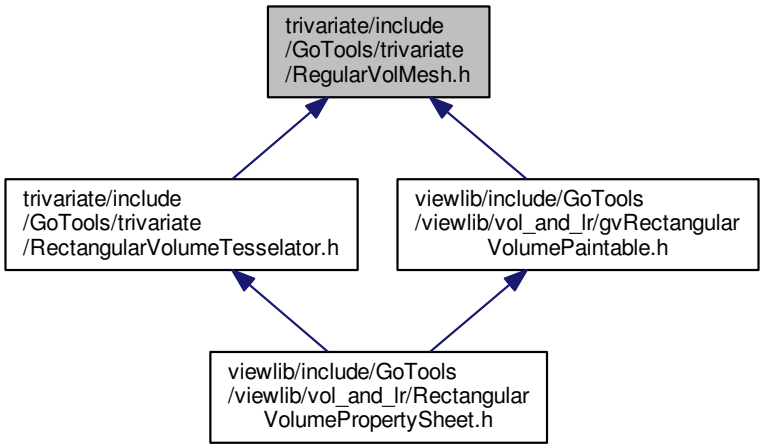
30.2916 trivariate/include/GoTools/trivariate/RegularVolMesh.h File Reference

```
#include "GoTools/tesselator/RegularMesh.h"
```

Include dependency graph for RegularVolMesh.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::RegularVolMesh

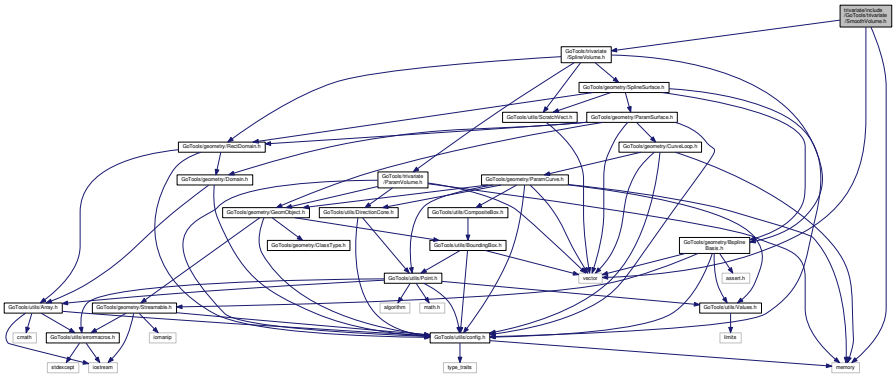
Namespaces

- Go

30.2917 trivariate/include/GoTools/trivariate/SmoothVolume.h File Reference

```
#include "GoTools/trivariate/SplineVolume.h"
#include <memory>
#include <vector>
```

Include dependency graph for SmoothVolume.h:



Classes

- class Go::SmoothVolume

  This class modifies a NURBS volume with respect to smoothness, editing constraints and boundary conditions. Specified coefficients are adjusted to minimize a functional combining the different modification conditions.

Namespaces

- Go

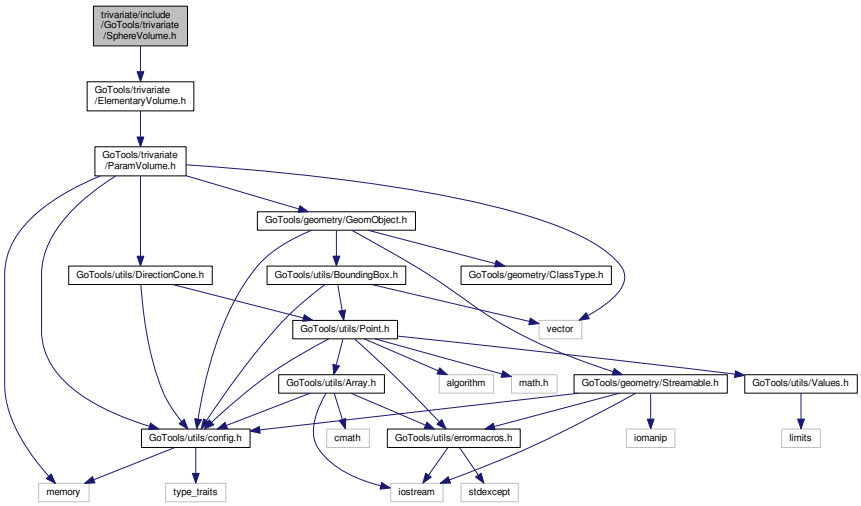
Enumerations

- enum Go::CoefStatus { Go::CoefFree, Go::CoefKnown, Go::CoefAvoid, Go::CoefOther }

30.2918 trivariate/include/GoTools/trivariate/SphereVolume.h File Reference

```
#include "GoTools/trivariate/ElementaryVolume.h"
```

Include dependency graph for SphereVolume.h:



Classes

- class Go::SphereVolume

  Class that represents a solid sphere. It is a subclass of ElementaryVolume, and thus has a parametrization.

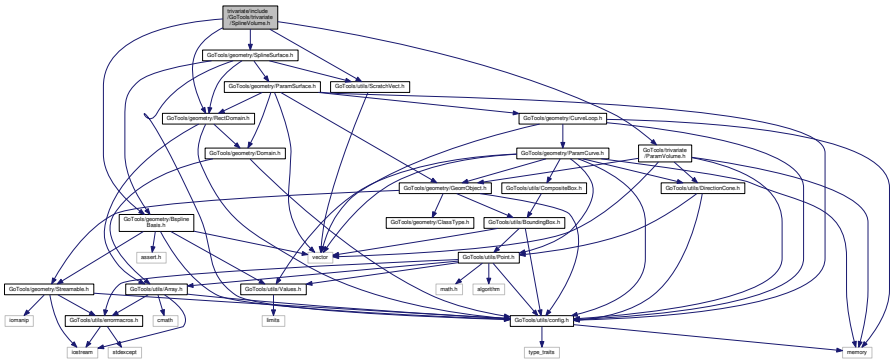
Namespaces

- Go

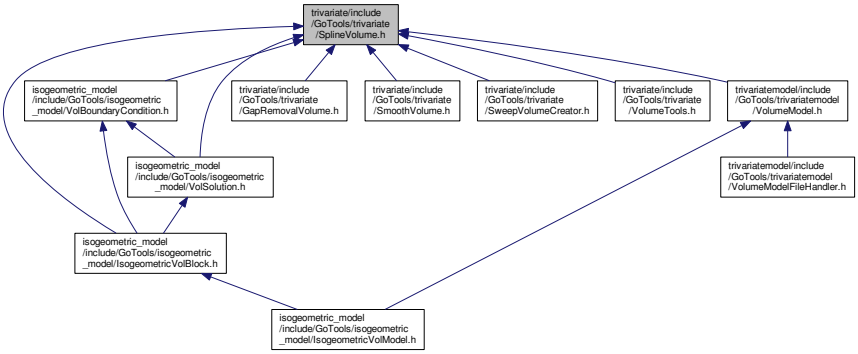
30.2919 trivariate/include/GoTools/trivariate/SplineVolume.h File Reference

```
#include "GoTools/trivariate/ParamVolume.h"
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/RectDomain.h"
#include "GoTools/utils/ScratchVect.h"
```

Include dependency graph for SplineVolume.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::BasisPts
- struct Go::BasisDerivs
- struct Go::BasisDerivs2
- class Go::SplineVolume

  SplineVolume provides methodes for storing, reading and manipulating rational and non-rational B-spline volumes.

Namespaces

- Go

Macros

- #define SPLINE_VOLUME_PERIOD_INFO_SIZE 3
- #define SPLINE_VOLUME_BD_SFS_SIZE 6

  Generated data.
- #define SPLINE_VOLUME_DEGEN_SIZE 6

30.2919.1 Macro Definition Documentation

30.2919.1.1 #define SPLINE_VOLUME_BD_SFS_SIZE 6

Generated data.

Definition at line 1029 of file SplineVolume.h.

30.2919.1.2 #define SPLINE_VOLUME_DEGEN_SIZE 6

Definition at line 1034 of file SplineVolume.h.

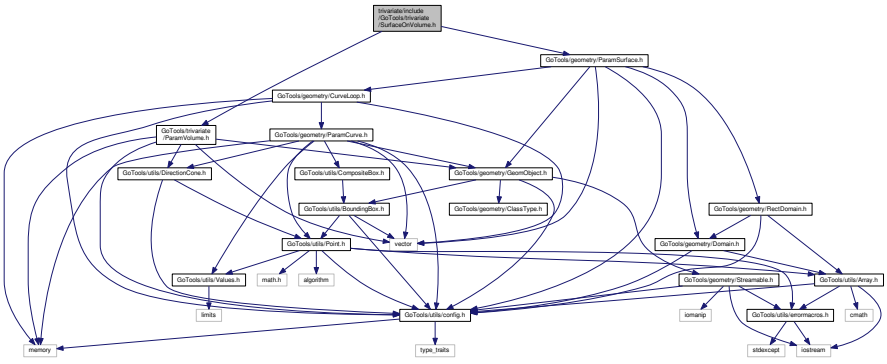
30.2919.1.3 #define SPLINE_VOLUME_PERIOD_INFO_SIZE 3

Definition at line 178 of file SplineVolume.h.

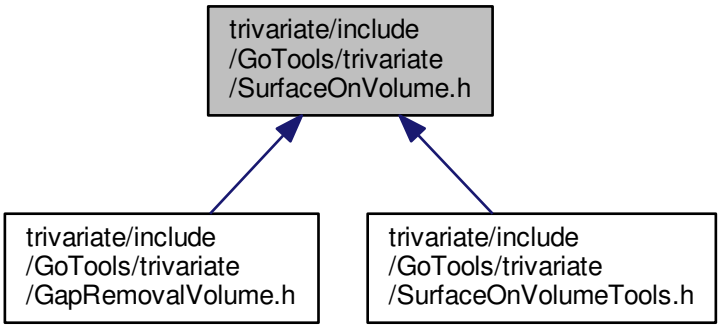
30.2920 trivariate/include/GoTools/trivariate/SurfaceOnVolume.h File Reference

```
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/trivariate/ParamVolume.h"
```

Include dependency graph for SurfaceOnVolume.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::SurfaceOnVolume

  A surface living on a parametric volume. It either has got information about the surface in geometry space and in the parameter domain of the volume or both. The surface may have information on whether it is a constant parameter or boundary surface on the volume.

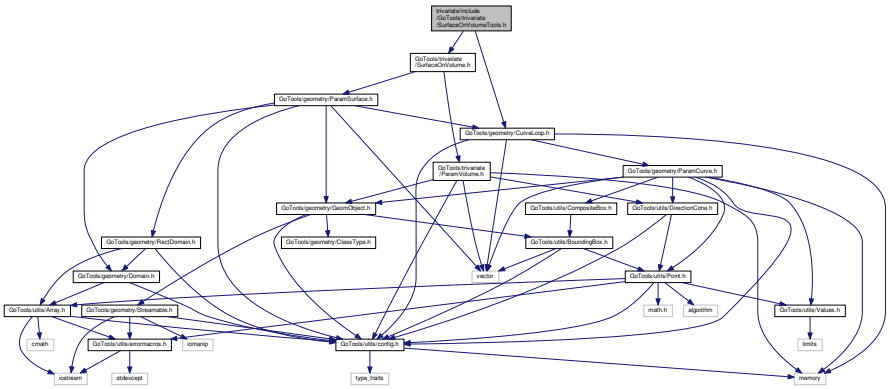
Namespaces

- Go

30.2921 trivariate/include/GoTools/trivariate/SurfaceOnVolumeTools.h File Reference

```
#include "GoTools/trivariate/SurfaceOnVolume.h"
#include "GoTools/geometry/CurveLoop.h"
```

Include dependency graph for SurfaceOnVolumeTools.h:



Namespaces

- Go
- Go::SurfaceOnVolumeTools

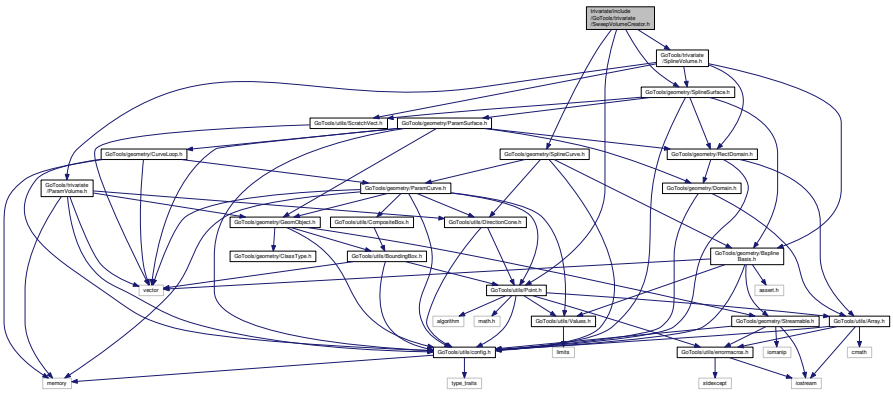
Functions

- CurveLoop Go::SurfaceOnVolumeTools::getOuterBoundaryLoop (shared_ptr< SurfaceOnVolume > sf, double eps)

30.2922 trivariate/include/GoTools/trivariate/SweepVolumeCreator.h File Reference

```
#include "GoTools/trivariate/SplineVolume.h"
#include "GoTools/geometry/SplineSurface.h"
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for SweepVolumeCreator.h:



Classes

- class Go::SweepVolumeCreator

  Class with static methods for volume creation by sweep methods.

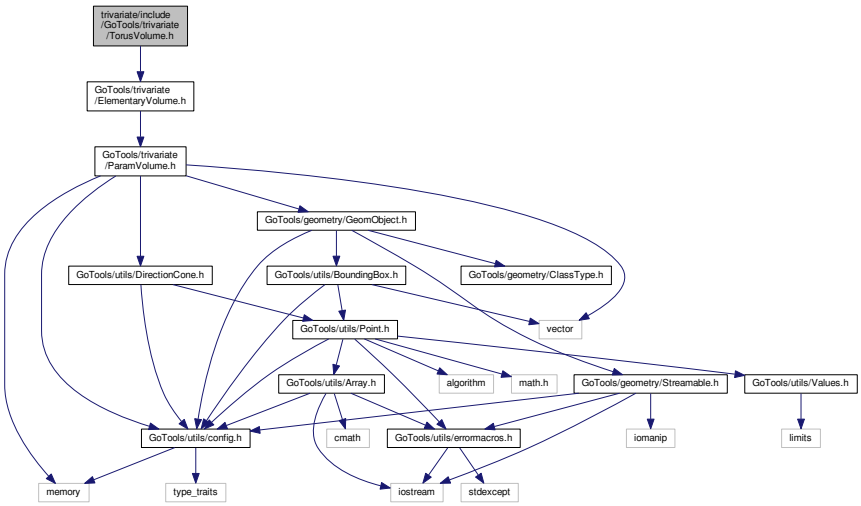
Namespaces

- Go

30.2923 trivariate/include/GoTools/trivariate/TorusVolume.h File Reference

```
#include "GoTools/trivariate/ElementaryVolume.h"
```

Include dependency graph for TorusVolume.h:



Classes

- class Go::TorusVolume

  Class that represents a solid torus, maybe with empty interior like a circular pipe, and/or a section (not full revolution along the main axis). It is a subclass of ElementaryVolume, and has a natural parametrization in terms of a radius u and two angles v and w: ***p****(u, v, w) =* ***C*** *+ (R + u cos w)((cos v)* ***x*** *+ (sin v)* ***y****) + (u sin w)* ***z****, where* ***C*** *is a position vector, R is the major radius, and* ***x****,* ***y*** *and* ***z*** *are the (local) axes. The parametrization for a full solid torus is bounded by:* $0 \leq u \leq r, 0 \leq v, w \leq 2\pi$*, where r is the minor axis. A bended pipe will have a positive minimal limit for u, while a torus segment will have other limits for v. The dimension is 3.*

Namespaces

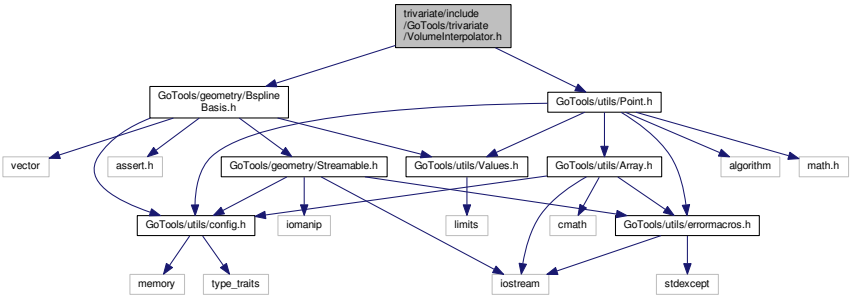
- Go

30.2924 trivariate/include/GoTools/trivariate/trivariate_doxymain.h File Reference

30.2925 trivariate/include/GoTools/trivariate/VolumeInterpolator.h File Reference

```
#include "GoTools/geometry/BsplineBasis.h"
#include "GoTools/utils/Point.h"
```

Include dependency graph for VolumeInterpolator.h:



Namespaces

- Go
- Go::VolumeInterpolator

  This namespace contains functions used to interpolate a set of points.

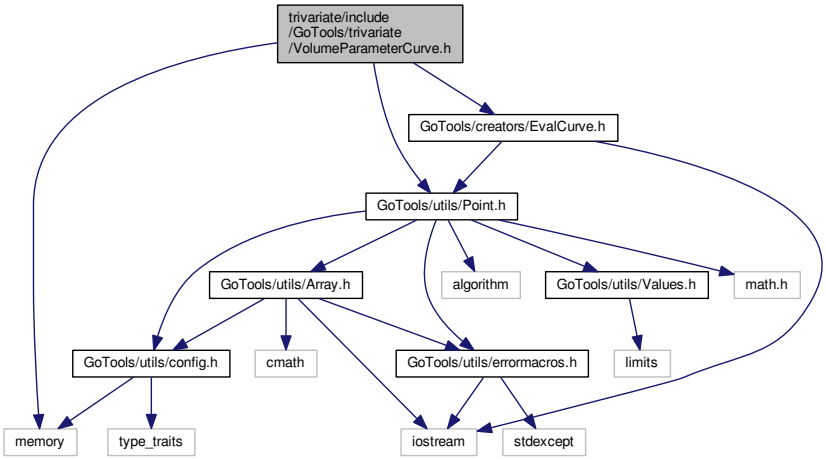
Functions

- SplineVolume * Go::VolumeInterpolator::regularInterpolation (const BsplineBasis &basis_u, const Bspline↩ Basis &basis_v, const BsplineBasis &basis_w, std::vector< double > &par_u, std::vector< double > &par_v, std::vector< double > &par_w, std::vector< double > &points, int dimension, bool rational, std::vector< double > &weights)

30.2926 trivariate/include/GoTools/trivariate/VolumeParameterCurve.h File Reference

```
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/creators/EvalCurve.h"
```

Include dependency graph for VolumeParameterCurve.h:



Classes

- class Go::VolumeParameterCurve

  An evaluator based curve representing the parameter domain curve in a given volume which represents the same curve as a given space curve. Project a geometry curve into the parameter domain of a volume.

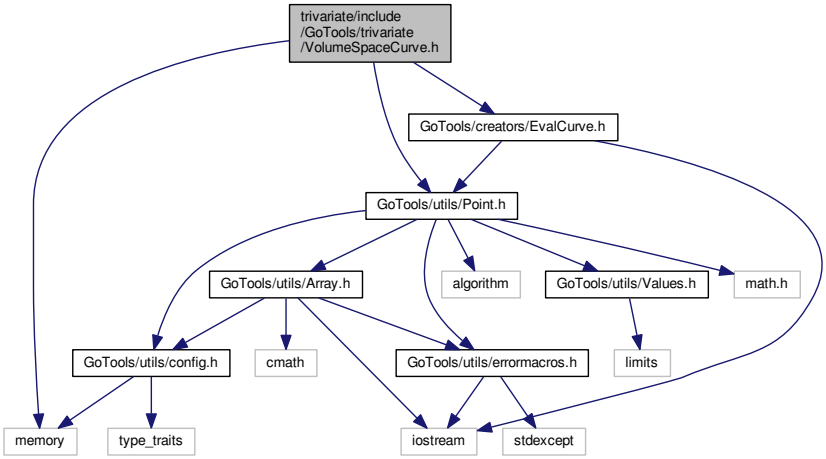
Namespaces

- Go

30.2927 trivariate/include/GoTools/trivariate/VolumeSpaceCurve.h File Reference

```
#include <memory>
#include "GoTools/utils/Point.h"
#include "GoTools/creators/EvalCurve.h"
```

Include dependency graph for VolumeSpaceCurve.h:



Classes

- class Go::VolumeSpaceCurve

  An evaluator based curve representing the space curve corresponding to parameter domain curve in a given volume. Compute the space curve corresponding to a curve in the parameter domain of a volume.

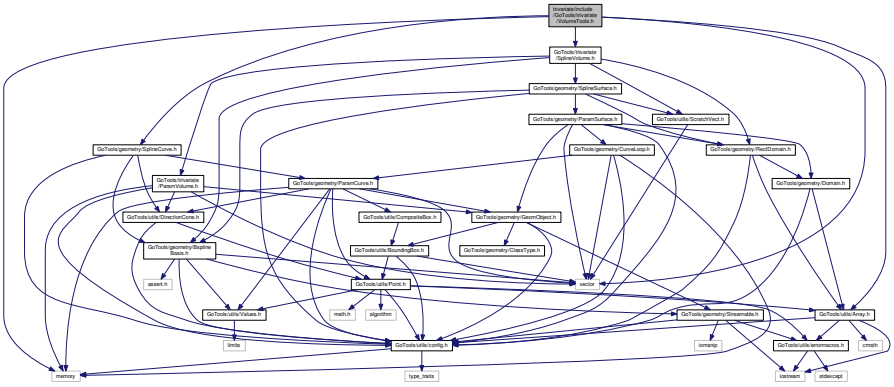
Namespaces

- Go

30.2928 trivariate/include/GoTools/trivariate/VolumeTools.h File Reference

```
#include "GoTools/geometry/SplineCurve.h"
#include "GoTools/trivariate/SplineVolume.h"
#include "GoTools/utils/Array.h"
#include <memory>
#include <vector>
```

Include dependency graph for VolumeTools.h:



Namespaces

- Go
- Go::VolumeTools

  This namespace contains free functions operating on parametric volumes.

Functions

- int GO_API Go::VolumeTools::analyzePeriodicity (const SplineVolume &sf, int direction, double knot_tol=1e-12)
- shared_ptr< SplineCurve > Go::VolumeTools::representVolumeAsCurve (const SplineVolume &volume, int cv_dir)
- shared_ptr< SplineVolume > Go::VolumeTools::representCurveAsVolume (const SplineCurve &curve, int cv_dir, const BsplineBasis &other_bas1, const BsplineBasis &other_bas2, bool rational)
- shared_ptr< SplineSurface > Go::VolumeTools::representVolumeAsSurface (const SplineVolume &volume, int sf_dir1, int sf_dir2)
- shared_ptr< SplineVolume > Go::VolumeTools::representSurfaceAsVolume (const SplineSurface &surface, int sf_dir1, int sf_dir2, const BsplineBasis &other_bas, bool rational)
- bool Go::VolumeTools::cornerToCornerVols (shared_ptr< ParamVolume > vol1, shared_ptr< SurfaceOn↩ Volume > vol_sf1, shared_ptr< ParamVolume > vol2, shared_ptr< SurfaceOnVolume > vol_sf2, double tol)
- bool Go::VolumeTools::getVolAdjacencyInfo (shared_ptr< ParamVolume > vol1, shared_ptr< SurfaceOn↩ Volume > vol_sf1, shared_ptr< ParamVolume > vol2, shared_ptr< SurfaceOnVolume > vol_sf2, double tol, int &bd1, int &bd2, int &orientation, bool &same_seq)
- bool Go::VolumeTools::getCorrCoefVolEnum (shared_ptr< SplineVolume > vol1, shared_ptr< SplineVolume > vol2, int bd1, int bd2, int orientation, bool same_seq, std::vector< std::pair< int, int > > &enumeration)
- bool Go::VolumeTools::getVolCoefEnumeration (shared_ptr< SplineVolume > vol, int bd, std::vector< int > &enumeration)
- bool Go::VolumeTools::getVolCoefEnumeration (shared_ptr< SplineVolume > vol, int bd, std::vector< int > &enumeration_bd, std::vector< int > &enumeration_bd2)

- bool Go::VolumeTools::getVolBdCoefEnumeration (shared_ptr< SplineVolume > vol, int bd, int bd_cv, std::vector< int > &enumeration)
- std::vector< shared_ptr< ParamSurface > > Go::VolumeTools::getBoundarySurfaces (shared_ptr< ParamVolume > vol)

  Given a parametric volume, fetch all boundary surfaces.
- std::vector< shared_ptr< ParamSurface > > Go::VolumeTools::getOrientedBoundarySurfaces (shared_ptr< ParamVolume > vol)
- shared_ptr< SurfaceOnVolume > Go::VolumeTools::getBoundarySurface (shared_ptr< SplineVolume > vol, int idx)

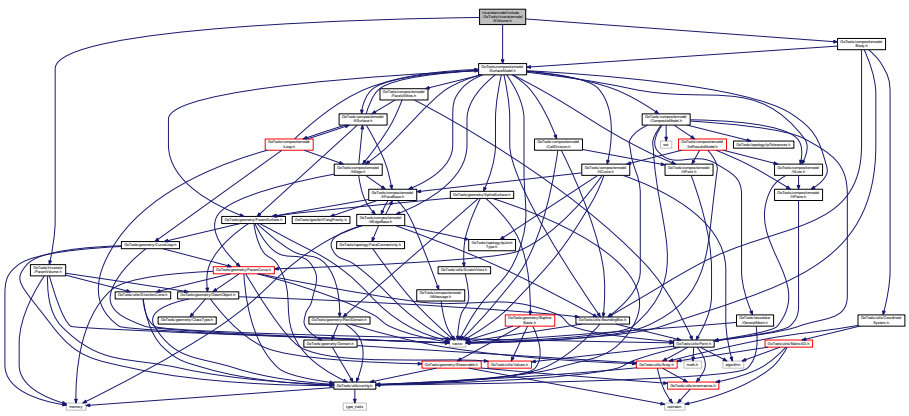
  Given a spline volume, fetch all boundary surfaces.
- shared_ptr< SurfaceOnVolume > Go::VolumeTools::getOrientedBoundarySurface (shared_ptr< SplineVolume > vol, int idx)
- void Go::VolumeTools::volCommonSplineSpace (shared_ptr< SplineVolume > vol1, int bd1, shared_ptr< SplineVolume > vol2, int bd2, int orientation, bool same_seq)
- shared_ptr< SplineCurve > Go::VolumeTools::liftVolParamCurve (shared_ptr< ParamCurve > pcurve, shared_ptr< ParamVolume > vol, double tol)
- shared_ptr< SplineCurve > Go::VolumeTools::projectVolParamCurve (shared_ptr< ParamCurve > spacecurve, shared_ptr< ParamVolume > vol, double tol)
- shared_ptr< SplineCurve > Go::VolumeTools::approxVolParamCurve (shared_ptr< ParamCurve > spacecurve, shared_ptr< ParamVolume > vol, double tol, int max_iter, double &maxdist)

30.2929 trivariatemodel/include/GoTools/trivariatemodel/examples_trivariatemodel_doxymain.h File Reference

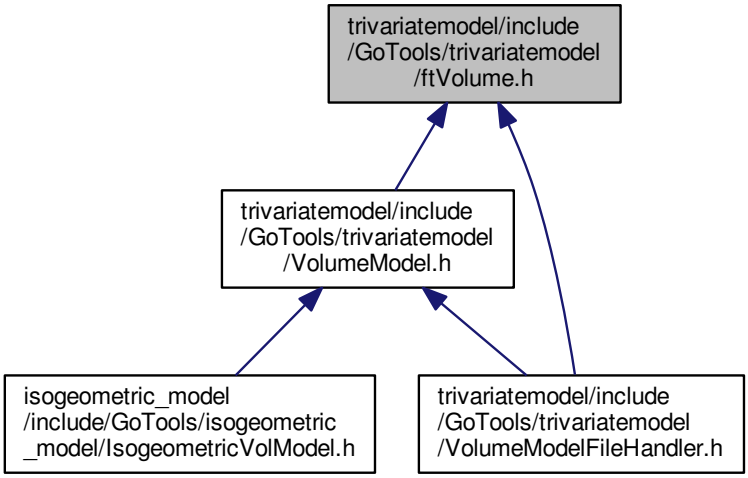
30.2930 trivariatemodel/include/GoTools/trivariatemodel/ftVolume.h File Reference

```
#include "GoTools/trivariate/ParamVolume.h"
#include "GoTools/compositemodel/SurfaceModel.h"
#include "GoTools/compositemodel/Body.h"
```

Include dependency graph for ftVolume.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct Go::VolumeAdjacencyInfo

  Struct to store information about adjacency relations between two bodies.

- class Go::ftVolume

  A topological solid with a trivariate geometry description.

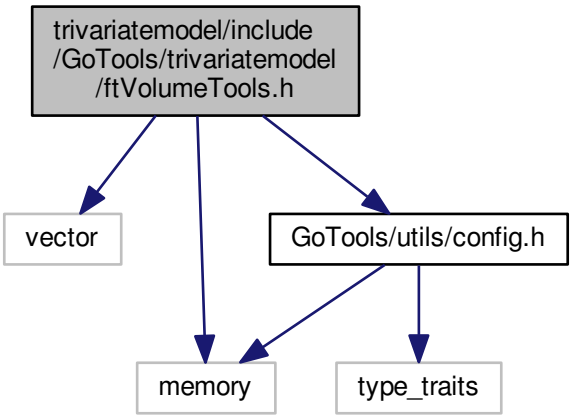
Namespaces

- Go

30.2931 trivariatemodel/include/GoTools/trivariatemodel/ftVolumeTools.h File Reference

```
#include <vector>
#include <memory>
#include "GoTools/utils/config.h"
```

Include dependency graph for ftVolumeTools.h:



Namespaces

- Go
- Go::ftVolumeTools

  This namespace contains service functions related to ftVolume.

Functions

- std::vector< shared_ptr< ftVolume > > Go::ftVolumeTools::splitVolumes (shared_ptr< ftVolume > &vol1, shared_ptr< ftVolume > &vol2, double eps, std::vector< int > &config)
- std::vector< shared_ptr< ftVolume > > Go::ftVolumeTools::splitVolumes (shared_ptr< ftVolume > &vol, shared_ptr< ftSurface > &face, double eps)

  Split one volume according to intersections with a given face.
- void Go::ftVolumeTools::updateWithSplitFaces (shared_ptr< SurfaceModel > shell, shared_ptr< ftSurface > &face1, shared_ptr< ftSurface > &face2, std::vector< std::pair< ftEdge *, ftEdge * > > &replaced_wires)

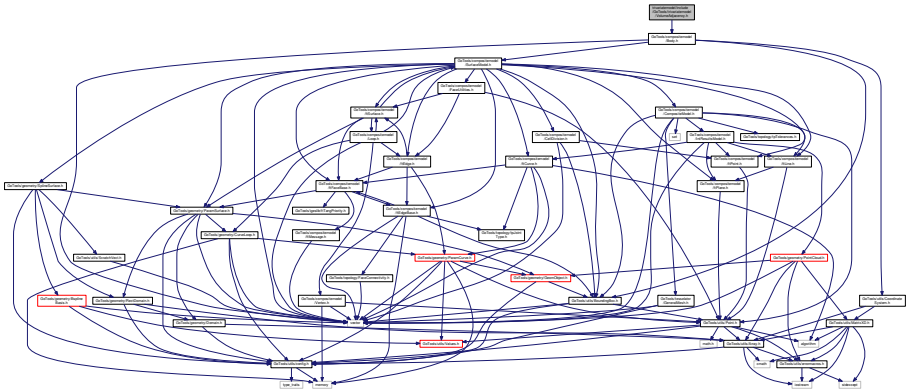
  Specific functionality. Used from ftVolume::generateMissingBdSurf.
- int Go::ftVolumeTools::boundaryStatus (ftVolume *vol, shared_ptr< ftSurface > &bd_face, double tol)

30.2932 trivariatemodel/include/GoTools/trivariatemodel/trivariatemodel_doxymain.h File Reference

30.2933 trivariatemodel/include/GoTools/trivariatemodel/VolumeAdjacency.h File Reference

```
#include "GoTools/compositemodel/Body.h"
```

Include dependency graph for VolumeAdjacency.h:



Classes

- class Go::VolumeAdjacency

  Adjacency analysis of volume models.

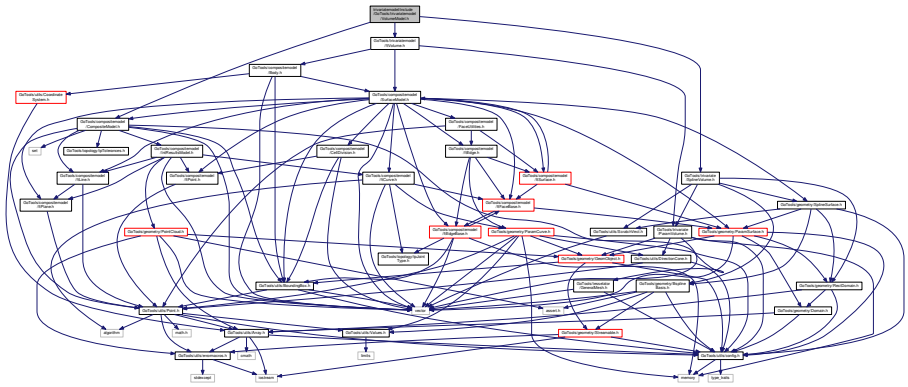
Namespaces

- Go

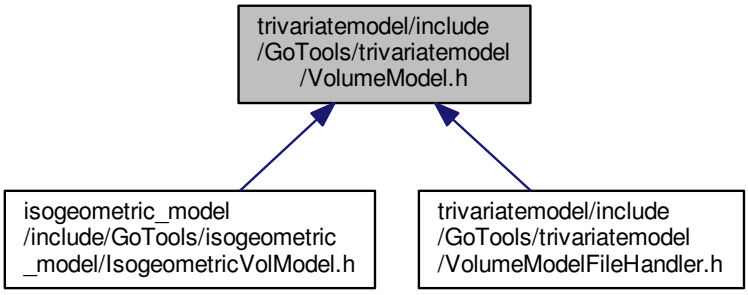
30.2934 trivariatemodel/include/GoTools/trivariatemodel/VolumeModel.h File Reference

```
#include "GoTools/compositemodel/CompositeModel.h"
#include "GoTools/trivariatemodel/ftVolume.h"
#include "GoTools/trivariate/SplineVolume.h"
```

Include dependency graph for VolumeModel.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Go::VolumeModel

  A set of volumes including topology information.

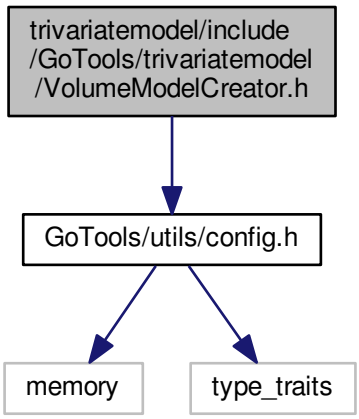
Namespaces

- Go

30.2935 trivariatemodel/include/GoTools/trivariatemodel/VolumeModelCreator.h File Reference

```
#include "GoTools/utils/config.h"
```

Include dependency graph for VolumeModelCreator.h:



Namespaces

- Go
- Go::VolumeModelCreator

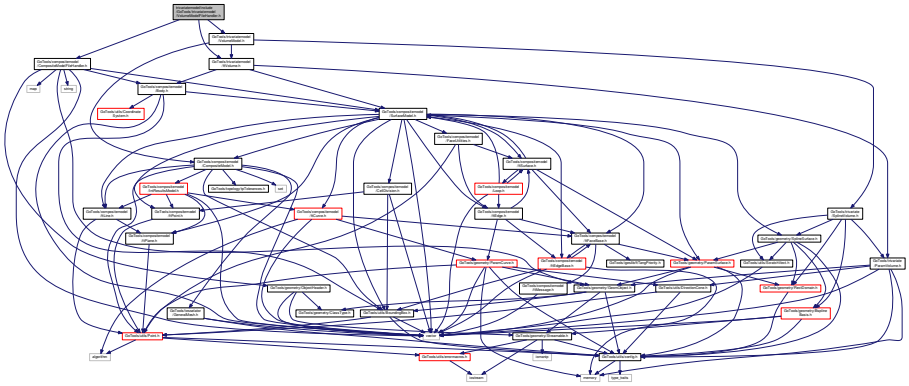
Functions

- bool Go::VolumeModelCreator::createRotationalModel (shared_ptr< SurfaceModel > &sfmodel, shared_ptr< VolumeModel > &volmodel)
- bool Go::VolumeModelCreator::linearSweptModel (shared_ptr< SurfaceModel > &sfmodel, shared_ptr< VolumeModel > &volmodel)

30.2936 trivariatemodel/include/GoTools/trivariatemodel/VolumeModelFileHandler.h File Reference

```
#include "GoTools/compositemodel/CompositeModelFileHandler.h"
#include "GoTools/trivariatemodel/ftVolume.h"
#include "GoTools/trivariatemodel/VolumeModel.h"
```

Include dependency graph for VolumeModelFileHandler.h:



Classes

- class Go::VolumeModelFileHandler

Namespaces

- Go

Macros

- #define _VOLUMEFILEHANDLER_H

30.2936.1 Macro Definition Documentation

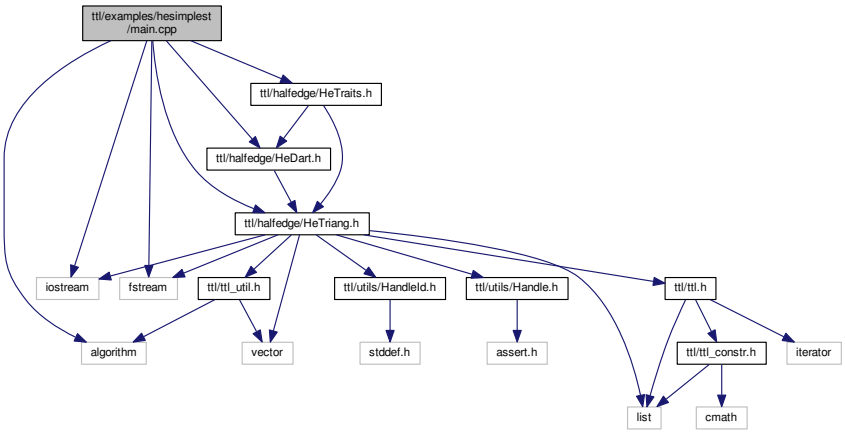
30.2936.1.1 #define _VOLUMEFILEHANDLER_H

Definition at line 41 of file VolumeModelFileHandler.h.

30.2937 ttl/examples/hesimplest/main.cpp File Reference

```
#include <ttl/halfedge/HeTriang.h>
#include <ttl/halfedge/HeDart.h>
#include <ttl/halfedge/HeTraits.h>
#include <fstream>
#include <iostream>
#include <algorithm>
```

Include dependency graph for main.cpp:



Functions

- bool eqPoints (hed::Node ∗&p1, hed::Node ∗&p2)
- bool ltLexPoint (const hed::Node ∗p1, const hed::Node ∗p2)
- int main ()

30.2937.1 Function Documentation

30.2937.1.1 bool eqPoints (hed::Node ∗& *p1*, hed::Node ∗& *p2*) [inline]

Definition at line 53 of file main.cpp.

30.2937.1.2 bool ltLexPoint (const hed::Node ∗ *p1*, const hed::Node ∗ *p2*) [inline]

Definition at line 67 of file main.cpp.

30.2937.1.3 int main ( )

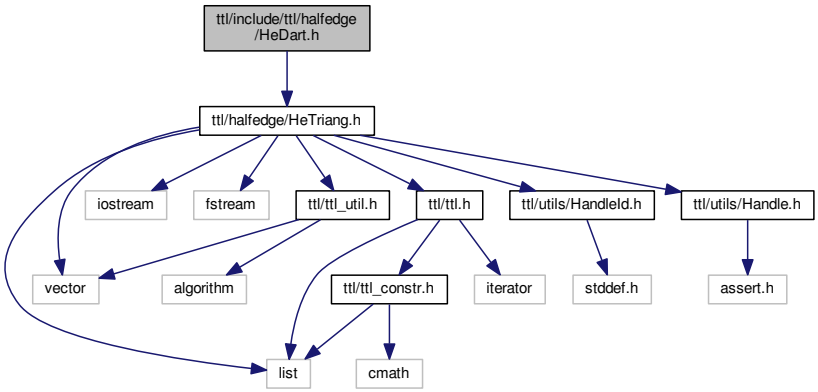
Definition at line 78 of file main.cpp.

30.2938 ttl/include/ttl/api.h File Reference

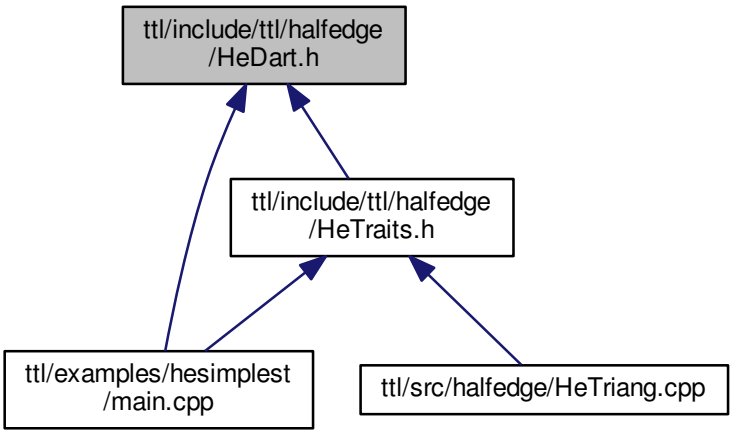
30.2939 ttl/include/ttl/halfedge/HeDart.h File Reference

```
#include <ttl/halfedge/HeTriang.h>
```

Include dependency graph for HeDart.h:



This graph shows which files directly or indirectly include this file:



Classes

- class hed::Dart

  Dart *class for the half-edge data structure.*

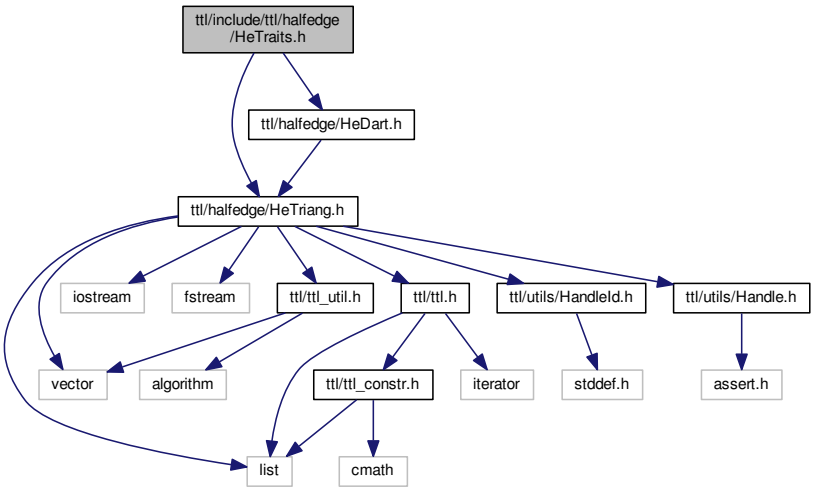
Namespaces

- hed

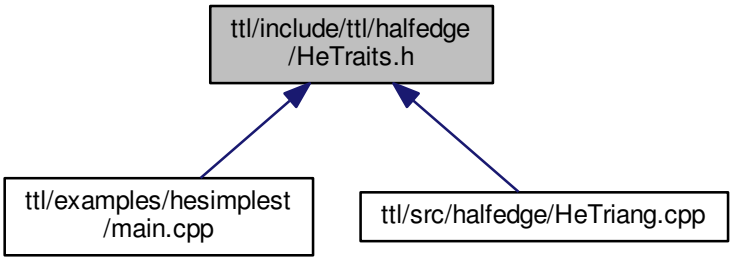
30.2940 ttl/include/ttl/halfedge/HeTraits.h File Reference

```
#include <ttl/halfedge/HeTriang.h>
#include <ttl/halfedge/HeDart.h>
```

Include dependency graph for HeTraits.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct hed::TTLtraits

  Traits *class (static struct) for the half-edge data structure.*

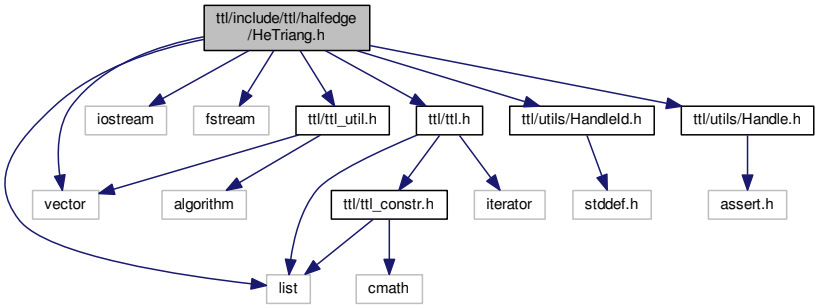
Namespaces

- hed

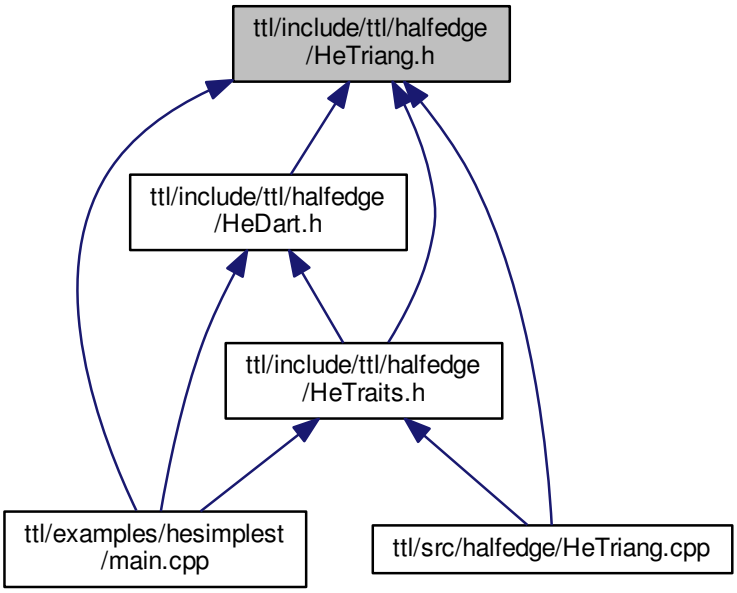
30.2941 ttl/include/ttl/halfedge/HeTriang.h File Reference

```
#include <list>
#include <vector>
#include <iostream>
#include <fstream>
#include <ttl/ttl.h>
#include <ttl/ttl_util.h>
#include <ttl/utils/HandleId.h>
#include <ttl/utils/Handle.h>
```

Include dependency graph for HeTriang.h:



This graph shows which files directly or indirectly include this file:



Classes

- class hed::Node

  Node *class for data structures (Inherits from HandleId)*
- class hed::Edge

  Edge *class in the in the half-edge data structure.*
- class hed::Triangulation

  Triangulation *class for the half-edge data structure with adaption to TTL.*

Namespaces

- hed

Macros

- #define TTL_USE_NODE_ID
- #define TTL_USE_NODE_FLAG

30.2941.1 Macro Definition Documentation

30.2941.1.1 #define TTL_USE_NODE_FLAG

Definition at line 45 of file HeTriang.h.

30.2941.1.2 #define TTL_USE_NODE_ID

Definition at line 44 of file HeTriang.h.

30.2942 ttl/include/ttl/halfedge/main_he_ref.h File Reference

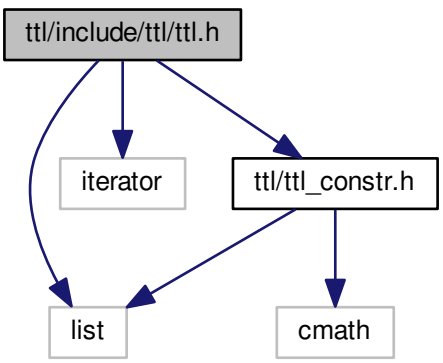
30.2943 ttl/include/ttl/halfedge/mainpage_hed.h File Reference

30.2944 ttl/include/ttl/mainpage_ttl.h File Reference

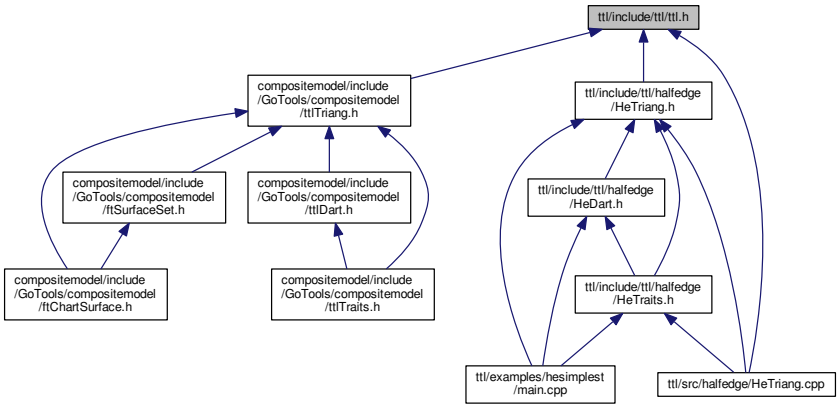
30.2945 ttl/include/ttl/ttl.h File Reference

```
#include <list>
#include <iterator>
#include <ttl/ttl_constr.h>
```

Include dependency graph for ttl.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- ttl

  Main interface to TTL.

Functions

Delaunay Triangulation

- template<class TraitsType , class DartType , class PointType >
  bool ttl::insertNode (DartType &dart, PointType &point)
- template<class TraitsType , class DartType >
  void ttl::removeRectangularBoundary (DartType &dart)
- template<class TraitsType , class DartType >
  void ttl::removeNode (DartType &dart)
- template<class TraitsType , class DartType >
  void ttl::removeBoundaryNode (DartType &dart)
- template<class TraitsType , class DartType >
  void ttl::removeInteriorNode (DartType &dart)
- template<class TraitsType , class ForwardIterator , class DartType >
  void ttl::insertNodes (ForwardIterator first, ForwardIterator last, DartType &dart)

Topological and Geometric Queries

- template<class TraitsType , class PointType , class DartType >
  bool ttl::locateFaceSimplest (const PointType &point, DartType &dart)
- template<class TraitsType , class PointType , class DartType >
  bool ttl::locateTriangle (const PointType &point, DartType &dart)
- template<class TraitsType , class PointType , class DartType >
  bool ttl::inTriangleSimplest (const PointType &point, const DartType &dart)
- template<class TraitsType , class PointType , class DartType >
  bool ttl::inTriangle (const PointType &point, const DartType &dart)
- template<class DartType , class DartListType >
  void ttl::getBoundary (const DartType &dart, DartListType &boundary)
- template<class DartType >
  bool ttl::isBoundaryEdge (const DartType &dart)

- template<class DartType >
  bool ttl::isBoundaryFace (const DartType &dart)
- template<class DartType >
  bool ttl::isBoundaryNode (const DartType &dart)
- template<class DartType >
  int ttl::getDegreeOfNode (const DartType &dart)
- template<class DartType , class DartListType >
  void ttl::get_0_orbit_interior (const DartType &dart, DartListType &orbit)
- template<class DartType , class DartListType >
  void ttl::get_0_orbit_boundary (const DartType &dart, DartListType &orbit)
- template<class DartType >
  bool ttl::same_0_orbit (const DartType &d1, const DartType &d2)
- template<class DartType >
  bool ttl::same_1_orbit (const DartType &d1, const DartType &d2)
- template<class DartType >
  bool ttl::same_2_orbit (const DartType &d1, const DartType &d2)
- template<class TraitsType , class DartType >
  bool ttl::swappableEdge (const DartType &dart, bool allowDegeneracy=false)
- template<class DartType >
  void ttl::positionAtNextBoundaryEdge (DartType &dart)
- template<class TraitsType , class DartType >
  bool ttl::convexBoundary (const DartType &dart)
- template<class TopologyElementType , class DartType >
  bool ttl::isMemberOfFace (const TopologyElementType &topologyElement, const DartType &dart)
- template<class TraitsType , class NodeType , class DartType >
  bool ttl::locateFaceWithNode (const NodeType &node, DartType &dart_iter)
- template<class DartType >
  void ttl::getAdjacentTriangles (const DartType &dart, DartType &t1, DartType &t2, DartType &t3)
- template<class DartType >
  void ttl::getNeighborNodes (const DartType &dart, std::list< DartType > &node_list, bool &boundary)
- template<class TraitsType , class DartType >
  bool ttl::degenerateTriangle (const DartType &dart)

Utilities for Delaunay Triangulation

- template<class TraitsType , class DartType , class DartListType >
  void ttl::optimizeDelaunay (DartListType &elist)
- template<class TraitsType , class DartType , class DartListType >
  void ttl::optimizeDelaunay (DartListType &elist, const typename DartListType::iterator end)
- template<class TraitsType , class DartType >
  bool ttl::swapTestDelaunay (const DartType &dart, bool cycling_check=false)
- template<class TraitsType , class DartType >
  void ttl::recSwapDelaunay (DartType &diagonal)
- template<class TraitsType , class DartType , class ListType >
  void ttl::swapEdgesAwayFromInteriorNode (DartType &dart, ListType &swapped_edges)
- template<class TraitsType , class DartType , class ListType >
  void ttl::swapEdgesAwayFromBoundaryNode (DartType &dart, ListType &swapped_edges)
- template<class TraitsType , class DartType , class DartListType >
  void ttl::swapEdgeInList (const typename DartListType::iterator &it, DartListType &elist)

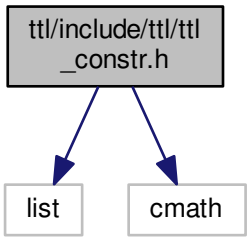
Constrained (Delaunay) Triangulation

- template<class TraitsType , class DartType >
  DartType ttl::insertConstraint (DartType &dstart, DartType &dend, bool optimize_delaunay)

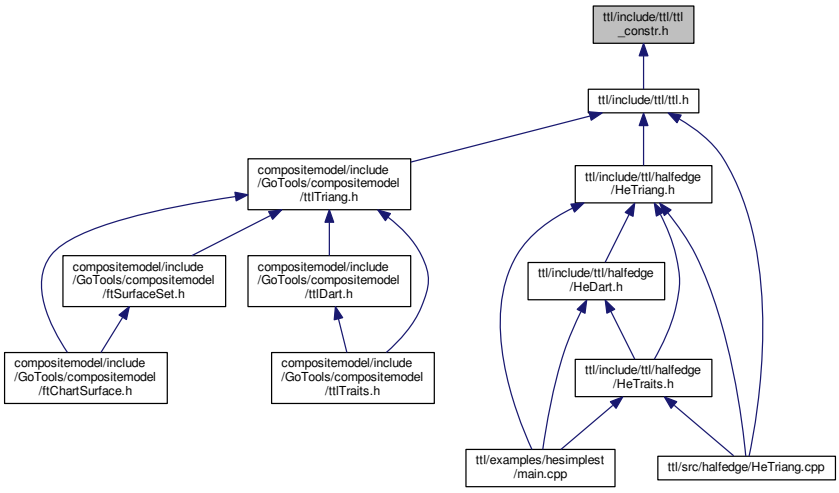
30.2946 ttl/include/ttl/ttl_constr.h File Reference

```
#include <list>
#include <cmath>
```

Include dependency graph for ttl_constr.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- ttl_constr

  Constrained Delaunay triangulation.

- ttl

  Main interface to TTL.

Functions

- template<class DartType >
  bool ttl_constr::isTheConstraint (const DartType &dart, const DartType &dstart, const DartType &dend)
- template<class TraitsType , class DartType >
  bool ttl_constr::crossesConstraint (DartType &dstart, DartType &dend, DartType &d1, DartType &d2)
- template<class TraitsType , class DartType >
  DartType ttl_constr::getAtSmallestAngle (const DartType &dstart, const DartType &dend)
- template<class TraitsType , class DartType , class ListType >
  DartType ttl_constr::findCrossingEdges (const DartType &dstart, const DartType &dend, ListType &elist)
- template<class TraitsType , class DartType >
  void ttl_constr::transformToConstraint (DartType &dstart, DartType &dend, std::list< DartType > &elist)

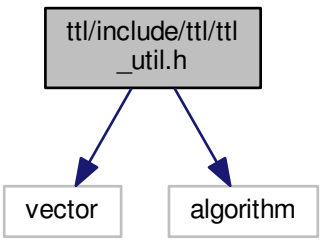
Constrained (Delaunay) Triangulation

- template<class TraitsType , class DartType >
  DartType ttl::insertConstraint (DartType &dstart, DartType &dend, bool optimize_delaunay)

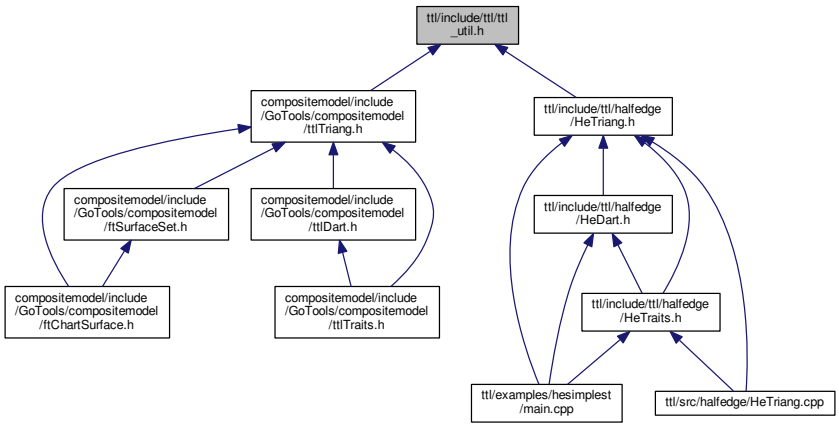
30.2947 ttl/include/ttl/ttl_util.h File Reference

```
#include <vector>
#include <algorithm>
```

Include dependency graph for ttl_util.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- ttl_util

  Utilities.

Functions

Computational geometry

- template<class real_type >
  real_type ttl_util::scalarProduct2d (real_type dx1, real_type dy1, real_type dx2, real_type dy2)
- template<class real_type >
  real_type ttl_util::crossProduct2d (real_type dx1, real_type dy1, real_type dx2, real_type dy2)
- template<class real_type >
  real_type ttl_util::orient2dfast (real_type pa[2], real_type pb[2], real_type pc[2])

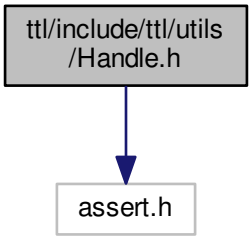
Utilities involving points

- template<class PointType >
  std::vector< PointType * > * ttl_util::createRandomData (int noPoints, int seed=1)

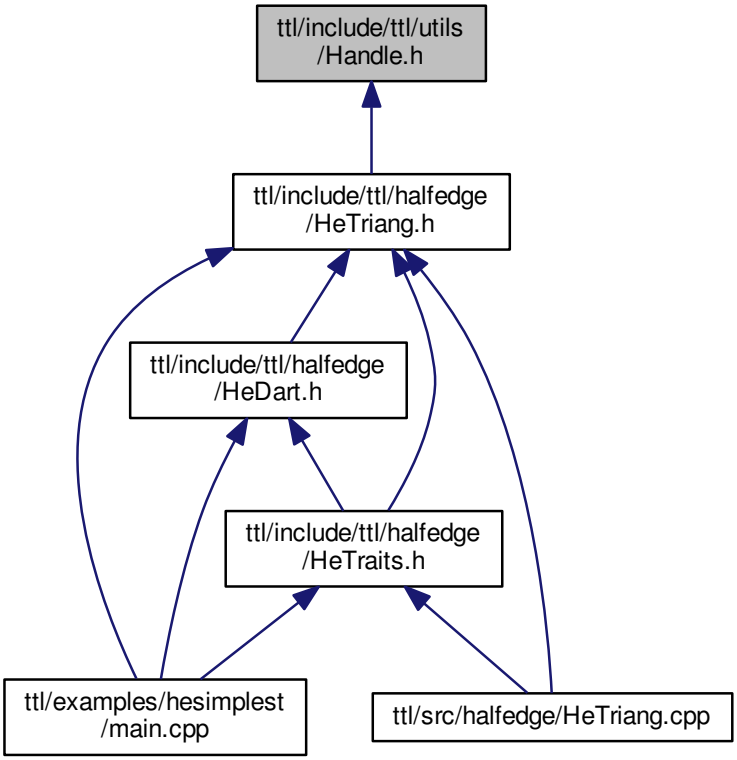
30.2948 ttl/include/ttl/utils/Handle.h File Reference

```
#include <assert.h>
```

Include dependency graph for Handle.h:



This graph shows which files directly or indirectly include this file:



Classes

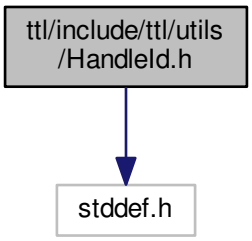
- class Handle< T >

  Template class for smart pointers. The actual class must inherit from HandleId.

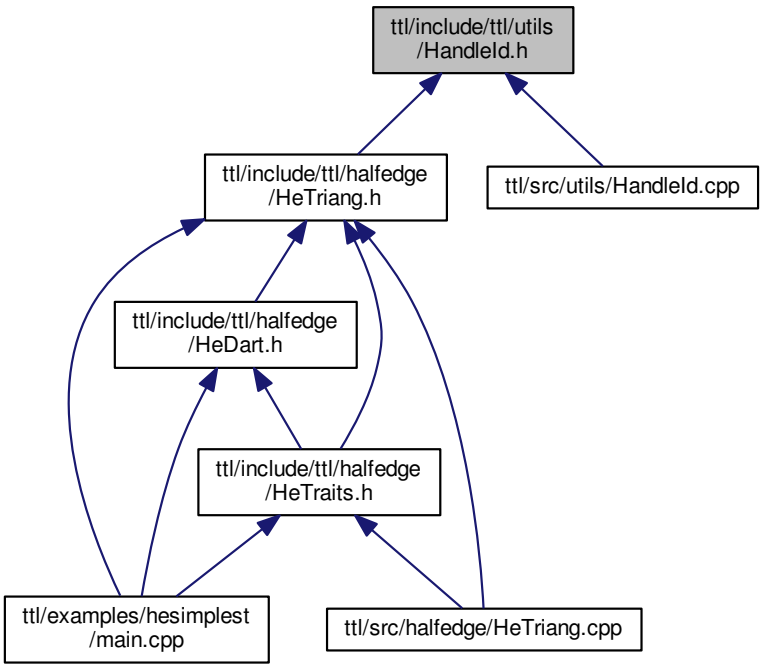
30.2949 ttl/include/ttl/utils/HandleId.h File Reference

```
#include <stddef.h>
```

Include dependency graph for HandleId.h:



This graph shows which files directly or indirectly include this file:



Classes

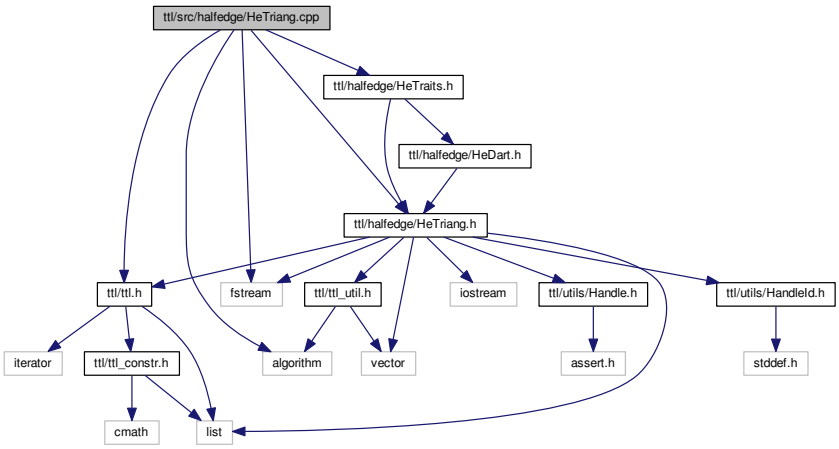
- class HandleId

  Base class with reference counting for smart pointers.

30.2950 ttl/src/halfedge/HeTriang.cpp File Reference

```
#include <ttl/halfedge/HeTriang.h>
#include <ttl/halfedge/HeTraits.h>
#include <ttl/ttl.h>
#include <algorithm>
#include <fstream>
```

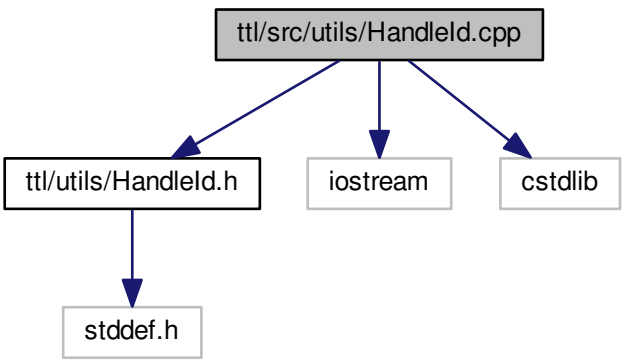
Include dependency graph for HeTriang.cpp:



30.2951 ttl/src/utils/HandleId.cpp File Reference

```
#include <ttl/utils/HandleId.h>
#include <iostream>
#include <cstdlib>
```

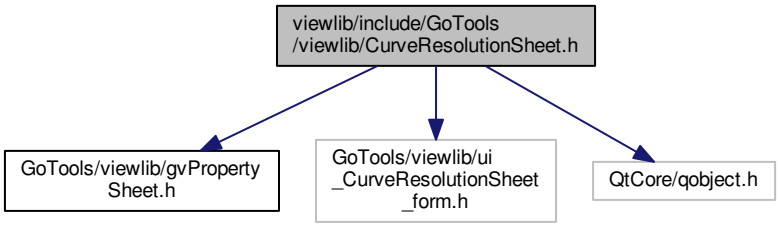
Include dependency graph for HandleId.cpp:



30.2952 viewlib/include/GoTools/viewlib/CurveResolutionSheet.h File Reference

```
#include "GoTools/viewlib/gvPropertySheet.h"
#include "GoTools/viewlib/ui_CurveResolutionSheet_form.h"
#include <QtCore/qobject.h>
```

Include dependency graph for CurveResolutionSheet.h:



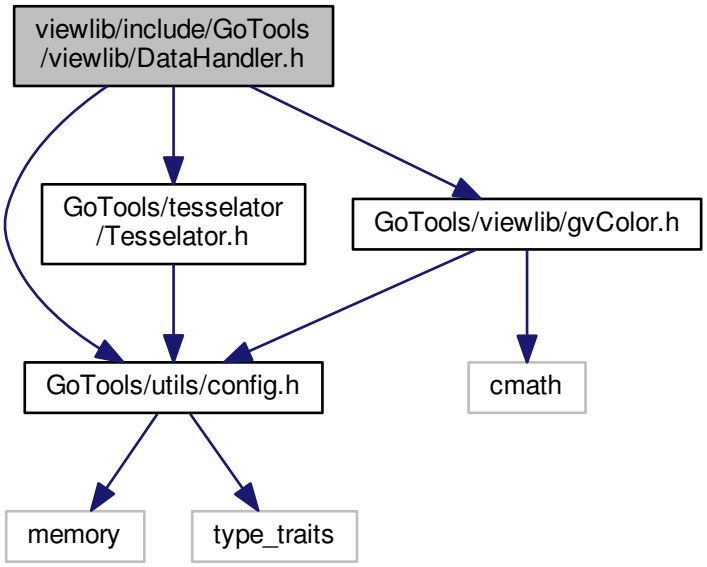
Classes

- class CurveResolutionSheet

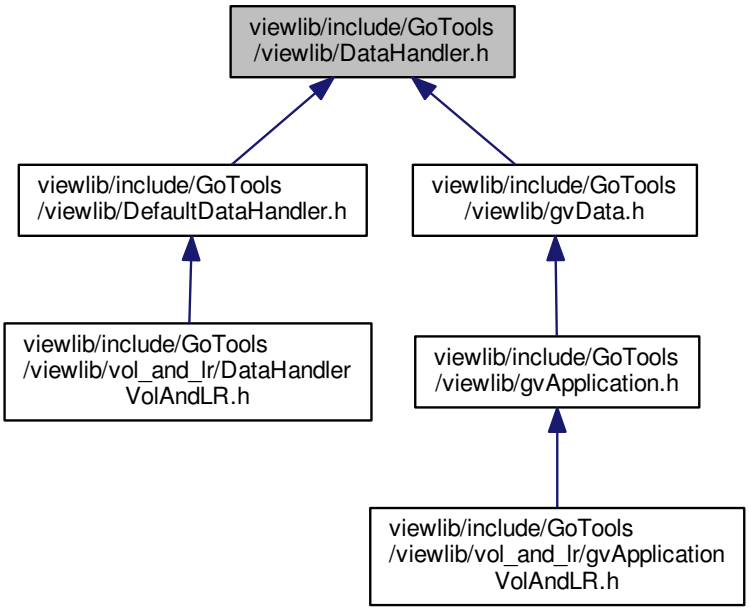
30.2953 viewlib/include/GoTools/viewlib/DataHandler.h File Reference

```
#include "GoTools/viewlib/gvColor.h"
#include "GoTools/tesselator/Tesselator.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for DataHandler.h:



This graph shows which files directly or indirectly include this file:



Classes

- class DataHandler

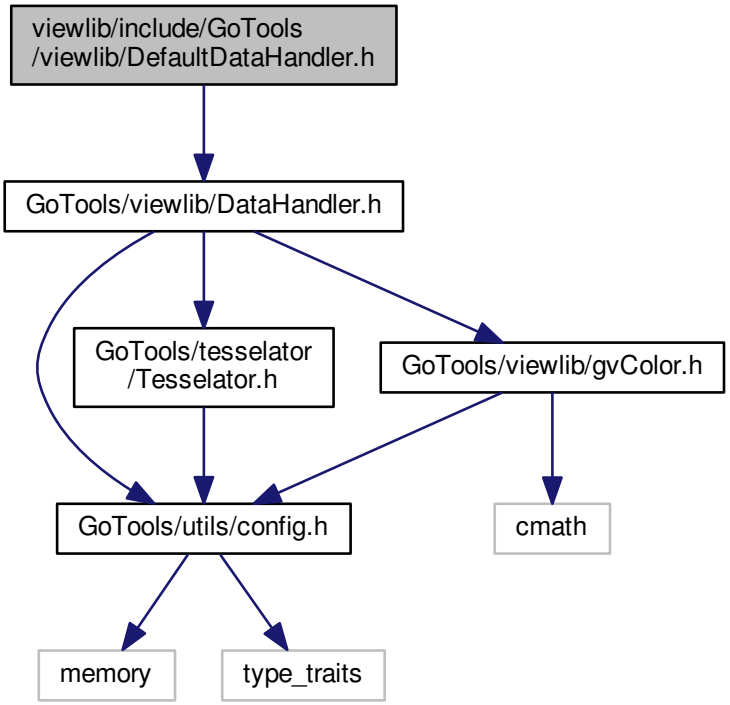
Namespaces

- Go

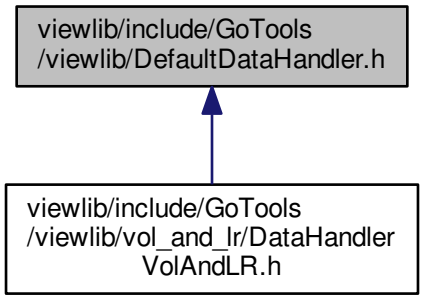
30.2954 viewlib/include/GoTools/viewlib/DefaultDataHandler.h File Reference

```
#include "GoTools/viewlib/DataHandler.h"
```

Include dependency graph for DefaultDataHandler.h:



This graph shows which files directly or indirectly include this file:



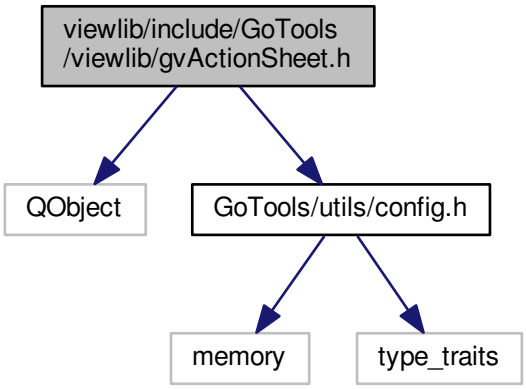
Classes

- class DefaultDataHandler

30.2955 viewlib/include/GoTools/viewlib/gvActionSheet.h File Reference

```
#include <QObject>
#include "GoTools/utils/config.h"
```

Include dependency graph for gvActionSheet.h:



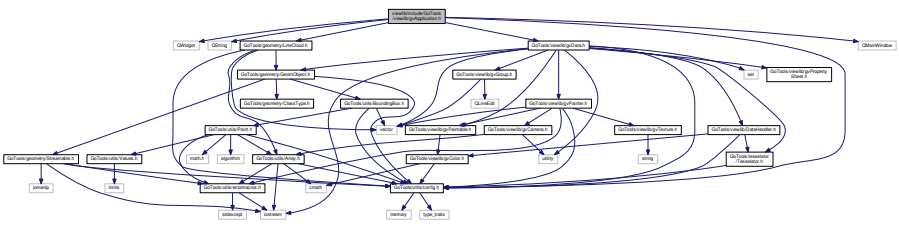
Classes

- class gvActionSheet

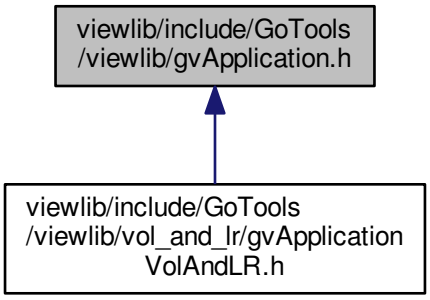
30.2956 viewlib/include/GoTools/viewlib/gvApplication.h File Reference

```
#include <QWidget>
#include <QString>
#include "GoTools/viewlib/gvData.h"
#include "GoTools/geometry/LineCloud.h"
#include <QMainWindow>
#include "GoTools/utils/config.h"
```

Include dependency graph for gvApplication.h:



This graph shows which files directly or indirectly include this file:



Classes

- class gvApplication

Typedefs

- typedef std::vector< shared_ptr< Go::GeomObject > > ObjContainer
- typedef std::vector< shared_ptr< gvColor > > ColContainer

30.2956.1 Typedef Documentation

30.2956.1.1 typedef std::vector<shared_ptr<gvColor> > ColContainer

Definition at line 66 of file gvApplication.h.

30.2956.1.2 typedef std::vector<shared_ptr<Go::GeomObject> > ObjContainer

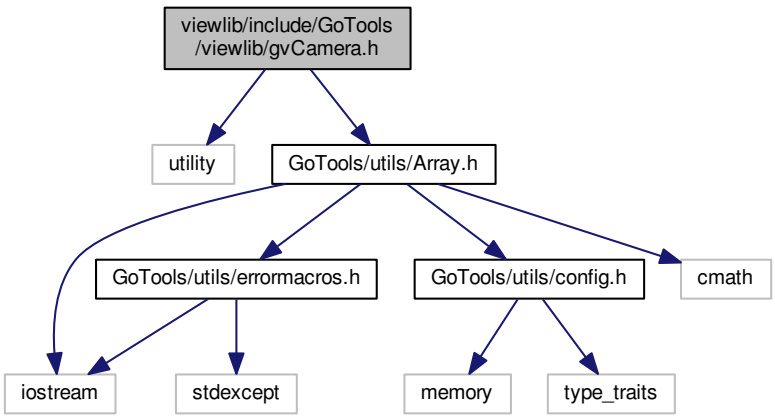
gvApplication: etc

Definition at line 57 of file gvApplication.h.

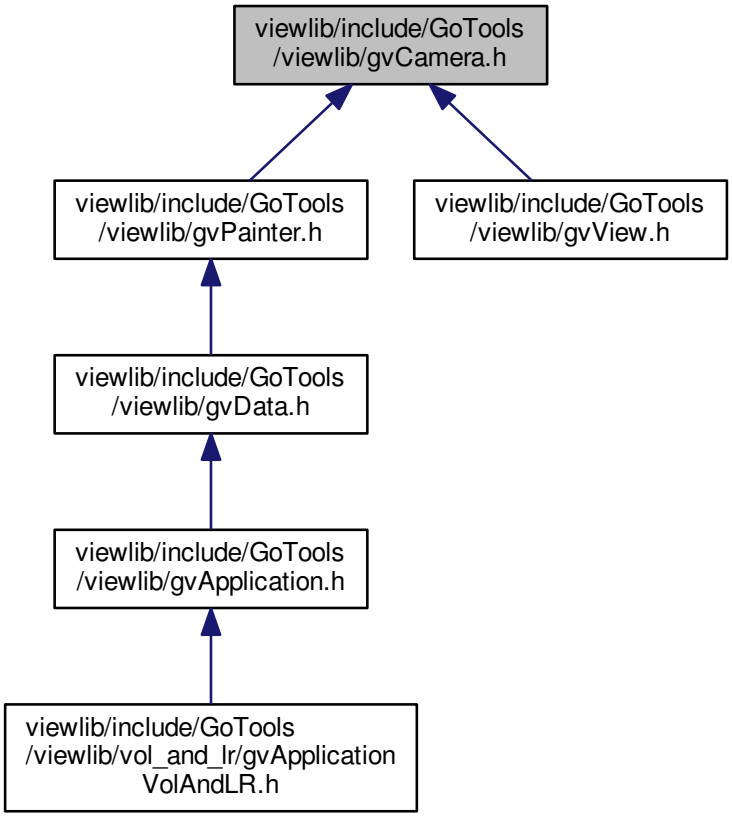
30.2957 viewlib/include/GoTools/viewlib/gvCamera.h File Reference

```
#include <utility>
#include "GoTools/utils/Array.h"
```

Include dependency graph for gvCamera.h:



This graph shows which files directly or indirectly include this file:



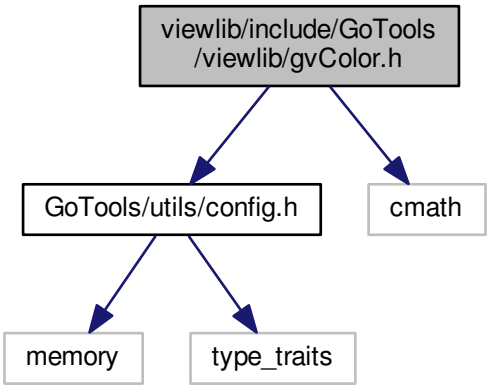
Classes

- class gvCamera

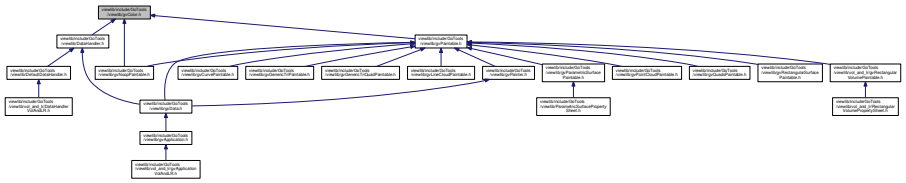
30.2958 viewlib/include/GoTools/viewlib/gvColor.h File Reference

```
#include "GoTools/utils/config.h"
#include <cmath>
```

Include dependency graph for gvColor.h:



This graph shows which files directly or indirectly include this file:



Classes

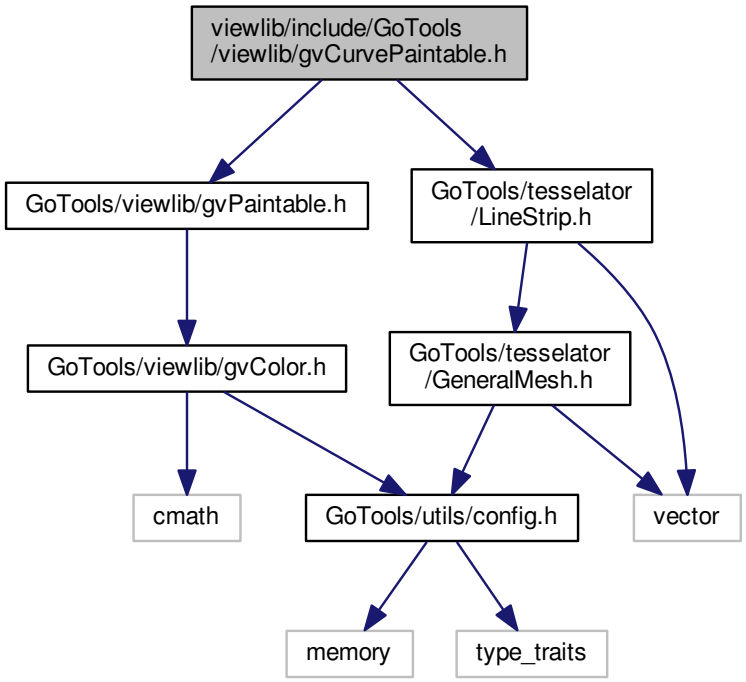
- struct gvColor

  Represents a color by four floats, like in OpenGL.

30.2959 viewlib/include/GoTools/viewlib/gvCurvePaintable.h File Reference

```
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/tesselator/LineStrip.h"
```

Include dependency graph for gvCurvePaintable.h:



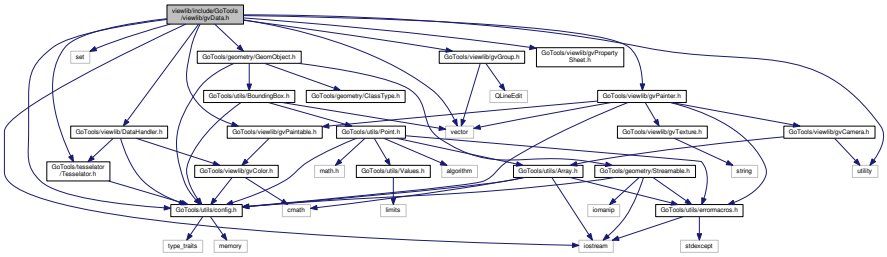
Classes

- class gvCurvePaintable

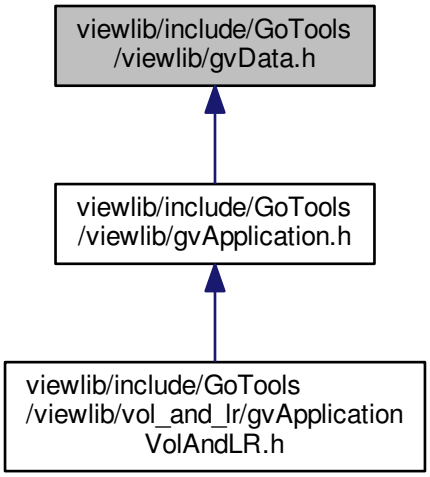
30.2960 viewlib/include/GoTools/viewlib/gvData.h File Reference

```
#include <iostream>
#include <vector>
#include <set>
#include <utility>
#include "GoTools/geometry/GeomObject.h"
#include "GoTools/viewlib/DataHandler.h"
#include "GoTools/tesselator/Tesselator.h"
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/viewlib/gvPropertySheet.h"
#include "GoTools/viewlib/gvPainter.h"
#include "GoTools/viewlib/gvGroup.h"
#include "GoTools/utils/config.h"
```

Include dependency graph for gvData.h:



This graph shows which files directly or indirectly include this file:



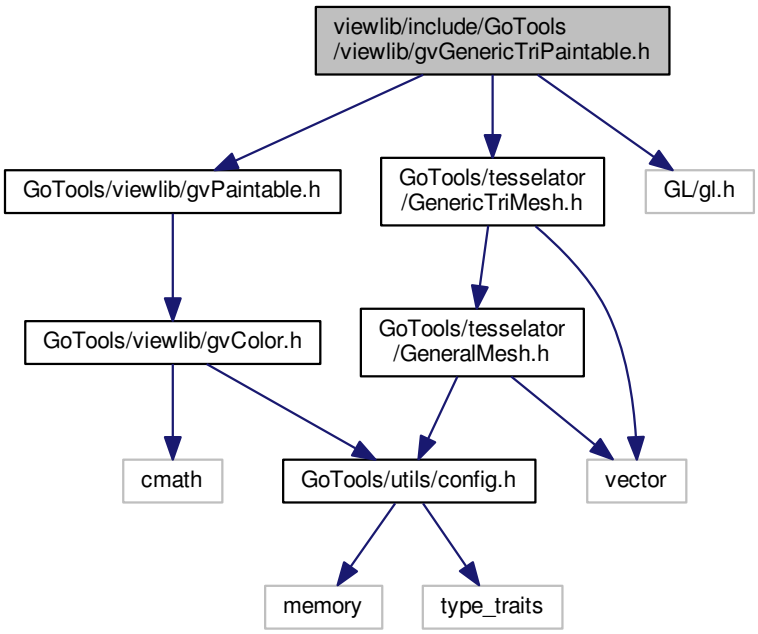
Classes

- class gvData

30.2961 viewlib/include/GoTools/viewlib/gvGenericTriPaintable.h File Reference

```
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/tesselator/GenericTriMesh.h"
#include <GL/gl.h>
```

Include dependency graph for gvGenericTriPaintable.h:



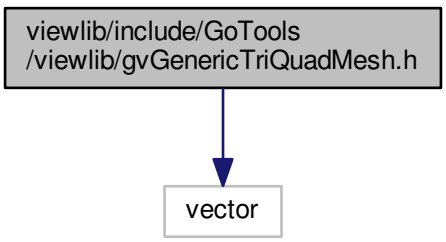
Classes

- class gvGenericTriPaintable< FloatType >

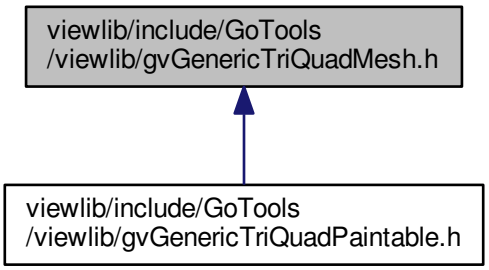
30.2962 viewlib/include/GoTools/viewlib/gvGenericTriQuadMesh.h File Reference

```
#include <vector>
```

Include dependency graph for gvGenericTriQuadMesh.h:



This graph shows which files directly or indirectly include this file:



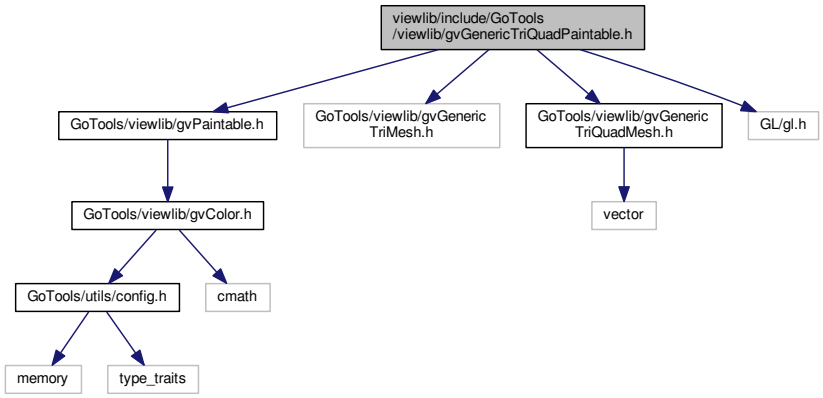
Classes

- class gvGenericTriQuadMesh< FloatType >

30.2963 viewlib/include/GoTools/viewlib/gvGenericTriQuadPaintable.h File Reference

```
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/viewlib/gvGenericTriMesh.h"
#include "GoTools/viewlib/gvGenericTriQuadMesh.h"
#include <GL/gl.h>
```

Include dependency graph for gvGenericTriQuadPaintable.h:



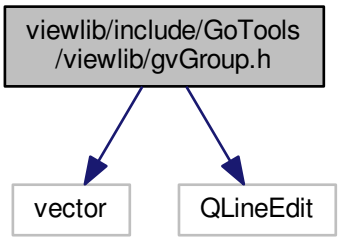
Classes

- class gvGenericTriQuadPaintable< FloatType >

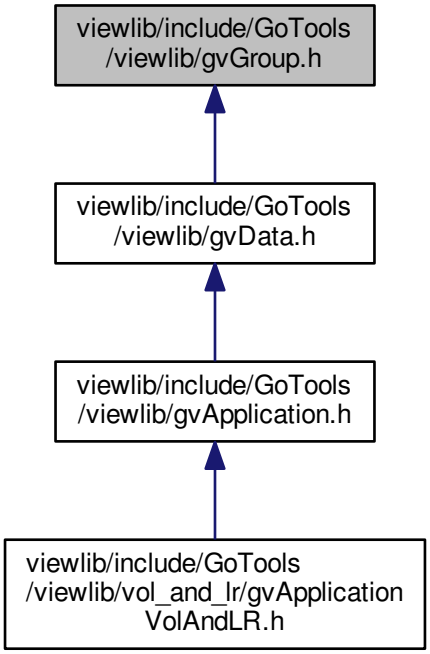
30.2964 viewlib/include/GoTools/viewlib/gvGroup.h File Reference

```
#include <vector>
#include <QLineEdit>
```

Include dependency graph for gvGroup.h:



This graph shows which files directly or indirectly include this file:



Classes

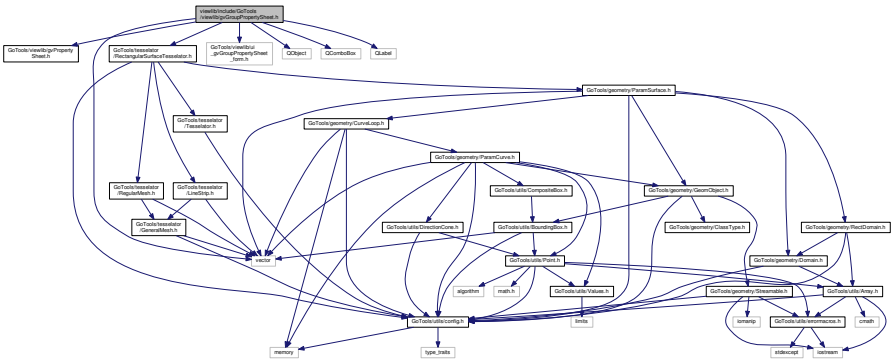
- class gvGroup

  Structure used to store name and index of members of a group of objects.

30.2965 viewlib/include/GoTools/viewlib/gvGroupPropertySheet.h File Reference

```
#include "GoTools/viewlib/gvPropertySheet.h"
#include "GoTools/tesselator/RectangularSurfaceTesselator.h"
#include "GoTools/viewlib/ui_gvGroupPropertySheet_form.h"
#include <QObject>
#include <QComboBox>
#include <vector>
#include <QLabel>
```

Include dependency graph for gvGroupPropertySheet.h:



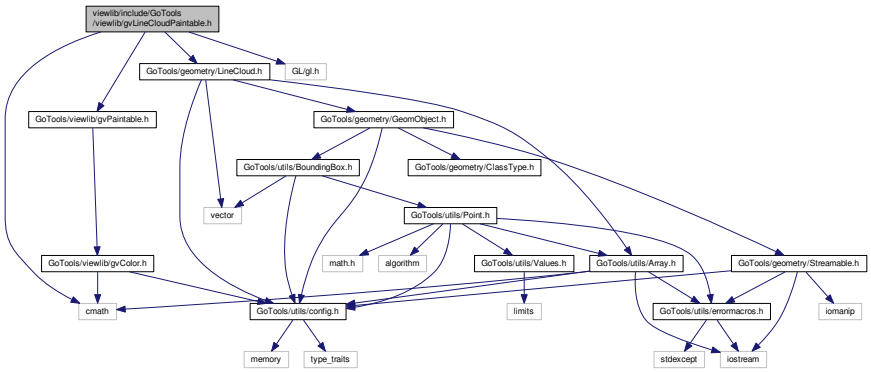
Classes

- class gvGroupPropertySheet

30.2966 viewlib/include/GoTools/viewlib/gvLineCloudPaintable.h File Reference

```
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/geometry/LineCloud.h"
#include <GL/gl.h>
#include <cmath>
```

Include dependency graph for gvLineCloudPaintable.h:



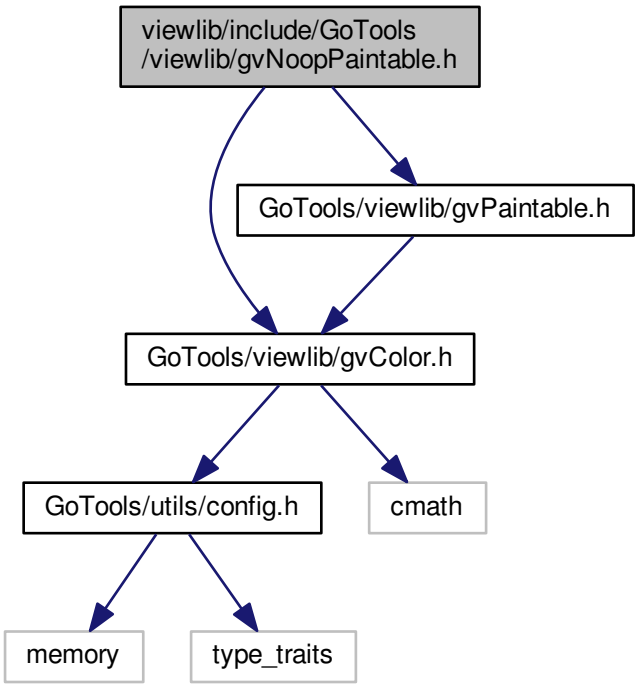
Classes

- class gvLineCloudPaintable

30.2967 viewlib/include/GoTools/viewlib/gvNoopPaintable.h File Reference

```
#include "GoTools/viewlib/gvColor.h"
#include "GoTools/viewlib/gvPaintable.h"
```

Include dependency graph for gvNoopPaintable.h:



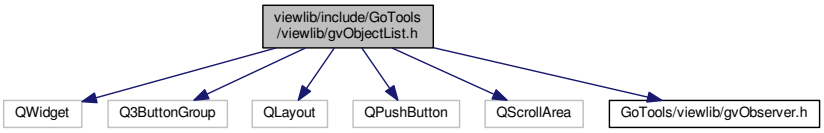
Classes

- class gvNoopPaintable

30.2968 viewlib/include/GoTools/viewlib/gvObjectList.h File Reference

```
#include <QWidget>
#include <Q3ButtonGroup>
#include <QLayout>
#include <QPushButton>
#include <QScrollArea>
#include "GoTools/viewlib/gvObserver.h"
```

Include dependency graph for gvObjectList.h:

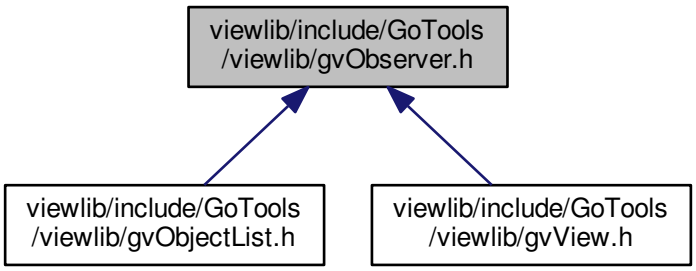


Classes

- class gvObjectList

30.2969 viewlib/include/GoTools/viewlib/gvObserver.h File Reference

This graph shows which files directly or indirectly include this file:



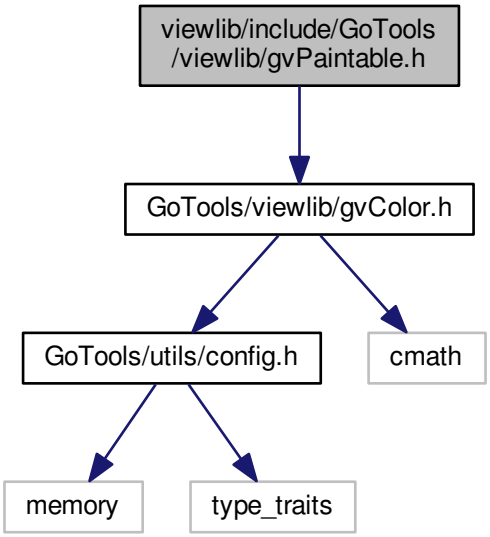
Classes

- class gvObserver

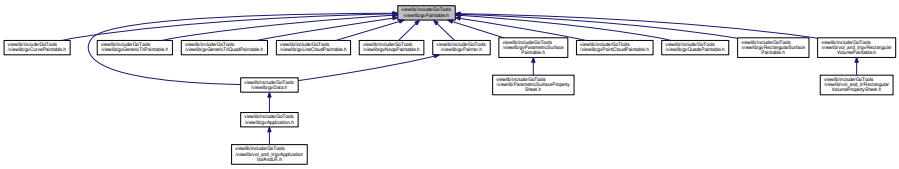
30.2970 viewlib/include/GoTools/viewlib/gvPaintable.h File Reference

```
#include "GoTools/viewlib/gvColor.h"
```

Include dependency graph for gvPaintable.h:



This graph shows which files directly or indirectly include this file:



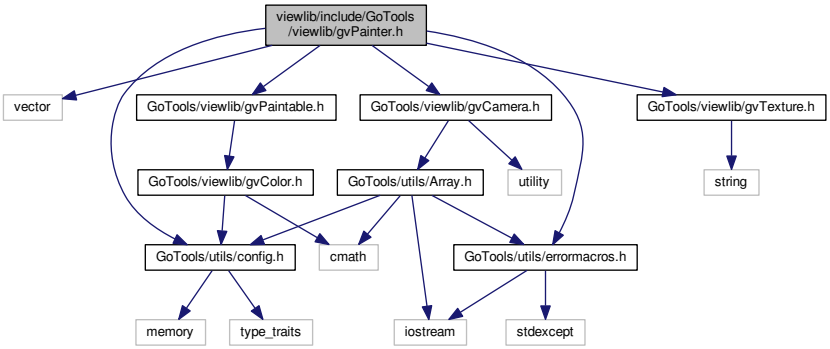
Classes

- class gvPaintable

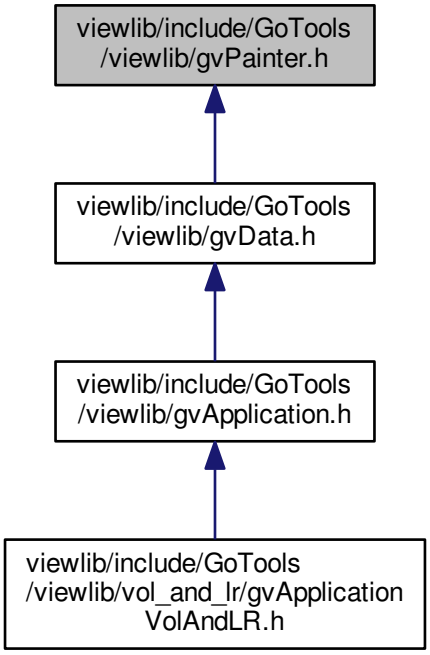
30.2971 viewlib/include/GoTools/viewlib/gvPainter.h File Reference

```
#include <vector>
#include "GoTools/utils/config.h"
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/viewlib/gvCamera.h"
#include "GoTools/viewlib/gvTexture.h"
#include "GoTools/utils/errormacros.h"
```

Include dependency graph for gvPainter.h:



This graph shows which files directly or indirectly include this file:



Classes

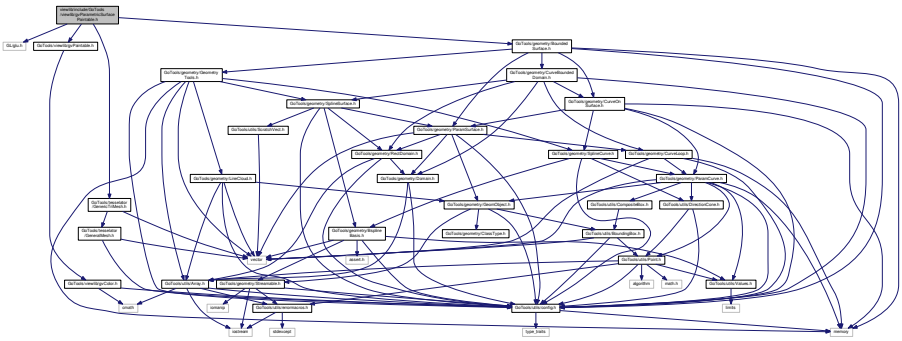
- class gvPainter

  The gvPainter is responsible for painting the 3D scene.

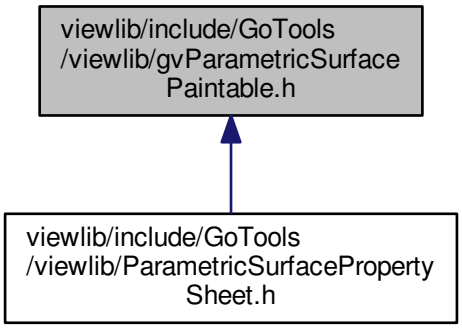
30.2972 viewlib/include/GoTools/viewlib/gvParametricSurfacePaintable.h File Reference

```
#include <GL/glu.h>
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/tesselator/GenericTriMesh.h"
#include "GoTools/geometry/BoundedSurface.h"
```

Include dependency graph for gvParametricSurfacePaintable.h:



This graph shows which files directly or indirectly include this file:



Classes

- class gvParametricSurfacePaintable

Typedefs

- typedef Go::GenericTriMesh genMesh

30.2972.1 Typedef Documentation

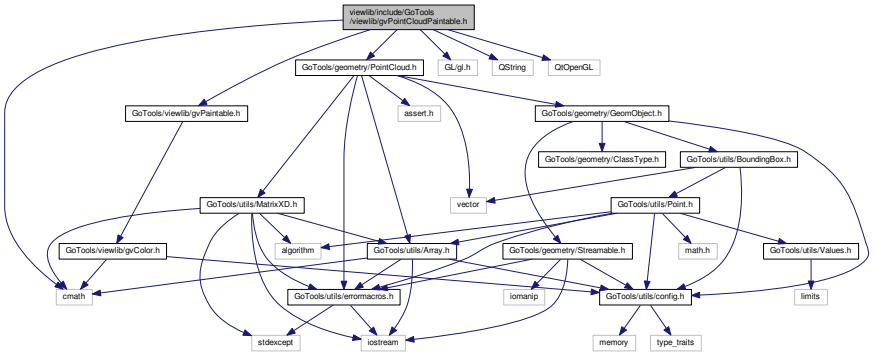
30.2972.1.1 typedef Go::GenericTriMesh genMesh

Definition at line 58 of file gvParametricSurfacePaintable.h.

30.2973 viewlib/include/GoTools/viewlib/gvPointCloudPaintable.h File Reference

```
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/geometry/PointCloud.h"
#include <GL/gl.h>
#include <cmath>
#include <QString>
#include <QtOpenGL>
```

Include dependency graph for gvPointCloudPaintable.h:

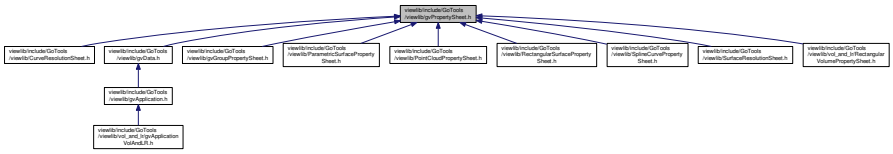


Classes

- class gvPointCloudPaintable

30.2974 viewlib/include/GoTools/viewlib/gvPropertySheet.h File Reference

This graph shows which files directly or indirectly include this file:



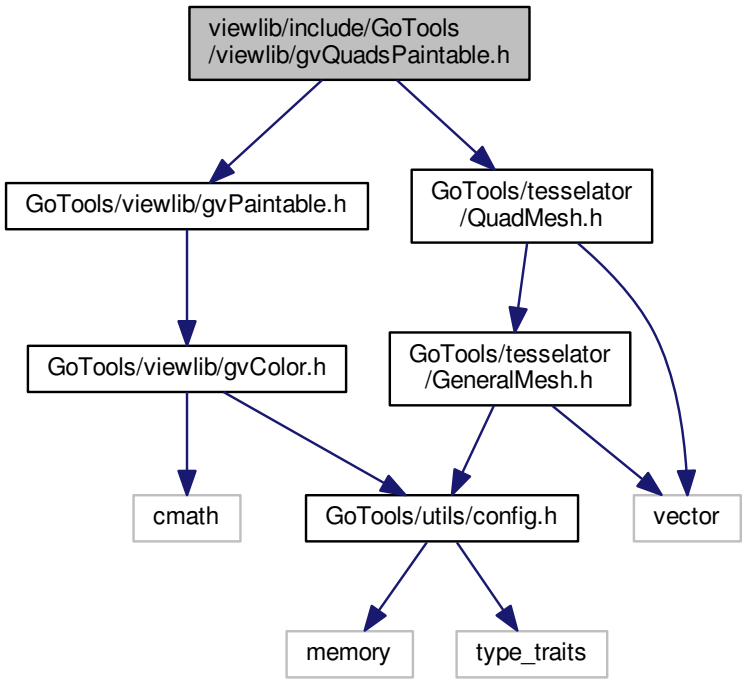
Classes

- class gvPropertySheet

30.2975 viewlib/include/GoTools/viewlib/gvQuadsPaintable.h File Reference

```
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/tesselator/QuadMesh.h"
```

Include dependency graph for gvQuadsPaintable.h:



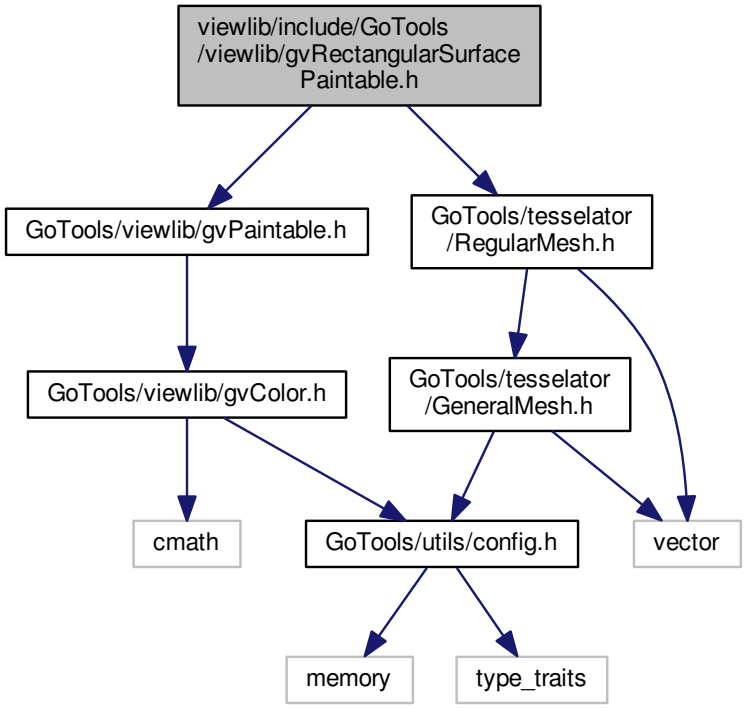
Classes

- class gvQuadsPaintable

30.2976 viewlib/include/GoTools/viewlib/gvRectangularSurfacePaintable.h File Reference

```
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/tesselator/RegularMesh.h"
```

Include dependency graph for gvRectangularSurfacePaintable.h:



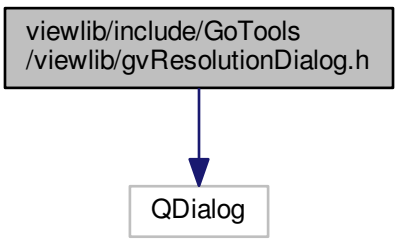
Classes

- class gvRectangularSurfacePaintable

30.2977 viewlib/include/GoTools/viewlib/gvResolutionDialog.h File Reference

```
#include <QDialog>
```

Include dependency graph for gvResolutionDialog.h:



Classes

- class gvResolutionDialog

30.2978 viewlib/include/GoTools/viewlib/gvStandardMouseHandler.h File Reference

Classes

- class gvStandardMouseHandler

Macros

- #define GV_STANDARD_MOUSEHANDLER_H_INCLUDED

30.2978.1 Macro Definition Documentation

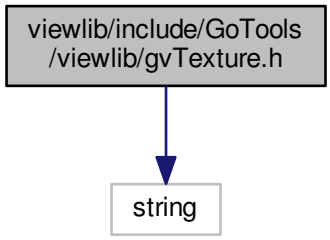
30.2978.1.1 #define GV_STANDARD_MOUSEHANDLER_H_INCLUDED

Definition at line 86 of file gvStandardMouseHandler.h.

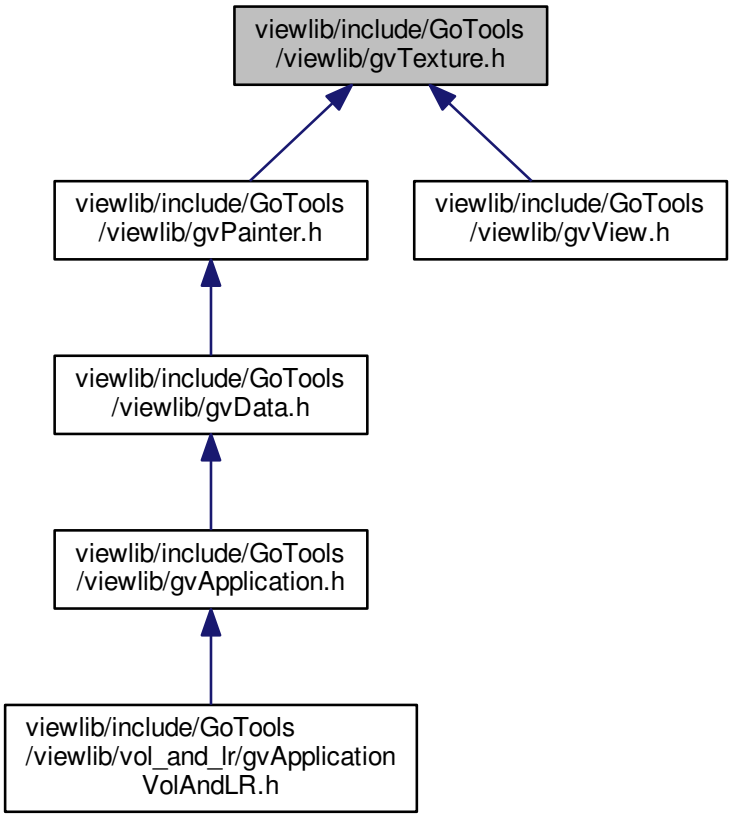
30.2979 viewlib/include/GoTools/viewlib/gvTexture.h File Reference

```
#include <string>
```

Include dependency graph for gvTexture.h:



This graph shows which files directly or indirectly include this file:



Classes

- class gvTexture

Enumerations

- enum MinFilterSet {
  minNearest, minLinear, minNearestMipmapNearest, minNearestMipmapLinear,
  minLinearMipmapNearest, minLinearMipmapLinear }
- enum MagFilterSet { magNearest, magLinear }
- enum EnvModeSet { envDecal, envReplace, envModulate, envBlend }
- enum WrapModeSet { wrapClamp, wrapRepeat }

30.2979.1 Enumeration Type Documentation

30.2979.1.1 enum EnvModeSet

Enumerator

envDecal

envReplace

envModulate

envBlend

Definition at line 53 of file gvTexture.h.

30.2979.1.2 enum MagFilterSet

Enumerator

magNearest

magLinear

Definition at line 50 of file gvTexture.h.

30.2979.1.3 enum MinFilterSet

Enumerator

minNearest

minLinear

minNearestMipmapNearest

minNearestMipmapLinear

minLinearMipmapNearest

minLinearMipmapLinear

Definition at line 45 of file gvTexture.h.

30.2979.1.4 enum WrapModeSet

Enumerator

wrapClamp

wrapRepeat

Definition at line 56 of file gvTexture.h.

30.2980 viewlib/include/GoTools/viewlib/gvUtilities.h File Reference

Typedefs

- typedef double FLOAT_TYPE
- typedef FLOAT_TYPE MATRIX3[9]
- typedef FLOAT_TYPE MATRIX4[16]

Functions

- void draw_cylinder (double x0, double y0, double z0, double x1, double y1, double z1, double radius, double radius2, int n)

  Draw a cylinder, or possibly a cone.
- void draw_gl_axes (int n, double r, double radius, double rim, double l)

  Draw a set of axes.
- void draw_gl_axes (double relscale)
- FLOAT_TYPE m3_det (MATRIX3 mat)
- void m3_identity (MATRIX3 mat)
- void m3_inverse (MATRIX3 mr, MATRIX3 ma)
- void m4_submat (MATRIX4 mr, MATRIX3 mb, int i, int j)
- FLOAT_TYPE m4_det (MATRIX4 mr)
- int m4_inverse (MATRIX4 mr, MATRIX4 ma)

30.2980.1 Typedef Documentation

30.2980.1.1 typedef double FLOAT_TYPE

Definition at line 51 of file gvUtilities.h.

30.2980.1.2 typedef FLOAT_TYPE MATRIX3[9]

Definition at line 52 of file gvUtilities.h.

30.2980.1.3 typedef FLOAT_TYPE MATRIX4[16]

Definition at line 53 of file gvUtilities.h.

30.2980.2 Function Documentation

30.2980.2.1 void draw_cylinder (double *x0,* double *y0,* double *z0,* double *x1,* double *y1,* double *z1,* double *radius,* double *radius2,* int *n*)

Draw a cylinder, or possibly a cone.

Definition at line 91 of file gl_aux.cpp.

30.2980.2.2 void draw_gl_axes (int *n,* double *r,* double *radius,* double *rim,* double *l*)

Draw a set of axes.

30.2980.2.3 void draw_gl_axes (double *relscale*)

30.2980.2.4 FLOAT_TYPE m3_det (MATRIX3 *mat*)

30.2980.2.5 void m3_identity (MATRIX3 *mat*)

30.2980.2.6 void m3_inverse (MATRIX3 *mr,* MATRIX3 *ma*)

30.2980.2.7 FLOAT_TYPE m4_det (MATRIX4 *mr*)

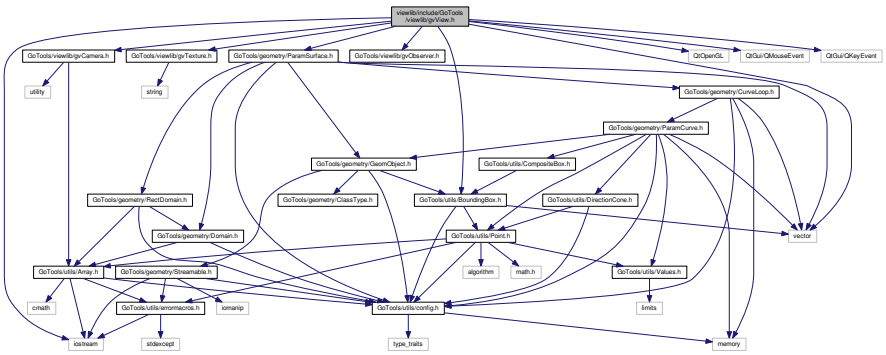
30.2980.2.8 int m4_inverse (MATRIX4 *mr,* MATRIX4 *ma*)

30.2980.2.9 void m4_submat (MATRIX4 *mr,* MATRIX3 *mb,* int *i,* int *j*)

30.2981 viewlib/include/GoTools/viewlib/gvView.h File Reference

```
#include "GoTools/viewlib/gvCamera.h"
#include "GoTools/utils/BoundingBox.h"
#include "GoTools/viewlib/gvObserver.h"
#include "GoTools/viewlib/gvTexture.h"
#include "GoTools/geometry/ParamSurface.h"
#include <QtOpenGL>
#include <QtGui/QMouseEvent>
#include <QtGui/QKeyEvent>
#include <iostream>
#include <vector>
```

Include dependency graph for gvView.h:



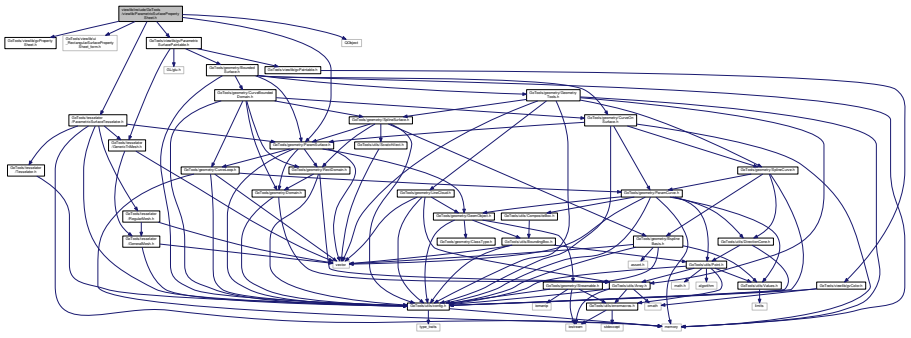
Classes

- class gvView

30.2982 viewlib/include/GoTools/viewlib/ParametricSurfacePropertySheet.h File Reference

```
#include "GoTools/viewlib/gvPropertySheet.h"
#include "GoTools/viewlib/ui_RectangularSurfacePropertySheet_form.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/viewlib/gvParametricSurfacePaintable.h"
#include "GoTools/tesselator/ParametricSurfaceTesselator.h"
#include <QObject>
```

Include dependency graph for ParametricSurfacePropertySheet.h:



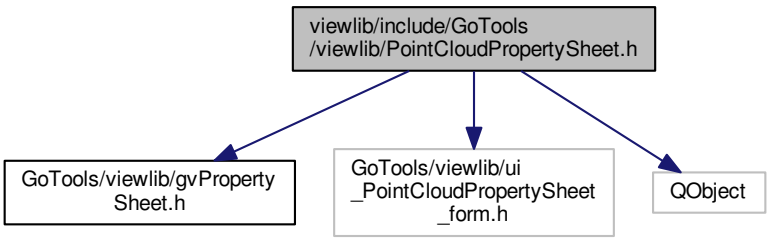
Classes

- class ParametricSurfacePropertySheet

30.2983 viewlib/include/GoTools/viewlib/PointCloudPropertySheet.h File Reference

```
#include "GoTools/viewlib/gvPropertySheet.h"
#include "GoTools/viewlib/ui_PointCloudPropertySheet_form.h"
#include <QObject>
```

Include dependency graph for PointCloudPropertySheet.h:



Classes

- class PointCloudPropertySheet

30.2984 viewlib/include/GoTools/viewlib/raster.h File Reference

Macros

- #define RASTERUTILS_H_INCLUDED

Functions

- unsigned char * read_ppm_file (const char *const name, int *const xs, int *const ys)

  Returns RGB data in a new'ed array.

- void write_ppm_file (const char *const name, const unsigned char *const d, const int xs, const int ys, bool rgb=true)

  Writes out a ppm file.

30.2984.1 Macro Definition Documentation

30.2984.1.1 #define RASTERUTILS_H_INCLUDED

Definition at line 66 of file raster.h.

30.2984.2 Function Documentation

30.2984.2.1 unsigned char* read_ppm_file (const char *const *name*, int *const *xs*, int *const *ys*)

Returns RGB data in a new'ed array.

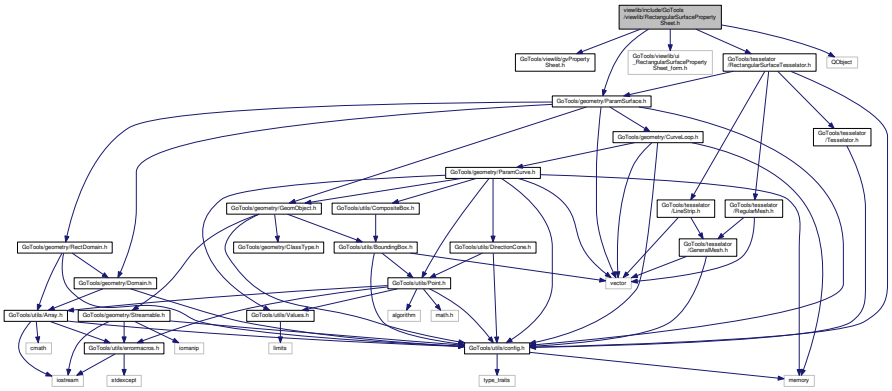
30.2984.2.2 void write_ppm_file (const char *const *name*, const unsigned char *const *d*, const int *xs*, const int *ys*, bool *rgb* = true)

Writes out a ppm file.

30.2985 viewlib/include/GoTools/viewlib/RectangularSurfacePropertySheet.h File Reference

```
#include "GoTools/viewlib/gvPropertySheet.h"
#include "GoTools/geometry/ParamSurface.h"
#include "GoTools/viewlib/ui_RectangularSurfacePropertySheet_form.h"
#include "GoTools/tesselator/RectangularSurfaceTesselator.h"
#include <QObject>
```

Include dependency graph for RectangularSurfacePropertySheet.h:



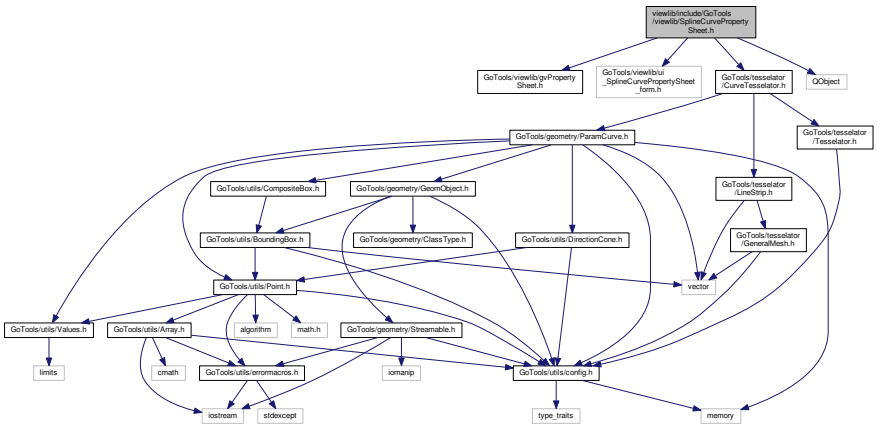
Classes

- class RectangularSurfacePropertySheet

30.2986 viewlib/include/GoTools/viewlib/SplineCurvePropertySheet.h File Reference

```
#include "GoTools/viewlib/gvPropertySheet.h"
#include "GoTools/viewlib/ui_SplineCurvePropertySheet_form.h"
#include "GoTools/tesselator/CurveTesselator.h"
#include <QObject>
```

Include dependency graph for SplineCurvePropertySheet.h:



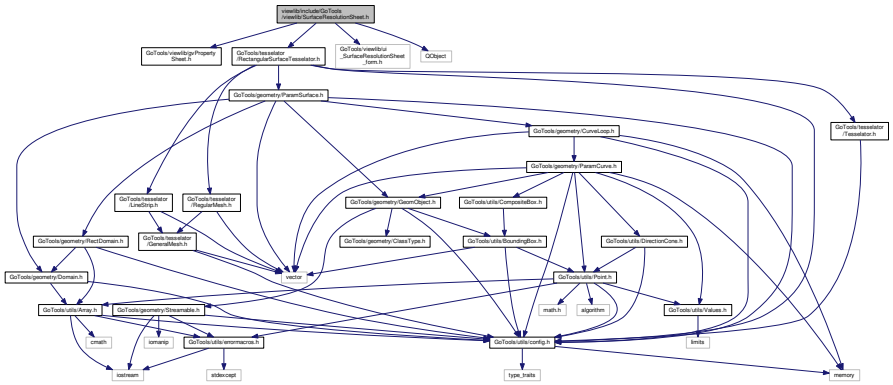
Classes

- class SplineCurvePropertySheet

30.2987 viewlib/include/GoTools/viewlib/SurfaceResolutionSheet.h File Reference

```
#include "GoTools/viewlib/gvPropertySheet.h"
#include "GoTools/tesselator/RectangularSurfaceTesselator.h"
#include "GoTools/viewlib/ui_SurfaceResolutionSheet_form.h"
#include <QObject>
```

Include dependency graph for SurfaceResolutionSheet.h:



Classes

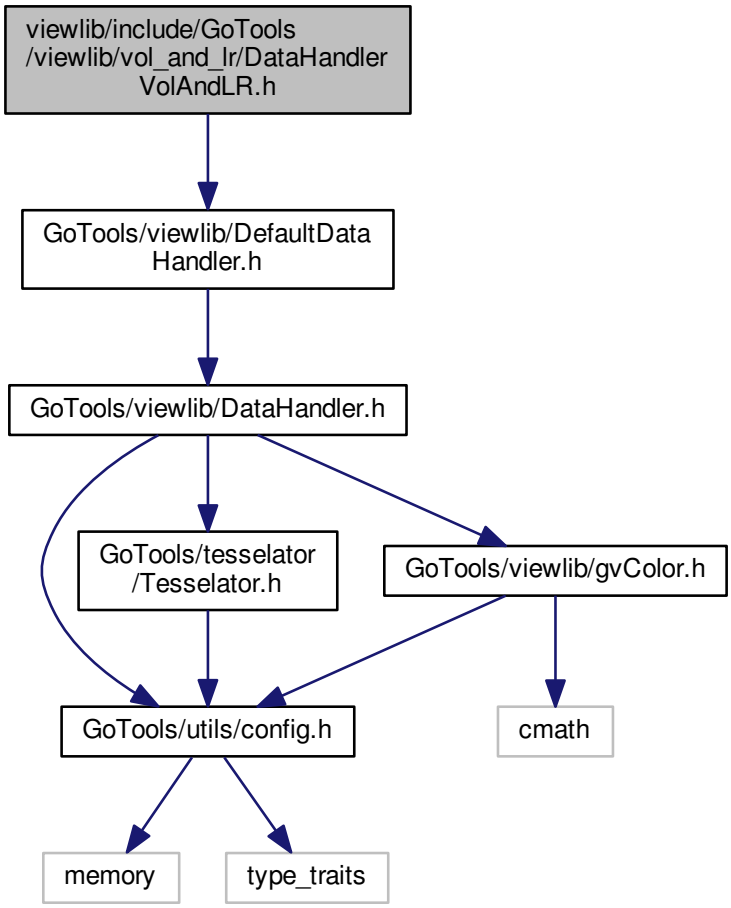
- class SurfaceResolutionSheet

30.2988 viewlib/include/GoTools/viewlib/viewlib_doxymain.h File Reference

30.2989 viewlib/include/GoTools/viewlib/vol_and_lr/DataHandlerVolAndLR.h File Reference

```
#include "GoTools/viewlib/DefaultDataHandler.h"
```

Include dependency graph for DataHandlerVolAndLR.h:



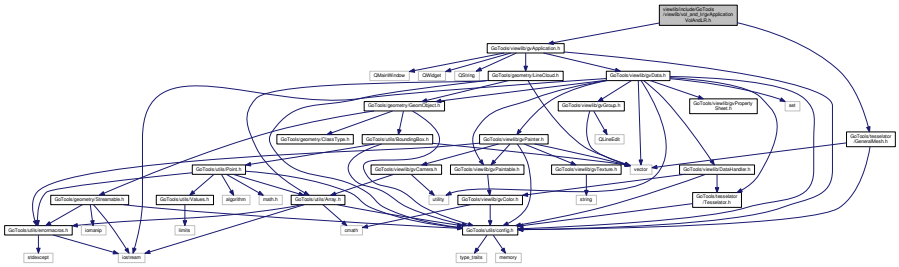
Classes

- class DataHandlerVolAndLR

30.2990 viewlib/include/GoTools/viewlib/vol_and_lr/gvApplicationVolAndLR.h File Reference

```
#include "GoTools/viewlib/gvApplication.h"
#include "GoTools/tesselator/GeneralMesh.h"
```

Include dependency graph for gvApplicationVolAndLR.h:



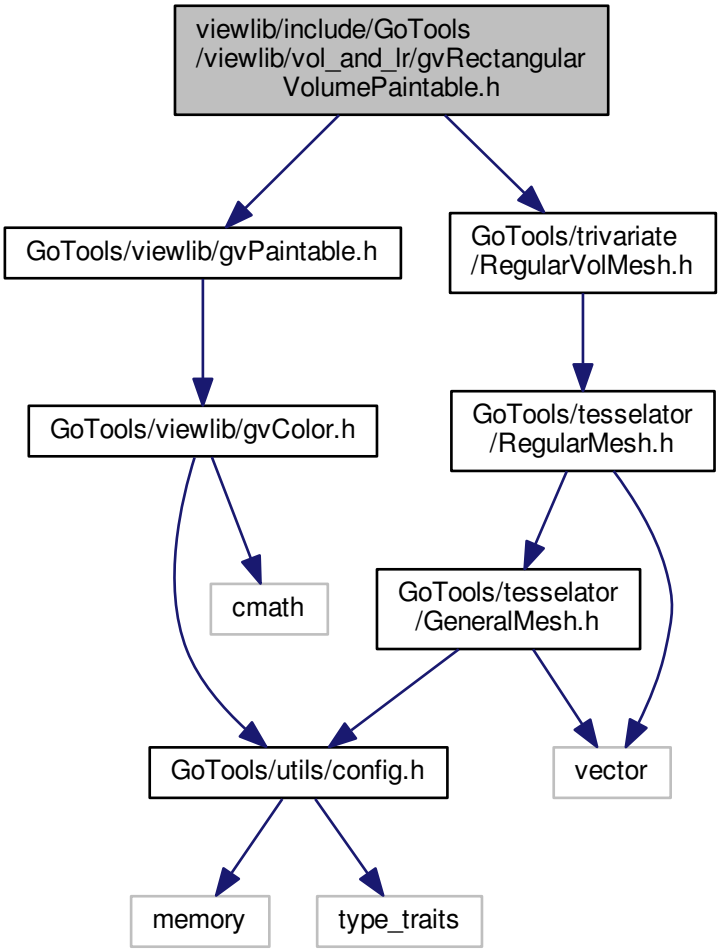
Classes

- class gvApplicationVolAndLR

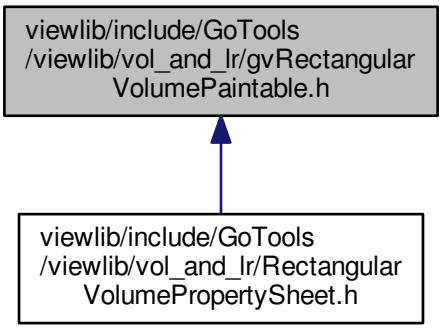
30.2991 viewlib/include/GoTools/viewlib/vol_and_lr/gvRectangularVolumePaintable.h File Reference

```
#include "GoTools/viewlib/gvPaintable.h"
#include "GoTools/trivariate/RegularVolMesh.h"
```

Include dependency graph for gvRectangularVolumePaintable.h:



This graph shows which files directly or indirectly include this file:



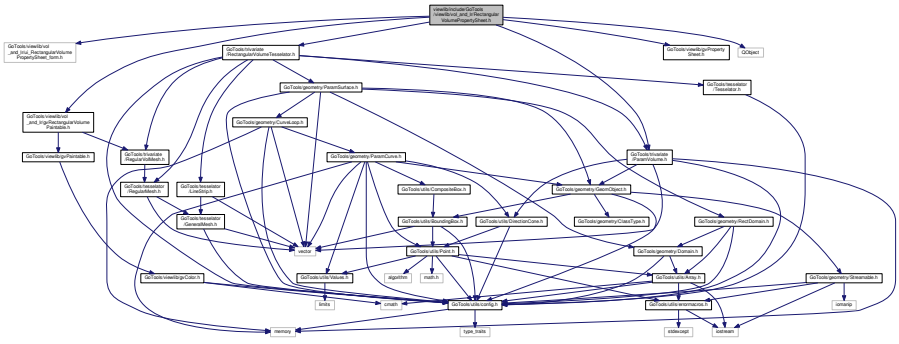
Classes

- class gvRectangularVolumePaintable

30.2992 viewlib/include/GoTools/viewlib/vol_and_lr/RectangularVolumePropertySheet.h File Reference

```
#include "GoTools/viewlib/vol_and_lr/ui_RectangularVolumePropertySheet_↩
form.h"
#include "GoTools/viewlib/vol_and_lr/gvRectangularVolumePaintable.h"
#include "GoTools/viewlib/gvPropertySheet.h"
#include "GoTools/trivariate/ParamVolume.h"
#include "GoTools/trivariate/RectangularVolumeTesselator.h"
#include <QObject>
```

Include dependency graph for RectangularVolumePropertySheet.h:



Classes

- class RectangularVolumePropertySheet

Chapter 31

Example Documentation

31.1 adapt_curve

adapt_curve.C

This program demonstrates the use of the class AdaptCurve. The class can generate a B-spline curve that approximates an evaluator based curve to satisfy a given accuracy.

The program reads a 2D parameter curve and a surface from file, and lifts the curve onto the surface to make an evaluator based curve. This evaluator based curve are then used as input to the AdaptCurve constructor.

31.2 append_curve

append_curve.C

This program demonstrates the use of the function SplineCurve::append_curve declared in SplineCurve.h. The function joins two SplineCurves by appending the start of the second curve to the end of the first curve. The two curves must be of the same type

31.3 approx_curve

approx_curve.C

This program demonstrates the use of the class ApproxCurve. The class can generate a B-spline curve that approximates a set of parametrized points for a given accuracy by inserting new knots in the curve until the required accuracy is reached.

31.4 approx_surface

approx_surface.C

This program demonstrates the use of the class ApproxSurf. The class can generate a new tensor product B-spline surface with four boundary curves that approximates a set of parametrized points for a given accuracy, or modify an old surface by a set of parametrized points.

31.5 BrepToTrivariate

BrepToTrivariate.C

The idea of this program is to read a Brep model in g2-format and create trivariate spline model. Note that the functionality works only for some classes of Brep models.

31.6 circle

circle.C

This program demonstrates the use of the class Circle. It is a subclass of ElementaryCurve. The space dimension of a circle is either 2 or 3. The default parametrization is an angle from 0 to 2∗PI.

31.7 closestpoint_curve

closestpoint_curve.C

This program demonstrates the use of the two functions ParamCurve::closestPoint(const Point& pt, double& clo_t, Point& clo_pt, double& clo_dist) and SplineCurve::closestPoint(const Point& pt, double tmin, double tmax, double& clo_t, Point& clo_pt, double& clo_dist, double const ∗seed = 0). They compute the closest point on a curve from a specified point.

31.8 closestpoint_degenerate_sf

closestpoint_degenerate_sf.C

This program demonstrates the use of the function SplineSurface::closestPoint(const Point& pt, double& clo_↩ u, double& clo_v, Point& clo_pt, double& clo_dist, double epsilon, const RectDomain∗ domain_of_interest = NULL, double ∗seed = 0) The declaration of the function is in 'ParamSurface.h'. The function compute the closest point on a surface from a specified point. It reads a spline surface file in Go-format and a file in plain ASCII format with the xyz-coordinates of the points we want to find the closest point on the surface to.

31.9 closestpoint_surface

closestpoint_surface.C

This program demonstrates the use of the function 'SplineSurface::closestPoint(const Point& pt, double& clo_u, double& clo_v, Point& clo_pt, double& clo_dist, double epsilon, const RectDomain∗ domain_of_interest = NULL, double ∗seed = 0)'. The declaration of the function is in 'ParamSurface.h'. The function compute the closest point on a surface from a specified point. It reads a spline surface file in Go-format and a file in plain ASCII format with the xyz-coordinates of the points we want to find the closest point on the surface to.

31.10 cone

cone.C

This program demonstrates the use of the class Cone. It is a subclass of ElementarySurface. The space dimension of a cone is 3. The default parametrization is the angle u from 0 to 2∗PI and the distance v from minus infinity to plus infinity.

31.11 const_param_curves

const_param_curves.C

The program demonstrates the use of the function SplineSurface::constParamCurve(double parameter, bool pardir_is_u). The declaration of the function is in SplineSurface.h.

31.12 coons_patch_gen

coons_patch_gen.C

This program demonstrates the use of some of the functions in namespace CoonsPatchGen. The functions can be used to create a Coons Patch or a Gordon Surface. The functions returns a SplineSurface pointer to the created surface.

31.13 coons_patch_volume_gen

coons_patch_volume_gen.C

This program demonstrates the use of the static function *createCoonsPatch* in namespace *CoonsPatchVolumeGen'* The function can create a new *SplineVolume* representing the coons patch of six SplineSurfaces, the six faces of the volume.

31.14 createBlockStructuredDisc

createBlockStructuredDisc.C

This example file creates a block structured set of spline surfaces from a face set consisting of possibly trimmed surfaces with arbitrary topology (no corner-to-corner conditions).

31.15 createCoonsVolume

createCoonsVolume.C

The program creates a Coons volume and performs smoothing of this volume keeping the boundary surfaces fixed.

31.16 createLinSweptVol

createLinSweptVol.C

Create a block structured volume model from a face set describing a boundary represented solid that may be created by sweeping a planar face set along a stright line

31.17 createMidShip

createMidShip.C

Build a volume model representing a simplified mid ship, hull with stiffeneres in both directions and deck. The model is represented as a block structured volume model.

31.18 createRotationalVol

createRotationalVol.C

Create a block structured volume model from a face set describing a boundary represented solid representing a rotational object.

31.19 createSplitDisc

createSplitDisc.C

This programs creates a face set representing a disc as two trimmed surfaces: The trimmed disc and a rectangular surface lying inside this disc. This is a starting point for the creation of a disc as a multi patch model with spline surfaces and no degeneracies. The construction uses planar, rectangular surfaces and a truncated sylinder, but the operations performed using these surfaces, do not depend on that level of regularity.

31.20 createVolumeBlocks

createVolumeBlocks.C

Create a block structured volume model from a face set consisting of possibly trimmed surfaces with arbitrary topology (no corner-to-corner conditions). The face set represents a boundary represented solid and is described in a g2-file.

31.21 createVolumeBoundaries

createVolumeBoundaries.C

This programs creates a set of B-spline surfaces intended as the boundary surfaces for a spline volume. A number of different methods are used in the surface construction. Thus, this expample program illustrates some of the possibilities for surface construction.

31.22 cylinder

cylinder.C

This program demonstrates the use of the class Cylinder. It is a subclass of ElementarySurface. The space dimension of a cylinder is 3. The default parametrization is the angle u from 0 to 2∗PI and the distance v from minus infinity to plus infinity.

31.23 ellipse

ellipse.C

This program demonstrates the use of the class Ellipse. It is a subclass of ElementaryCurve. The space dimension of an ellipse is either 2 or 3. The default parametrization is an angle from 0 to 2∗PI.

31.24 face2splineset

face2splineSet.C

This program demonstrates how to create a set of spline surfaces, meeting in a corner-to-corner configuration and with corresponding coefficients at common boundaries, from one possibly trimmed face / The program reads a bounded surface from a file, splits this surface into several bounded surfaces where each surface has (at most) 4 boundary curves. Finally, each bounded surface is approximated by a spline surface within a given tolerance and C0 continuities at common boundaries is ensured.

31.25 interpol_curve_free

interpol_curve_free.C

This program reads a point data set from a file, interpolates a spline curve through the points and writes an output file with the spline curve and the input points.

31.26 interpol_curve_hermite

interpol_curve_hermite.C

This program reads a point data set from a file, interpolates a spline curve through the points and write two output files: One file with spline curve data and one file with tangent vectors from the input points.

31.27 linear_swept_surface

linear_swept_surface.C

This program demonstrates the use of the static function 'linearSweptSurface' in the class 'SweepSurfaceCreator'. The function can generate a B-spline surface by sweeping one curve along another. A given point on the sweeping curve will be swept along the other curve.

31.28 linear_swept_volume

linear_swept_volume.C

This program demonstrates the use of the static function *linearSweptVolume* in the class *SweepVolumeCreator*. The function can generate a SplineVolume by sweeping a surface along a curve or sweeping a curve along a surface. A sweeping point on the curve or the surface must be specified. If the point lies on the the surface, the surface will be swept along the curve. If the point lies on the the curve, the curve will be swept along the surface. The curve and the surface must be such that it doesn't lead to self-intersection.

31.29 linearBrepToTrivariate

linearBrepToTrivariate.C

The idea of this program is to read a Brep model in g2-format and check if it can be regenerated as a linear sweep. In that case a multi block trivariate spline model will be created.

31.30 loft_volume_creator

loft_volume_creator.C

This program demonstrates the use of a static function *loftVolume* in namespace *LoftVolumeCreator*. The function use lofting to create a new *SplineVolume* based on a set of surfaces. The surfaces are not changed during the lofting process. The surfaces must lie in the same space.

31.31 mirrorAndLoft

example_mirrorAndLoft.C

This program demonstrates how to create a volume model from a set of spline surfaces. The surfaces must be connected. The surface set is mirrored around a given plane, and lofting between corresponding surfaces is performed.

31.32 multiPatchSweep

multiPatchSweep.C

The idea of this program is to sweep a set surfaces to create a multi patch volume model. The surface set will be created by the example programs in compositemodel: createSplitDisc and createBlockStructuredDisc

31.33 project_curve

project_curve.C

This program demonstrates the use of the function void CurveCreators::projectCurve(shared_ptr<ParamCurve>& space_cv, shared_ptr<ParamSurface>& surf, double epsge, shared_ptr<SplineCurve>& proj_cv, shared_ptr<↩ SplineCurve>& par_cv)

The function generates a cubic spline curve(order four) which lies on a given SplineSurface and is the projection of a given space curve (in 3D space) onto that surface, within a given tolerance. The given space curve should be close to the surface.

31.34 rotational_swept_surface

rotational_swept_surface.C

This program demonstrates the use of the static function *rotationalSweptSurface* in the class *SweepSurfaceCreator*. The function can generate a B-spline surface by rotating a curve around an axis.

31.35 rotational_swept_volume

rotational_swept_volume.C

This program demonstrates the use of the static function *rotationalSweptVolume* in the class *SweepVolumeCreator*. The function can generate a SplineVolume by rotating a surface around an axis. The surface must be such that it doesn't lead to self-intersection.

31.36 sphere

sphere.C

This program demonstrates the use of the class Sphere. It is a subclass of ElementarySurface. The space dimension of a sphere is 3. The default parametrization is the angles u from 0 to 2∗PI and v from -PI/2 to +PI/2.

31.37 surface_of_revolution

surface_of_revolution.C

This program demonstrates the use of the class SurfaceOfRevolution. SurfaceOfRevolution is swept out by a SplineCurve that is rotated around an axis with a complete revolution, and is thereby a parametric surface. The space dimension is 3. The curve must be such that it doesn't lead to a self-intersecting surface.

31.38 torus

torus.C

This program demonstrates the use of the class Torus. It is a subclass of ElementarySurface. The space dimension of a torus is 3. The default parametrization is the angles u along the major circle and v along the minor circle from 0 to 2∗PI.